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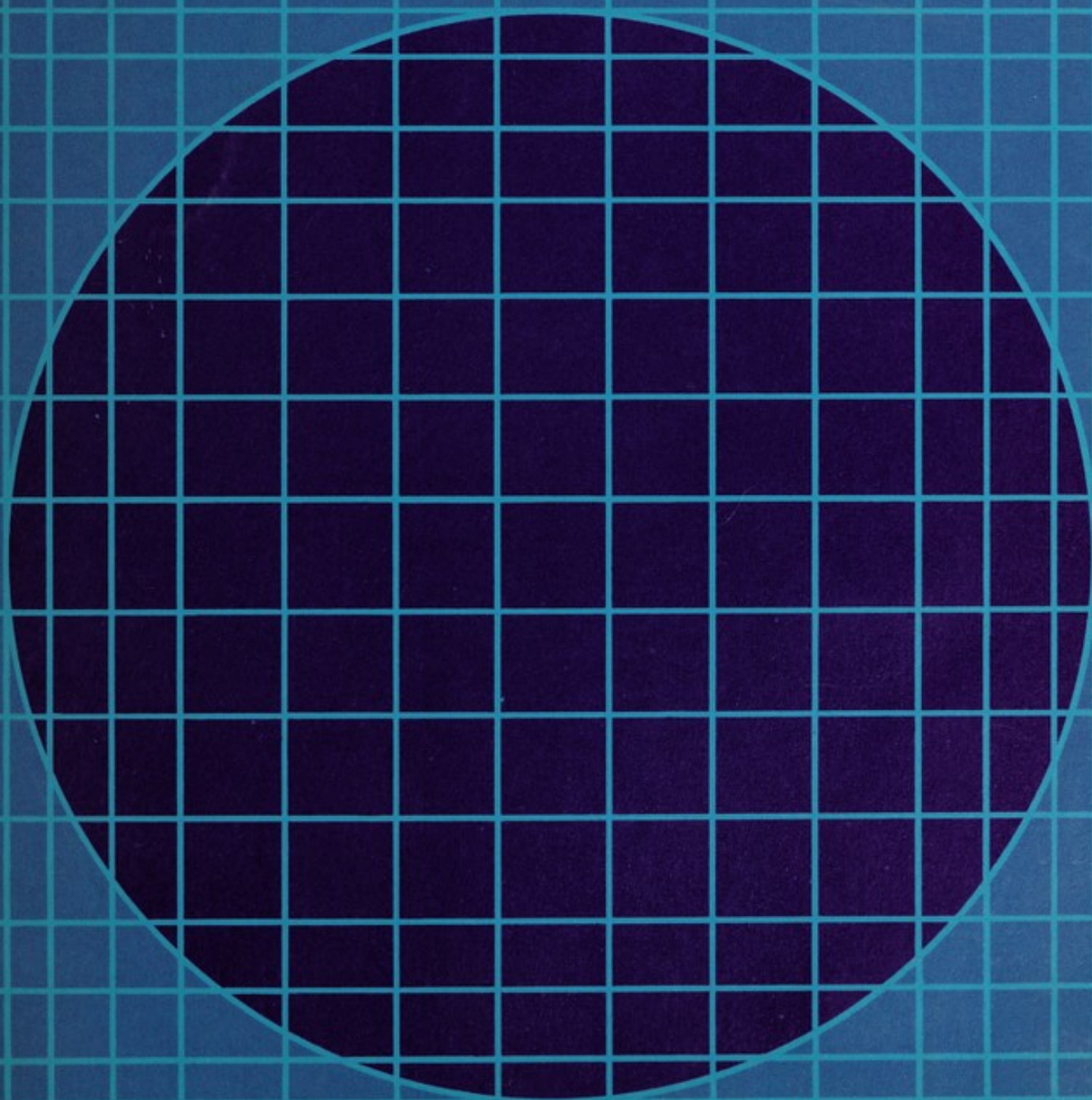
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AUSTRALIAN  
DEPARTMENT OF HEALTH

# Annual Report of the Director-General of Health 1974-75





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AUSTRALIAN DEPARTMENT OF HEALTH

**Annual Report  
Director-General  
of Health  
1974-75**



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Annual Report  
Director General  
of Health  
1974-75



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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 1975.*

*Gwyn Howells*

*Gwyn Howells  
Director-General of Health  
September 1975  
Canberra, A.C.T.*

# Introduction

Modern society is becoming increasingly aware and concerned about the environment in which we live and its pollution, and the effect of such pollution on the health of the persons who make up the community.

In the health field the concept of environmental health attempts to recognise the far broader issues of social behaviour and life styles, and their inter-relationship with the environment, the health and well-being of the individual, and the development of far wider preventative care rather than curative medicine. Ideally, I envisage developments which would enable all persons to be conscious of their physical and mental well-being and consciously to develop patterns of behaviour which protect and extend their sense of vitality. This involves not only an increasing public awareness of the problems involved, but also a developed community willingness of purpose to evaluate actively and prevent unnecessary destructive behaviour.

My purpose now is to draw attention to a particular and insidious form of pollution and its impact on health. I am referring to the ills of smoking and the pollution it causes to the atmosphere, in homes, offices and public buildings and to our bodies and our minds.

The association between smoking, ill-health and death cannot now be disputed. Expert committees in the U.S.A., Britain and Europe, the World Health Organisation, indeed throughout the world, have reported at various times that excessive smoking is a major cause of death from lung cancer and heart disease; contributes to chronic bronchitis, emphysema and tuberculosis; and has adverse effects on the outcome of pregnancy and the health of infants. In Australia we are constantly reviewing the growing evidence of ill-health caused by smoking and will continue to do so. We have worked hard, and will continue to work to reduce the ill-effects of smoking and eventually to eliminate it.

I am very pleased and heartened by the positive successes which the Departments of Health of the Australian and the State Governments, together with concerned groups and individuals in the community (such as the Anti-Cancer Councils and the Australian Council on Smoking and Health) have achieved.

First I would like to note that of later years the pro-smoking forces have been strangely quiet. They no longer challenge the ever-increasing evidence which demonstrates the dangers from tobacco products.

Our campaign has already encouraged the cigarette manufacturers to reduce the tar contents of cigarettes in Australia. In 1967, 90 per cent of brands of cigarettes had higher than 24 mg per cigarette of tar and none had less than 18 mg. By 1974 the situation had changed dramatically so that 90 per cent of brands of cigarettes had less than 18 mg of tar and none had more than 24 mg.

This success indicates that publicity on the extreme dangers of high tar cigarettes is reaching its target audience of smokers. The same survey also



revealed that there has been a significant turn to low tar cigarettes amongst smokers, and particularly that those over the age of 45 are more likely to be low tar smokers—2.3 per cent of smokers compared with 0.9 per cent of smokers under 45.

It is particularly encouraging to note that in Victoria, where the Anti-Cancer Council has been very active and the publicity concerning low tar smoking has been most intense, the survey reveals that the proportion of smokers using low tar content cigarettes contrasts markedly with the rest of Australia. In Victoria, low tar cigarettes claim 3.5 per cent of the market, compared with 0.6 per cent for the other five States. This gives a lesson for the future and I will be encouraging more intense activity in this area.

The National Warning Against Smoking campaign in Australia has also been successful in actually increasing the percentage of the population who do not smoke. A survey carried out on behalf of the Department in July 1974 has indicated that 61.6 per cent of Australians were non-smoking—a small but encouraging increase over the figure of 60.5 per cent in a similar survey conducted two years earlier. Another survey in January 1974 indicated that approximately 84 per cent of people claim to believe that smoking is hazardous to their health.

We can also be encouraged by the fact that the over-40 years group, in general, are smoking about 4 per cent less, with particularly significant changes apparent in the older age groups. For instance, 39 per cent of Australian males aged 60 or more are now ex-smokers and, of these, 71 per cent gave up five or more years ago. These very impressive figures are reflected in the lung cancer death rates of the 55-64 years male age group which have shown a clear downward trend since 1971, following a long continuous upward climb. This is encouraging and on balance we can expect a continued rise, albeit slowly, in the total percentage of people who do not smoke. However, it will of course be necessary to follow up with further work to assess the continuity of these trends.

Of vital importance to the anti-smoking forces are, of course, political attitudes. Without the support of Governments and their Ministers it is much more difficult to devise effective plans. The Australian Government and its Minister for Health have consistently made their attitudes clear, and given a positive lead by their early decision to phase out, and subsequently ban entirely, radio and television advertising of cigarettes.

And in recent times it has been encouraging to witness a unanimity of thinking by State Governments on the question of cigarette promotion. The State Ministers for Health, at their most recent annual conference in May 1975, agreed that all would seek the introduction of legislation requiring all forms of cigarette advertising to carry a health warning. Work has been proceeding on the preparation of legislation for such warnings in the Federal Territories.

There are critics who say that such moves are too insignificant, too ineffectual, too slow, who accuse Governments of double standards in supporting anti-smoking campaigns with one hand and tobacco production with the other. Governments, of course, must take a broad view which has appropriate cognisance of all opinion in the community and must examine individual issues from every angle. Their difficult role is to weigh up the greatest good for the greatest number, and strike a judicious balance between the views of the pro and anti forces in any issue, reflecting, as they see it, the community consensus. While many individuals in the ranks of the anti-smoking forces might wish to see much speedier and wider-reaching action by

Governments, most, I believe, recognise the dilemmas facing the politicians and are therefore delighted with the new directions and climatic changes stemming from political attitudes.

I have discussed this question of political attitudes at some length with a view to emphasising the importance of the decision by the Australian Health Ministers at their May conference. I venture to suggest that, say, five years ago such a decision would not have been reached. I suggest, too, that this augurs well for the future.

During the past year there has been a great deal of representation both to the Minister for Health and direct to the Department regarding smoking in public places and the discomfort and associated health hazard this causes to non-smokers. A growing body of scientific opinion asserts that, particularly in confined spaces, the danger to non-smokers is no less than if they themselves were lightly smoking.

My Department is currently looking into the possibility of the Australian Government setting an example in this area by prohibiting smoking in various facilities under its control. As a start I have banned smoking in the lifts of the Department of Health building in Canberra and have sought bans on smoking in government-run buses and cafeterias in the A.C.T. I have under study the possibility of segregating portions of our offices so as to avoid non-smokers being unwillingly compelled to suffer from the actions of their colleagues who smoke.

I have also raised the question of revised allocations of non-smoking seating in aircraft and am happy to report that all Australian airlines are co-operating in this matter in a most responsible and receptive manner.

At this juncture, I feel it is appropriate to mention the unsolicited support of the media. I have been pleased to note the increasingly frequent media stories on smoking and its hazards which have been appearing in the past year, and I believe we can be encouraged by reports like these:

- The Queensland State Transport Department upheld the right of a taxi driver to refuse to carry a passenger who declined to extinguish a cigarette on request.

- Smoking was banned on the Metropolitan Transport bus fleet in Perth.

- A survey revealed that only seven of 100 top Australian sportsmen are regular smokers.

- The Retail Traders Association of New South Wales mounted a campaign to stop customers smoking in their shops.

- Smokers in New York are now liable for a fine of up to \$1000 and up to a year's jail if they smoke in any one of a wide range of public places including supermarkets, lifts, classrooms, and recreational, religious and social gathering places holding more than fifty people.

- Growing numbers of restaurants in the United States are voluntarily setting aside areas for non-smoking diners, and proudly advertising the fact.

- In Britain a proposal is being examined for a compulsory insurance scheme for smokers, financed by a levy on the price of cigarettes, which would have the effect of making tobacco manufacturers responsible for compensation in respect of damage caused by smoking.

This random selection of items does not include any samples of those many other news stories which dealt with the latest medical findings on the dangers of cigarette smoking. Nor do I intend to detail medical evidence in this report. The dangers have been thoroughly documented many times in many places (including the literature issued by the National Warning Against Smoking, and in an excellent supplement to the 26 July 1975 issue of the *Medical*

*Journal of Australia*, prepared by the President of the Australian Council on Smoking and Health, Dr Cotter Harvey) and, as I stated earlier, they are rarely subject to public challenge.

These activities mentioned are individually not of major significance, but collectively they are making a positive contribution. To them must be added the contribution which the National Warning Against Smoking campaign has made with its financial support of individual State health education programs, the provision of a wide range of printed resource materials, and the latest promotional activity—a national contest in which school-children were asked to undertake research and design advertisements drawing attention to the hazards of smoking.

All that I have outlined above can, I believe, be a source of satisfaction to those concerned with the dangers of cigarette smoking. I offer my congratulations to those who have worked so hard and long to achieve these successes and I commend their example to all the community. However, while we may find cause for optimism in these successes there are still remaining a number of areas where we all have cause for grave concern.

One of the areas that concerns me the most is the failure of the campaign to have any demonstrable effect upon the smoking habits of young children, adolescents and women. A survey conducted by the Anti-Cancer Council of Victoria in 1974 brought to light the disturbing fact that increasing numbers of children and women are commencing to smoke and that the 20-29 years age group smoking has increased by approximately 4 per cent.

These groups appear unable to resist the subtle image-building of the tobacco advertisers or unwilling to resist peer group pressures. I am very concerned that the attitude of our young people, particularly, appears to be successfully influenced by the method of advertising cigarettes based on the psychology that smoking contributes to glamour, manhood, sexual attractiveness and success. In my view this approach is deliberately pitched at an impressionable young age group and I believe that the community must come to consider it as unacceptable.

The Director of the Anti-Cancer Council of Victoria, Dr Nigel Gray, who is one of the leading figures in the National Warning Against Smoking campaign, and who has made a close study of smoking trends here and elsewhere in the world, sees the total ban on radio and television advertising, which will come into force on 1 September 1976, as a major weapon against smoking. In spite of the experience in other countries where tobacco consumption has continued to rise despite similar bans, Dr Gray believes that eventually—perhaps in five years—the move will begin to have a measurable impact on children's smoking habits. The present image-building advertising campaigns, he says, are a major obstruction to anti-smoking education programs in schools, in spite of disclaimers by the campaign creators that they are not seeking to seduce the young.

Dr Gray also points out that school health education programs have become much more sophisticated and comprehensive, with better and more freely available resource materials, but only in the past couple of years. Again, he feels, it will take several years for this improvement to have a measurable impact.

Another of the aspects which concerns me greatly is the mental and physical dependence on smoking which the habit generates. While the community is becoming increasingly aware of the insidiousness of narcotic drugs and alcohol dependence, it should not forget the dependence facets of cigarette smoking. However, although withdrawal effects are often reported

by smokers discontinuing, they are not usually prolonged if the smoker can sustain his non-smoking behaviour.

In addition, even long-term smokers should be aware that in many, and possibly most, cases smokers who have ceased smoking can recoup within six to twelve months up to 80 per cent of the damage their former smoking has done to their bodies. In the light of this I believe that a most constructive public health measure in the future will be a stepping up of the education campaigns on methods to stop smoking.

The part that smoking has been found to play in road crashes emphasises in practical terms the value to the whole community of such education campaigns. As long ago as 1966 the Australian Road Safety Council reported that a study in the U.S.A. of 1100 road crashes showed that smokers behind the wheel were involved in four times as many smashes as were non-smokers. Some suggested reasons are the shifting of attention to light or search for cigarettes; reduced control with one hand off the wheel lighting a cigarette; confusion regarding hand signals when the driver is ashing a cigarette; and being dazzled at night by the flash of a lighter.

I have already mentioned that non-smokers are also forced to breathe air polluted by tobacco smoke, both from mainstream sources exhaled by smokers and sidestream smoke drifting directly from cigarettes, etc. It is in this area that I believe there is a need for a complete change in public attitude. That this change has already begun is evidenced by the many representations mentioned earlier, from concerned people pointing out the blatant abuse by smokers of the right of non-smokers to breath air free from pollution and repugnant smells.

I suggest that this change must become more rapid and go much further, for only when smoking has become socially unacceptable will we see a really positive improvement in our environment and our health. When this is achieved, no longer will our children be susceptible to peer group pressure to take up this unacceptable and dangerous habit, nor will they any longer be able to charge their elders with double standards and hypocrisy.

I venture to suggest that this change must find its initiative in the hands of the non-smokers. They must assert their right to breathe air unpolluted by tobacco smoke by letting airline companies know of their wish for non-smoking seats; by letting transport authorities know of their desire for increased non-smoking space in trains and buses; by letting supermarket proprietors know of their preference for food uncontaminated by cigarette smoke; by letting restaurant proprietors know that they would like to eat their food surrounded by other non-smokers. In this way, they would become one of the most positive contributions to the anti-smoking, anti-pollution campaign. I commend this course of action to every non-smoker in the community.

Turning now from the specific subject of smoking, 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.

In 1973 the life expectancy of an Australian male at birth was more than 68 years while females could expect to live for at least an additional seven years. The life expectation for Australians at birth is comparable to that experienced on the average by Europeans and North Americans, but far exceeds the expectation of life in Africa, South Asia and Latin America. Indeed, only one third of the world's population is expected to experience a life span of 65 years or more. Life expectation in Australia nevertheless remains lower than that in a number of developed countries.

Both the number of live births and the crude death rate in Australia showed a downward trend in 1973 compared to earlier years. The number of live births in 1973—247 670—was 17 299 below that in 1972. The crude birth rate in 1973—18.81 births per 1000 of population—was the lowest recorded since 1940 when it was 17.95 per 1000. The figure was 7.7 per cent below the 1972 rate of 20.39 per 1000.

In 1973, 110 822 deaths were registered, 1062 more than in 1972. The crude death rate decreased in 1973 to 8.42 per 1000, and was the lowest yet recorded for Australia.

The major causes of death were diseases of the circulatory system, neoplasms, accidents and respiratory diseases. Diseases of the circulatory system still account for more than half of all deaths, and in 1973 were responsible for 54.2 per cent although this percentage has been declining. The actual death rate per 100 000 persons from circulatory diseases was 455.7 in 1973 compared to 492.6 in 1964. The main components were ischaemic heart disease and cerebrovascular disease, which accounted for 29.8 per cent and 14.4 per cent respectively. Ischaemic heart disease caused 32.2 per cent of deaths of males and 26.8 per cent of deaths of females, while the corresponding proportions for cerebrovascular disease were 10.7 per cent of male and 19.0 per cent of female deaths.

As in previous years, malignant neoplasms were the next in importance, causing 17.5 per cent of male and female deaths. A comparison of death rates indicates that cancer is increasing in prevalence. In 1964 the death rate per 100 000 population due to malignant neoplasms was 135.8. By 1973 this had reached 147.3.

Accidents and other violence accounted for 9.7 per cent of male and 5.7 per cent of female deaths. The number of deaths caused by motor vehicle accidents increased from 3571 in 1972 to 3825 in 1973. This was the most important single cause of death for males aged 5 to 34 years and females aged from 5 to 24 years. At ages 15 to 24 years, motor vehicle accidents caused 58.8 per cent of male deaths and 40.7 per cent of female deaths, compared with 55.3 per cent and 40.2 per cent respectively in 1972.

Diseases of the respiratory system accounted for 8.7 per cent of male and 4.9 per cent of female deaths.

It is estimated that, as at May 1974, approximately 3.7 million persons in Australia (27.7 per cent of the civilian population) were suffering from one or more chronic illnesses, injuries or impairments. Of those with a chronic illness or condition, 32.2 per cent were limited in some way in their activities. The proportion of persons suffering from chronic illness, injuries or impairment increased with age—for persons under 5 years of age it was 9.7 per cent, for those aged 45 to 54 years 39.6 per cent, and for those aged 65 years and over 61.0 per cent. Chronic illnesses most frequently reported were arthritis (33 per 1000 of civilian population), hypertensive disease (32), hay fever (31), asthma (24) and bronchitis (24).

The absence of smallpox, cholera, yellow fever, plague and typhus can be generally attributed to a strict quarantine system which has been effective in preventing the entry of such diseases. Public health measures have also brought the incidence of other infectious diseases, such as poliomyelitis, hepatitis and tuberculosis, to very low levels.

The estimated consumption of alcohol per head of population continued to increase. In 1973-74, 141 litres of beer were consumed per head compared with 110 litres in 1964-65, while per capita consumption of wine was 11 litres in 1973-74 compared with 6 litres in 1964-65.

Turning finally to specific matters relating to my Department during the past year, I must first place on record my appreciation of the continuing spirit of complete and harmonious co-operation between the Chairman of the Hospitals and Health Services Commission, Dr Sidney Sax, and myself, and between our respective officers. The smoothness of implementation of the rapidly-enlarging range of projects under the Community Health Program is a product of this co-operation.

The same spirit of co-operation extended also during the year to new initiatives in the hospitals field, following the Government's approval of a Hospitals Development Program based on recommendations made by the Commission. This necessitated the establishment of further support units within the Department, and a new Health Services Division was created with the overall responsibility for implementing both community health and hospitals projects approved by the Minister for Health on the Commission's recommendation.

In tandem with this growing involvement in project implementation was a growth in the research and planning components of the Department's activities. A second Health Services Research and Planning Branch began operating to help cope with essential commitments both for the Department and the Commission. The two Branches are undertaking a wide range of tasks to provide information which will undoubtedly help shape the future of Australian Government involvement in the provision of health services.

Another structural change to the Department was the severing of the A.C.T. Health Services Division from Central Office administration. Although the Division had been acting for many months as a semi-autonomous body, the official separation took place on 30 June 1975 with the formal creation of the Capital Territory Health Commission. I would like to take this opportunity of placing on public record my appreciation of the loyal and excellent service which officers of the former Division gave to the Department, and of wishing them and the Commissioners well as they continue the task of providing a complete range of health services to residents of the A.C.T.

An event of major significance during the year under review was the devastating visit to Darwin by Cyclone Tracy—a visit which tested fully the Department's capacity to respond to a health emergency of such proportions. The story of the cyclone and its aftermath has already been fully documented elsewhere, and only a brief account appears in the Northern Territory Division chapter of this report. However, I must again record my sense of pride in the way Departmental officers, particularly those on the spot in Darwin, responded to the challenge, and must also thank again those officers of other Departments and agencies, together with many volunteers from the private sphere, without whose help the highly dangerous health situation would not have been so satisfactorily resolved.

On the international front, Australia's long and active participation in World Health Organisation affairs was recognised in a tangible way by the election of the Minister for Health, Dr D. N. Everingham, at the twenty-eighth World Health Assembly as Vice-President for the Western Pacific Region. I was also honoured to be chosen to serve on the WHO Executive Board, following Australia's election as a member state entitled to designate such a person.

The Department undertook a number of new domestic activities during the year, including the medical assessment of children eligible for the new Handicapped Child's Allowance, which is payable to parents or guardians caring for severely handicapped children in their own home. A report of the

program appears in the Divisional Offices chapter. Another area of fresh involvement was the preparation for active participation in family planning activities, following the appointment of a Family Planning Consultant in September 1974. This activity, described in detail in the Social Health Projects chapter, is the forerunner of expanding Departmental involvement in the broad social health field.

Among *ad hoc* activities during the year was a major role in the evacuation of orphans from South Vietnam. Departmental officers travelled with the two evacuation flights, while the Quarantine Station at North Head in Sydney was pressed into service as a very efficient reception centre for one group of children. Another *ad hoc* task, which was approaching finality as this report went to press, was the organisation of a major conference on women's health—the Department's contribution to Government recognition of International Women's Year. Some 1000 delegates were expected to attend the conference, being held at the University of Queensland from 25-29 August.

Such special tasks, of course, represent only a small fraction of the total work output of the Department which continued throughout the year to supervise an extremely broad range of health initiatives. The work of all areas of the Department is reported in detail on the following pages.

# General Quarantine

The year saw further expansion of activities in general quarantine, due mainly to the continuing increase in numbers of travellers returning to Australia.

Lower international air fares, package group tours, and the ready availability of round trip cruises in the Pacific have all contributed to the increased travel and, as a consequence, extra vigilance has been required to protect Australia from the importation of quarantinable diseases.

Once again it is pleasing to record that, although outbreaks of smallpox, cholera and yellow fever occurred in other countries, some within a few hours flying time of Australia, no cases were recorded in this country during the last twelve months.

## Smallpox

Smallpox was once the scourge of the world, and brought death and disfiguration to millions of people. Through the efforts of the World Health Organisation, assisted by the health administrations of member countries, smallpox is now endemic in three countries only—Ethiopia, Bangladesh and India.

When WHO began its campaign against the disease in 1967, smallpox was endemic in thirty countries or regions and was carried by travellers into many other parts of the world. Mass vaccination of populations was undertaken, followed by various methods of breaking the chain of transmission from person to person. Dramatic results were achieved. By 1973 the total number of cases notified to WHO from all countries had fallen to 135 853. In 1974 the figure increased to 218 397 cases—an increase attributed by WHO to improved surveillance and reporting of cases by medical teams sent to the endemic areas.

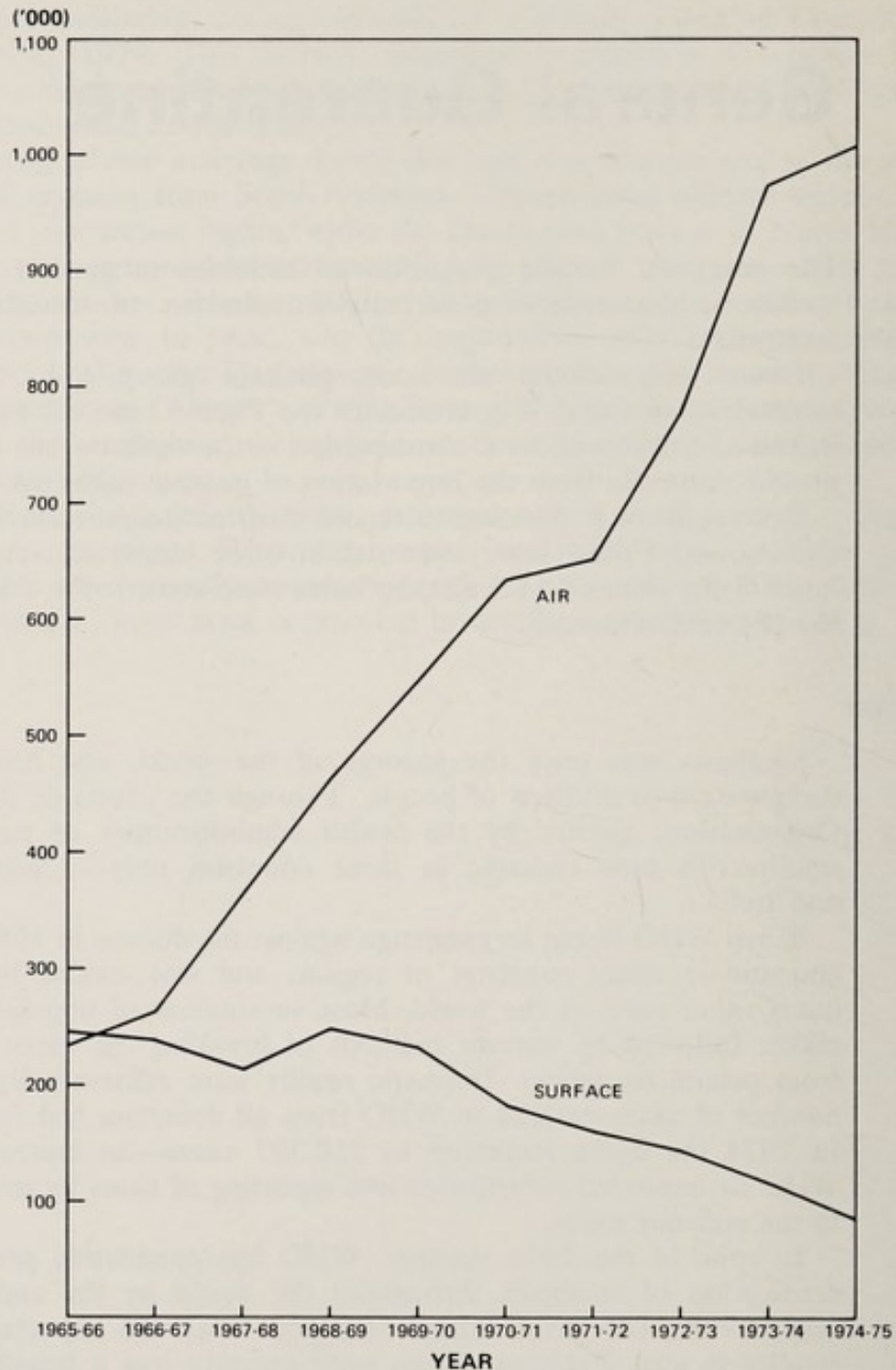
In spite of the 1974 upsurge, WHO has confidently predicted the total eradication of smallpox throughout the world by the end of the current year, 1975. The areas where smallpox cases are reported are becoming smaller in size. Pakistan, which until recently was a heavily infected area, has not reported a case since October 1974. The disease has disappeared from the Americas. As far as is known to medical science, human beings alone are the reservoir of the virus and they alone can pass it on to others. Thus, once mankind is freed of the disease, smallpox will be unable to re-establish itself.

With the decrease in affected areas, Australia has been able to relax its requirements on smallpox vaccination, and now allows travellers who have contraindications to vaccination because of medical conditions to enter the country without being vaccinated.

Such people are no longer quarantined on arrival, provided they have come direct by air from a country which has not recorded a case of smallpox in the last twelve months. Specified medical conditions are: pregnancy;



NUMBER OF PASSENGERS ON VESSELS BOARDED AND CLEARED—  
1965-66 TO 1974-75



*The number of passengers entering Australia by air exceeded the one million mark for the first time during the year, while the number of surface passengers fell below 100 000. In spite of the increase in passenger movements, Australia was again free of quarantinable diseases.*

history or presence of eczema or other skin disease considered by the traveller's doctor to be a contraindication to smallpox vaccination; states of immunological deficiency which are (i) subsequent to treatment which depresses immunity (e.g. deep X-ray therapy, administration of corticosteroids, alkylating and cytotoxic drugs) or (ii) hypogammaglobulinaemic conditions; nephrosis; organ transplants; general malignant disease; any condition necessitating travellers to be accompanied by a doctor or nurse or

for whom hospital care is likely for fourteen or more days after arrival; infants under twelve months of age; encephalitis, Guillain-Barre syndrome or peripheral neuropathy attributable to previous smallpox vaccination; Hodgkins disease and the leukemias.

Travellers must carry a medical certificate issued within twelve months of embarkation and signed by a registered medical practitioner, stating that vaccination is inadvisable because of a medical condition (which must be specified). Exemption does not extend to travellers from countries where smallpox is still endemic or where the disease has been recorded in the previous twelve months. The Weekly Epidemiological Record of WHO is used as the source of information for this purpose.

A stopover in a transit lounge of an overseas international airport does not disqualify a person from this exemption.

The relaxation applies only to travellers with the medical conditions specified. Any travellers arriving without valid vaccination certificates, or entering from smallpox infected countries are still being isolated in quarantine as previously. Travellers arriving by air from overseas are now handed a form which advises seeking medical advice if an illness develops within six weeks of arrival. It also warns medical practitioners of the possibility of the travellers having acquired an exotic disease while abroad.

It is hoped that in time, as WHO's eradication campaign continues, further relaxation on smallpox vaccination may be possible.

## Cholera

No case of cholera was imported into Australia during the last twelve months. In October 1974, Australia decided that vaccination against cholera would no longer be required as a condition of admission of any international traveller to this country. This came as a result of experience gained throughout the world over the last decade, which showed that international spread of the cholera vibrio cannot be prevented either by vaccination or by preventive medication.

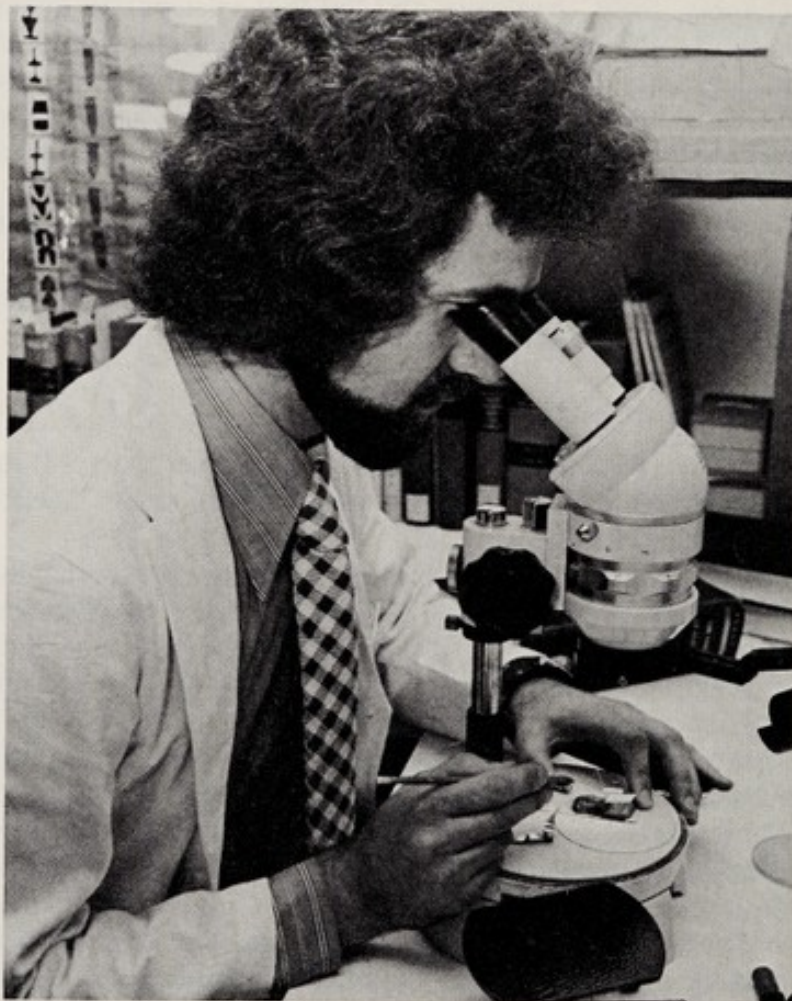
Although vaccination does not provide a barrier against the international dissemination of the disease it may afford a certain measure of individual protection. Travellers may still therefore, on request, be vaccinated against cholera by the Department before going overseas.

## Lassa Fever and Marburg Virus Disease

During the year, two more diseases, Lassa Fever and Marburg Virus Disease, were proclaimed as quarantinable diseases under Section Five of the *Quarantine Act 1908-1973*.

Lassa Fever is an acute infectious disease which was recognised in man for the first time in 1969. It is caused by a virus which belongs to the Arenavirus group. So far this micro-organism has been successfully isolated in some half a dozen epidemic or endemic foci in the rural areas of West Africa, but it may well be that it is also endemic in other parts of tropical Africa. The gravity of the disease, which is sometimes fatal, and its relative ease of transmission from person to person have already created public health problems that have proved difficult to solve.

Four epidemics which occurred in widely separated foci in West Africa between 1969 and 1973 involved more than 100 cases. The highly infectious nature of the disease is shown by the fact that in these epidemics 20 medical workers, including a physician and 14 nurses and midwives, acquired Lassa



*During the year the Department surveyed aircraft arriving at international airports in Australia to determine the degree of insect infestation and the effectiveness of quarantine disinsection procedures. Above, Senior Medical Entomologist Mr Neville Rajapaksa collects insects from the flight deck of an international jet airliner following its arrival at Sydney Airport. At left, Mr Richard Russell, an entomologist at the School of Public Health and Tropical Medicine, examines some of the insects collected.*

Fever. Nine of these died as a result of the infection. There are also recorded cases of passengers travelling from Africa and developing the disease in places such as the United Kingdom and the United States of America.

In 1967 a total of thirty cases of another virus disease was reported at Marburg and Frankfurt, in West Germany, and at Belgrade, Yugoslavia, among employees of research institutes who had handled organs of monkeys imported from Africa. Seven died while four secondary cases occurred in medical personnel who attended the patients and another resulted from a household contact.

On investigation a dangerous 'new' virus, now known as Marburg Virus, was found to be the agent responsible. Serological evidence indicates that natural infection of non-human primates may be common in Africa, and it has been suggested that the virus may be transmitted by mosquitoes.

In February 1975 a 20-year-old Australian died in a hospital in South Africa of the disease. His companion, another Australian who had been touring South Africa with him, was also admitted to hospital suffering from the disease but she and a nurse, who subsequently was infected at the hospital, recovered after a protracted convalescence.

Because no methods of immunisation or specific treatment for these two diseases are known, quarantine is at present the only effective means of reducing risk of person-to-person transmission.

## Training courses

This year, for the first time, comprehensive training courses on general quarantine were conducted by the Department's Training Section for personnel engaged in quarantine procedures. It is anticipated that different levels of training will be organised for staff who undertake the various types of quarantine work. Refresher courses will be continued for those who have already attended a full course of instruction.

## Insect recovery program from overseas aircraft

For the past year, Department entomologists have regularly monitored aircraft from overseas for the presence of insects in passenger compartments. The collection program was initiated to ascertain the degree of insect infestation of aircraft and to evaluate effectiveness of quarantine disinsection procedures.

A total of 3166 insects was collected from 174 flights, but this in no way reflects the actual numbers present as the time available for collection is limited due to aircraft movements. The number of insect orders represented in the collections at different international airports varied from six to eleven. Many of those identified were exotic to Australia and were potentially highly dangerous to Australian human, animal and plant life.

Among them were mosquitoes capable of carrying diseases like yellow fever, dengue, malaria and Japanese B encephalitis. Initial studies also showed that at least five of the identified insect orders contained important agricultural pests. These were coleoptera (beetles, timber borers), diptera (which includes fruit flies), lepidoptera (which includes major pests that attack cotton, tobacco and horticultural crops), hymenoptera (wasps including sirex which attacks coniferous trees), and hemiptera (bugs including orange shield bug which attacks vegetables). Other identified species could introduce bluetongue disease—a disastrous prospect for Australia's sheep and cattle industries.

The results of the survey fully uphold the Department's quarantine spraying procedures on arriving overseas aircraft. The inconvenience experienced by some passengers due to disinsection spraying is considered minimal compared with the danger posed by potential disease-carrying insects and agricultural pests.

# Animal Quarantine

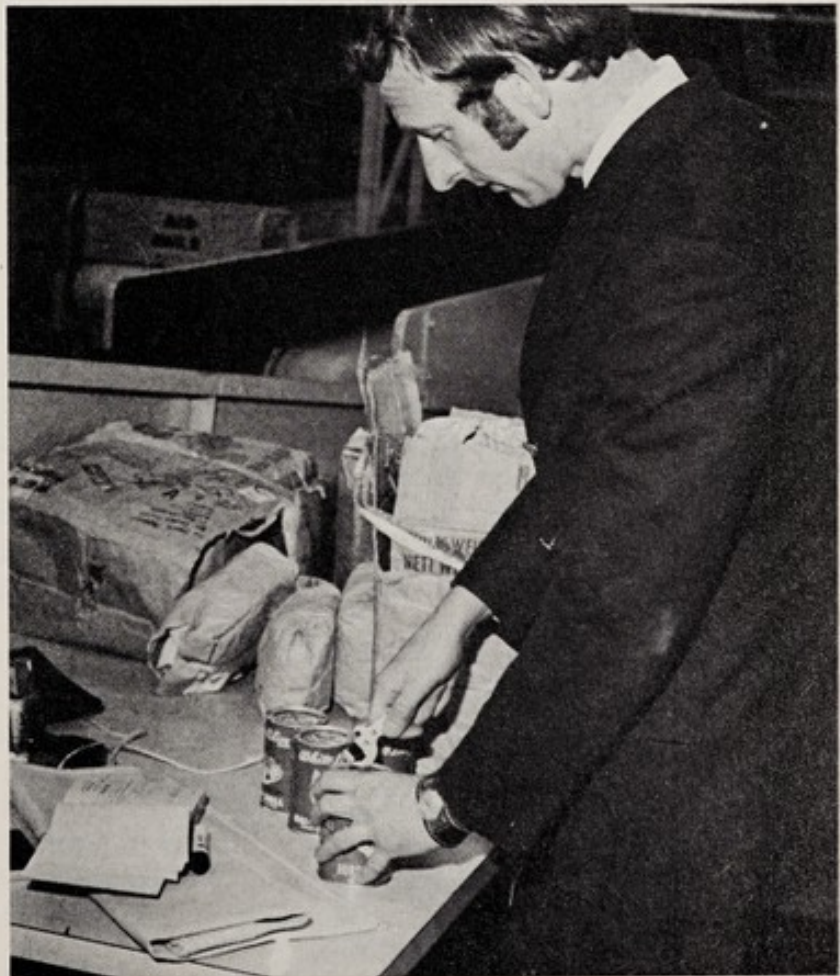
The routine activities of the Animal Quarantine Branch continued at a high level throughout the year. In addition Branch officers took part in the development of proposals for new construction at animal quarantine stations and for disposal of quarantinable material from international airports, as well as investigating designs for incinerators for both air and sea ports.

## Imports of livestock

Imports of dogs and cats from the United Kingdom and Papua New Guinea taxed all available quarantine accommodation for small animals during the year. In addition, horses imported from the United Kingdom by air fully occupied all large animal facilities at the quarantine stations in Sydney, Melbourne, Adelaide and Perth.

To meet this demand, small animal accommodation is being progressively increased. Plans are in hand for the construction of a new and very large quarantine station in New South Wales, together with expansion of facilities

*Mr Malcolm Johns, a Quarantine Officer at the Chief Parcels Post Office, Melbourne, checks a parcel of Asian foodstuffs. In this case tins labelled as vegetables were found to contain salami-type sausage. A constant watch is kept on parcels coming from abroad to guard against the importation of goods which pose a threat to Australian livestock.*





*The Quarantine Division has a vital interest in the movement of foreign fishing boats in Australian waters. Vessels like these, pictured off the coast of Western Australia, could introduce exotic animal diseases to isolated areas of the continent, and the Department is co-operating with other Australian and State Government departments in regular surveillance.*

—Department of Defence photograph

in the station at Spotswood in Melbourne. These developments, when completed, will meet all foreseeable requirements.

## Exotic diseases

Two films on foot and mouth disease were produced during the year—*The Constant Threat* and *A Continent on Guard*. One is designed to alert the general public to the consequences of the introduction of exotic animal disease, while the other acquaints primary industry with the procedures which will be adopted should vesicular diseases of animals be introduced into Australia. Since their completion, the demand for the films has been exceptionally heavy and the Department has increased its stock of films so that copies can be made available to any organisation on long or short-term loan.

The Department provided air fares for an officer of the South Australian Department of Agriculture to attend the 1975 Exotic Diseases Course at Grosse Ile in Canada. The officer also visited the high security animal quarantine laboratory operated by the United States Department of Agriculture, at Plum Island, New York. In view of the economic problems caused by virulent Newcastle disease in poultry industries overseas, an officer of the Victorian Department of Agriculture visited the United States to study virological aspects of the disease, with particular relation to the very mild strain present in Australia.

## Animal Quarantine magazine

The circulation of *Animal Quarantine* magazine was increased still further, and it now reaches overseas Government veterinary authorities and scientific workers in a wide variety of disciplines. The magazine is gaining acceptance as an authoritative journal on quarantine matters generally and on Australian animal species in particular. The latter, of course, are of great interest to countries importing livestock from Australia.

## Quarantine stations and incinerators

Because of the heavy demand on animal quarantine accommodation, a program of standardisation of design has been undertaken with the aim of providing high security accommodation with minimal increase of cost at all Australian stations.

The same principles of standardisation are being applied to the design of incinerators to be installed at airports and sea ports for the disposal of quarantinable refuse. Such standardisation will, in the long term, result in considerable savings in cost.

## Imports of cattle semen

Importations of cattle semen continued at a high level. It is of interest to record that 780 donor bulls are currently being used for the export of semen to Australia from Canada, the United Kingdom and New Zealand.

## Bureau of Animal Health

In 1974 a Bureau of Animal Health was created within the Australian Department of Agriculture, and some of the responsibilities formerly carried by the Animal Quarantine Branch of this Department were transferred to it. The principal function transferred was the control of the export of livestock from Australia.



# Plant Quarantine

In common with the other quarantine branches, the tempo and scope of activities of the Plant Quarantine Branch increased in line with the general increase in overseas movements of people and goods.

## Plant Quarantine Research Station

The year was one of consolidation and growth for the Plant Quarantine Research Station in Canberra which was opened the previous year.

In an important addition to staff, a nematologist began duty in November. Many nematodes of commercial crops—notably Golden Nematode of potatoes—are not present in Australia, and the nematologist's task is to develop techniques which will prevent their introduction.

Other projects being undertaken at the Research Station include the development of treatments for imported second hand bags, the investigation of methods of devitalising seeds, and of treatments for various seed-borne diseases which may be present on imported seed.



*Technical Assistant Mr Adam Cattoi (right) and Officer-in-Charge, Mr Lance Smee, stake carnations being grown as part of a research project at the Department's Plant Quarantine Research Station in Canberra.*

## Germ plasm banks

The Branch was actively associated during the year with the Australian wheat industry and the N.S.W. Department of Agriculture in the establishment of a wheat germ plasm bank at the Wheat Research Institute, Tamworth. There are now more than 16 000 lines in the Australian Wheat Collection.

A new germ plasm bank is being set up, this time for sunflowers. Sunflower is a relatively new crop in Australia, but is one of the group of oilseeds which are assuming great importance as a source of vegetable oil. To assist breeders in developing strains which are more suitable to Australian conditions, but at the same time avoiding the risk of introducing any pests or diseases, the Branch is co-operating with CSIRO and the State Departments of Agriculture in a program of sunflower seed introduction.

## Quarantine fees

Following a revision of fees in 1973—the first significant review since 1951—it became necessary to make a further revision during the year to meet recent cost increases in labour and materials. Fees now recoup approximately two-thirds of the cost of the plant quarantine service.

## Aid to Indonesia

The Aid Program for Indonesian Plant Quarantine entered its third year. A second shipment of equipment, including three quarantine greenhouses, was sent to Indonesia and an officer of the Branch spent three weeks there overseeing installation and instructing local staff in operation and maintenance of the equipment.

Equipment for the third and final phase of the program is now being assembled in Sydney. It is expected that the program will be completed in 1976.

## Fruit fly in Northern Australia

A Sub-Committee of the Standing Committee for Agriculture has been looking at the danger of the introduction of fruit flies into Northern Australia. One species has already become established, but potentially greater pest species are present in Papua New Guinea. Surveillance is to be undertaken by Queensland, the Northern Territory and Western Australia to detect any new introduction before it can become established.

Plant quarantine is also increasing its interest in surveillance based on Thursday Island. Apart from the danger of fruit fly introduction, the Giant African Snail—also a resident of Papua New Guinea—is another major threat. The snail has been receiving close and regular attention from quarantine.

## Publicity

A new film entitled *Port of Entry* was completed during the year and is ready for distribution. This film highlights the smaller ports and the quarantine problems associated with large scale agriculture. The animated film *The Travelling Garden* is now available in Greek, Italian, Turkish and Lebanese language versions.

New displays showing the work of plant quarantine were prepared for the



*Plant Quarantine Inspector Mr Doug Blackman uses a two-way radio to relay a message from his position at the docks to the main plant quarantine operating centre at the New South Wales Department of Agriculture in Sydney. Radio units have been installed in all vehicles operating in the metropolitan area to facilitate operations. Similar equipment is planned for Melbourne and other major ports.*

agricultural shows in Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart and Launceston. Arrangements were also made for a display at Rockhampton.

## Publications

Publications printed during the year included *Varieties of Fruit Trees, Berry Fruits, Nuts and Vines in Australia, Fruit Variety Foundation, Notes for Training Plant Quarantine Officers* (first printed 1967) and *Thermal Treatment of Seeds*.

## Radio communication

A 'Talk-Through' radio communication network was installed at the main plant quarantine operating centre of the N.S.W. Department of Agriculture in Sydney during the year, with units in all vehicles operating in the metropolitan area. The network has already made a significant difference to the operations of the service, and the saving in time and increase in efficiency has more than justified the capital cost.

Tenders have been received for a similar network in Melbourne and it is hoped that radio communication will be available for plant quarantine staff there before 1976.

# Pharmaceutical Benefits

The severe influenza epidemic throughout Australia during the winter months of 1974 contributed significantly to the marked increase in both utilisation and cost of pharmaceutical benefits during the year. The epidemic prompted abnormally high prescribing of antibiotics, sulphonamides, cough suppressants, and drugs used in the treatment of bronchospasm.

Other factors contributing to the increased cost were rises in chemists' professional fees and steadily rising drug costs.

## The cost of the scheme

The total cost of providing benefits in 1974-75, including the patients' contribution on prescriptions supplied to people other than eligible pensioners and their dependants, was \$329.1 million. This represented an increase of \$51.8 million or 18.7 per cent over the 1973-74 cost, and compared with an increase of \$51.0 million or 22.6 per cent in 1973-74 over the previous year. It should be remembered, however, that 1973-74 was a year of abnormally high increase, being the first full year during which anovulants had been available as benefits and the minor tranquilliser diazepam had been available without restriction.

Increased costs were distributed as follows:

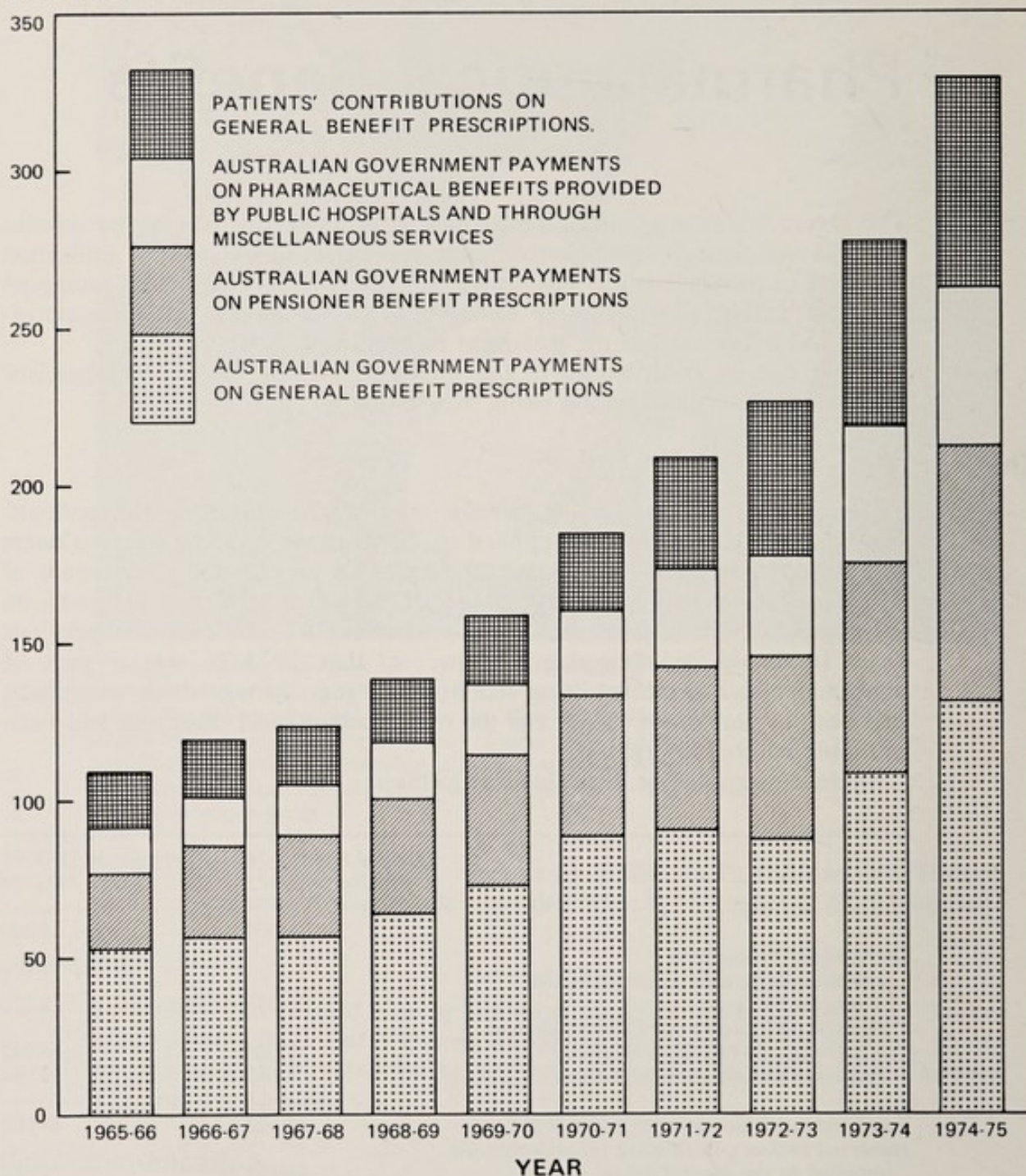
	<i>Increase in 1973-74 over 1972-73</i>	<i>Increase in 1974-75 over 1973-74</i>
	<i>\$'000</i>	<i>\$'000</i>
Government expenditure		
Prescription benefits available to the general public	20 635	23 275
Benefits provided in public hospitals and through miscellaneous services	11 365	6 942
Pensioner pharmaceutical services	8 663	13 784
Total increased Government expenditure	40 663	44 001
Increased patient contribution on prescriptions supplied to the general public	10 375	7 813
Total increased costs	51 038	51 814

N.B.—Apparent minor errors are due to rounding.

Following recommendations of the Joint Committee on Pharmaceutical Benefits Pricing Arrangements, two increases in chemists' professional fees were effected during 1974-75. The first was an increase of seven cents, retrospective to 1 January 1974, and the second of five cents, effective from 1 July 1974. These increases are estimated to have cost the Pharmaceutical Benefits Scheme an additional \$13.1 million in 1974-75.

## COST OF PHARMACEUTICAL BENEFITS—1965-66 TO 1974-75

\$ MILLION



To illustrate the impact on the Scheme of the influenza epidemic, mentioned above, the number of prescriptions included in chemists' claims during the four months July to October 1974 for antibiotics, sulphonamides, cough suppressants and preparations for bronchospasms was 9.0 million, or 28.8 per cent above the level for the corresponding four months of 1973-74.

### General benefits

The cost of providing prescription benefits to people other than pensioners and their dependants was \$198.2 million, including the patient contribution. This was an increase of \$31.1 million or 18.6 per cent over 1973-74.

The average cost of general benefit prescriptions rose steadily throughout the year, due principally to the influence of increased dispensing fees and rising drug costs. The average cost in June 1975 was \$2.94 compared with \$2.83 in June 1974.

Major factors influencing the rise in cost of general benefits are assessed as follows:

	<i>Cost increase in 1974-75</i>
	<i>\$'000</i>
Dispensing fee increases	9 013
Population increase	3 302
Increased utilisation (including listing of new drugs)	18 481

Details of the more significant movements in 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

<i>Drug Group</i>	<i>1974-75</i>		<i>Increase over 1973-74</i>			
	<i>Prescription</i>		<i>Cost</i>	<i>Prescription</i>		
	<i>Cost</i>	<i>Volume</i>		<i>%</i>	<i>Volume</i>	<i>%</i>
	<i>\$'000</i>	<i>'000</i>	<i>\$'000</i>		<i>'000</i>	
Diuretics	10 726	3 097	1 339	14.3	347	12.6
Gastrointestinal sedatives	2 114	797	677	47.1	186	30.0
Sulphonamides	5 783	1 851	1 687	41.2	433	30.5
Tetracyclines	10 731	3 596	1 592	17.4	270	8.1
Penicillins	18 560	6 100	2 597	16.3	715	13.3
Preparations for bronchospasms	13 540	3 148	2 992	28.3	677	27.4
Analgesics	13 698	5 085	2 381	21.0	1 148	29.2
Tranquillisers	9 291	4 032	825	9.7	175	4.5
Anti-depressants	5 635	2 291	360	6.8	75	3.4
Anovulants	13 954	5 698	2 466	21.4	561	10.9
Other antibiotics	2 045	287	235	13.0	18	6.7
Food supplements	2 277	559	629	38.2	137	32.5

The high cost of analgesics reflects, in the main, the influence of two drugs—Ibuprofen, an anti-rheumatic which was first listed as a benefit in April 1973 and has been prescribed at a steadily increasing rate since then, and dextropropoxyphene hydrochloride with paracetamol (Digesic), a non-narcotic analgesic listed on 1 April 1974. Both items attracted a high level of prescribing during 1974-75 with only marginal offsetting reductions in other items with similar therapeutic qualities.

The high prescribing and cost of antibiotics and sulphonamides is again indicative of the severity of the influenza epidemic. The most significant increases occurred in the utilisation of ampicillin, epicillin, tetracycline with nystatin and trimethoprim with sulphamethoxazole. The increase in gastrointestinal sedatives was due to prescribing of alginic acid compound granules, added to the list of benefits on 1 August 1973.

## Pensioner benefits

The cost of providing prescription benefits to pensioners and their dependants in 1974-75 was \$80.6 million, an increase of \$13.8 million or 20.6 per cent over the previous year. The volume of prescriptions was 30.3 million which was 2.5 million or 9.1 per cent higher than in 1973-74.

The rapidly rising cost of pensioner benefits again reflected the influence of professional fee and drug cost increases, in the same manner as general benefits, with the average prescription price climbing during the year from \$2.42 in June 1974 to \$2.62 in June 1975.

Major factors affecting the cost of pensioner benefits are assessed as follows:

	<i>Cost increase in 1974-75</i>
	<i>\$'000</i>
Dispensing fee increases	4 078
Population increase	1 968
Increased utilisation (including listing of new drugs)	4 128

Movements in prescribing and costs within the most significant therapeutic drug groups are shown in the following table:

**PENSIONER PHARMACEUTICAL PRESCRIPTION BENEFITS**  
Table of Drug Usage—Selected Groups, Ready-Prepared Items

<i>Drug Group</i>	<i>1974-75</i>		<i>Increase over 1973-74</i>			
	<i>Prescription</i>		<i>Cost</i>	<i>Prescription</i>		
	<i>Cost</i>	<i>Volume</i>		<i>%</i>	<i>Volume</i>	<i>%</i>
	<i>\$'000</i>	<i>'000</i>	<i>\$'000</i>		<i>'000</i>	
Gastrointestinal sedatives	692	250	351	102.9	104	71.2
Diuretics	8 457	2 247	1 117	15.5	253	12.7
Tetracyclines	1 955	649	332	20.5	68	11.7
Penicillins	2 128	652	380	21.7	109	20.1
Analgesics	9 850	4 306	1 462	17.4	466	12.1
Tranquillisers	5 214	2 150	462	9.7	92	4.5
Preparations for bronchospasms	3 064	931	794	34.9	181	24.1
Anti-depressants	2 648	1 140	196	8.0	48	4.3

Reasons for the increases are the same as those applying to general benefits.

## Public hospitals and miscellaneous services

The cost of benefit drugs supplied in public hospitals and through miscellaneous services such as Bush Nursing Centres and the Royal Flying Doctor Service was \$50.4 million, a rise of \$7.0 million or 16.1 per cent over 1973-74. Claims for reimbursement received from State hospital authorities rose steadily throughout the year, reflecting the rapidly rising costs of pharmaceutical benefit drugs.

Expenditure under this heading includes special arrangements under Section 100 of the National Health Act whereby the Government meets the full cost of fluids used in home dialysis by people suffering from renal failure. There are currently about 200 people undergoing such treatment at a cost to the Government in 1974-75 of \$237 000 for their home dialysis fluids.

## Offences

The Pharmaceutical Services Committees of Inquiry considered thirty-nine 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 chemists were warned to exercise more care in dispensing and sixteen were given Ministerial reprimands, two of which were published in the *Australian Government Gazette*. In the remaining three cases finalised during the year, no further action was taken. Seven cases remained unresolved at 30 June 1975, compared with seventeen cases carried over from 1973-74.

During the year, the Medical Services State Committees of Inquiry considered two references for alleged offences by doctors relating to pharmaceutical benefits. Both cases remained unresolved at 30 June 1975. One case unresolved in 1973-74 lapsed when the doctor concerned did not return from overseas.

Court proceedings were finalised in connection with one chemist and one doctor, and both were convicted and fined for offences under the National Health Act. Court proceedings were started in connection with two chemists and two doctors.

## Price negotiations

The escalation of costs of both labour and raw materials within the pharmaceutical industry during 1974-75 resulted in a tenfold increase in the number of applications for price increases. Inflationary factors in the economy severely limited the scope of negotiations for price reductions.

Despite rising costs, the Department maintained careful scrutiny over requests for price increases and also achieved some price reductions. It is estimated that the increases granted during 1974-75 will increase expenditure for a twelve-month period by \$7.01 million, while reductions negotiated will give savings of \$3.86 million in the first year.

A significant number of manufacturers are now voluntarily submitting costs information concerning pharmaceutical benefit items. On 21 May 1975, a bill was introduced into the Parliament to amend the National Health Act to require manufacturers to provide the Department, on request, with cost and financial information on products listed, or recommended for listing, as pharmaceutical benefits. The Bill has not yet been debated.

## Changes in listing

During the year thirty-one new items and twenty-six new forms and strengths of existing items were listed as pharmaceutical benefits on the recommendation of the Pharmaceutical Benefits Advisory Committee. Ninety-nine items were deleted from the list of ready-prepared benefits, thirty of which were removed on the recommendation of the Pharmaceutical Benefits Advisory Committee and the remainder at the request of the manufacturer.

Most significant among the new items added to the list of benefits was beclomethasone dipropionate aerosol spray, for use by asthmatics requiring corticosteroid therapy. With this corticosteroid preparation the drug is inhaled directly into the lungs, thereby reducing the systemic steroid require-



ment. Thus substantially less corticosteroid is taken into the bloodstream and the patient is in less danger of suffering the side effects of conventional oral corticosteroid therapy.

The continuing policy of providing doctors and patients with easier access to pharmaceutical benefits resulted in several changes to listings during the year. Authority requirements were removed from nineteen items, restrictions were removed from seventy-nine, the maximum quantity which may be prescribed was increased for ten items, and additional repeats were made available for eighty-nine items.

Provision has also been made for certain drugs to be prescribed in larger quantities for the treatment of certain medical conditions, when the prescriber endorses the prescription to indicate that the drug is being prescribed for a specified condition for which a longer course of treatment is required than for other medical conditions.

## Administration

To supervise the operation of the Pharmaceutical Benefits Scheme, the Branch is divided into six Sections—Secretariat and Listings, Ministerial, Information, Liaison, Policy, and Publications and Services.

The Secretariat and Listings Section provides the secretariat for, and implements recommendations of, the Pharmaceutical Benefits Advisory Committee and committees associated with the Human Pituitary Hormone Scheme. During the year the Section serviced three meetings of the Pharmaceutical Benefits Advisory Committee, eleven meetings of the Human Pituitary Advisory Committee and its sub-committees, and a number of meetings with representatives of medical colleges and societies. The Drug Prices Sub-section also had a busy year because of the marked rise in the numbers of applications by drug manufacturers for price increases.

The volume of correspondence handled by the Ministerial Section continued at a substantial level, while the Information Section recorded an increase in the number of requests from outside the Department for information on the benefits scheme.

The Liaison Section reached full strength during the year, enabling it to carry out its duties more effectively. Section officers gave substantial assistance to an efficiency review team which conducted a review of the administration of the Pharmaceutical Benefits Scheme.

The Policy Section continued its review of aspects of the Scheme, but had to defer some programs because of a staff shortage. The Publications and Services Section maintained the regular flow of pharmaceutical benefit publications and doctor's prescription forms, despite difficulties with printing and distribution which affected other publications.

# Therapeutic Goods

The ever-increasing workload in the therapeutics areas of the Department's activity placed a strain on resources during the year, particularly in the Administration Section of the Therapeutic Goods Branch. The Section provides clerical and administrative support for both the Therapeutic Goods Control Section and the Drug Evaluation Section. In spite of the pressures, however, a marked improvement was achieved in processing in some areas.

Activities in the Therapeutic Goods Branch during the year included a review of policy relating to the importation of herbs and herbal remedies into Australia. The review was aimed at developing procedures to facilitate the processing of applications for the importation of these substances and, at the same time, providing the necessary degree of protection to consumers consistent with the statutory requirements of the Customs (Prohibited Imports) Regulations and the Therapeutic Goods Act and Regulations.

## Australian Drug Evaluation Committee

The Chairman of the Australian Drug Evaluation Committee, Sir William Morrow, relinquished the position during the year, after having occupied it for eight years. Dr S. J. M. Goulston is the new Chairman.

The activities of the Committee continued again at a high level, with members meeting on six occasions and making 132 resolutions. A special combined meeting was held in Melbourne with the Adverse Drug Reactions Advisory Committee to discuss the general question of intensive monitoring of drugs, and to explore the possibility of establishing an Australia-wide, hospital-based, collaborative program as well as a scheme to monitor the use of drugs within a community.

A total of thirty-seven applications for approval for general marketing of new therapeutic substances was considered during the year. Twenty-three were approved—eighteen of them on first presentation and five after further consideration—while seven applications were rejected and seven deferred pending the provision and evaluation of further data to substantiate the safety and efficacy of the substance. Although, in general, the Department considers applications for approval for clinical investigational use of new drugs, the Committee itself considered specific trial applications on six occasions. Twelve matters referred by the Pharmaceutical Benefits Advisory Committee for advice were also considered.

In addition to their work involving new therapeutic substances, Committee members reviewed the safety and efficacy of a number of substances which have been on the Australian market for a number of years. As a result, several substances were removed from sale because of lack of safety or efficacy, while amendments were made to claims or warnings on other specific products.

Bismuth subgallate, essential phospholipids (EPL substance), laevulose and sorbitol were subsequently declared by the Director-General to be

Designated Therapeutic Substances under the provisions of the Customs (Prohibited Imports) Regulations, to enable strict control over their usage to be exercised. In the case of laevulose and sorbitol, this will allow implementation of the Committee's recommendation that intravenous solutions of laevulose and/or Sorbitol alone should not be permitted on the Australian market, and compound solutions containing carbohydrates and other active ingredients should not be permitted if the strengths of laevulose or sorbitol either alone or in combination exceed a total of 5 per cent carbohydrate.

Other products removed from the market because of possible hazards include local anaesthetic preparations containing concentrations of catecholamines in excess of one in 50 000 and systemic hormonal formulations for pregnancy testing. Amendments were required to warnings on labels or in product literature for such substances as lincomycin, clindamycin and practolol, while a warning concerning the potential toxicity of fluorocarbons used as propellants in aerosol inhalers is now required in the product literature for all such products. Several statements were circulated to the medical profession covering such topics as the restriction on usage of sequential oral contraceptive formulations containing megestrol acetate, and the association between rauwolfia derivatives and breast cancer.

Among policy matters considered by the Committee were the requirements for post-marketing reports on new drugs. These were amended, and such reports are now required annually for three years following the granting of approval. However, all reports of suspected adverse reactions or related experiences are still required to be provided immediately they are received, and proposed amendments to the product literature for the drug are to be forwarded for evaluation and approval prior to circulation.

Amendments to the requirements for product literature for combined and sequential oral contraceptive formulations were also recommended. They now cover promotional literature circulated to the medical profession, patient package inserts and patient information booklets. The concept of an abridged package insert and a detailed patient information booklet to be available on request from medical practitioners or pharmacists is new, and the matter has been referred to the pharmaceutical industry for consideration and comment. When finalised, the new requirement will be incorporated in the *NDF4 Guidelines for Preparing Applications for the General Marketing or Clinical Investigational Use of a Therapeutic Substance*. The requirements for clinical studies to be carried out with new oral contraceptive formulations have also been updated.

A Parenteral Nutrition Sub-committee was established in January 1975 to draw up guidelines covering chemistry and quality control requirements, animal studies, clinical testing including human metabolism, and recommended procedure for use of parenteral nutrition products in hospitals. Several resolutions covering such subjects as the safety of parenteral nutrients administered to children and the use of laevulose and sorbitol in intravenous solutions were presented to and ratified by the Drug Evaluation Committee.

### Adverse Drug Reactions Advisory Committee

The Adverse Drug Reactions Section continued throughout the year to provide the secretariat for the Adverse Drug Reactions Advisory Committee and to maintain the Australian Registry of Adverse Reaction to Drugs.

A significant event was a decision by the Committee to publicise its findings

more widely. Previously relevant information was published only in the *Medical Journal of Australia* and infrequent circular letters were sent to medical practitioners. However, this policy was found to be ineffective in reaching a significant proportion of doctors, and the Committee decided in mid-1974 on a campaign of direct approach to all health professionals including doctors, dentists, pharmacists, hospital staff and others.

The first step entailed distribution of a pamphlet which drew attention to the Committee's existence and asked for assistance with submission of adverse drug reaction reports. This was closely followed by the publication in November 1974 of the first edition of an *Adverse Drug Reactions Bulletin*, and in December by the Committee's annual report for 1973 (*Med. J. Aust.*, 1974, 2: 875-880). The Committee's reply-paid report form was re-designed in conjunction with this exercise to facilitate reporting.

The *Adverse Drug Reactions Bulletin* was designed as a monthly publication containing four or five short articles, each dealing with a specific reaction to a specific agent. Australian and WHO data were included in every article for the information of local health professionals. Seven editions of the Bulletin were distributed during the year. The eighth and subsequent issues are being incorporated in the new Departmental publication, *Australian Prescriber*.

The success of this publicity campaign was immediately apparent. The incidence of reporting jumped from an average of 100 reports per month to more than twice this figure in the months following November 1974. Not only did the reporting rate double, but it appeared at the year's end to be increasing further. This heightened awareness of the need to report was accompanied by increased referral of individual questions for answer by the information retrieval service offered by the Committee.

Possibly the most important drug-related problems investigated in 1974-75 were those dealing with rauwolfia derivatives, the Dalkon Shield intra-uterine device, practolol and beclomethasone.

In September 1974 three papers in *The Lancet* reported independent surveys which suggested that post-menopausal women taking rauwolfia derivatives for hypertension were two to four times as likely to develop breast cancer as matched controls. The Committee met soon afterwards to consider information from its own records, from the published literature and from other national centres. It was agreed that while the similar findings of these surveys enhanced the likelihood of their validity, the limitations in methodology were such that market removal was not justified. Medical practitioners were advised accordingly by circular letter in October 1974 and by an article in the *Adverse Drug Reactions Bulletin*. Investigations are still under way.

The investigation into a claimed increase in incidence of mid-trimester septic abortion in users of the Dalkon Shield IUD was initiated, following notification by United States authorities that the American distributor of the product had voluntarily suspended sales. It soon became evident that septic abortion was not unique to the Shield. Medical practitioners again were advised both by letter and a *Bulletin* article, and were asked to provide details of such episodes to the Committee. While this problem was not strictly an adverse drug reaction, it was felt that therapeutic devices should in future be included in the surveillance program. The Committee also recommended that all aspects of IUD use, including patient acceptability and sociological factors as well as safety and efficacy, should be considered by a special committee established for this purpose.

Although the association between beta-blockers and various skin rashes had been known for some time, the first published cases of a skin, eyes and serious membrane syndrome linked with practolol appeared late in 1974. An interim recommendation was promulgated because of the serious aspects of the syndrome and conveyed to practitioners in a *Bulletin* article. The Pharmaceutical Benefits Advisory Committee, in a separate action, recommended restricted availability of practolol as a pharmaceutical benefit item. A number of points are still being investigated by the Adverse Drug Reactions Committee, including the possibility that other beta-blockers could induce similar symptoms. Reports implicating other beta-blockers are beginning to appear in the literature.

The Committee was made aware, also late in 1974, of five episodes of sudden death in asthmatic children who were receiving, or who had received, the newly-released agent beclomethasone dipropionate aerosol as treatment for asthma. Clinical details of all five patients suggested death was probably unrelated to beclomethasone, but investigations are continuing since these isolated reports, occurring early in the clinical history of the drug, could be early warnings of an unsuspected toxic effect.

Development of automatic data processing systems for the Committee continued throughout the past year. Many are now functioning adequately, although a reallocation of priorities meant that the provision of a cumulative summary of reports had to be deferred until late in 1975. Summaries were published in 1968, 1969 and 1973 as a reference for Australian practitioners. The next, containing information from August 1964 to the end of June 1975, should be available in the third quarter of 1975.

Clinical details of local reports were forwarded regularly to the WHO Research Centre for Monitoring of Adverse Reactions to Drugs. Australia's contribution to the project ranks amongst the best four or five of the eighteen countries which currently contribute to the Centre. This is largely due to the introduction of automatic data processing in 1973. Prior to that year, information was transcribed manually in a pre-determined format, and because of fluctuations in staffing resources and work load Australia's contribution was not always as good as it might have been.

Initiatives were taken to increase contact with drug monitoring authorities in other countries, with activity initially concentrated on those centres enrolled in the international surveillance program. The lack of any satisfactory forum for detailed on-going discussion and information sharing was the primary motivation for the exercise. WHO acts primarily as a central registry for drug reaction reports and is currently not able to provide the additional information and opinions of member nations, which can be extremely useful to investigations carried out in Australia.

### National Therapeutic Goods Committee

The National Therapeutic Goods Committee, which comprises senior officers from the Australian and State Health Departments, and its sub-committees continued to meet regularly during the year.

As reported last year, the Committee had formulated draft proposals for the control of all aspects of advertising of prescription and non-prescription drugs and therapeutic appliances. These have since been finalised and were presented to the Australian Health Ministers at their conference in August 1974, with a recommendation that they be introduced on a uniform basis by the Australian and State Governments, as appropriate to their constitutional

powers. The Ministers agreed to take the proposed requirements back to their respective Governments.

In the Federal sphere the requirements will be used as the basis of prior censorship of advertisements for transmission on radio and television. Action has been initiated also to incorporate the requirements in regulations to control other forms of advertising of therapeutic goods originating in the Australian Territories.

The Department requires importers of therapeutic substances to demonstrate their quality, safety and efficacy by the submission of relevant data before approval for importation and general marketing is granted, but comparable controls do not exist in all States for therapeutic substances of local manufacture. The Australian Health Ministers agreed at their conference in 1970 that the Committee should investigate the feasibility of introducing a uniform registration scheme for pharmaceutical products marketed in Australia. It was proposed that the quality, safety and efficacy of such products should be required to be substantiated before registration and marketing approval would be granted.

The Sub-Committee on Registration of the National Therapeutic Goods Committee prepared two reports outlining the broad details of a scheme and possible methods for its implementation. Unfortunately, lack of resources within the Department led to a postponement of further detailed consideration of the scheme.

During the past year, the Committee agreed it would be worthwhile and practicable to proceed now with a national product register of therapeutic goods, in order to provide a national data bank and as a first step towards a national registration scheme. Information would be stored on such aspects of pharmaceutical preparations as their composition, therapeutic claims, dosage, and status for use in man, in the first instance, and eventually all other therapeutic goods. Establishment of the register would also allow control of any therapeutic goods sold in Australia should an acute need become apparent. It is hoped to present the Health Ministers with a viable modified scheme in the near future.

## Health advertising

The Therapeutic Goods Branch recently became responsible for the prior censorship and approval of advertisements for medicines and other therapeutic goods transmitted on radio and television, under the provisions of the Broadcasting and Television Act. This allows a closer liaison between the officer responsible for these functions and the medical officers of the Drug Evaluation Section, who consider the promotional literature for therapeutic substances in conjunction with their evaluation of data submitted in support of applications for approval for general marketing of such substances.

Advance notice has been given to organisations representing the media and pharmaceutical manufacturers that the Requirements for Advertising of Therapeutic Goods, recommended by the National Therapeutic Goods Committee, will be adopted as the basis of censorship of radio and television advertisements submitted after 1 September 1975. Further, approvals granted on the basis of the previous requirements will be cancelled with effect from 1 September 1976, if their two-year approval period has not expired by that time.

Details of the numbers of advertising scripts submitted for approval for the past five years are given in the statistical appendix.

# Drug Evaluation

The new Drug Evaluation Section—formed the previous year to undertake the evaluation of submissions for clinical trial or marketing of drugs—faced a number of problems in its first full year of activity. They stemmed largely from the difficulties encountered in recruiting suitably qualified medical officers to fill vacant positions within the Section.

Nevertheless, a considerable improvement was recorded in the handling of applications to carry out clinical trials so that related research work in Australian institutions is not delayed longer than necessary.

A total of 40 applications for clinical trials involving full evaluation was received during the year and 22 were approved, while 35 applications were under consideration at 30 June 1975. Since 1 February 1975 statistics have been kept on applications for trial protocols only and from doctors for the use of drugs on individual patients. These were 102 and 175 respectively. Most of them were dealt with speedily.

Delay is still being experienced in the processing of general marketing applications. Much of the delay is due to the paucity of information submitted by some drug companies in support of their applications. It is hoped that with the advent of the new NDF4 guidelines for preparing these applications, which were distributed during December and January, together with the introduction of new procedures, some of the delay will be eliminated.

One hundred and twenty applications for general marketing were received during the year and 42 were finalised.

An important priority for the Section was the planning of educational aids for the medical profession. The publication of a new journal, *Australian Prescriber*, the first issue of which was due for release in July 1975, will be the first step in this direction. The bi-monthly journal is designed to inform Australian medical practitioners of developments and trends in the use of drugs. It will not be restricted to specific drug comment but will also be a venue for general therapeutic comment.

The Section was actively engaged in examining aspects of the establishment of a central computerised data bank of information concerning drugs. The need for such a service has been recognised by the Hospital and Allied Services Advisory Council which has formed a working party to look at the feasibility of computerising drug information services in Australia.

A further means under consideration of disseminating information is a quick reference compendium which would be available to all medical practitioners. It would be an adjunct to the computerised drug information service which is envisaged as a nationwide co-ordination of drug education services operating by a means of a network of hospital-based drug information centres.

A draft drug data profile was drawn up and distributed to the pharmaceutical industry and to representatives of the medical profession for comments and suggestions. Such profiles are considered to be the most appropriate means of disseminating objective and reliable information in a

comprehensive manner. They will form the basis of the services referred to above. It is hoped that an adequate profile will supplement or even replace the package insert which at present rarely reaches the prescriber. The first stage of this exercise could involve the drawing up of profiles of the 100 most-prescribed drugs in Australia.

Officers of the Section were also involved in drawing up bioavailability guidelines for new drugs or those already on the Australian market. These will indicate the type and extent of data required for new drugs, and should also help to ensure that different brands of the same drug are interchangeable so far as response in patients is concerned.



# Drugs of Dependence

Following a Government decision in 1974 to rationalise functions relating to controls over the legal trade in drugs of dependence, the Department's Drugs of Dependence Section was expanded.

The Section now has responsibility for controls over imports, exports and manufacture, including the allocation of quotas—functions which were transferred from the Department of Police and Customs. The transfer has enabled the direct co-ordination of the control area with that of the Drugs of Dependence Monitoring System, a complementary function which had already existed within the Department.

The Monitoring System is one of the measures employed in Australia to limit the diversion of drugs from the licit to the illicit market. The system, now in its sixth year of operation, utilises the Department's computer facility to record and provide regular reports on the manufacture, distribution and destruction of drugs covered by the Single Convention on Narcotic Drugs 1961, and those listed in Schedule II of the Convention on Psychotropic Substances, 1971.

The information produced by the system is used by State and Federal authorities in meeting their international and national control responsibilities. Feedback from authorities using the reports indicates that they have been invaluable in providing drug control information which otherwise would not have been readily available.

Routine reports generated by the Monitoring System over the past four years have pointed to a significant rise in the consumption of methadone. In 1973 the Drugs of Dependence Section carried out a detailed survey of monitoring and pharmaceutical data available on methadone prescribing. The results confirmed the rise in consumption of the drug and also disclosed that unofficial methadone maintenance programs conducted by private practitioners were partly responsible for the increase in consumption.

A further survey carried out early this year showed a substantial fall in the prescribing of methadone 10mg tablets in private practice. This may be attributed to a tightening of existing controls in the States and also to the introduction, in August 1974, of a specially formulated oral syrup for use in official maintenance programs. The situation will continue to be monitored.

## National Drug Advisory Council

At a meeting of the National Standing Control Committee on Drugs of Dependence it was agreed that there was a need for a community-based body to be established at a national level with the aim of providing a forum whereby a wide cross-section of the community might become involved in influencing people against drug abuse. The outcome of this suggestion was the formation of the National Drug Advisory Council in the latter half of 1974. Council members are drawn from a number of bodies including employee, youth, media, education and parental groups. It is expected that,

through the Council, potentially valuable advice and assistance may be utilised by those bodies directly concerned with the various aspects of drug abuse prevention.

The Council has held two meetings since it was established, the first in November 1974 and the second in February 1975. At the first meeting it was considered that the Council could most effectively operate in the form of sub-committees which report to the Council. The sub-committees cover such areas as formal education, legal drugs, legal policy, law enforcement, research and evaluation.

## National Drug Education Program

The first comprehensive review of the National Drug Education Program in Australia was prepared by an assessment team set up by the Drug Education Sub-Committee of the National Standing Control Committee, following a visit by the team to State and Territory drug education centres. The report was prepared in conjunction with the drug education units in each State and the Australian Capital Territory. The recommendations of the report are under consideration by the National Standing Control Committee.

Among the projects recommended by the Education Sub-Committee was a national workshop for drug education officers, which was to be conducted in Canberra on 6-12 July 1975 by the Regional Teacher Training Centre, University of New South Wales. Workshop participants were to include representatives from State and Territory health education administration, field workers, drug education administrators, and curriculum development and law enforcement officers.

On the recommendation of another committee in this area, the Inter-departmental Committee on Drug Abuse, the Section undertook to produce a pamphlet containing information on drugs of dependence for use by police in a pilot study to be conducted in the A.C.T. The pamphlet, entitled *Drugs of Dependence: A Guide*, was prepared in conjunction with the Public Relations Section and was distributed in the A.C.T. in April 1975.

Further publicity at an international level was given to the education program with the reproduction of an article prepared by the Section. The article, which appeared in Information Letter No. 2 of the United Nations Division of Narcotic Drugs (published February 1975), described the work of the National Drug Information Service.

Circulation of the *Technical Information Bulletin* published by the Information Service increased during the year from 6000 to 7000 copies, with demand continuing to grow both locally and overseas.

## U.N. Commission on Narcotic Drugs

The twenty-sixth session of the U.N. Commission on Narcotic Drugs was held in Geneva in February 1975. Australia, as a member of the Commission, sent a delegation on which the Department was represented. Among the problems examined by the Commission was the serious need to provide improved sources of morphine for codeine production—a matter which has relevance to Australia's growing involvement in poppy cultivation and codeine manufacture.

# Aboriginal Health

The Aboriginal Health Branch expanded its activities during the year in providing an expert advisory service to Australian and State Government authorities on all matters affecting the health of Aborigines.

Initiatives in this area are an important segment of Australian Government policy which aims to help the Aborigines 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 the distinctive Aboriginal culture, languages, tradition and arts. The Government has emphasised its concern about the urgent need to permanently improve the standard of Aboriginal health, and has accorded high priority to new initiatives in the health field.

## National Plan

The National Plan, which was approved by the Minister for Health in April 1973, aims to raise Aboriginal health standards to the level enjoyed by their fellow Australians. To pursue this objective, the Branch works in close consultation with the Department of Aboriginal Affairs to provide guidance, advice and assistance to State and Territory authorities charged with the provision of health care for Aborigines. Most States and the Territories have substantially upgraded their local programs which are aimed at improving the quality of health services available. Health education programs with special emphasis on the needs of Aborigines are also being developed in the States, as a means of preventive care.

During the year direct Australian Government expenditure on Aboriginal health totalled some \$17 million, an increase of nearly \$6 million over the previous year.

## Aboriginal medical services

Throughout the year, the Government continued to fund medical services established by Aboriginal organisations in urban areas of considerable Aboriginal population. The services, in Townsville, Brisbane, Sydney, Bairnsdale, Melbourne and Perth, provide much-needed medical facilities for urban Aborigines.

It is expected that the need for such services will continue until the Aboriginal population at large is able to relate to general community health services. At present, the existing Aboriginal services are under pressure to provide additional medical facilities at their established locations and to expand to other areas.

A grant of \$18 000 was made during the year to the Central Australian Aborigines' Congress in Alice Springs to investigate a different philosophy of health care for its people. The Congress is an independent group representing all large Aboriginal communities in Central Australia. Its aims are to promote



*A nursing assistant weighs a baby on a set of portable scales at the Oenpelli Health Clinic, Northern Territory.*

the interests of Aborigines and the preserve their heritage. The grant will allow the Congress to examine ways of establishing an alternative community-based health system which, if successful, could serve as a model for the re-establishment of a healthy way of living for Central Australian Aborigines.

The Branch organised a workshop on Aboriginal Medical Services which was held in Albury in July 1974. Its objectives were to exchange experiences gained in the operation of existing services and to discuss the desirability of developing similar services in other centres of Aboriginal population. The training of Aboriginal health workers and the role of Aborigines in the training of other health professionals including doctors and nurses were also considered.

The workshop clearly demonstrated the need for greater involvement of Aborigines in the delivery of health care to their people and for the training of Aboriginal health workers. The importance of producing separate statistics of the activities performed by the services and responsible Government authorities was also recognised.

### **Study Group on Aboriginal Health**

The Study Group on Aboriginal Health, which is responsible for the preparation of both urgent and long-term recommendations to serve as guidelines for all matters relating to the health of Aborigines, continued its activities. The Group brings together relevant experience and skills from the various administrations around Australia concerned with Aboriginal health, and is augmented by specialist advice from the Universities and clinical areas as required.

The third meeting of the Group was held in Alice Springs in November 1974 and had as its main aim the establishment of guidelines in relation to problems associated with malnutrition. It recognised that malnutrition at varying levels was a problem in almost all Aboriginal communities, and concern was expressed about its long-term effects. The Group's recommendations covered the need to develop nutritional improvement programs, the development of effective prevention programs, the medical management of severe malnutrition as an acute or chronic illness, the improvement of dietary habits, and methods of ensuring an adequate supply of suitable foods.

### N.H. & M.R.C. committee

The Health of Aborigines Standing Committee of the National Health and Medical Research Council continued its role as an advisory body assisting the Australian and State Governments in the task of improving Aboriginal health. The Committee has nineteen members, including representatives of the National Aborigines Congress who are experienced in working with Aboriginal people. Biannual meetings are held and recommendations are made to the responsible authorities.

To ensure a co-ordinated approach to medical research, a sub-committee considers applications from researchers wishing to carry out projects concerned with Aboriginal health. To date research projects approved cover diabetes, preventive dentistry, growth retardation, respiratory and intestinal infections, the interaction between malnutrition, immune response and infection, hearing conservation, factors affecting infant mortality and morbidity, and the treatment of leprosy. Two new projects approved during the year were a study of viral gastroenteritis and a microbiological and clinical study of eye diseases with particular reference to trachoma.

It is, of course, important to disseminate the results of such research so that it can be examined critically by other researchers and health professionals generally. To this end the Branch has arranged for the publication of several special supplements on Aboriginal health in the *Medical Journal of Australia*.

### Northern Territory

In the Northern Territory development of a special health care program continued. Because of the large area to be covered and the remoteness of Aboriginal communities, the program is based primarily on rural health centres and supported by regional and district hospitals. The Northern Territory Medical Service is also developing a comprehensive and forward-looking system of health care with increasing involvement of Aborigines in both the delivery of care and the undertaking of preventive health measures (the operations of the Northern Territory Medical Service are covered in detail in another chapter).

A new program under consideration is the provision of emergency nutritional supplements to families in need. The aim is to ensure that the urgent nutritional requirements of Aboriginal children, especially of pre-school age, and of pregnant and nursing mothers are met.

The Department's regional office at Alice Springs is maintaining close liaison with the Central Australian Aborigines' Congress concerning the alternative health model being investigated by that body. Support is also being given to the Congress in its efforts to establish an Aboriginal medical service.

Unfortunately the lack of trained medical and nursing staff is hampering the implementation of effective health care throughout the Territory and in other remote areas. Steps are being taken to launch a recruitment campaign to encourage trained health personnel to serve in Aboriginal communities throughout Australia.

### Visit by WHO consultants

The Department arranged for two WHO representatives, Dr J. H. Hirshman and Miss Joan Bentley, to examine and report on Aboriginal health services in the Northern Territory and on community health nursing. They suggested that greater emphasis be placed on preventive health care and on the improvement of environmental conditions, rather than on the construction of sophisticated hospital facilities in remote rural areas.

Their report also stressed that Aborigines should be more involved in the delivery of community health care for their people, and that individual communities should be involved in the selection of representatives to undergo the necessary training.

The consultants' recommendations are being considered in the further development of health services for Aborigines.

# Environmental Health

The Environmental Health Branch continued to investigate and provide information on a wide range of environmental health matters during the year.

The Branch undertakes research into the medical and technical aspects of environmental air, water and noise pollution and also into waste disposal. It advises on water quality criteria, sanitation, dietary and nutritional matters and food standards, and undertakes toxicological evaluation of poisons and pesticides. Preventive medicine is another of its functions, 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 and administers the free issue of sabin poliomyelitis, rubella and measles vaccines to States and Territories.

During the year under review, some functions previously performed by the Branch were transferred to other areas of the Department. Approval of health advertising became a function of the Therapeutic Goods Branch, while health education matters are being handled in a separate cell concentrating on Social Health Projects (see separate chapter).

## Environmental hygiene

The Environmental Hygiene Section, while principally concerned with the effects on human health of water, air and noise pollution, metallic contamination of the environment and waste disposal, expanded its activities to cover other areas of the environment which have health implications.

The Section continued to provide the secretariat for National Health and Medical Research Council committees, sub-committees and working parties concerned with environment matters. These bodies include those concerned with environmental health, air and noise pollution, lead levels in air, water quality, metals in seafoods and synthetic detergents. More recently, the N.H. & M.R.C. has added working parties on the disposal of toilet waste from caravans, ambient air quality, and on the assessment of a proposed lead filter for motor vehicles.

Close and continuing surveillance was maintained on such diverse matters as the disposal of disposable nappies; inadequate toilet facilities on international aircraft; disposal of human excrement from trains and marine craft; bush fly control by dung beetles; legislation for control of toxic metal wastes, particularly to ensure that tolerance levels of toxic metals in foods are not exceeded; mercury content in whales, whalemeat and fish; metallic contamination of food containers, particularly from cadmium, lead and zinc; treated timber used for children's playground equipment; ozone in the stratosphere; carcinogenic hazard from dyes used in origami paper; the emetic effect of cupro-nickel coinage in Christmas puddings; lead in gasoline; sun screening agents; polychlorinated biphenyls in packaging made from recycled material; edible powder paints used in pre-schools; and the adverse effects on human health caused by the noise of trail bikes.

To ensure consideration and recognition of appropriate medical aspects, officers attended meetings of the Inter-departmental Committees on Motor Vehicle Emissions of the Australian Transport Advisory Council, the Committee of Advice on Ocean Dumping and on Disposal of Ballast Waters, inter-departmental committees and working parties on National Air Quality Monitoring and mobile monitoring programs, the Technical Committee on Water Quality, the working party of the Australian Water Resources Council on safe re-use of wastewaters, and the Co-ordinating Committee on Metals in Fish and Fish Products of the Australian Fisheries Council.

One Section officer is medical director of the Executive council 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 system was instituted for the continuing scrutiny of documents relating to the Environment Committee and Environment Directorate of the Organisation for Economic Co-operation and Development and the United Nations Development Fund programs. This system has greatly assisted with the preparation, often at short notice, of appropriate briefing material for an Australian delegation or representative attending meetings of either organisation. Data is also provided, as needed, for Australian representatives attending WHO meetings.

## Communicable diseases

The Branch continued to act as an agency for the collection and dissemination of statistics on notifiable diseases throughout Australia. The figures were again given wide circulation in Australia and overseas.

Notifications of gonorrhoea and syphilis showed significant increases during 1974. Notified gonorrhoea cases increased from 11 337 to 12 570 while syphilis rose from 1430 to 2185 cases. The N.H. & M.R.C. *ad hoc* Subcommittee on Venereal Diseases is moving to finality in its preparation of a handbook for general practitioners on the management and diagnosis of the diseases.

Notifications of infective hepatitis continued their recent decline, with 3289 cases in 1974 compared to 4358 in 1973 and 6118 in 1972. Serum hepatitis, on the other hand, jumped from ninety-six to 129 cases.

It is pleasing to note that the incidence of diphtheria declined dramatically during the year, from eighty-two cases to thirty-two. One case of poliomyelitis was recorded. There were no cases of cholera, plague, smallpox or yellow fever.

At its Seventy-ninth Session in November 1974, the N.H. & M.R.C. noted the substantial reduction in the incidence of smallpox around the world, and considered that in the present circumstances there was no justification for mass immunisation campaigns against the disease. However, Council recognised that groups exposed to special risk should be urged to undergo vaccination and re-vaccination at regular intervals.

Encephalitis notifications totalled 106 during the past year, of which forty-four occurred in Victoria and twenty-three in N.S.W. In view of the 1974 outbreak of Australian Arbo-encephalitis in all mainland States, a meeting was convened in November 1974 of State and Federal health representatives and experts in entomology to discuss methods of co-ordinating research and to consider preventive procedures in the event of a further outbreak of the disease during 1975. So that measures for control



might be organised on a national basis, representatives agreed to co-ordinate current and proposed research into the disease. A working party on the Entomological Control of Australian Arboencephalitis has been set up by the Communicable Diseases Committee of the N.H. & M.R.C. and has recommended methods of vector control by means of which a further outbreak may be avoided.

Following the 1974 epidemic a sum of \$300 000 was approved by the Australian Government for allocation to the Victorian, N.S.W. and South Australian Governments, on a \$1 for \$1 basis, to assist in their Australian Arbo-encephalitis control program along the Murray Valley Basin. Of this amount \$120 000 has been requested by Victoria, \$15 000 by South Australia and \$20 000 by N.S.W.

The Branch was fortunate to obtain recently the services of a medical entomologist who was formerly based in the Department's Darwin office. He is engaged primarily in carrying out field studies on Australian Arbo-encephalitis, and in other research activities.

### Export of blood and blood products

Federal power to control the exportation of human blood, blood products, human organs and tissues under the Customs (Prohibited Exports) Regulations, Sixth Schedule, is administered by the Branch. The Sixth Schedule also covers the export of beef and pork pancreas glands and serum produced from the blood of bovine animals.

Requests for export approval are divided into categories such as approaches by individuals, organisations or neighbouring countries, and aid to overseas disaster areas. Where possible, annual or period export permits are granted, mainly to Red Cross Blood Transfusion Services, university medical research departments and private firms dealing in animal by-products. Ready communication exists with the Department of Police and Customs, and Directors of Health in the Department's Divisional Offices have received delegated authority to expedite the release of rare blood donations. During the last twelve months, twenty-eight permits and 105 individual approvals were granted.

Close liaison was maintained with the Australian Red Cross Society and Commonwealth Serum Laboratories, and officers of the Branch represented the Department on the Red Cross National Blood Transfusion Committee, its executive sub-committee, and working party on the future of plasma fractionation.

### Food standards

The importance of acceptable standards for foods has been of concern to the Department for many years. This year the Department organised an inter-departmental committee to review and co-ordinate Australian Government activities on the setting of suitable standards, both for imported foods and food produced within Australia. The committee made a number of recommendations relating to the setting of standards and to procedures relevant to the workings of the Food Standards Committee of the N.H. & M.R.C.

The Australian Health Ministers, at their 1975 conference in Perth, considered the problem of the slow rate of progress of agenda items through the Food Standards Committee and the delays at State level in incorporating N.H. & M.R.C. approved standards into State legislation. The Ministers

recognised that considerable improvement and updating of approved standards was necessary and they agreed that, as an initial step, a working group of Federal and State representatives should meet to investigate the problems and legislation procedures in some depth, with the aim of moving towards uniformity in legislation.

Officers of the food area discussed with State officers the incorporation of Codex Alimentarius Commission Recommended Standards into State legislation, and a tentative working procedure was implemented. Officers were also involved in the FAO/WHO Food Standards Program and attended numerous panel meetings arranged by the Australian Department of Agriculture to finalise Australian attitudes to many complicated issues such as date marking and ingredient labelling of foods. Representation at appropriate overseas food meetings continued.

During 1974 a new N.H. & M.R.C. publication entitled *Approved Food Standards* was released. A second edition incorporating recommendations made at the Eightieth Session of Council in April 1975 was published in May 1975. An additional publication, *Approved Food Additives*, which complements the food standards document, is also now available.

### Food surveys

The Seventy-ninth Session of the N.H. & M.R.C. recommended that this Department and the State Departments of Health should undertake a further 'market basket' survey, along the lines of previous surveys conducted during 1970 and 1974. The survey is to ensure the continued monitoring of the



*Students in the Home Certificate Diploma Course at the School of Home Science, East Sydney Technical College, prepare and process food for the fourth Market Basket Survey being conducted by the Department. Foods purchased in each State are prepared, cooked, blended, weighed and packaged at the School and then sent to laboratories for testing. The surveys are made to monitor levels of pesticides and heavy metals in the average Australian diet.*

residues of certain pesticides and heavy metals in selected foods which are typical of average dietary habits.

Following discussion with the Australian Government Analyst, it was decided to survey cereals, meat, fish (including shellfish), eggs and offal, butter, vegetables, fruit and canned goods including juices, fruits and vegetables (some of them intended for consumption by infants), condensed and evaporated milk.

Sampling, which began on 26 February, will cover each State capital city on a seasonal basis, with the last purchases to be made in mid-October 1975. The items are being cooked and subsequently blended at the School of Home Science, East Sydney Technical College, while the analyses for organochlorides and heavy metals including cadmium, lead, tin, zinc and arsenic are being carried out in the laboratories of the Australian Government Analyst.

The results of the 1974 survey were received in February 1975, and a detailed analysis of the results is currently taking place. A complete report will be available for the Eighty-first Session of Council in the latter part of 1975. An initial examination of the results indicated that there appeared to have been some improvement in the position of HCB and dieldrin, and of mercury in the group containing eggs and offal, compared with results obtained in the earlier surveys.

A three-year survey of the microbiological status of foods began on 2 September 1974 and is proceeding satisfactorily. This survey, being conducted by the Food Microbiology Sub-committee of the N.H. & M.R.C., is part of a program to obtain further analytical data on which it is hoped realistic and meaningful microbiological standards can be set for Australian foods. The survey is directed at 'take-away' foods. A complete sampling cycle of the twenty-six different foods selected takes twelve weeks. Five separate laboratories situated throughout Australia are participating in the survey, examining a total of 100 sample units each week.

## Nutrition

Four new nutrition publications—an updated version of *Eat Better for Less*, *Guidelines for Meals-on-Wheels*, *Welcome to Meals-on-Wheels* and *Charts of Heights, Masses and Head Circumferences of Infants and Children*—were released during the year. *Eat Better for Less* received extensive publicity in all media, and even greater interest was stimulated when the Australian Women's Weekly, which has a circulation of some 900 000, published a large segment of the book in its issue of 14 May 1975. A total of 250 000 copies of the book has been distributed.

Progress was made with the revision of an old publication, *Notes on Special Diets for Hospital Purposes*. The replacement booklet, for reference use by doctors and nurses, will be called *Manual of Diet Therapy*, and will be accompanied at a later date by a *Hospital Diet Manual* for use by caterers and diet supervisors. Both booklets are being prepared in close collaboration with the Department of Repatriation and Compensation. A booklet on *Control of Body Mass*, which uses metric terminology, is being prepared for use by community nutritionists.

Interest in the bi-monthly publication *Food and Nutrition Notes and Reviews* continued to increase. The number of copies distributed in Australia rose from 4500 per issue in 1973-74 to 7000 in 1975, largely because the publication is now listed as a reference text for secondary schools.

The Nutrition Section continued to provide secretarial services and

documentation for meetings of the N.H. & M.R.C. Nutrition Committee and its working parties. A further dietitian has now been recruited, enabling the Section to meet an ever-increasing demand for personnel to participate in nutritional seminars and undertake lecturing assignments.

### Pesticides and agricultural chemicals

As in past years, close liaison was maintained with Government departments and industry concerned with pesticides and agricultural chemicals. The Branch was represented on several technical committees convened by the Department of Agriculture and also serviced the Poisons Schedule Subcommittee and the Pesticides and Agricultural Chemicals Sub-committee of the N.H. & M.R.C. An increase in the numbers of meetings of these Sub-committees led to a considerable improvement in the clearance of pesticides, agricultural chemicals, feed additives and veterinary drugs intended for registration.

During the year, two further issues of the *Pesticides Review*, a journal containing abstracts on health aspects of pesticides, were prepared and published. The third edition of *Pesticides: Synonyms and Chemicals Names*, containing over 4500 names, was issued.

### National Poisons Service

The National Poisons Service continued to compile the *National Poisons Register Manual* which includes information on toxic constituents in many chemical preparations used in everyday life. This material is intended for use by doctors treating cases of poisoning.

During the year consideration was given to the feasibility of computerising the information in the Manual. At present it contains information on 27 000 individual commercial products, and computerisation would enable a ready up-dating of material and facilitate the printing of amendments. The Poisons Service receives reports on poisoning cases in Australia and Papua New Guinea. For the calendar year 1974, 6749 cases were reported, compared with 5761 in 1973. From the beginning of 1975 the States and Territories began to receive monthly print-outs of cases reported to the Service.

### Support services

Two support Sections assist the Branch in its efficient functioning. The Technical Secretariat Section, comprising a group of chemists, provides technical advice to the Branch and to the relevant N.H. & M.R.C. committees on such diverse matters as environmental hygiene, poisons, pesticides, agricultural chemicals, food additives and food standards. Several of the chemists represent the N.H. & M.R.C. on a variety of technical committees of the Standards Association of Australia.

The General Services Section provides administrative and clerical assistance to professional staff. Throughout the year it continued its major functions of servicing committees, preparing appropriate submissions and correspondence, and controlling the release of vaccines and the export of blood and blood products. A full-time position of Executive Secretary to service the N.H. & M.R.C. Public Health Advisory Committee and oversight committee servicing duties was approved during the year.

# Dental Health

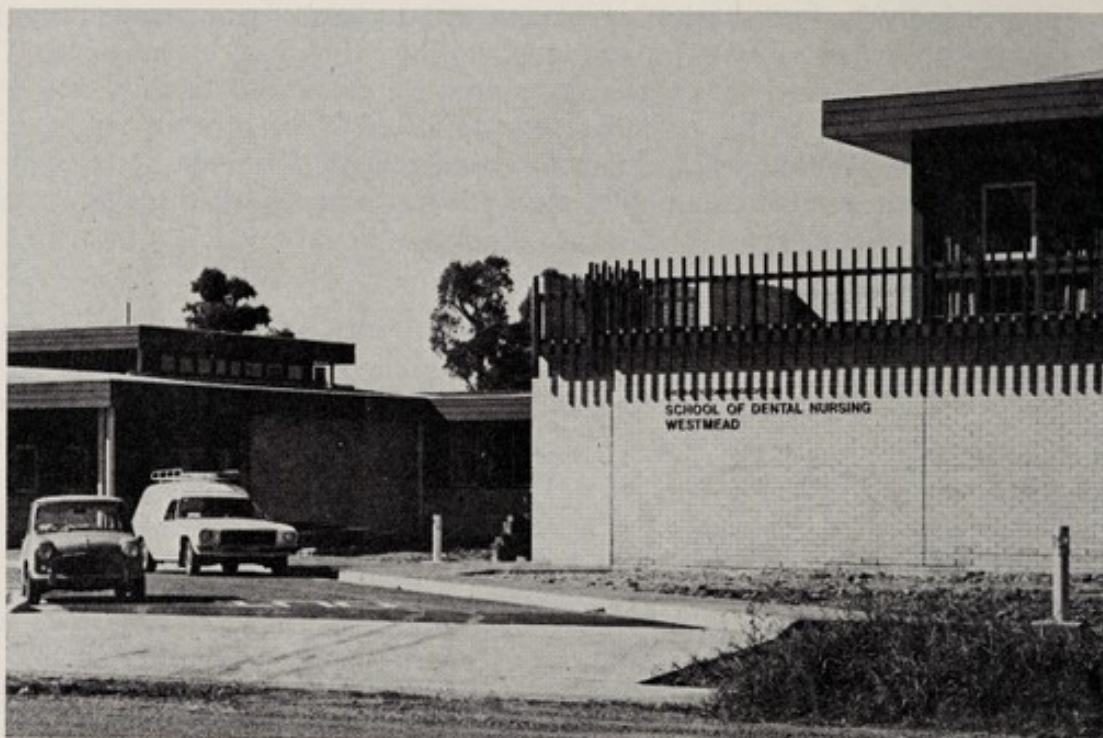
The development and co-ordination of the Australian School Dental Scheme continued to be the main role of the Dental Health Branch throughout the year. With the ready co-operation of the States and the Australian Dental Association, work on implementation of the Scheme proceeded on a harmonious basis.

At this early stage, emphasis has necessarily been placed on the development of dental therapy training facilities. However, this aspect is now well advanced and an active expanding treatment program will follow rapidly.

## Financial arrangements

The Australian Government meets all approved capital and operational costs of training facilities for dental therapists, all capital costs of school dental clinics, and three-quarters of operational costs of the field service.

The major expenditure so far has been in the development of training facilities for dental therapists. Grants to the States for this purpose during the year totalled \$10.3 million, an increase of \$7.3 million over the previous year. Total expenditure for 1974-75 was \$18.6 million, compared with \$7.5



*The Westmead Dental Therapy Training School in Sydney—the first permanent dental therapy training school completed in New South Wales under the Australian Government's School Dental Scheme, which is being implemented in association with the State Governments. The Westmead School opened in February 1975.*

million in 1973-74. Expenditure on dental therapy training schools will drop markedly after 1975-76 when current building projects will be largely completed.

Full details of expenditure are shown in the statistical appendix, together with other detailed information on the Scheme.

### Training schools

In spite of delays which are an inevitable part of building, and despite some industrial difficulties, a rapid rate of development of training facilities for therapists has been achieved. The detailed planning of such projects is, of course, a responsibility of the State authorities, and the rapid progress again reflects the high level of co-operation and activity by the States.

During the year, six new training schools were opened—at Westmead and Sylvania (N.S.W.), Somerton Park (S.A.), Mt. Henry (W.A.), and Stafford and Holland Park (Qld.). The Queensland schools are small regional training centres which provide for the second year of the two-year course. There are currently ten schools in operation, with a total capacity to graduate 242 dental therapists each year.

A further six schools are under construction, five of which will open in February 1976. These are at Shellharbour (N.S.W.), St. Kilda (Vic.), Yeronga and Townsville (Qld.) and Warwick (W.A.). The remaining school, at Adelaide, is scheduled to open in February 1977. The completion of these schools will increase the total training capacity to 422 therapists each year.

Preliminary planning is under way for further training schools in Victoria and New South Wales. Their completion will mark the end of the training school building program.

### School dental clinics

The provision of school dental clinics—the next phase of the School Dental Scheme—is gaining momentum. It is important, of course, that the clinic program be maintained in harmony with the capacity of the dental therapy training schools.

During the year eighteen school dental clinics were completed and a further twenty-seven were approved. In addition eight fully equipped mobile surgeries were provided. The total number of static school dental clinics operating in the Scheme is now 181, with most containing two surgeries. As indicated by long-term planning, approximately 150 school clinics will be required each year during the next decade.

### New Zealand training scheme

The training of dental therapists in New Zealand has been an interim measure pending the development of training facilities in Australia. The first group of twenty-one students to be trained there under an agreement with the New Zealand Government graduated in February 1975, and are now working throughout Australia. A short orientation course was necessary before they took up duty to cover certain specific aspects of dental therapy in Australia. A further twenty-one students are expected to graduate in September 1975, including twelve who undertook the first year of training in New Zealand and are completing the course at Westmead school in New South Wales.



*A group of Brisbane school children board a School Dental Service bus to be returned to school following their visit to the Stafford Regional Dental Therapy Training School for treatment.*

A final group of twenty-three Australian students was sent to New Zealand in March 1975. This brought to 100 the number of students sent to New Zealand, and will complete the training program there.

## Personnel

In 1973, twenty-eight dental therapists graduated from Australian schools under the School Dental Service, while in 1974 the figure was twenty-seven. On the basis of students already in training the number of therapists graduating will increase to 174 in 1975 and 234 in 1976. The present total of students is 404, compared with 204 in 1973-74.

The number of therapists working in the Service increased from 120 in June 1973, to 151 in June 1974 and 192 in June 1975. The number of dentists in the Scheme is 197 compared with 189 in June 1974.

## National Schedule of Dental Therapists

The Branch has completed a national Schedule of Dental Therapists, which was compiled from data supplied by all States and Territories. The schedule will be updated twice each year and will be a valuable source of information for manpower planning. It will also provide a ready source of information concerning therapists moving inter-State.

## Children treated

The number of children covered by the scheme rose from 171 776 in 1973 to 207 257 in 1974. Further details are shown in the statistical appendix.

## Clinical evaluation and assessment

The planning of evaluation studies to determine the effectiveness of the Scheme in improving the dental health of children is nearing completion. This, of course, has been planned in close collaboration with the Evaluation and Review Committee of the Australian Dental Services Advisory Council.

The project will provide a wide range of epidemiological data in the field of dental public health and will facilitate long-term planning. The evaluation studies, which are based on WHO recommendations, will be co-ordinated by the Department of Health through the Dental Health Branch, and will be carried out in close co-operation with the States and Territories. Data will be processed by the Department's A.D.P. Branch which has played an essential role in the planning of this part of the study.

These continuing clinical evaluation studies will also provide an invaluable means of assessing, on a broad public health basis, the effect of various preventive and dental health education procedures. The results of this work will clearly influence the development of the Service, and will also be of world-wide significance.

## Equipment

Participants in the Scheme have agreed that there could be substantial savings if arrangements were made for certain standard items of equipment to be supplied and/or manufactured en masse. This would also have the advantage of facilitating continuity of supply, both of the equipment itself and of spare parts.

Specification for certain items of equipment which are acceptable to States and Territories have been finalised, and tenders for the provision of the equipment are being invited through the Department of Manufacturing Industry. Under these arrangements States will continue to be responsible for the actual purchasing arrangements in accordance with a contract price and other conditions which are being negotiated by the Australian Government.

*Dental therapy tutor Helen Knight examines a young patient at the new Westmead Dental Therapy Training School at Westmead, Sydney.*





## Australian Dental Services Advisory Council

The Australian Dental Services Advisory Council was established in March 1973 to advise the Australian Minister for Health on all aspects of the School Dental Scheme. Its membership comprises representatives of the Australian Government, the States and Territories, and the Australian Dental Association. The third session of the Council was held on 31 October and 1 November 1974, with full secretarial support provided by the Dental Health Branch. Recommendations were made on a wide range of matters concerning the Scheme.

The Council provides an essential opportunity for discussion, overall planning and general co-ordination in the development and operation of the Scheme. It has four specialist committees—Equipment, Materials and Building; Auxiliary Dental Personnel Training; Field Operations; and Evaluation and Review—all of which met in 1974.

## Dental manpower

The progressive decline in the number of dentists relative to the Australian population has caused concern, particularly in view of the introduction of the School Dental Scheme for which some 600 to 700 dentists will be required by 1990.

Discussions have been held with the Australian Universities Commission with a view to initiating a substantial increase in the output of existing dental schools. The formulation of advice to the Universities Commission was undertaken in collaboration with the Health Personnel Section of the Health Services Research and Planning Branch No. 1. An extensive report on dental manpower in Australia, prepared by the Universities Commission in collaboration with the Health Department and the Australian Bureau of Statistics, has been released. Action for increasing the training capacity of dental schools is being initiated by the Commission.

## Other activities

In liaison with the Department of Social Security and the Northern Territory Division of the Department of Health, the Branch is responsible for arrangements for the continuing orthodontic treatment of Darwin school children evacuated after the cyclone disaster of December 1974.

The Branch has also investigated and developed proposals for a domiciliary dental care program to provide treatment for people who, through age or physical infirmity, are unable to travel to dental surgeries or hospitals for treatment.

Branch officers are also actively involved in a wide range of general dental matters including dental fees and compensation and the provision of advice to Australian Government Departments and instrumentalities. In other activities, information is being gathered on communities which are using artificially fluoridated water and on other water supplies with a significant fluoride level.

# Social Health Projects

Responsibility for several Departmental functions was transferred to a newly-formed cell within the Public Health Division during the year. The functions have been grouped under the broad heading of Social Health Projects and, pending formal changes in Departmental organisation and as a trial measure, the cell is operating as a Branch to handle health education matters and the implementation of government initiatives in family planning. In addition it supervises the activities of the Australian Institute of Anatomy.

In creating the cell, the Department has recognised the growing importance of such functions, and has laid the foundation for a structure which will be capable of meeting expanding demands for projects of a social health nature. Such projects must be expected to increase in parallel with other comparatively recent initiatives, particularly projects of a community health nature. The activities described below are simply the beginning of an enlarging program to meet the increasingly complex health needs of modern Australia.

## Health education

The National Warning Against Smoking continued to be the Department's main initiative in the health education field.

In a bid to reach and influence young people, it was decided to concentrate resources on the development of a project aimed specifically at school children in the 9 to 14 years age group. The project, a competition to design anti-smoking advertisements, was launched just before the end of the financial year, and large-scale participation from children throughout Australia was anticipated.

The Department continued to meet the non-stop demand for posters, booklets, stickers, desk cards and T-shirt transfers, all carrying anti-smoking messages. Two new booklets, *So You Want to Stop Smoking* and *Summary of Smoking and Health Now* (a summary of a report by the Royal College of Physicians of London) were published during the year and distributed widely, in addition to a pocket-sized card showing the tar and nicotine content of Australian cigarettes.

In other activities, work was undertaken to draw attention to the problems associated with facsimile confectionery cigarettes which, whether intentionally or not, are seen as potentially developing future smoking acceptance and behaviour. Efforts were also made to engender growing public awareness of the health risks and discomfort caused by 'passive' smoking—that is inhaling smoke from cigarettes and other smoking materials used by others in public places such as aircraft, lifts, etc.

The Minister for Health agreed with State Health Ministers on the introduction of warnings on all forms of cigarette advertising. Work is under way to implement this decision in the A.C.T. and the Northern Territory.

All State health authorities except Victoria continued to participate in the National Warning activities, as well as the Anti-Cancer Council of Victoria and the Australian Council on Smoking and Health.

In addition to its anti-smoking activities, the cell undertook preliminary work on a number of other health education topics including venereal disease, alcoholism and underwater safety.

## Family planning

Involvement in family planning matters was stepped up following the appointment of a Family Planning Consultant in October 1974.

A considerable effort was made to develop co-ordination and liaison with State Governments and voluntary family planning organisations, to ensure that appropriate facilities and services are made available to the Australian population. A number of specific areas of development were examined, including education of medical practitioners in family planning and the provision of funds for research.

New initiatives were developed in line with Australian Government policy that family planning advice should be available to all who require it. These included a decision to establish pilot 'Action Centres' in Sydney, Melbourne and Brisbane where young people can seek advice and discuss personal problems relating to sex and contraception.

Funds were also provided to enable the Royal Flying Doctor Service to employ women's health advisers, for a three-month pilot period, at the Service's bases at Broken Hill, Mount Isa and Kalgoorlie. The advisers are travelling with doctors and nurses to remote areas to give advice and provide educational materials on contraception, fertility and sexuality. Other funds were provided to local Family Planning Association branches to enable them to set up clinics, to the Preterm Foundation in Sydney to enable the re-establishment of its clinic which had been destroyed by fire, and to the South



*An intricate acrylic display at the Institute of Anatomy in Canberra is carefully dusted by Departmental artist Mr Ian MacKay. A special task force has reported to the Director-General and the Minister for Health on future plans for the Institute.*

Australian and Western Australian State Governments for a range of family planning initiatives.

These payments were in addition to major grants made to the Family Planning Association (\$250 000) and the Australian Catholic Social Welfare Commission (\$125 000).

### Institute of Anatomy

A special task force was established during the year to consider future plans for the Institute of Anatomy, which houses the osteological and comparative anatomy collections of the late Sir Colin MacKenzie, together with substantial anthropological collections.

The Institute building, a famous Canberra landmark since 1929, also houses some of the Department's laboratories. Proposals have been made to relocate the laboratories elsewhere and there is also a possibility that the anthropological material might be moved to its own museum. The task force, therefore, considered ways of utilising the extra space which would become available, subject, of course, to any decision which might be made by the Government on its reallocation for other purposes.

Preliminary plans were considered for the establishment of an Australian Institute of Health Education within the building. A proposal that the building should also house an Institute of the History of Medicine is still being examined.

# Occupational Health

Substantial progress was made during the year with proposals for an Occupational Health Service for Australian Government Employees.

Arrangements were made for the Hospitals and Health Services Commission to undertake planning and future evaluation of the Service, and for the Department of Health to assume responsibility for future implementation through a Bureau of Occupational Health operating within the health framework. This arrangement is in line with the role accorded the Commission by the Government for overall health service planning and co-ordination, and with the general pattern of implementation of Commission initiatives by the Department of Health.

Proposals for the Service were developed by a Joint Working Party established by the Commission for this purpose. The Working Party comprises representatives of the Commission, the Department of Health and Public Service Unions.

The proposals envisage the provision of a comprehensive range of community type preventive and treatment services to all classes of Australian Government employee, from the factory worker to the senior executive, through the operation of a number of occupational health field units located in employee concentrations throughout the country.

The proposals have been based on the provisions of ILO Recommendation No. 112 which was carried with Australia's active support. International adoption of this recommendation and other evidence from around the world gives solid grounds for expecting that the Service will make a substantial contribution to a reduction in the costs of occupational injury and illness, lower compensation and sickness absence costs, reduced labour turnover and lost working time with consequential increases in productivity and efficiency. It should also have a beneficial effect on morale, industrial harmony and job satisfaction.

The ultimate aim of the Service would be to cover employees in all Australian Government Departments and Authorities. The rate at which this objective could be achieved would, however, depend on the availability of necessary occupational health skills.

In response to the urgent need for a suitable research and teaching framework within Australia, the Minister for Health established a Joint Council for Occupational Health Research to plan and co-ordinate action in this field. On the recommendations of the Joint Council, a comprehensive program of occupational health research has been initiated.

The program involves the establishment of a research unit in occupational health which would be attached to the School of Public Health and Tropical Medicine; support for special research projects initiated from any suitable source in Australia; and the funding of a number of overseas travelling fellowships in occupational research training and teaching. The program would be financed from the Medical Research Endowment Fund administered by the National Health and Medical Research Council.

In September 1974 the Government adopted the Code of General Principles on Occupational Safety and Health in Australian Government Employment, which all Australian Government Departments and Instrumentalities must now implement. The Department of Labor and Immigration was assigned responsibility for general oversight of the implementation of the Code while the Director-General of Health was appointed Occupational Health Authority. In this role he is responsible for the determination of health requirements and recommendations under the Code. These determinations are binding on all Australian Government Departments and Instrumentalities.

A Departmental Committee on Occupational Health Standards was formed to advise the Director-General in his activities as Occupational Health Authority. Close liaison has been established with the Department of Labor and Immigration.

A shortage of trained manpower in occupational health disciplines persists in Australia. In order to satisfy the future manpower needs of the proposed Occupational Health Service, the Department is sponsoring the training of occupational physicians and occupational health nurses. Fourteen doctors are undertaking the 1975 Diploma Course in Occupational Health at the School of Public Health and Tropical Medicine, and arrangements are in hand for approximately fifty nurses to undertake the Occupational Health Certificate Course at the N.S.W. College of Paramedical Studies.

In associated activities, new sub-committees of the National Health and Medical Research Council were set up to report on decompression sickness and the occupational health aspects of vinyl chloride and occupational carcinogens.

Following reports of bone necrosis in both professional and semi-professional divers, an inter-departmental committee convened by the Department has proposed the establishment of a central registry on decompression sickness at the School of Underwater Medicine, HMAS Penguin, Sydney. In addition the committee has recommended that an N.H. & M.R.C. working party be set up to inquire into and make recommendations on the prevention and control of decompression sickness and diving accidents.

# Women's Health Conference

As a special initiative for International Women's Year, the Department sought approval early in 1975 to hold a major conference on women's health at the University of Queensland in August 1975.

Following approval by the Prime Minister for an initial grant of \$22 500 from International Women's Year funds, which was then supplemented with an equal amount from Departmental funds, a Conference Directorate was established at the beginning of March. The conference was set down for 25-29 August. Subsequently a further \$38 000 was made available from International Women's Year funds. The Department is providing the administrative support structure for the Conference.

## Initial organisation and publicity

The Conference Director, Patricia Bollard, was seconded from the Dental Health Branch of the Department to be engaged full-time on the organisation of the conference. Mrs Bollard, whose initial training and experience was as a librarian and economist, had latterly been involved in senior management activities relating to the School Dental Scheme, and has been actively associated with many women's interests. She was later joined by two other Departmental officers and was provided with the full resources of the Department.

Following the securing of conference halls, audio-visual equipment, College accommodation for delegates, baby-sitting facilities, etc. at the University of Queensland, a massive publicity campaign was launched throughout Australia. An officer in each of the State Divisions of the Department, and in the Northern Territory, was appointed Conference Information Officer and assisted the Director in making contact with interested individuals and groups when she visited each State during April. These officers also made personal contact with people in their State, answered all local inquiries and distributed brochures, posters and registration forms.

To supplement the issue of brochures and posters and the placing of advertisements in major newspapers throughout Australia, the Director won valuable publicity for the conference through guest appearances on television and radio and with a series of press interviews.

## Response

As a result of the publicity campaign, there was a massive response to requests for submission of outlines of papers for possible presentation at the conference. They came from a very wide range of people in all States, including some living in such remote places as Tennant Creek in the Northern Territory and Kununurra in Western Australia. Inquiries were also received from Papua New Guinea, New Zealand, Canada and the United States.

Among groups whose views will be represented at the Conference are State and Australian Government authorities, the universities, the medical profession (through colleges, societies and individuals), social workers, nurses, the Family Planning Associations, Good Neighbour Council, Salvation Army, churches, trade unions, National Council of Women, Campaign Against Moral Persecution, Nursing Mothers' Association, Country Women's Association, health centres, drug companies, the Pharmacy Guild, Women's Electoral Lobby, Women's Liberation, Right to Life, Council on the Ageing, Parents without Partners, Alcoholics Anonymous, women's refuges, rape crisis centres, teachers' federations, Aboriginal women, YWCA, chiropractors, naturopaths, Parents Anonymous, university medical students' associations, abortion counselling services, local government, the Family Medicine Program, town planning authorities, slimming clubs, policewomen, mental health associations, health education councils and handicapped women's associations.

### Programming

Following the selection of approximately 150 papers for formal presentation at the conference, a program committee comprising senior personnel of the Department, representatives of other Departments and Commissions, the International Women's Year Secretariat and the Prime Minister's Adviser on Women's Affairs, is determining the final format of the Conference.

It is envisaged that there will be four major streams running concurrently, dealing with the broad topics of Reproductive Life and General Health, Behavioural Aspects of Women's Health, Health of Women at Work (in the home and in outside employment), and the Health of Isolated Women (isolation due to physical, social, ethnic or economic circumstances). Each stream will comprise ten sessions, each under the direction of a chairperson. Three or four key papers will be presented in each session, with ensuing question discussion periods.

### Registration

To ensure equal representation from all groups and to encourage participation by voluntary organisations with practical experience in delivery of health care to women, registration fees were purposely set at minimal rates—\$10 per person, with a lower rate of \$3 for students and pensioners.

Registration was limited to 1000 delegates, excluding chairpersons, overseas guest speakers, the Conference organisers and the media. Applications for registration were accepted in order of receipt, with special consideration being given to minority groups (e.g. handicapped women) to ensure equal representation.



# Community Health

The increasingly wide acceptance and scope of the Community Health Program prompted a busy year for the Community Health Branch. Officers were concerned with a total of nearly 600 projects funded under the Program, or under the associated Community Mental Health, Alcoholism and Drug Dependency Program.

The Branch is involved in implementation and administration of both Programs, and also undertakes project proposal analysis for the Mental Health, Alcoholism and Drug Dependency Program.

Both Programs were introduced by the Government during 1973-74 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 Community Mental Health, Alcoholism and Drug Dependency Program, legislative authority for which is provided under the Mental Health and Related Services Assistance Act 1973, was to be encompassed by the broader-based Community Health Program from 1 July 1975.

Australian Government financial allocations to all projects under the Community Mental Health, Alcoholism and Drug Dependency Program, and to national projects under the Community Health Program, were on a 100 per cent basis. Allocations to other projects under the Community Health Program were generally on a basis of 75 per cent of capital costs and 90 per cent of operating costs.

Allocations for the year totalled \$7.1 million under the Community Mental Health, Alcoholism and Drug Dependency Program and \$32.7 million under the Community Health Program—a total of \$39.8 million for the financial year.

The projects funded covered a wide range of categories, from large to relatively small. They included community health centres, day hospitals and day care centres, health hostels, rehabilitation facilities, referral and assessment centres, 'shop-front' and 'drop-in' facilities, mobile community health services, training courses, community health service co-ordination and administration units, and several national projects.

The projects are widely scattered throughout Australia, from Hobart to Busselton (Western Australia) and from Rockhampton to Ceduna (South Australia). They operate at a variety of levels—national, State, regional and local. Most are of a continuing nature, but a few are of limited duration. The majority are conducted by State health authorities, but a significant number are operated by non-governmental organisations including religious or charitable bodies and community groups specifically established for the purpose of conducting the particular project.

The several factors mentioned above—the large number of projects, the wide range of categories, their spread throughout Australia, wide variations in the scope of their operations, and differences in bases of management—necessitated a large number and wide variety of administrative initiatives by

*The Leichhardt Main Community Centre, established in an old terrace house in Sydney, receives support from the Community Health Program. The centre serves a high-density population in the inner-city area.*



the Branch throughout the year. The Branch was also involved in several projects involving Australian Government-owned facilities.

National projects funded under the Programs required significant administrative effort too. The majority of approved projects involve financial allocations to the States for State-conducted projects or through the States for projects conducted by non-governmental projects at State level. However, projects operated on a national basis by non-governmental bodies described later are funded direct, and this necessitates a deeper involvement by the Branch in their implementation and administration.

In addition to undertaking its implementation and administration roles, the Branch assisted in some aspects of project development and analysis activities for which the Health Services Research and Planning Branch No. 1 has primary responsibility. The Branch's medical officers and psychologist provided professional advice on a number of matters.

The Branch worked in close collaboration throughout the year both with the Health Services Research and Planning Branch No. 1 and with the secretariat of the Hospitals and Health Services Commission. It is represented on the Commission's Community Health Working Party and Joint Committee.

Close liaison was also maintained with State health authorities and with non-governmental organisations operating in the community health field. Good working-level relationships were established.

## Australian Government community health facilities

During the year the Branch was deeply involved in the development of four projects involving the direct construction or acquisition of community health facilities by the Australian Government. They are located in Deer Park, Doveton and East Preston (all in Victoria) and Eastern Shore (Hobart).

In June 1974, the Minister for Health announced that the Australian Government would construct a main community health centre for the 11 000 residents of Deer Park, who had virtually no community health facilities. Work on the project began the following month and five months later, on 14 December, the centre was officially opened. A community group which conducts the centre has been granted a long-term lease at a 'peppercorn' rental. The project has been very successful.

The Doveton project involved the acquisition and modification of premises, which will also be leased to a community committee. At East Preston, the Australian Government is to construct a major community health centre, the planning of which was taken to an advanced stage during the year. It will also be leased to a committee of local residents.

In May 1975 the Minister announced that, in response to an urgent request by the Tasmanian Government, the Australian Government would construct a major community health facility on the Eastern Shore of Hobart, which had been affected by the Tasman Bridge disaster. During May and June, officers of the Branch were urgently employed on site acquisition and design of the project.

The Establishments and Finance Branch was also involved in the detailed planning and financial aspects of these four projects, and the Department received excellent co-operation from the Departments of Services and Property and Housing and Construction.



*Members of the Deer Park Community Health Services Society pose outside the Deer Park Community Health Centre with the Minister for Health, Dr D. N. Everingham, after he officially opened the building in December 1974. Deer Park was the first Australian Government-owned community health centre built in an Australian State.*



*A specialist lectures a group of women doctors undergoing retraining under the Family Medicine Program in Melbourne. The part-time orientation course is designed mainly for women who want to return to general practice, sometimes after a considerable length of time. The Family Medicine Program is funded under the Australian Government's Community Health Program.*

## National projects

The major national project funded under the Community Health Program continued to be the Family Medicine Program conducted by the Royal Australian College of General Practitioners. This program, which began in 1973-74, is primarily designed to improve the quality of family medical practice and to relieve the shortage of general practitioners within the community. It also offers medical graduates, particularly women, who have left active practice, appropriate training and education aimed at assisting their entry or re-entry into family medicine. Family medicine educational material is provided to medical undergraduates.

In its relatively short life, the Family Medicine Program has expanded rapidly, and its success has exceeded the expectations of even its most optimistic proponents. A total of 805 trainees, including 107 re-orientation trainees, had been accommodated within the Program as at 30 June 1975.

Australian Government allocations to the Family Medicine Program in 1974-75 totalled \$4 086 750.

Other national projects funded under the Community Health Program included those conducted by the National Heart Foundation, the National Life Line Association, the Association for the Welfare of Children in Hospital, the Australian National Association for Mental Health, and the Australian Medical Students' Association.

Allocations to national projects under the Community Health Program totalled \$4 344 755.

A prominent feature of the Program has been the continued growth and development of a number of Women's Health Centres throughout Australia,

with an emphasis on providing consultative services for women and improving women's health care in general. Towards the end of the financial year, Community Health Program assistance in meeting the health and welfare needs of women was widened to include general grants to several refuges for women and their dependants.

Continued funding was also provided under the Community Mental Health, Alcoholism and Drug Dependency Program for the maintenance of the national secretariats of Recovery/Grow and the Australian Foundation on Alcoholism and Drug Dependency. With the co-sponsorship of the Department of Labour and Immigration and this Department, the Australian Foundation on Alcoholism and Drug Dependency conducted two national management union conferences on 'Alcoholism in Industry'.

Allocations to national projects under the Community Mental Health, Alcoholism and Drug Dependency Program for the year totalled \$194 018.

### Allocations to projects within States

Australian Government financial allocations during 1974-75 to community health projects operated within the States, and the numbers of such projects, are set out in the following table:

<i>State</i>	<i>Community Health Program</i>		<i>Community Mental Health, Alcoholism and Drug Dependency Program</i>	
	<i>Allocation</i>	<i>No. of Projects</i>	<i>Allocation</i>	<i>No. of Projects</i>
	<i>\$'000</i>		<i>\$'000</i>	
New South Wales	13 820	267	2 466	40
Victoria	3 830	67	1 758	25
Queensland	3 223	35	872	26
South Australia	3 003	41	672	7
Western Australia	3 792	31	668	6
Tasmania	753	21	468	3
<b>Total</b>	<b>28 421</b>	<b>462</b>	<b>6 904</b>	<b>107</b>

Further details of the numbers of approved projects according to categories are contained in the statistical appendix.

# Hospital Facilities Services

The new Hospital Facilities Services Branch was established during the year to undertake the implementation and administration of the Australian Government's Hospitals Development Program. The five-year Program of capital assistance to the States for the development of public hospitals and other health institutions was announced in the 1974-75 Federal Budget.

It was proposed that under the Program, capital assistance by the Australian and State Governments would represent a joint initiative aimed at co-ordinated planning on a regional, State and national basis. The States have agreed to the principle of their hospital programs being considered by Joint Hospital Works Councils which comprise State officers and representatives of the Hospitals and Health Services Commission, one of whom is a nominee of this Department. On the basis of this consideration, the Commission submits recommendations to the Minister for Health concerning the extent of Australian Government financial assistance to each State.

It is a fundamental principle of the Program that Australian Government funds will be directed towards assisting total State programs rather than individual projects.

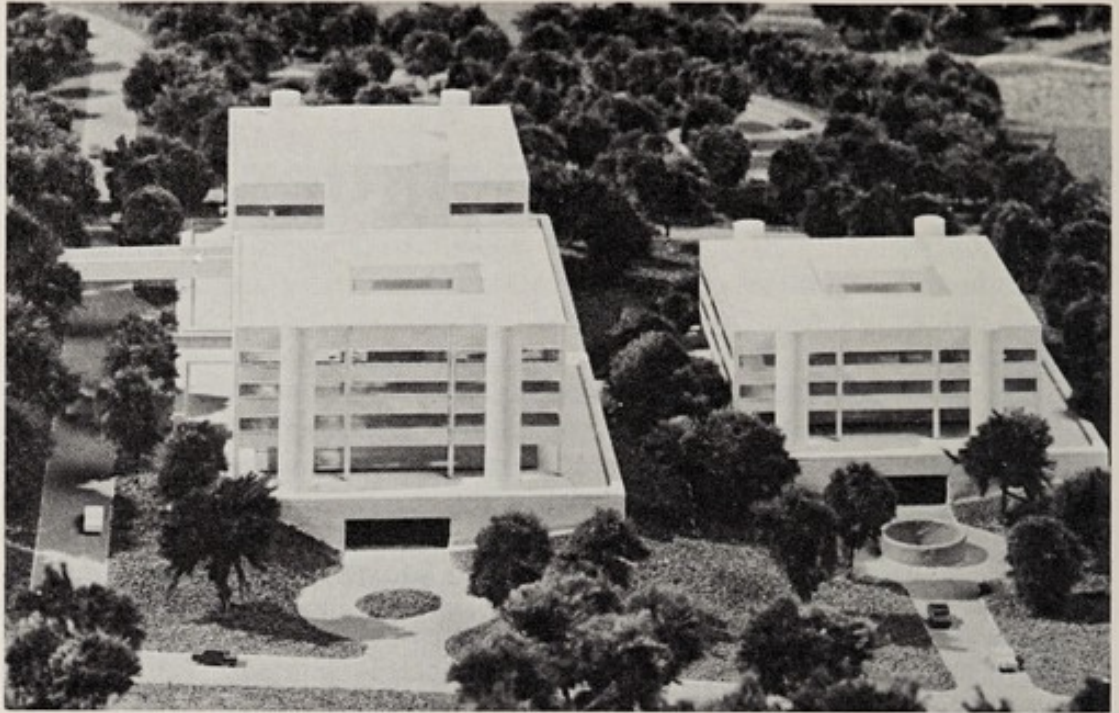
The anticipated Australian Government contribution to State programs over the five-year period 1974-75 to 1978-79 is approximately \$650 million at 1974 values. Of this amount, \$30.306 million was expended in 1974-75. Amounts for subsequent years are at present the subject of Budget discussions, but it is expected that the bulk of the Australian Government contribution will be spent during the latter years of the Program as major project development progresses.

The Hospital Facilities Services Branch works closely with the Hospitals and Health Services Commission, maintaining a continuous servicing role. It undertakes liaison with the States and arranges provision of funds and the promotion and development of approved projects in accordance with determined conditions.

The Branch is developing planning and evaluation procedures to monitor the progress of projects within the Program, to identify problems of implementation, and contribute to the provision of solutions for design and construction problems.

To assist the Department in the implementation of such a major program, the Department of Housing and Construction has provided a small cell of experts consisting of architects, engineers and quantity surveyors, with assistance as required from other technical experts located with the staff of the Branch, to assist in evaluation of proposals submitted by the States. The working relationship, co-ordination and co-operation between officers of the two Departments has been excellent and many benefits are accruing.

Both Departments are also engaged in the preparation of a data bank of health facilities planning information which will be available widely to planners in the health field.



*A scale model of a new hospital being built at Campbelltown, N.S.W. The hospital is one of a large number of State hospital projects receiving financial assistance under the Australian Government's Hospitals Development Program.*

The Branch is also contributing to State planning procedures by participating in planning meetings for a number of major developments. These include Launceston General Hospital in Tasmania, Para and Whyalla Hospitals in South Australia, and Campbelltown Hospital in New South Wales. This activity is expected to grow rapidly.

### State projects

Some details of State funding and of projects for which the Branch had administrative responsibility in 1974-75 are set out below:

**NEW SOUTH WALES**—\$8 830 000. Of this amount \$7 million was to be expended on a widespread program of upgrading hospitals, and the remainder for development of hospitals at Westmead, Campbelltown and Gosford.

**VICTORIA**—\$7 330 000. Included in this grant were funds to assist in the re-development and modernisation of the Alfred Hospital, expansion of out-patients and casualty facilities and the provision of a therapy department at Western General Hospital at Footscray, and development of the first stage of a new hospital at Sunshine.

**QUEENSLAND**—\$5 084 000. This grant was to be used to advance projects under construction, including hospitals, nursing homes and psychiatric facilities including accommodation for the intellectually handicapped at Wolston Park, Brisbane, Baillie Henderson, Toowoomba and at Rockhampton.

**SOUTH AUSTRALIA**—\$3 236 000. This grant assisted South Australia to accelerate a comprehensive program of capital expenditure on both Government and non-Government public hospitals.

WESTERN AUSTRALIA—\$4 326 000. This grant assisted Western Australia to accelerate a comprehensive program of capital expenditure on public hospitals.

TASMANIA—\$1 500 000. This grant assisted Tasmania to accelerate a comprehensive program of capital expenditure on public hospitals, including planning for the re-development of Launceston General Hospital and the construction of an obstetrics wing at the Royal Hobart Hospital.



# Tuberculosis and Health Standards

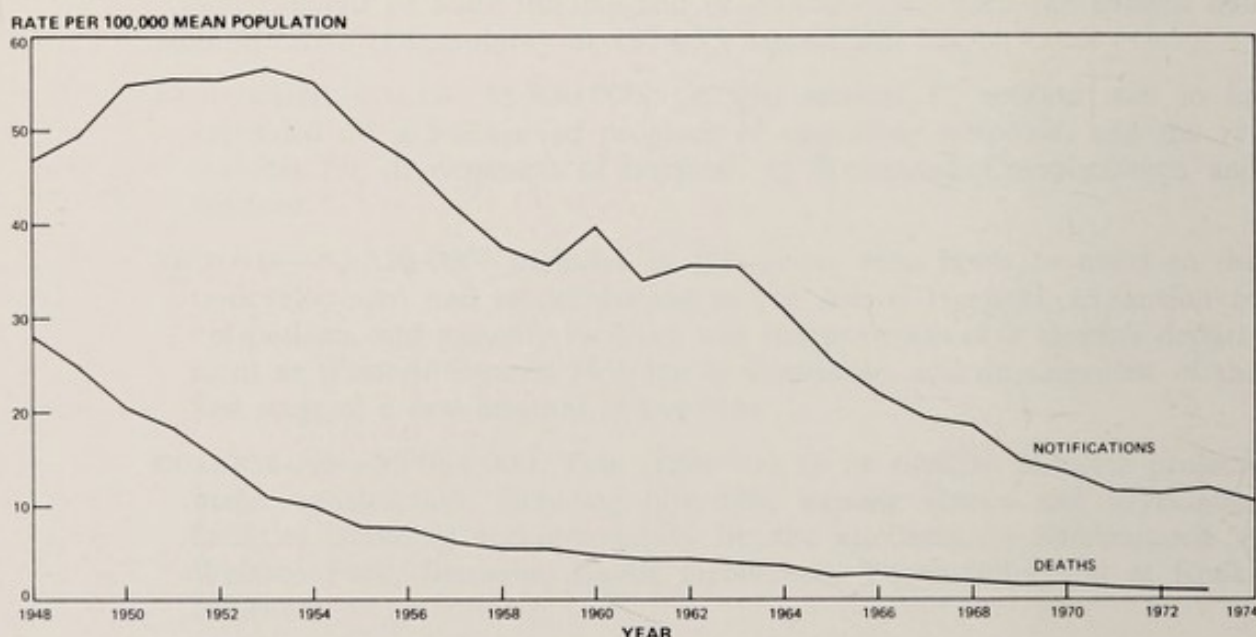
It is pleasing to report that the number of new cases of tuberculosis notified in Australia showed a decline in 1974, in contrast to the dramatic and unexpected increase in new cases and new case rates the previous year. A total of 1408 cases was notified—a rate per 100 000 of mean population of 10.5 compared to 11.9 in 1973.

The 1973 increase arose mainly from a rise of 23.1 per cent in New South Wales notifications. While there was a drop in new case rates in New South Wales last year from the 1973 figure of 12.5 to 11.2, the 1974 rate compared unfavourably with the 1971 and 1972 rates in that State of 10.8 and 10.3 respectively. Figures from other States also indicated the continuing difficulty of controlling tuberculosis and of maintaining a decline in the annual notifications of new cases. Rates in Queensland, for instance, rose from 11.8 (226 cases) in 1973 to 12.2 (241 cases) in 1974, while Tasmania recorded a higher rate in 1974 than in 1971.

These figures have not reversed the trend of overall decline in new cases notified, which has been occurring for many years, but they do indicate a tendency towards a levelling off to a stable new case rate which has long

NOTIFICATIONS (EXCLUDING REACTIVATIONS) PER 100 000  
POPULATION—ALL FORMS—1948 TO 1974

DEATHS PER 100 000 POPULATION—ALL FORMS—1948 TO 1973



*Notifications of new cases of tuberculosis declined in 1974, resuming the steady downward trend of recent years which had been unexpectedly halted in 1973. However, there are indications that this trend is now levelling off to a stable new case rate.*

been forecast. They give point to the ninth report of the WHO Expert Committee on Tuberculosis (Technical Report Series 552 of 1974) in which the Committee emphasised that the disease still ranks among the major health problems of the world.

In addition to new cases, 137 reactivated cases of tuberculosis were notified in 1974. Reactivation refers to a patient who requires treatment for tuberculosis after having been conventionally considered as cured. As with new cases, reactivations over the past four years—149 (1971), 130 (1972), 151 (1973) and 137 (1974)—show a tendency towards levelling off and a reduced decline.

The death rate per 100 000 of mean population, however, again declined. In 1973 (the latest available period) it reached the very low figure of 1.0—a drop of 0.2—thanks to the effectiveness of modern drug treatment and control measures employed in Australia.

### Patient surveillance

The 1408 new cases notified in 1974, together with the small number of reactivations and the low death rate, do not give a true indication of the patient case load of the control program. At 31 December 1974, 3994 patients were receiving anti-tuberculosis drug treatment. Of these, 376 were in hospital and 3618 were receiving domiciliary treatment.

In addition, a total of 176 094 people was under regular surveillance against breakdown with tuberculosis. Of these, 51 764 were previous sufferers, 48 512 were contacts of sufferers, and 76 818 were other people considered to be at high risk of contracting the disease.

### The future of tuberculosis services in Australia

The National Tuberculosis Advisory Council gave further consideration to the future role of Australian tuberculosis services at its twenty-fifth meeting, held on 25 and 26 June 1974. Council noted that, in all States, some measure of integration of investigation and treatment of tuberculosis services in general hospitals had been achieved.

Members were advised of discussions which had been held with the Hospitals and Health Services Commission on the question of incorporating tuberculosis services within schemes for total health care. The discussions had shown that it was not possible to authorise community health projects which were located in hospitals and which formed part of the hospital's activities, as those presently fell outside the scope of the scheme. However, State Governments, local authorities or citizens' groups could propose community health projects incorporating chest clinics outside hospitals, or as a separate activity within a hospital.

While Council agreed that efforts should continue towards further integration of tuberculosis services with other health services and for chest clinics to broaden their activities to encompass other aspects of thoracic medicine, it recognised that many problems existed which would need to be overcome before complete integration within State health services would be feasible. These problems included the lack of suitably qualified physicians to undertake treatment of general thoracic cases, the difficulty of attracting and retaining younger physicians in this area of medicine, and the continuing need to ensure the existence of central supervision so that an effective control and follow-up program could be maintained within a State as well as between States.

The following resolution was passed:

'Council considered at length the future role of the tuberculosis services in Australia. It noted that the rate of reduction of tuberculosis notifications had slowed down in recent years and that the notifications for 1973 had exceeded those for 1972. In the light of this and the present situation regarding the delivery of health care in Australia it recommended that:

- (1) The present basis of tuberculosis services in the various States be retained;
- (2) the scope of the work of chest clinics be extended as appropriate to include pulmonary diseases other than tuberculosis;
- (3) the importance of retaining physicians with special skills in the tuberculosis field be recognised in this expansion; and
- (4) the situation be kept under constant review by the State Directors of Tuberculosis in consultation with the Australian Department of Health.'

The recommendation, which was accepted by the Australian Minister for Health, was referred to the State Ministers of Health for their consideration. Five of the Ministers agreed, while the sixth indicated that expansion of chest clinics to include other pulmonary diseases could not readily be introduced because most clinics have no room for physical expansion. The difficulty in recruiting suitably qualified medical staff also inhibited any expansion of chest clinic activities in that State along the lines proposed by Council.

### Chest clinics

Again in 1974 chest clinics demonstrated their growing importance in tuberculosis control. With the modern approach to treatment outside hospitals, there was increased work for the clinics in supervising long-term drug treatment of patients at home.

Because of their surveillance and investigational work, the clinics in 1974 discovered a higher percentage of new cases of tuberculosis than any other case-finding source—28 per cent compared with other major sources of discovery of 26 per cent by general and chest hospitals, 19 per cent by mass X-ray surveys, 16 per cent by private medical practitioners, and 6 per cent by Repatriation clinics and hospitals.

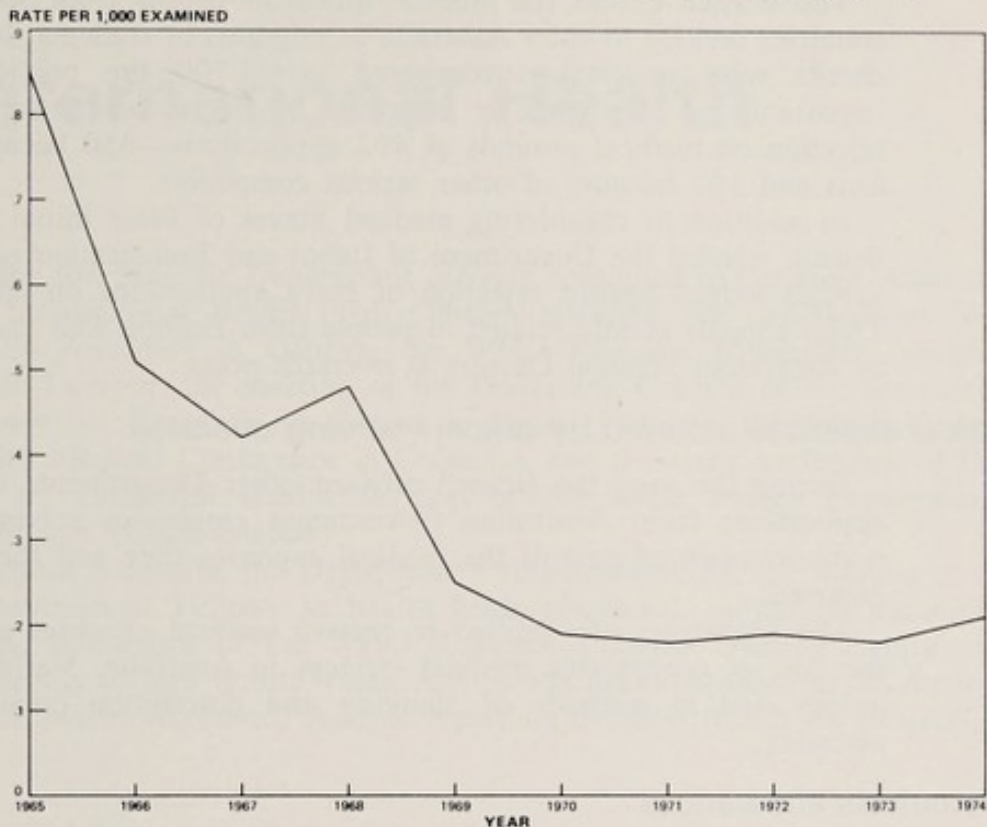
### Mass X-ray surveys

A further review of the compulsory mass chest X-ray program was carried out in 1974 by the National Tuberculosis Advisory Council in respect of all States, except Western Australia where mass X-ray surveys remained suspended. Programs to scale down or rationalise surveys in other States were pursued.

In conjunction with the current round of a mass survey in Queensland, a voluntary tuberculin skin testing survey is being conducted. This offers people with negative reactions exemption from future compulsory X-ray surveys. A high acceptance rate has been achieved so far.

A total of 1.09 million people was examined in compulsory X-ray surveys in Australia during 1974 compared with 1.45 million in 1973. The surveys discovered 226 active and probably active cases of tuberculosis, at a rate of 0.21 cases per 1000 people examined, compared with 264 cases and a rate of 0.18 cases per 1000 in 1973.

RESULTS OF MASS X-RAY SURVEYS—RATE OF ACTIVE AND PROBABLY ACTIVE TUBERCULOSIS CASES PER 1 000 EXAMINED—1965 TO 1974



*A total of 1.09 million people was examined throughout Australia in compulsory mass X-ray surveys in 1974, producing a discovery rate of active and probably active cases of 0.21 per 1 000 examined.*

Although mass X-ray surveys were curtailed in the Northern Territory during 1974, they still contributed 36.0 per cent of new cases of pulmonary tuberculosis notified. The surveys also contributed significantly in Queensland with the discovery of 26.7 per cent of pulmonary cases notified, and in Victoria with 23.4 per cent.

### Tuberculosis in migrants

The incidence of tuberculosis in people born outside Australia was again much higher than among the Australian-born. Although representing only 20.2 per cent of the total population, people born outside Australia were responsible for 32.0 per cent of the new and reactivated cases discovered in 1974. The proportion of disease among foreign-born people varied from 58.6 per cent in Western Australia to 3.8 per cent in Tasmania.

A higher incidence of non-pulmonary tuberculosis was also discovered among people born elsewhere. They produced 41.1 per cent of the new and reactivated cases of non-pulmonary disease discovered in 1974, including 58.3 per cent of cases of genito-urinary tuberculosis.

### Hospital beds

A total of seventy-three beds was released from the tuberculosis service during 1974, of which fifty-seven were made available for use by general hospital patients and sixteen for the general use of mental hospital patients. At 31 December 1974, 1097 beds were being retained for tuberculosis patients, but many of these are used by general patients when not required for the treatment of tuberculous patients.

## Medical clearance of migrants

The Branch checks the medical fitness of people from South-East Asian countries seeking to enter Australia as migrants or students. In 1974, 17 535 checks were undertaken compared to 13 709 the previous year. The importance of this work is indicated by the recommendations made for rejection on medical grounds of 492 applications—350 because of tuberculosis and 142 because of other serious complaints.

In addition to considering medical fitness of these initial applicants, the Branch advised the Department of Labor and Immigration concerning 4281 appeals lodged against rejection of entry applications on medical grounds. These appeals mainly related to people from Europe who had been rejected by Australian Medical Officers at overseas posts.

## Medical expenses incurred by officers serving overseas

During the year the Branch advised other Departments concerning 240 applications from Australian Government employees serving overseas for reimbursement of part of the medical expenses they and their families had incurred.

The employees are entitled to receive medical expenses over and above the cost of comparable medical services in Australia. Variations in terminology and in methods of charging and description create problems in assessing.

## Tuberculosis allowances

The rates of allowances paid to tuberculosis sufferers and their dependants were increased on four separate occasions during the financial year 1974-75.

The basic allowance payable to a sufferer without dependants who is undergoing approved domiciliary treatment was increased from \$29.25 a week to \$39.25 a week over the period, while the allowance for a sufferer without a spouse but with a dependant child increased from \$30 a week to \$40. The supplementary assistance for sufferers who pay rent and the allowance for dependant children were also increased.

Following the Government's decision to proceed with the second step towards the abolition of the means test, tuberculosis sufferers aged 70 years and over became entitled to receive the tuberculosis allowance free of means test.

## Handbook for Australian Government Medical Officers

During the year proposals for an amended superannuation scheme for Australian Government employees indicated the need for a revision of medical standards for superannuation and appointment. These standards, which are laid down for the guidance of Australian Government Medical Officers, were contained in one handbook. Another book contained standards for special occupations and work in remote localities etc., which were also pertinent to the work of the medical officers.

It was decided to incorporate the two sets of standards and instructions in one handbook and to bring all the material up to date. Compilation of the book was completed in conjunction with the Public Service Board, the Superannuation Board and some thirty Departments and instrumentalities with interest in the procedures involved. However, because of delays in the passage of legislation concerning the amended superannuation scheme, printing of the new book was also delayed.

# International Health

During the year the Department actively continued to represent Australia in the international health field. Officers attended the twenty-eighth World Health Assembly in Geneva, the WHO Regional Committee meeting in Kuala Lumpur, the meeting of the Governing Council of the International Agency for Research on Cancer in Lyon (France), the fourth Commonwealth Medical Conference in Colombo, and the sixth conference of Directors of Territorial Health Services of the South Pacific Commission in Rarotonga (Cook Islands).

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 again provided to the Australian Development Assistance Agency regarding overseas health aid projects.

## World Health Organisation

The Minister for Health, Dr D. N. Everingham, led the Australian delegation to the twenty-eighth World Health Assembly, held in Geneva from 13-30 May 1975. Dr Everingham was elected as one of the five vice-presidents of the Assembly, having been chosen unanimously by the Western Pacific



*Members of the Australian delegation at the twenty-eighth World Health Assembly in Geneva were (front row, left to right): the Assistant Director-General, International Health Branch, Dr R. W. Cumming; the Minister for Health, Dr D. N. Everingham; the Director-General of Health, Dr Gwyn Howells; and the Chief Medical Officer, London, Dr R. W. Greville.*

Region. This is the first occasion on which an Australian Minister for Health has held such a position, which he will retain until the next meeting of the Assembly in 1976.

Australia was further honoured by its election as a member state entitled to designate a person to serve on the WHO Executive Board for the next three years. The Board is the policy-making body of WHO, and directs the overall activities of the organisation and its annual assemblies. The Director-General of Health was designated to serve on the Board and attended the fifty-sixth session held in Geneva on 2 and 3 June 1975.

The Executive Board previously consisted of twenty-four individuals, but at the twenty-eighth Assembly advice was received that enough member states had ratified the constitutional amendments to allow the Board to increase to thirty. The fifty-sixth session was thus the first occasion on which the new thirty-member Board met.

### Admission of new members

At the Assembly, the Democratic Republic of Vietnam, Mozambique and Tonga were admitted as members of WHO. This brought the total membership to 145, plus two associate members.

### Anti-malaria program

Setbacks in malaria control in many parts of the world, particularly Asia, have prompted WHO to review its anti-malaria program and to encourage member states to enhance their efforts against the disease.

A resolution approved by the Assembly called for more aid to affected member states in planning their own anti-malaria programs, and for a thorough review of the development and production of anti-malaria drugs and insecticides.

### Promotion of mental health

The Assembly decided that WHO should assist countries in developing the mental health component of their health programs, in particular by seeking more information on the epidemiology of mental disorders, and by developing new and effective methods for the treatment and control of neuro-psychiatric disorders. These include epilepsy and other organic brain disorders, as well as disabilities related to alcohol consumption and drug dependence.

Dr Everingham presented a resolution urging member states to sponsor research programs into mental retardation and possible preventive and rehabilitative measures, and to develop international guidelines to train personnel charged with the care and development of the mentally retarded. This resolution was co-sponsored by a number of other members and was adopted unanimously.

### Assistance in special circumstances resulting from war

The Assembly decided that two programs of technical and material assistance to meet special circumstances resulting from war should be put into operation. One was for former Portuguese colonies in Africa and the second for Cambodia, the Democratic Republic of Vietnam and the Republic of South Vietnam.

## Smallpox eradication

The number of smallpox cases now being reported throughout the world is the smallest in history. The Assembly emphasised the need to maintain the utmost vigilance during the closing stages of the world-wide eradication program.

## Promotion of primary health care

The Assembly agreed that primary health care integrates, at the community level, all the elements necessary to make an impact on the health status of the population. A comprehensive approach in promoting primary health care as part of national development efforts was approved.

## Drugs and medicants

The Assembly called for greater direct assistance from WHO to member states to help their national programs for drug research and for the control and monitoring of drugs and medicants. Further, a WHO certificate scheme for the quality of pharmaceutical products moving in international commerce was approved by the Assembly.

This is essentially aimed at protecting developing countries which have to import all modern drugs and medicants and are ill-equipped to test their quality, efficacy and safety.

## Traffic in blood

All member states were urged to promote national blood services based on voluntary, non-remunerated donations of blood, and to take any steps necessary to protect and promote the health of blood donors and recipients. This recommendation was the outcome of discussion of a report dealing with traffic in human blood by commercial firms.

## Fluoridation and dental health

A report on fluoridation and dental health put before the Assembly stated briefly that fluoride, provided at optimal levels in drinking-water throughout the whole lifespan of the individual, was the most effective known means of preventing dental caries. The report advocated that, unless there were overriding technical reasons, no nation could afford the luxury of not fluoridating every central water supply system containing less than the optimum concentrations of fluoride.

The Assembly agreed that each member state should take steps for the prevention of caries.

## Regional Committee

The twenty-fifth session of the WHO Regional Committee for the Western Pacific Region met in Kuala Lumpur, Malaysia, from 2-10 September 1974. The Australian delegation was led by the Director-General of Health.

The other Member States represented at the meeting were China, Fiji, France, Japan, Khmer Republic, Laos, Malaysia, New Zealand, the Philippines, Portugal, Republic of Korea, Republic of Vietnam, Singapore, United Kingdom, United States of America, and Western Samoa. Papua New Guinea attended as an associate member.



The Committee dealt with a number of topics including the disinsection of aircraft, quality of water and food in international aviation, drug dependence, and the importation by pilgrims of holy water.

### International Agency for Research on Cancer

The fourteenth session of the Governing Council of the International Agency for Research on Cancer was convened in Lyon on 8-9 May 1975. All ten participating States—Australia, Belgium, France, Federal Republic of Germany, Japan, Italy, Netherlands, United Kingdom, U.S.A. and U.S.S.R.—sent delegations to the meeting.

The Director reported on the Agency's activities and drew attention in particular to a request by the asbestos industry in Europe for an investigation into the carcinogenicity of asbestos fibres. During the ensuing discussion the Australian delegation, while welcoming this new area of activity, stated that care must be exercised that the Agency was not left with a continuing commitment in funds and manpower should industry decide to withdraw from any project.

### Regional Teacher Training Centre

The Regional Teacher Training Centre in Sydney continued its role of providing service to the countries of the Western Pacific Region, including Australia, in the field of education for the health professions.

Financial problems, which might have affected the fulfilment of the Centre's educational program, were encountered during the year. The Hospitals and Health Services Commission undertook to provide funds covering travel and subsistence costs for Australian participants from areas other than Sydney wishing to attend courses at the Centre.

Long-term funding for the Centre's operation was established as the result of a grant of \$132 000 from the W. K. Kellogg Foundation. Within this grant, spread over the four years 1975-78, provision was made for the appointment of two academic staff members, staff training, and other assistance. Additional funds necessary to meet the continuing costs involved in accepting this grant are being provided by the Commission and the Department of Health.

Planning of a degree course of Master of Health Personnel Education continued. It was anticipated that the course would be inaugurated in July 1975.

Inter-country activities of the Centre increased during the year and national training courses were begun. Three inter-country educational workshops were conducted: two of them inter-disciplinary with participants from the medical, the nursing and allied health professions, and the other for deans and government departments involved in teacher training activities.

In developing its potential to respond to national needs, the Centre began a number of national workshops. Six were conducted during the year in various aspects of teaching methodology. Three more national workshops and one inter-country workshop were proposed for the latter half of 1975.

### Fourth Commonwealth Medical Conference

The fourth Commonwealth Medical Conference was held in Colombo, Sri Lanka, from 18-28 November 1974. The Australian Delegation was led by the Minister for Health.

Delegations from thirty Commonwealth countries attended, most of them led by their Health Ministers. Observers from the Commonwealth Foundation, WHO, the International Planned Parenthood Federation and the Commonwealth Medical Association also attended.

The theme of the conference was 'Choosing Among Health Goals: The Allocation of Scarce Resources Among Unlimited Needs'. Discussion was focussed on the delivery of health services in rural areas; the impact of urbanisation, industrialisation, mechanisation and pollution on health problems; the place of family planning in Commonwealth health programs; the role of statistics in the planning and delivery of health services; and the organisation and management for training and retention of the required personnel.

## **South Pacific Commission**

The sixth conference of Directors of Territorial Health Services of the South Pacific Commission was held in Rarotonga (Cook Islands) from 4-10 February 1975, 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 Territories 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 including the epidemiological status of countries and territories within the territorial scope of the Commission; the study of health regulations in respect of international travel within the region; and an evaluation of the Commission's health program for 1974 and projections for future years. Present programs on nutrition, fish poisoning and dengue fever were reviewed, and technical discussions were held on the epidemiological aspects of cancer in the Pacific Islands.

This was the third successive meeting attended by a Departmental officer. Australia's participation in these meetings is in line with the importance it attaches to regional organisations and the South Pacific area generally.

## **Australian foreign aid**

The Department continued to be the principal consultant to the 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 Burma, Indonesia, Malaysia and other countries of South-East Asia.

At the request of the Australian Development Assistance Agency, an officer of the Department visited Indonesian Borneo in December 1974 to examine health facilities there and to recommend future action to improve the health of local communities. Similarly in June 1975, at the request of the Agency, an officer joined a general project team which examined current aid programs in Indonesia and Malaysia.



*In Shanghai, Dr Brian Shea, Director-General of Medical Services, South Australia, shakes hands with a patient who had undergone successful reimplantation of an arm following the removal of a malignant tumour of the bone. The Chairman of the Hospitals and Health Services Commission, Dr Sidney Sax (third from left), and the Director-General of Health, Dr Gwyn Howells, look on. Dr Howells led the first Australian medical delegation on an official visit to China in March 1975.*

### Training of overseas Fellows in Australia

The Department continued to act as a training authority under various Australian and international schemes for overseas trainees in the health field.

In conjunction with the Australian Development Assistance Agency, the Department of Education, and various universities, hospitals, State health authorities and other institutions the Department arranged suitable training programs for overseas post-graduate medical, dental, paramedical and nursing personnel under a number of aid schemes. These included the Colombo Plan, the South Pacific Aid Program, the Commonwealth Scholarship and Fellowship Plan, and the Australia Papua New Guinea Education and Training Scheme. Trainees in the health field sponsored by international bodies such as the UN and WHO or by their home governments are also the responsibility of this Department.

A total of seventy overseas Fellows was placed in training institutions in 1974-75, covering many fields of post-graduate medicine and surgery as well as dentistry, physiotherapy, occupational therapy, laboratory technology, radiography, cardiology, medical records librarianship, health statistics, occupational and environmental health, and post-basic and post-graduate nursing. A further thirteen overseas Fellows attended an international training course in culture and mental health from May to July 1975.

### Other activities

An exchange of visits of medical teams between Australia and the People's Republic of China took place in March 1975. The Australian delegation, led

by the Director-General of Health, comprised senior health administrators and public health officials. The Chinese delegation to Australia was led by Dr Tung Mien-kuo, Deputy Director of the Bureau of Science and Education, Ministry of Public Health. While in Australia the delegation studied health administration, immunology, pharmacology and stomatology.

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.

# Nursing

The focus of the Nursing Section's activities changed during the year. The advisory role of the Section was expanded, and advice was provided to a number of areas within the Department including Aboriginal Health, Occupational Health, Health Services Planning and Research and Establishments and Finance; to the Interim Committee of the Capital Territory Health Commission; and to the Hospitals and Health Services Commission. Other government departments also sought assistance.

Responsibility for the planning and organisation of formal and *ad hoc* courses for nurses under Australian Government aid programs was centralised in the International Health Branch during the year. The Nursing Section provided expert advice on various aspects of post basic and post graduate training.

The Section continued to participate in various Departmental and inter-departmental working parties and committees, including two established by the Hospitals and Health Services Commission; a working party to investigate the integration of the Home Nursing Subsidy Scheme into the Community Health Program; and a sub-committee of the Health Careers Committee, set up to survey nursing manpower.

In addition, the Section Principal was appointed chairman of a sub-committee of the Nursing Advisory Committee, Interim Committee of the Capital Territory Health Commission, to consider the role of the community health nurse in the A.C.T. The Section also represented the Department on the Inter-departmental Standing Committee for Review of Overseas Student Policy, on the inter-departmental team set up by the Public Service Board to review nurse classifications in Government service, and on the Department of Aboriginal Affairs Working Party on Health Manpower. The Section continued to provide the Secretariat for the N.H. & M.R.C. Nursing (Standing) Committee, with the Assistant Principal acting as convener and secretary.

Trends in nursing were studied and liaison was maintained with nursing organisations throughout Australia and with State, national and international nursing authorities. Officers attended a variety of meetings including the annual oration of the New South Wales College of Nursing, the annual meeting and conference of the Institute of Hospital Matrons of New South Wales and the A.C.T., the Trans Pacific Nursing Conference, the council meeting of the Royal Australian Nursing Federation and the annual meeting of the College of Nursing, Australia.

The Section continued to assemble information regarding all aspects of nursing, and is currently revising its manual on Post Basic Courses in Australia. This document, which was originally compiled for Departmental information only, has been requested by and distributed to other nursing and health care organisations throughout Australia.

Visitors to the Section included Professor J. B. Scholte, of the University of Tilburg, Holland; Miss E. Boyd, Assistant Director (Nursing Education)

of the Division of Nursing, Department of Health, New Zealand; Florence Nightingale Scholar Miss Jennifer Jones, Area Nursing Officer with the Leicestershire Area Health Authority, United Kingdom; and two officers from the Western Pacific Regional Office of WHO—Miss Mary Abbott, Regional Adviser on Nursing Education, and Mrs A. Pinsent, Senior Nurse Educator.

# Medical Laboratories

During the year, the Department's pathology laboratories, which are co-ordinated centrally by the Medical Laboratories Branch and administered by the Australian Directors of Health in the States, continued to provide their essential community service to hospitals, medical practitioners and the public in fifteen regional centres throughout Australia. Again the workload of the laboratories—located at Canberra, Cairns, Townsville, Rockhampton, Toowoomba, Lismore, Tamworth, Albury, Bendigo, Port Pirie, Kalgoorlie, Hobart, Launceston, Alice Springs and Darwin—continued to increase.

The total number of tests and examinations carried out in all laboratories was 4.5 million, an increase of 13.8 per cent over 1973-74. This continuing growth placed a severe strain on the resources of the laboratories, but detailed planning is under way to enable the Department to meet the rising demand for pathology services.

## Accommodation

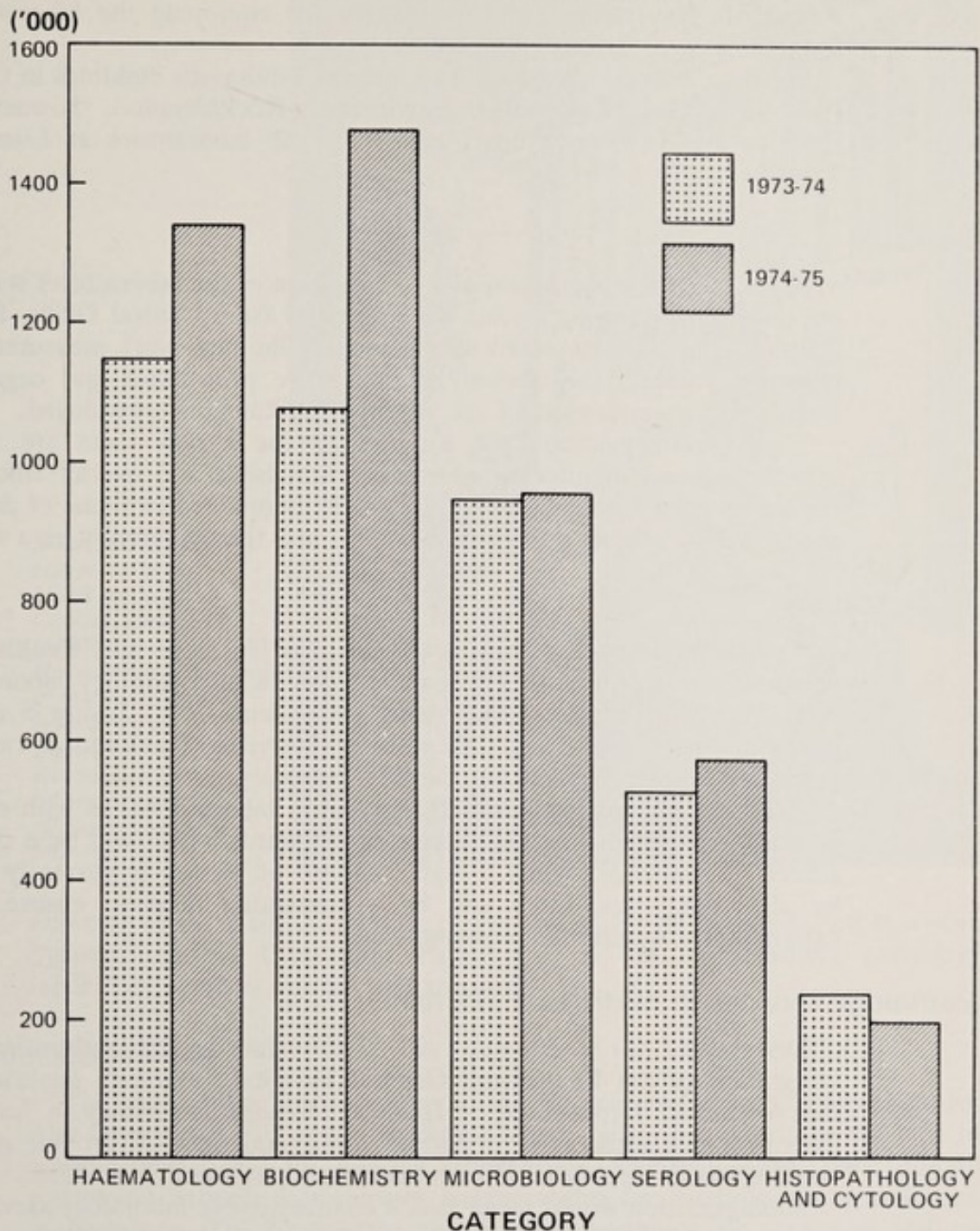
During the year new laboratory buildings were opened in Toowoomba and Albury.

The new building in Albury, built at a cost of approximately \$400 000 and opened in April 1975 by the Minister for Health, replaces the laboratory



*Mr R. B. White, Chairman of the Albury Hospital Board, addresses guests at the official opening in April 1975 of a new pathology laboratory at Albury. The new building replaces one destroyed by fire in 1971.*

NUMBER OF TESTS—CATEGORY OF WORK—1973-74 AND 1974-75



*The numbers of tests carried out by the Department's pathology laboratories increased in all work categories during the year, and resources were stretched to meet the rising demand for pathology services.*

destroyed by fire in December 1971. It has an open plan interior design, is fully air-conditioned, and incorporates modern concepts of layout and planning which ensure efficiency and convenience for both patients and staff. Special facilities were incorporated for visiting audiologists from the National Acoustic Laboratories.

The new building in Toowoomba was jointly opened in March 1975 by the Australian and Queensland Ministers for Health. The building was constructed under an agreement between the Queensland and Australian



Governments, whereby the State provided the building 'shell' and the Australian Government was responsible for equipping the laboratory, and for staffing and administering it.

Planning is currently under way for new laboratory buildings in Canberra, Port Pirie, Hobart, Bendigo, Launceston, Rockhampton, Townsville and Darwin, and extensions are planned for the laboratories at Lismore and Tamworth.

## Reviews

A review of the operations and organisation of the laboratories was carried out during the year by a joint working party from Central Office. Particular attention was paid to technical work areas, the new work measurement and reporting scheme, the clerical/administrative procedures and organisation, and classification aspects of the various staff categories employed.

The recommendations put forward by the review team are aimed at maintaining and monitoring operational standards and overall efficiency, to ensure that the required level of service is maintained in terms of developing need by the medical profession, hospitals and the community as a whole.

## Accreditation

A working party has been set up by the Hospitals and Health Services Commission to formulate a scheme to accredit all pathology laboratories in Australia. The primary objective of the scheme is to ensure a continued high standard in the provision of pathology services. The Laboratories Branch represents the Department on the working party.

Accreditation will assist the Department's laboratories, as with others, by providing external objective criteria on standards which will be a continuing source of challenge. While a high standard of service is currently provided by all laboratories, there will be a continuing need to ensure that the externally-set standards are maintained.

## Pathology services in north-east Tasmania

Discussions are continuing with Tasmanian health authorities on the integration of the Launceston General Hospital pathology department and the Australian Department of Health pathology laboratory in Launceston. This proposed integration is part of the overall plan to provide a comprehensive health care system for the north-east region of Tasmania.

Amalgamation would mean that a comprehensive laboratory service would be provided free to all hospitals, doctors, State health services and other users in Launceston and the surrounding region. The service would be funded, administered, staffed and operated by this Department.

## Conference

A conference of Departmental pathologists was held in Canberra in March 1975—the first of its kind since 1972. The conference was primarily a vehicle for Departmental experts to share their experience and meet common problems and, in line with this objective, most of the discussion papers were presented by the Departmental officers.

Discussion topics included administration and policy as well as scientific matters. A demonstration of biochemical equipment, virological and serological techniques was given at the Canberra laboratory. Dr V. McGovern,

*Miss Lorrene Nation completes a full blood count on a Coulter S machine installed in the Haematology Section of the pathology laboratory at Toowoomba. Extensions to the laboratory were officially opened in March.*



Director of the Fairfax Institute of Pathology, Royal Prince Alfred Hospital, Sydney, who is Consultant Pathologist to the Department's pathology laboratory service, was a guest speaker.

### Equipment Committee

The composition and functions of the Equipment Committee were revised. The Committee will now provide advice on policy in relation to the type of equipment suitable for various laboratories, standardisation, relocation of equipment between laboratories, arrangements for 'back-up' equipment, and maintenance. The Committee also has responsibility for arranging and reviewing evaluation reports on particular types of equipment, either from Departmental laboratories or from outside sources.

The revised composition and functions of the Committee will allow the Medical Laboratories Branch to develop a sound basis for forward planning which will provide as uniform an approach as possible, compatible with efficient and economical management in the light of varying local factors.

### Training scheme

During the year the format of the traineeship for Trainee Technical Officers (Medical Laboratory) was modified to allow trainees to be appointed to Departmental laboratories in New South Wales, South Australia, Western Australia and the Northern Territory. Previously trainees were not attached

to laboratories in these locations as suitable courses were not available at local technical colleges.

The new format of the traineeship will consist of periods of on-the-job training at the home laboratory, with periods of full-time study at the Canberra Technical College. The aim of this new approach is to recruit local people who, on completion of their traineeship, will remain at their home laboratory. In the past, training was centred in Queensland and graduating trainees were posted to Departmental laboratories according to demand.

Response to the advertisements for the new training scheme has been encouraging, and the first intake of trainees from the centres concerned will begin training in 1975.

# National Acoustic Laboratories

The demand for services provided by the National Acoustic Laboratories continued to increase during the year. The Laboratories provide a free audiological service, including the fitting of hearing aids to children under the age of 21 years, pensioners, ex-servicemen, and several other groups. A technical advisory service on hearing conservation and the investigation of noise problems is also provided to the Armed Services and to Australian Government Departments and instrumentalities.

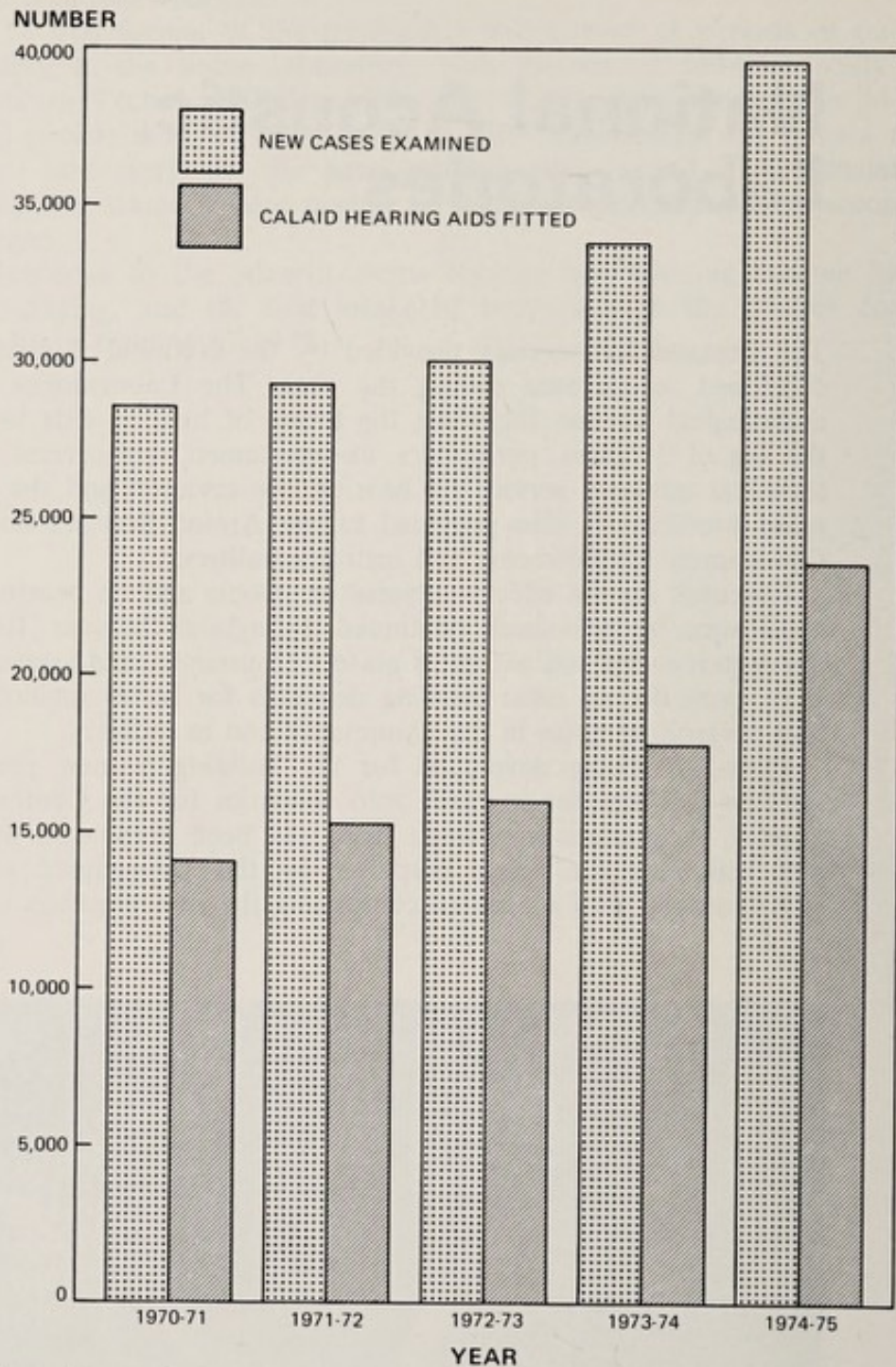
Research on the effects of noise on people and on hearing aids and their application to individuals continued throughout the year. Resources for the development and evaluation of noise measurement and assessment techniques were expanded to meet growing demands for better methods of measuring and controlling noise in the community and in industry.

Plans are being developed for the building of new premises including modern facilities for research into acoustics for the Central Laboratory in Sydney. A preliminary design brief has been completed and sketch plans and estimates are being prepared by the Department of Housing and Construction, with a view to completing the new premises in 1979.



*Audiologist Miss Lorraine Goodall inserts an earmould into the ear of a child at the National Acoustic Laboratories central laboratory in Sydney. The child is wearing one of the new range of hearing aid harnesses produced by NAL.*

NEW CASES EXAMINED AND CALAID HEARING AIDS FITTED—  
1970-71 TO 1974-75



*The demand for audiological services from the National Acoustic Laboratories increased still further during the year. It is proposed to appoint additional staff in the coming year to help meet the demand.*

## Services and development

### Hearing and hearing aid services

The number of people seeking audiological services again increased during the year. This led to difficulties in providing a high quality service without unreasonably long waiting times. However, these difficulties should be overcome in the coming year when additional staff are appointed. It will also

allow further developments to be made in other areas, particularly those relating to services for hearing-impaired children, hearing aid fitting and after-care procedures and aural rehabilitation.

The number of hearing aids produced during the year increased by more than 80 per cent and steps were taken to expand resources for the development of new models. A medium-powered model of the Calaid H behind-the-ear aid was introduced and a new low-powered version is currently being developed.

Because of delays in introducing a high-powered behind-the-ear aid, due to problems experienced by a contractor in developing a suitable amplifier, a quantity of 6000 high-powered, behind-the-ear hearing aids are being purchased from overseas for children and eligible adults. The program for the fitting of these aids will extend over a period of two years.

Further work was undertaken on the development and refinement of new methods of selecting and evaluating hearing aids, with particular reference to the performance of hearing aids when being worn. Reports describing results of these investigations have been accepted for publication in various local and overseas journals.

In order to study overseas trends in the selection and fitting of hearing aids, an audiologist from Central Laboratories, Sydney, and another from the Melbourne Hearing Centre, made separate overseas visits during which a study was made of leading organisations in the United States, England, Denmark and Sweden.

A new subsection responsible for the development of methods to evaluate central auditory disorders is now in operation. The psychologist in charge of this section is at present in the United States on an eighteen-month Australian Government Postgraduate Scholarship, studying the latest techniques in the field.

NAL audiologists played an important role at the first Conference of the Audiological Society of Australia, held in Sydney in September 1974. The Laboratories' contribution included seven papers and a video demonstration on the testing of young deaf children. A number of other courses and conferences were also held during the year. These included seven basic training courses for newly appointed audiologists, an advanced course for more experienced audiological staff and an intensive course in the principles of audiology for ear, nose and throat registrars from hospitals throughout Australia.

In order to increase public awareness of the problems of deafness, and to stress the need for early detection and remedial action, the Laboratories initiated or collaborated in several publicity measures. These included the preparation of an information card that is now distributed to all parents of young babies (with Maternity Allowance cheques issued by the Department of Social Security), and the presentation of an exhibit on NAL services for deaf children at the Australian Paediatric Association Conference, held in Canberra in April 1975. Advice was also given to the Australian Broadcasting Commission in the preparation of an award-winning radio documentary, *The World of JK*, which dealt with the problems of a hearing-impaired child.

### Special program for severely deaf children

During the year particular attention was given to the hearing aid requirements of severely and profoundly deaf children. The proposition that all of these children should be fitted with behind-the-ear hearing aids, rather than



*An exhibit designed to increase public awareness of the problems of deafness and the need for early detection and remedial action was prepared by the National Acoustic Laboratories during the year. The display, which was mounted at the Australian Paediatric Association conference in Canberra, also explained developments in medical ultrasonics.*

body-worn aids, received much publicity among parents, especially since the visit to Australia of an American teacher of the deaf late in 1974.

However, the Laboratories are convinced that the correct approach is to provide the type of hearing aid which gives the most useful hearing to the child. A middle-of-the-road course between those prominent overseas authorities who advocate the use of a robust body-level aid for all children and those who claim that all should be fitted with behind-the-ear aids has therefore been adopted.

When the behind-the-ear aid becomes available, a program will be started to re-evaluate all children currently using body-worn aids to determine whether a change would be beneficial. To assist in this assessment it is proposed to expand the liaison between teachers of the deaf and Laboratories audiologists.

The first issue of *NAL News* appeared in January 1975 and was distributed throughout Australia to parents of hearing-impaired children, teachers of the deaf and other interested people. This bi-monthly publication is designed to facilitate the exchange of information between NAL, parents and other groups concerned with hearing-impaired children.

### Noise investigations and acoustical advice

During the year a Noise Evaluation Section was set up to evaluate noise standards and develop new and more accurate methods of measuring and

assessing noise. Investigations begun by this section include the application of new types of equipment for measuring and assessing workers exposed to industrial noise and for measuring vehicle noise. An evaluation of standards for rating noise in residential areas is also in progress.

Professional assistance given on problems associated with noise and hearing conservation included an investigation of noise levels in the Holsworthy/Liverpool area of Sydney, as the first stage of a complete hearing conservation survey for the Australian Army.

A number of courses on noise control and hearing conservation were held, including instruction for engineers employed by Australian Government Departments. Talks covered such topics as physics of sound, sound measuring devices, measurement, analysis and reduction of noise, hearing conservation and ear protection.

Another important project involved the acoustical evaluation of many types of ear protectors.

## Research

### Audiology

A new method of deriving binaural percentage hearing loss from hearing threshold levels of the two ears was derived from theoretical considerations, verified empirically, and incorporated in the final version of the NAL procedure for determining percentage loss of hearing. This final version of the



*The directional hearing of a patient is measured with earphones mounted on earmuffs by audiologist Mr Denis Byrne, of the Audiology Services Section of the National Acoustic Laboratories central laboratory in Sydney.*



procedure has been accepted by the Otolaryngological and Audiological Societies of Australia as the best available procedure for determining degree of hearing loss on a percentage basis.

In order to determine whether there are any adverse effects of hearing aid use on normal auditory functions, an evaluation was made of auditory functions of normal hearing subjects when wearing a specially constructed high fidelity hearing aid.

Results show that the subjects suffered a severe reduction of auditory spatial perception in the vertical dimension but only a slight reduction in the horizontal plane. For technological reasons, this effect of wearing hearing aids is difficult to avoid at the present time. In order to improve auditory spatial perception, it will be necessary to use hearing aid transducers with a frequency range extending to 12kHz and to mount the earphone and microphone in the ear canals.

## Psychoacoustics

Further work was carried out on the project *Effect of Urban Noise on Children's Hearing*, which is part of a program designed to find out if existing environmental noise levels are damaging to hearing, and to develop criteria for safe levels of environmental noise. Additional children were tested during the year, bringing the total number to 459.

Data analysis carried out during the year indicated no evidence that Sydney urban noise had an effect on children's hearing. However there were differences in hearing associated with the conditions revealed by the medical history, the results of ear, nose and throat examination, and electro-acoustic impedance tests. The pattern of association between these variables and hearing acuity also appeared to differ between schools.

A proposal that the study be repeated in other countries where environmental noise is known to exceed the noisiest areas of Sydney has been made to the International Commission on Biological Effects of Noise. The proposal was favourably received and details were requested by the Commission for circulation to noise scientists in other countries.

A more extensive analysis is being made of the large amount of data obtained on the noise environment of the eleven Sydney schools used in the study. Analysis of the audiometric data is also continuing to ascertain the incidence of hearing loss and aural disease among children of this age group attending State primary schools in Sydney; the relative efficiency of two of the methods of testing used in detecting minor aural disease; and the best estimate of the normal or 'reference' level of hearing with which the hearing of deaf children can be compared.

A series of studies was made to assist the development of a binaural sensory aid—that is, a device which uses ultrasonic sound waves to enable blind people to sense the position of objects in their vicinity. The development of this device was carried out in New Zealand and research work was undertaken at the Laboratories to determine the effect of changes in the method of connecting the device to the ear.

The problems associated with these changes have been answered to the satisfaction of mobility instructors and the manufacturers of the device. A report has been written for publication. A chapter on audiological and psychoacoustic aspects has also been prepared for inclusion in the binaural sensory aid instructors' manual, which should receive world-wide distribution because of international interest in the device.

# Ultrasonics Institute

On 20 August 1974 the Minister for Health approved the establishment of an Ultrasonics Institute to provide research and advisory services on the use of ultrasonic waves for the diagnosis and treatment of disease. The new body continues and expands the work previously undertaken by the Ultrasonics Research Section of the National Acoustic Laboratories.

The Institute was created to fulfil a growing need for research into medical ultrasonics, and in recognition of the international pre-eminence of Health Department scientists in that field. Because of this world-wide recognition, members of the research team are in constant demand for lecture tours by overseas professional and scientific organisations and have, by invitation, contributed chapters to several text books on the use of ultrasound in medicine. Approximately 125 research papers have been published.

The main research effort has been concentrated on developing the techniques of pulse echo ultrasonic echography. Commencing in 1959 with the design of an echoscope for examination of the pregnant uterus, the technique has proved successful in two main ways. It avoids the possibility of ionising radiation damage that is associated with X-ray exposure and it provides clinically useful information that cannot be obtained from X-ray examination.

The technique is particularly useful for diagnosing the period of gestation, for determining the number of foetuses and foetal abnormality in early pregnancy, and for assessment of foetal size and growth rate, placental localisation and pre-natal analysis of foetal condition in late pregnancy.

Ultrasonic echography has been developed successfully in many other areas of medicine. In ophthalmology it has been used to demonstrate the presence and nature of intraocular and retrobulbar lesions. Although screening for early detection of breast disease is not yet practicable, echography allows the location, size and number of breast lesions to be determined and their nature to be diagnosed.

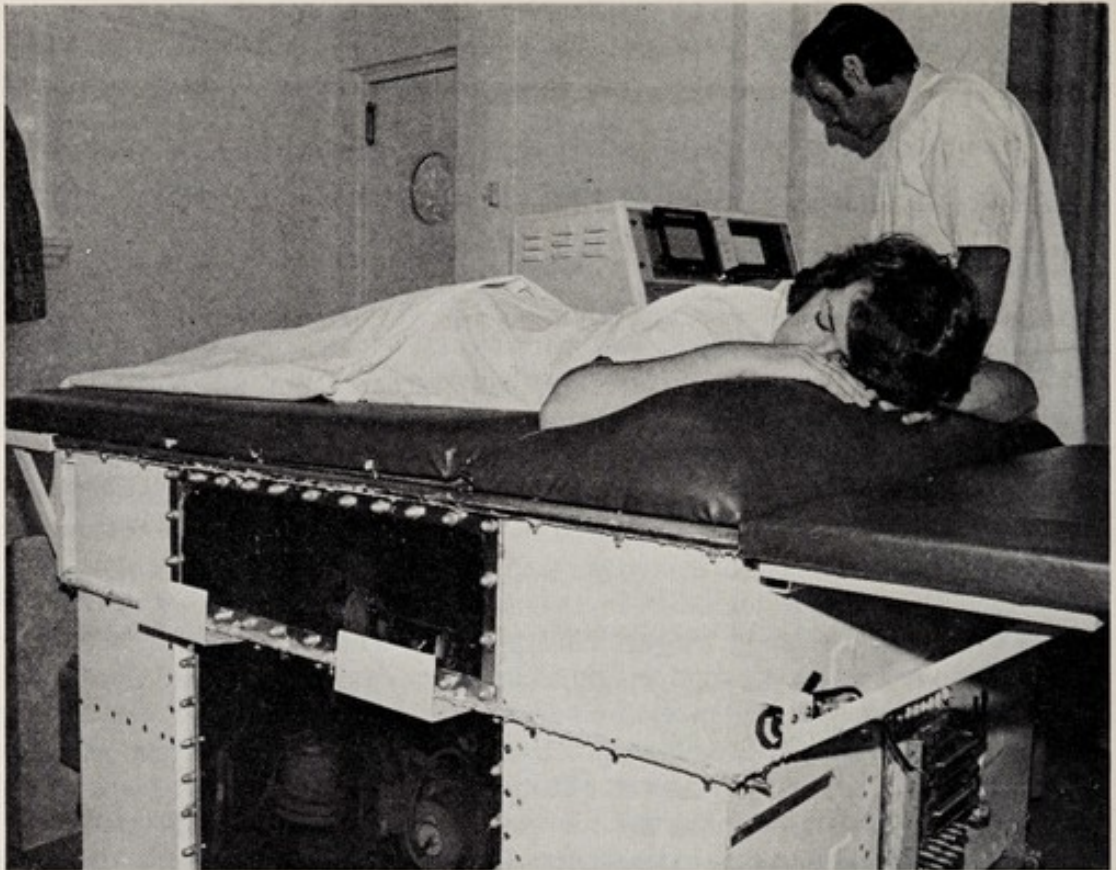
The abdominal organs such as liver, kidneys, spleen and pancreas can be visualised and areas of altered tissue structure evaluated. Recent developments have permitted evaluation of the thyroid gland and infant brain.

Research has also been undertaken into the surgical application of ultrasonic waves for the treatment of Meniere's disease. Investigations have been made of the effect of ultrasound on a variety of tissues and biological systems.

## Organisation

The Institute is made up of four sections—Advanced Techniques, Engineering Research, Echography and Biology.

The Advanced Techniques Section investigates new techniques for the use of ultrasonic waves in the diagnosis of disease. Work includes basic research on ultrasonic wave propagation, imaging and digital signal processing and formulation of new techniques, together with an investigation of



*Technical Officer Mr George Radovanovich, of the Ultrasonics Institute, monitors equipment during an examination of a pregnant woman, with the prototype of the new U.I. Octoson echoscope at the Royal Hospital for Women, Sydney. The multi-scan echoscope, developed by Health Department scientists, is now being manufactured under licence by an Australian company for world-wide distribution.*

their properties, design of instrumentation procedures to implement the techniques, and preliminary clinical trials.

Engineering Research staff are concerned with incorporating advances and improvements made in technology and engineering into present and future ultrasonic equipment. Research areas include the use of phased array techniques on ultrasonic transducer arrays to obtain electronic control of the shape and position of the ultrasonic beam, the application of Doppler techniques for measurement of blood flow and imaging of moving structures, and the design of integrated circuits for ultrasonic transducer arrays and for specialised echoscope requirements. The Section also undertakes research into transducer and allied technology for diagnostic and surgical investigations.

The Echography Section applies the techniques and instrumentation devised and developed by the Advanced Techniques and Engineering Research Sections to clinical situations. Considerable research and investigation are usually required before an ultrasonic system gives optimum performance in a specific application. Thus a machine which is specially designed for dealing with the breast, for instance, requires considerable modification for use on the thyroid.

Work in this Section is based on the team approach, with a medical consultant, a research engineer and a technical officer working in close co-operation. Such an approach enables each echoscope to provide the best possible pictorial results from the technical point of view. In addition, it also allows the instrumentation to be optimised and diagnostic criteria to be

developed so that specific diagnostic information can be obtained for each area of investigation.

Research into the effect of ultrasound on biological tissues is the responsibility of the Biology Section. Two aspects are currently being investigated—the surgical applications of ultrasonic waves for treatment of disease, and the toxicity of ultrasound as used in diagnosis.

In view of the growing awareness of the dangers inherent in many of the diagnostic modalities at present in use, toxicity studies are particularly important. Although it is known that the clinical dosages of ultrasound at present in use are well below the danger level, it is not yet possible to specify which diagnostic dosage levels are likely to affect tissue.

## Results

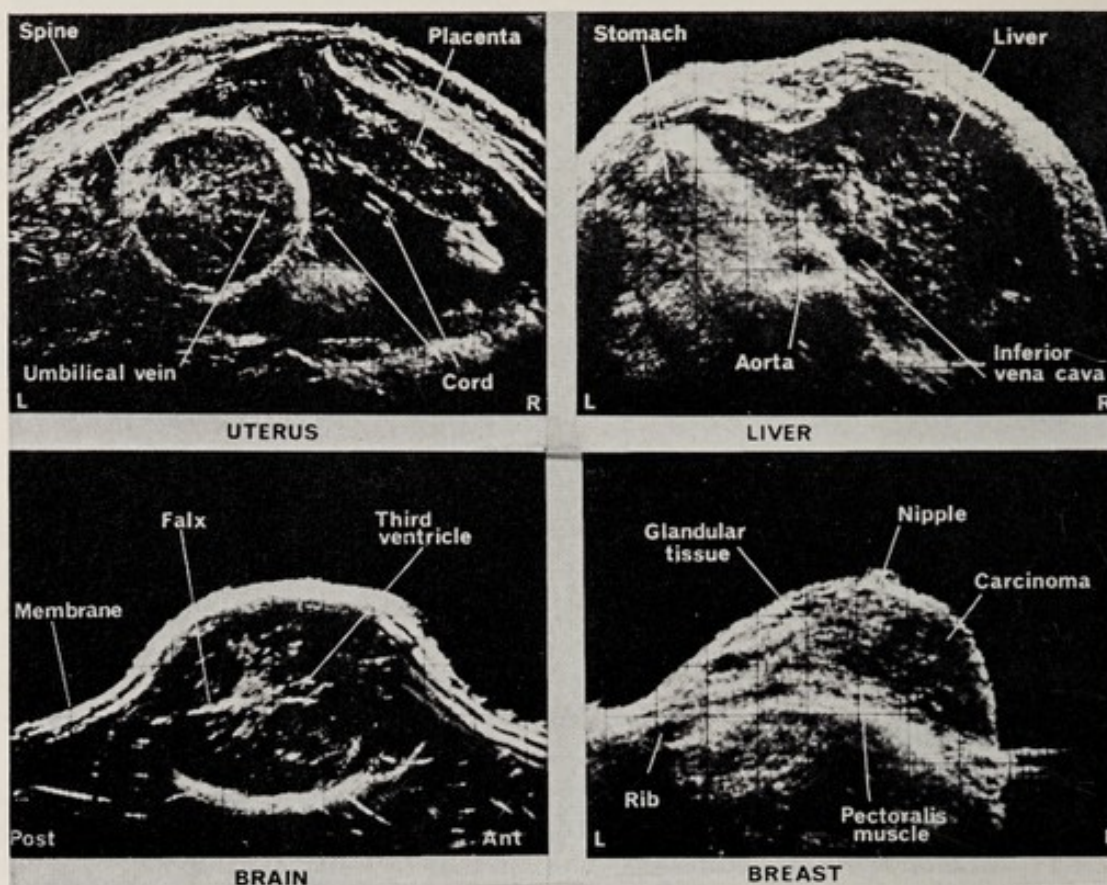
During the year the development of a new multi-transducer general purpose ultrasonic echoscope, the U.I. Octoson, was completed. The Octoson enables complete individual ultrasonic cross sectional pictures to be obtained within a period as short as one second. With further development it will be possible to undertake a complete ultrasonic examination with the Octoson in about one minute compared to the twenty to thirty minutes needed with the present range of machines.

This reduction in time will mean that up to fifty patients a day may be examined and blurring effects in the echograms resulting from patient movement will be minimised. The latter is of particular advantage in examination of the pregnant uterus, because of movement of the foetus, and in examination of the liver because of movement due to respiration. The Octoson is coupled to the patient by a water-bed method with a detachable membrane, and is suitable for examining the abdomen and pregnant uterus, infant brain, breast and thyroid.

A licensing agreement has been reached with an Australian company, Nucleus Holdings Pty Ltd of Sydney, for the commercial production of the U.I. Octoson—the first agreement of its kind to be negotiated by the Health Department. The manufacture of highly complex equipment of advanced standard represents a major advance by the Australian medical equipment industry and gives Australian hospitals an opportunity of buying equipment that has been designed and developed in Australia.

Work is continuing on the development of instrumentation techniques and diagnostic criteria for examination of the pregnant uterus, abdominal organs, infant brain, eye, breast and thyroid. An electronically-scanned echoscope for cross-sectional display of the heart has been developed and the practicability of the technique has been proved by building half of the array and half of the electronic circuitry. When completed, the instrument will use an eighty-element transducer with sixteen elements in use at any one time. The image will contain sixty-four lines of sight, and real-time viewing will be provided by obtaining a new picture fifty times a second.

A computer has been used for investigation of basic resolution improvement techniques and for ultrasonic data acquisition and processing. During the year, programs were written to input ultrasonic data directly from the U.I. Octoson, while driven under computer control. The data were reformed into a picture with the computer, and output was through a cathode ray tube display. It was found that a picture of 160 x 200 points retained all the detail visible in the normal echogram obtained at the same time. Further work is being done to input pictures to the computer from a TV signal.



*The quality of 'pictures' produced by an echoscope is a major factor in the extent and accuracy of diagnosis. These polaroid photographs of scans made by the prototype of the U.I. Octoson show the detail visible in various soft-tissue organs which can be examined with the device.*

The microphonic response of the cochlea to auditory stimuli has been used to study the effect of ultrasound on various parts of the inner ear of cats. Work continued also on a project involving the effects of ultrasound on the eye. The evaluation of the histological effect of low level intensity of ultrasound, as used in diagnostic ultrasonography, is continuing.

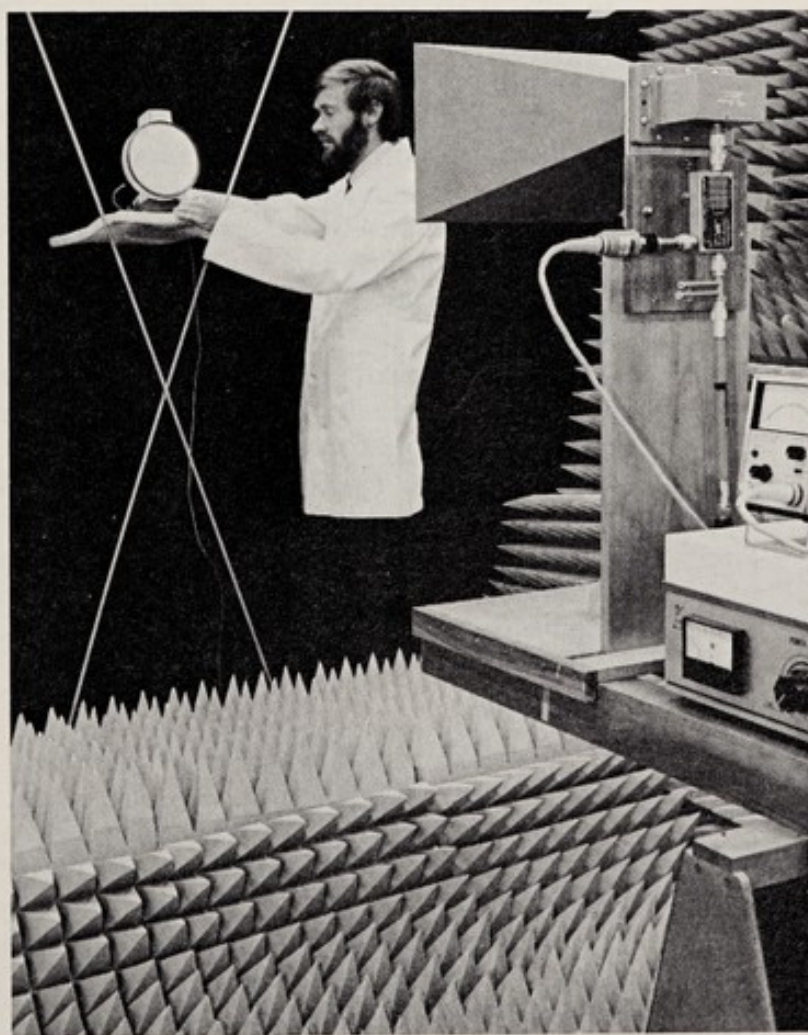
During the year, an investigation into the effect of low intensity ultrasonic energy on the rate of regeneration in rat livers was begun. The surgical and histological techniques have been established and the investigation is continuing. The treatment of Meniere's disease by ultrasonic irradiation continued and the evaluation of a group of thirty-three patients with a post-operative survival time averaging four years indicates a success rate of approximately 75 per cent.

# Australian Radiation Laboratory

During the year, the Australian Radiation Laboratory continued to provide advisory scientific services in nuclear medicine and in the physical aspects of medical radiology, including radiotherapy.

The Laboratory maintains standards for the precise measurement of ionising radiations and of radioactive substances, and procures and distributes all radiopharmaceuticals used in Australia for diagnostic investigation and treatment of patients. It also performs quality assurance studies of these radiopharmaceuticals, maintains a continuing surveillance of the levels of radioactivity in the Australian environment and provides an advisory service on the protection of persons against ionising radiations, microwaves and lasers. The scientific services of the Laboratory are necessarily supported by related scientific research and investigations on ionising and non-ionising radiations.

*Facilities to calibrate and check the performance of instruments used for monitoring microwaves have been established by the Australian Radiation Laboratory. Here physicist Mr Wayne Cornelius positions a microwave monitor prior to its exposure to microwaves emitted from the horn (at right). Such calibrations are carried out in a room lined with absorbent material of the kind shown in foreground to prevent interference by microwaves reflected from the walls.*



During the year officers of the Laboratory assisted in the development of Australian occupational health standards and in the preparation of a draft comprehensive code of safe practice in the mining and milling of radioactive ores. Another matter of particular interest has been the study of X-rays emitted by colour television receivers.

Unfortunately the work of the Laboratory and its productivity are hampered by the sub-standard accommodation and inadequate area of its present premises. A proposal to construct new premises in the Melbourne suburb of Yallambie has been approved by the Government, but funds have not yet been provided to enable building work to begin.

## Radioactivity in the environment

During 1974 France carried out a further series of tests on nuclear devices in the atmosphere at its South Pacific test centre. Again the workload of the Laboratory was increased by the need to measure the short-lived radio-nuclides which reached Australia.

The Australia-wide programs for monitoring fresh fission product fallout from the 1974 French tests began on 24 June 1974 and continued into January 1975. Three different, but integrated, sampling programs were operated—continuous air sampling was carried out at six major population centres, filters being changed twice weekly; fallout deposit samples were collected from each of twenty-five centres daily; and samples of milk for the measurement of iodine-131 concentrations were obtained daily from each of the nine major Australian milk-producing areas.

In all, 7810 samples were returned to the Laboratory for assay. Daily and weekly reports of the results of measurements made on the samples were sent to appropriate authorities.

In addition to the special programs described above, the Laboratory maintained its normal routine surveillance of radioactive materials in the Australian environment, including the monitoring of the long-lived radio-nuclides, strontium-90 and caesium-137, resulting from all tests of nuclear devices in the atmosphere.

The whole-body monitor at the Laboratory continued to be used extensively during the year. This instrument has proved particularly useful for the measurement *in vivo* of the potassium levels in hospital patients. It has also been used to assess the levels of caesium-137 in samples of the population, to check possible contamination of people who work with unsealed radioactive materials, and to detect and identify impurities in radiopharmaceuticals.

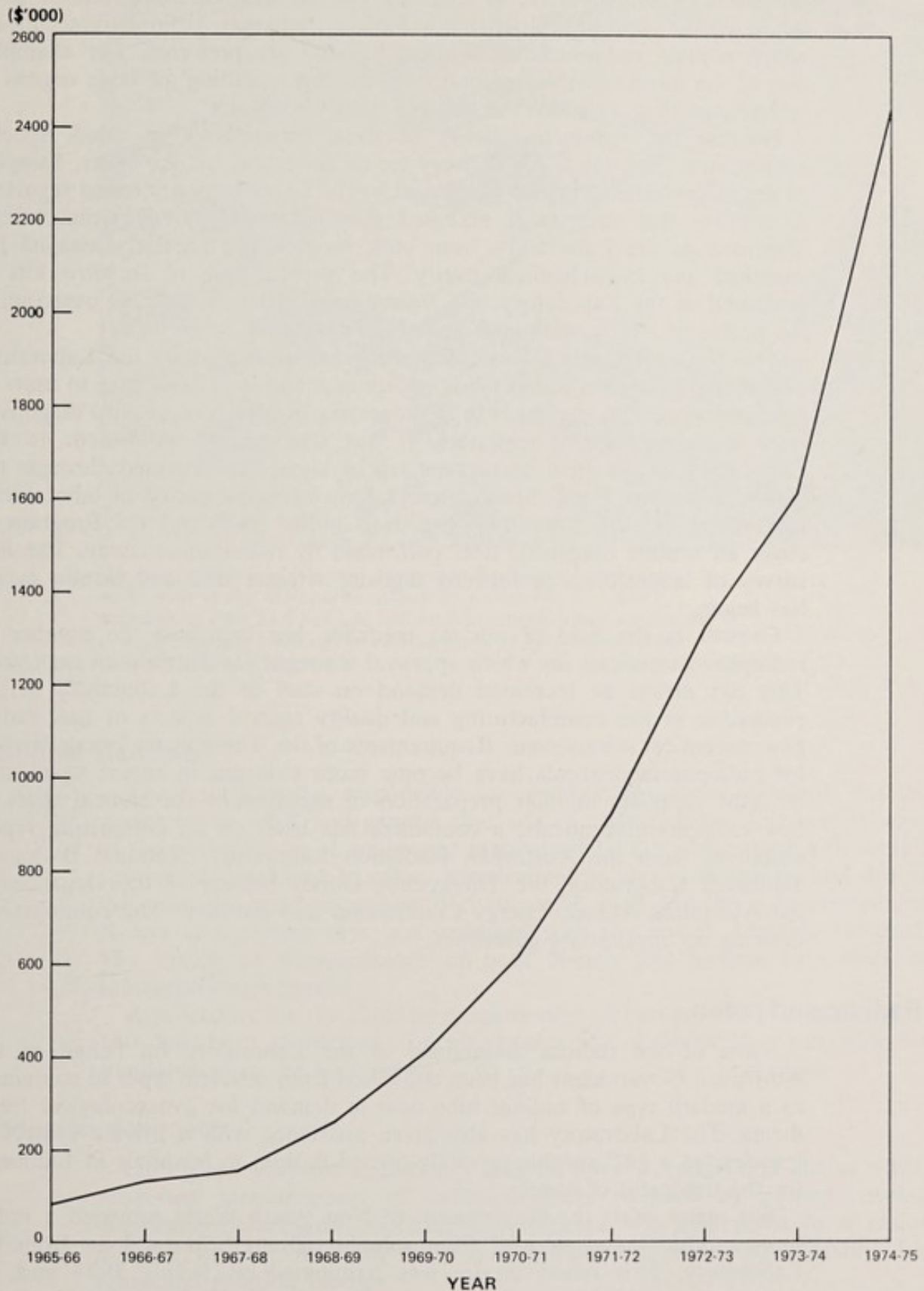
Advice was given to a number of Australian Government Departments about the use of radioactive materials in projects which will release these materials to the environment.

## Radiopharmaceuticals

The Laboratory is the central procurement authority for the purchase and distribution of all radiopharmaceuticals used in Australia for medical diagnosis and treatment. Radiopharmaceuticals provided for established routine medical purposes are issued free of charge, the cost being borne by the National Welfare Fund. Expenditure for the year was \$2 439 415.

The majority of the radiopharmaceuticals provided by the Laboratory are supplied from the Australian Atomic Energy Commission but some are obtained from Europe, India, Israel and the United States.

EXPENDITURE FROM THE NATIONAL WELFARE FUND ON RADIO-PHARMACEUTICALS FOR MEDICAL DIAGNOSIS AND THERAPY PURPOSES—1965-66 TO 1974-75



*Growth in the field of nuclear medicine in Australia has increased the demand for radiopharmaceuticals for medical diagnosis and treatment. The Australian Radiation Laboratory spent \$2.4 million on the purchase of radiopharmaceuticals during the year.*



Among their many medical applications, radiopharmaceuticals provide a rapid means of studying the dynamic behaviour of body organs and so provide valuable methods of assisting clinical diagnosis. To reduce to a minimum the exposure of patients to ionising radiation, radiopharmaceuticals which contain radionuclides of short half-life are preferred. For example, one of the most valuable radionuclides for the 'scanning' of body organs is technetium-99m, of which the half-life is only six hours.

Because the radioactive decay of these materials is so rapid, special arrangements are made for delivery to, or collection by, the users. Samples of the radiopharmaceuticals purchased by the Laboratory are tested regularly to confirm that they meet accepted standards, and radiopharmaceuticals dispensed at the Laboratory from bulk supplies are regularly assayed for chemical and radiochemical purity. The performance of *in vitro* kits is evaluated at the Laboratory and assistance is given to users in overcoming the problems which sometimes arise in their use.

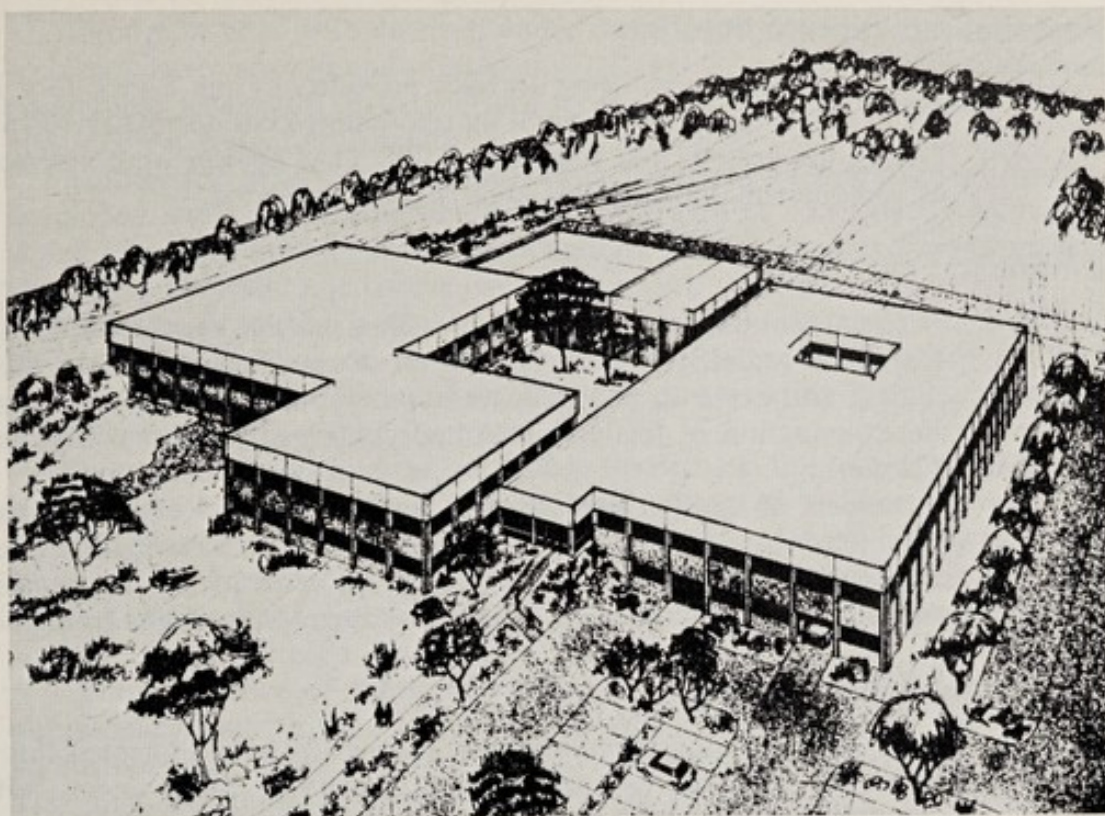
The National Quality Evaluation Program, instituted by the Laboratory in January 1974, has found ready acceptance and is of assistance to users in the maintenance of standards in the reporting of results of *in vitro* diagnostic tests using radioactive materials. It has also proved of benefit to the Laboratory in the field assessment of *in vitro* kits provided through the National Welfare Fund. Seven surveys have been completed of laboratories performing *in vitro* thyroid testing. It is hoped to extend the Program to cover all routine diagnostic tests performed by radioimmunoassay. The first survey of laboratories performing digoxin, vitamin B12 and insulin assays has begun.

Growth in the field of nuclear medicine has increased the number of radiopharmaceuticals for which approval is sought for distribution each year. This has meant an increased demand on staff of the Laboratory in the evaluation of the manufacturing and quality control aspects of new radiopharmaceutical submissions. Requirements of the Therapeutic Goods Branch for radiopharmaceuticals have become more stringent in recent years and, to assist suppliers in their preparation of submissions for clinical trials of new radiopharmaceuticals, a committee has been set up comprising representatives from the Australian Radiation Laboratory, National Biological Standards Laboratory, the Therapeutic Goods Branch of the Department, the Australian Atomic Energy Commission and industry. The committee is drawing up appropriate guidelines.

## Radium and radon

Some of the radium maintained at the Laboratory on behalf of the Australian Government has been converted from obsolete types of containers to a modern type of radium tube now in demand for gynaecological treatments. The Laboratory has also given assistance with a private project to transfer, as a gift, surplus privately-owned radium to hospitals in Indonesia for the treatment of cancer.

For many years the Government of New South Wales provided a radon service using radon derived from soluble radium held on loan from the Laboratory. This radon service was terminated on 1 July 1974 and, by arrangement with the authorities in New South Wales, officers of the Laboratory recovered the radium from solution and returned it to the Laboratory. Since 1 July 1974 radon has been supplied to New South Wales direct from the radon service operated by this Laboratory.



*An artist's sketch of the new Australian Radiation Laboratory to be built in the Melbourne suburb of Yallambie. The new building, to cost \$3.6 million, will enable activities now conducted in eight separate buildings in various parts of Melbourne to be centralised under one roof.*

## National standards

The Laboratory is responsible for maintaining official standards for the measurement of X and gamma rays and of radionuclides. Intercomparisons of the performance of equipment maintained by the Laboratory with similar equipment developed in other organisations is always desirable, and during the year an intercomparison of equipment used for the measurement of X-rays and gamma rays was arranged with the Royal Adelaide Hospital. The results of measurements of both X-rays and gamma rays were in satisfactory agreement.

A procedure for the accurate measurement of barium-140 plus lanthanum-140 has been developed. In all, twenty-five radionuclides can now be standardised in the Laboratory.

## Radiation dosimetry

During the year the Laboratory assisted those hospitals and clinics which requested measurements of radiation doses received by patients during diagnostic radiological procedures. Assistance was also given to a major hospital in Melbourne in the physical aspects of treatment planning for tangential rotation therapy.

The Laboratory is taking part in an international 'postal survey' on the reliability of dosimetric methods. The survey has been arranged by the International Atomic Energy Agency and the World Health Organisation as a joint project.

## Personal radiation monitoring

The personal monitoring services provided by the Laboratory include the use of film-badges and of small thermoluminescent dosimetry (TLD) devices. During the year 92 132 films and 2 208 TLD devices were assessed. The use of computer methods in this area is being extended.

## Diagnostic radiology

The Laboratory continued to provide a service on the physical aspects of diagnostic radiology. The planning of X-ray departments in hospitals and clinics, assistance in the preparation of specifications for equipment, and the examination of tenders submitted continued to be an important part of this work.

Projects of special interest were an investigation of radiopaque markers suitable for incorporation in surgical swabs, and the evaluation of the relative radiographic performance of several X-ray units in one hospital department with the object of achieving uniform radiographic results from them.

## Protection against radiation

Reports from the United States of America have indicated that particular brands of domestic colour television receivers could, under certain 'fault' conditions, emit significant amounts of X-rays. As a consequence, the Laboratory intensified its survey of colour television receivers to determine levels of X-ray emission under normal and 'fault' conditions of operation.



*Mr Peter Burns, a physicist at the Australian Radiation Laboratory, monitors a prototype domestic color television receiver to check X-ray emissions. Such measurements are made under normal conditions as well as under induced fault conditions which could give rise to increased emissions.*

Although X-rays were detected under some 'fault' conditions, no television receivers have been found which emit X-rays in excess of the maximum permissible levels for such receivers recommended by the National Health and Medical Research Council.

Facilities for generating and measuring microwave radiation were further developed and extended, particularly in the region of 434 MHz, a frequency which is widely used in medicine. Calibrations of microwave monitors and surveys of domestic microwave ovens continued.

Studies on protection against laser radiations also continued, with emphasis on safety in the use of lasers of relatively low power because of their increasing application in industry. Facilities for studying the characteristics of protective goggles were improved.

Other matters of interest included studies of the potential radiation hazards associated with the mining and milling of radioactive ores, the development and calibration of a personal monitor for estimating exposure of people to airborne radioactivity, the safe transport of radioactive substances, and safety assessments of various kinds of consumer products containing radioactive materials.

Technical advice on matters pertaining to protection against ionising and non-ionising radiations was sought by Australian and State Government authorities. An intended survey of all sources of radiation in the Northern Territory had to be postponed as a result of cyclone Tracy.

### Support services

The Technical Services Section continued to provide the mechanical and electronic engineering services necessary for the efficient working of the Laboratory. The Administration Section and Library also maintained their wide range of essential support services to all areas of the Laboratory.

# Australian Dental Standards Laboratory

The Australian Dental Standards Laboratory continued throughout the year to play a major role in dental health through its services to the dental profession and to technicians, laboratories and the dental trade generally. The Laboratory has a wide range of facilities for testing dental materials and instruments and allied medical instruments.

## Acceptance of dental materials

The program of testing samples submitted by manufacturers and distributors continued at a high level, together with regular check testing for quality control.

Most distributors, when considering importing new materials, insist that a sample be sent first to the Laboratory. Products are accepted for distribution only if and when they comply with the appropriate standards or, if standards are not available, when they satisfy tests devised by the Laboratory. As most dental materials are imported, these procedures ensure adequate control of the standards of materials available to Australian dentists and dental laboratories.

Technical assistance for Australian manufacturers also continued throughout the year. The main dental materials produced in Australia are amalgam and gold alloys, orthodontic wires, waxes and gypsum products. Expansion to include other materials is being considered by some manufacturers and assistance is continually sought during the developmental stages. Batch testing is conducted later.

## Advisory services

The Laboratory again provided a wide range of other advisory services, including an educational program on the mixing or processing of dental materials. The program, for dentists, auxiliaries and the dental trade generally, comprises lectures and instructional visits to the Laboratory, together with provision of literature. These services are in constant demand.

A number of manufacturers began production during the year of composite resins based on Bowen's resin, a new formulation with a high percentage of hard filler. The resins have properties very suitable for dental anterior fillings and, to a large degree, have replaced the silicate cements which have been used for many years. The arrival of this material has necessitated preparation of a new standard which is being used to indicate the comparative qualities of available resins.

Because of the price of gold, there was much experimentation during the year with base-metal alloys of cobalt-chromium-nickel, chromium-nickel and others for crown and bridge applications. New specifications are being pre-

*Senior Technical Officer Mr Vic McLaverty places a chrome cobalt alloy sample into a high temperature induction casting machine at the Australian Dental Standards Laboratory. The machine operates at temperatures between 1300 and 1400 degrees C. Testing of equipment and materials is a major function of the Laboratory.*



pared for these and the nature of the bond between the alloys and porcelain is being investigated. Investigations into dynamic methods of preparing amalgam specimens, simulating packing operations performed by the dentist, are proceeding and the results are being incorporated into an almost completed revision of the current Australian Standard for Amalgam Alloys.

Materials available for mouthguards in contact sports are under investigation by analysis of content and test of physical properties. Mechanically-operated toothbrush units are also receiving attention, together with the quality of the brushes. A standard already exists for hand-operated brushes.

The second of two projects for determination of the deterioration of dental materials under tropical conditions for periods of six months and twelve months has been completed. The materials, stored at the Tropical Trials Establishment, Cowley Beach, Queensland, were compared with control samples stored at the Laboratory. The results are being tabulated and will soon be published. The tests were conducted in co-operation with medical services of the Australian Military Forces.

Requests for determination of mercury vapour levels in dental surgeries are still being received. This service is always available and recommendations for good hygiene can also be obtained from the Laboratory.

## Equipment

The field emission scanning electron microscope installed last year has proved extremely useful in initial consideration of the band between com-

posite resins and their fillers and the form of the fillers. Some aspects of the phases in amalgams are being investigated. The microscope is used regularly for applications where high magnification is necessary for evaluation of materials.

### Australian standards

Progress in completing new and revising old standards slowed during the year, largely because the standards now being developed require more extensive research and testing for preparation of data, design of methods and equipment, and preparation of draft documents.

The following standards were published:

- AS 1592 Dental hypodermic needles (re-usable)
- AS 1616 Dental artificial stone
- AS 1626 Acrylic teeth
- AS 1651 Dental impression plaster
- AS 1652 Dental laboratory plaster

The following revisions with metrication will be available in the near future:

- AS 1620 Dental casting golds (AS T12, T13)
- AS 1625 Dental wrought gold alloys (AS T9)
- AS 1623 Dental gold solder (AS T26)
- AS 1622 Dental silver solder (AS T30)
- Dental die stone (AS T7)



*Mr Max Chong, Senior Technical Officer at the Australian Dental Standards Laboratory (left), and Mr Frank Thomaz, Dental Technician, prepare a sample of a dental impression material to test the rate of hardening.*

A number of standards which have required a great deal of technical research and international co-operation are also nearing completion. These are:

- Endodontic type K files and reamers
- Excavating burs
- Base-metal casting alloys
- Dental surgery operating lights
- Zinc oxide/eugenol/EBA cements

In the medical area, assistance is still being given in the preparation and revision of standards for equipment such as hypodermic needles and syringes. A new single specification for all types of sharpened hypodermic needle tube is being developed, including a method of determining the sharpness of needles. Work is also proceeding on standards for packaging to maintain sterility. With assistance from the Laboratory, the following medical standards were completed during the year:

- AS 1600 Conical fittings with 6 per cent (Luer) taper for hypodermic and other surgical equipment
- AS 1615 Single-use hypodermic needles (sterile) for insulin injection
- AS 1679 Glass syringes (Luer fitting) for general medical use

Revision of the following medical standards is nearing completion:

- AS T29 Hypodermic syringes for insulin injections
- AS T34 Hypodermic needles for insulin injection
- AS T48 Single-use hypodermic needles (sterile) for general medical use
- AS T42 Re-usable hypodermic needles for general medical use

Further test programs are being conducted to revise some aspects of these standards. Manufacturers have installed modern clean-environment factories and highly automated plant in Australia for the production of single-use hypodermic equipment, and the standards are constantly being revised to ensure that quality is maintained.

## International standards

Laboratory officers continued to play an active role in the work of both the Federation Dentaire Internationale (FDI) and the International Organisation for Standardisation (ISO) during the year. Senior staff represent Australia on all committees of the two bodies, providing technical data, participating in 'round robin' test series, and regularly reviewing draft documents until a standard is ready for publication as an ISO standard.

Work continued on standards for normal filling materials, denture materials and dental instruments. Other international standards in various stages of completion cover such items as terminology, dental equipment and its classification, a complete number coding for rotary instruments, working space of the dentist, and a universal tooth numbering system. The tooth numbering system should be of particular interest to dentists as it can be used with a typewriter or computer.



# National Biological Standards Laboratory

For the National Biological Standards Laboratory the year was marked by a further increase in the rate of development of Australian standards for therapeutic goods. The appointment of several senior officers to co-ordinate standards work, coupled with the willing co-operation the Laboratory has continued to receive from expert advisers and the Australian drug industry generally, has improved development procedures and they are now working well.

The sampling and testing of therapeutic goods continued, but at a lower rate than in previous years because of the need to divert resources to the preparation of standards. This situation will probably continue until general standards applicable to most important classes of therapeutic goods have been prepared.

The number of new goods requiring evaluation increased sharply. Experienced officers capable of carrying out this very specialised work are rare and, despite Public Service Board approval to appoint additional staff, their recruitment is difficult and the time required for on-the-job training reduces their immediate impact on the work load even when appointed.

## Administration Section

The Administration Section moved from very crowded offices in Canberra to new and more commodious accommodation in Queanbeyan. Although the move was necessary, regrettably it has further dispersed the Laboratory and increased problems of transport and communication. Proposals for the construction of a suitable permanent laboratory building were deferred pending a Government decision on the possible inclusion of the N.B.S.L. in a new growth centre in Geelong. Submissions on this matter were made to the Inter-departmental Committee on the Location of Australian Government Employment.

The Standards Secretariat Unit which previously provided basic secretarial services was strengthened to cope with its considerably increased workload. The Unit is now responsible for the overall co-ordination of the committee stages of standards work, the preliminary legal drafting of Ministerial Orders, and liaison with the Attorney-General's Department.

During the year there were fifty meetings of statutory committees, sub-committees and working parties appointed by the Therapeutic Goods Standards Committee. Before such meetings, the Section, when necessary, reviews the relevant scientific literature on agenda items, and collates them as background papers. In this manner the talents of a wide range of experts from Australian scientific institutions and industry have been mobilised.

Over fifty standards and tests are in various stages of preparation for proclamation as Ministerial Orders. Included amongst these are general

standards for labelling of all therapeutic goods, for tablets and capsules, liquid oral formulations, metered aerosols, particulate matter in large volume injections, and avian veterinary vaccines.

Standards for some individual products have been prepared. One of these, a modification of the British Pharmacopoeia monograph for Digoxin Tablets, was prepared as a matter of urgency to provide closer specifications for the content of digoxin in individual tablets and its bioavailability. This was the first order to be made under Section 12 of the Therapeutic Goods Act 1966, and was proclaimed in October 1974.

## Inspection Unit

The inspection of pharmaceutical companies with officers of State Health Departments continued during the year. In addition to 231 visits made to assess compliance with the Australian Code of Good Manufacturing Practice, thirty-nine meetings were held with company representatives to discuss proposed building plans and other matters relating to the requirements of the Code. A number of the plans examined were for buildings in which biologicals for veterinary use are to be manufactured in N.S.W. The examinations and discussions were carried out in conjunction with the Division of Animal Husbandry, Department of Agriculture, N.S.W.

Inspection reports showed an increased compliance with the Code by most companies. However, a few were still failing to achieve the standards of manufacture required by the Code.

A revision of the Code has been undertaken in conjunction with the National Council of the Chemical and Pharmaceutical Industry, State inspectors and N.B.S.L. officers, to update and clarify certain areas. The revision is to be submitted for approval to the National Therapeutic Goods Committee. Following initiatives by the Australian Society of Hospital Pharmacists, the Inspection Unit prepared an appendix to the Code providing for minor manufacturing operations carried out in hospital pharmacies.

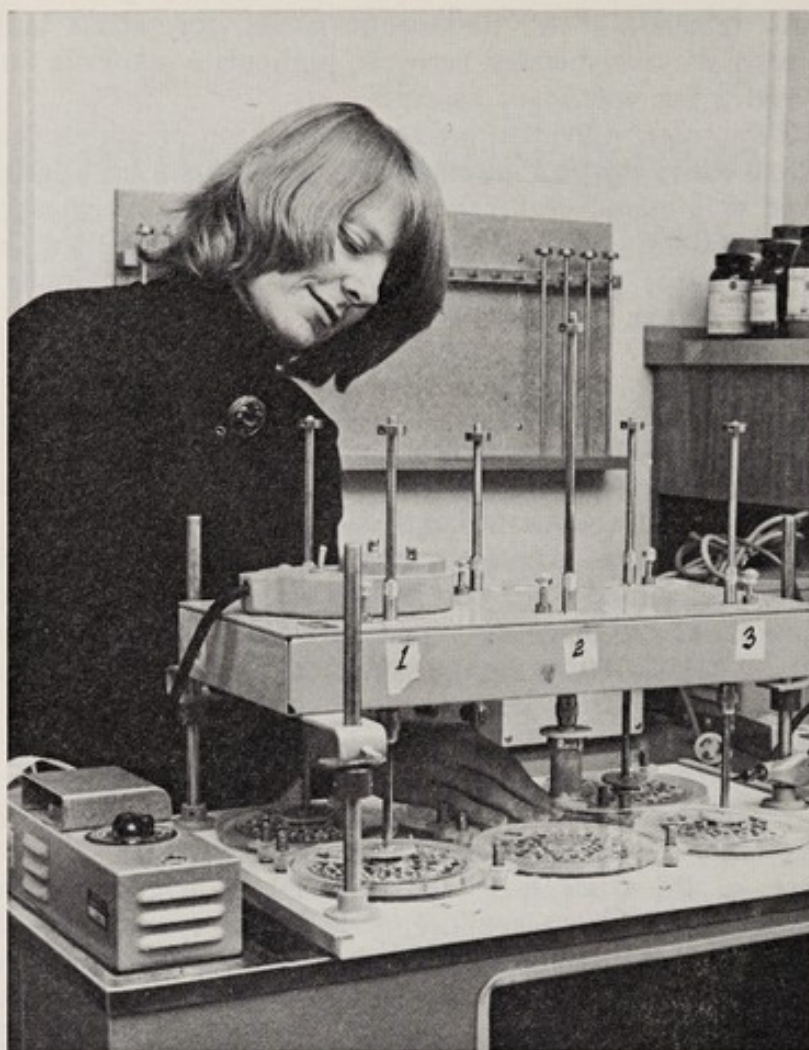
## Pharmaceutical Chemistry Section

The Pharmaceutical Chemistry Section was strengthened to carry out the chemical and quality control evaluations necessary for the considerable number of new drugs and pharmaceutical benefits applications although, as with pharmacologists, there is a lack of pharmaceutical scientists with experience in this field.

An automated system was built to permit the dissolution of six tablets to be followed simultaneously. Concentrations of drugs are measured by a spectrophotometer, and recorded on punched tape. A computer is then employed to calculate results and plot the dissolution-time curves. A study of the flow conditions in the dissolution apparatus of the United States Pharmacopoeia helped to find some of the causes of variation commonly encountered in these tests. The method and conditions have now been more closely defined and are yielding more consistent results. Following reports of varying bioavailability, a survey of dissolution behaviour of prednisone and prednisolone tablets was begun.

A large number of proposed standards has been circulated for public comment. A review of these comments and revision of the standards is under way prior to legal drafting.

A considerable amount of work was undertaken in further developing the list of Australian Approved Names for drugs, which will provide single



*Chemist Dr Susan Walters investigates dissolution rates of drugs from tablets and capsules at the National Biological Standards Laboratory in Canberra. Investigations of the bioavailability of drugs are a major role of the Laboratory.*

official names to be uniformly used on labels for drugs. The names will also serve as an entry point for search in a number of computer programs being developed as part of a data bank on therapeutic goods.

A workshop on the use of infra-red spectroscopy in pharmaceutical analysis was held during the year. Participants came from industry, University departments and Government laboratories. The response was such that three courses, each of two days, had to be arranged.

### Pharmacology Section

New analytical techniques for drugs, enzymes and hormones, including calcitonin, corticotrophin, glucagon, asparaginase, pancreatin and streptokinase were developed in the Pharmacology Section. The radioimmunoassay technique was also investigated for application to a wide range of problems.

A survey of commercial radioimmunoassay kits used for determining blood levels of digoxin by clinical laboratories was carried out to assess their precision and accuracy. It was found that modification to some kits would be required to achieve consistent results.

The number of samples taken for testing was about the same as last year, but the variety of samples was increased due to the work described above.

Difficulty was experienced in keeping abreast of the work load of evaluation of preclinical data in drug submissions from the pharmaceutical industry. In an attempt to improve this situation and increase efficiency, clinical and preclinical evaluators were brought together in the same building. The

preclinical evaluators now take part in discussions jointly with officers of the Therapeutics Division, company representatives and clinical trialists, in an attempt by the Department to streamline procedures for the release of new drugs.

### Antibiotic Products Section

Throughout the year, the Antibiotic Products Section continued its surveillance of quality of antibiotic products for human and veterinary use.

Research towards the improvement of bioassay methods for gentamycin and nystatin began. The development of new assay procedures for antibiotics not able to be assayed by the agar diffusion method was also studied.

Because of complaints about the reliability of antibiotic sensitivity discs, which are used to assess the sensitivity of micro-organisms to a particular antibiotic, a survey of the quality of these products in Australia was carried out. A detailed report which will serve as a basis for Australian standards for these diagnostic agents is nearly complete.

Modifications to the chemical assay and identification methods for lincomycin and tetracycline preparations were incorporated into draft standards. These modifications add greater precision to the standards for these preparations. The preparation of reference standards for antibiotic assay was continued and fourteen were reassessed. Ninety vials involving twenty-five antibiotic reference standards were supplied to sixteen companies. These materials are used by manufacturing companies as standards when determining the potency of products containing antibiotics.

### Bacterial Products Section

The program of research into the methods of testing a number of bacterial vaccines, described in last year's report, led to the development of a more precise assay of tetanus vaccine which will ensure a greater uniformity of its potency.

The Bacterial Products Section also worked on new methods for other clostridial vaccines used in sheep and cattle. For reasons of cost, small laboratory animals are employed. The availability of sheep to the Section has now permitted an investigation of the degree of correlation between the results obtained in the smaller species and sheep. This work is complicated by the use of vaccines containing a number of similar components, and requires the validation of methodology, not only for single components, but also for their various combinations. To date, promising results have been obtained.

The commissioning of the laboratory for testing Brucellosis vaccines was delayed when the contractors went out of business. In addition, some cracks developed in areas of the building designed to form an impervious concrete barrier—a problem which is now being corrected.

A test method was developed by the Section to check such barriers for leakage. Freon gas is used in conjunction with a flame ionisation detector. This simple and effective method will also be used to test similar barriers in the Australian National Animal Health Laboratory, presently being built at Geelong.

Another role for the Section was the testing of non-sterile pharmaceuticals for their degree and type of microbial contamination. The products tested were the particularly critical ones but, fortunately, they were found to be satisfactory. A project was also begun to assess the efficacy of preservatives

in eye drops and injections. As both these projects use techniques similar to those employed in the testing of pharmaceuticals for sterility, the sterility testing unit was transferred to the Bacterial Products Section.

The preparation of standards and testing methods for Pullorum antigens was nearly completed. Manufacturers are now using seed strains prepared by the N.B.S.L. The freeze dried reference antigen and the sera, to be used in testing, have been distributed to manufacturers for their future use.

## Viral Products Section

The major efforts of the Viral Products Section were, as in past years, devoted to developmental research into problems related to human and veterinary viral vaccines. In the field of human virus vaccines, an improved plaque-assay system for the potency of measles vaccines was introduced, and a Reference Preparation of measles virus was prepared and calibrated for use in testing of measles vaccines for potency. A Reference Preparation was also evaluated for use in potency testing of yellow fever vaccine.

Bacterial contamination of the embryonated eggs used in the manufacture of influenza vaccine is a major problem, and was studied in considerable detail for the Sub-committee on Inactivated Influenza Vaccines. A study of the factors affecting disruption of influenza virus by detergents during the manufacture of sub-unit vaccines was also made. It showed that prior treatment of virus with formaldehyde, which may be used to control bacterial contamination, interferes with virus disruption and results in a product which, instead of being composed solely of sub-units, contains a mixture of sub-units and whole virus. It was also found that formaldehyde remaining in influenza vaccines can interfere with the measurement of antigens and egg proteins in vaccines when the single radial immunodiffusion technique is used in assays.

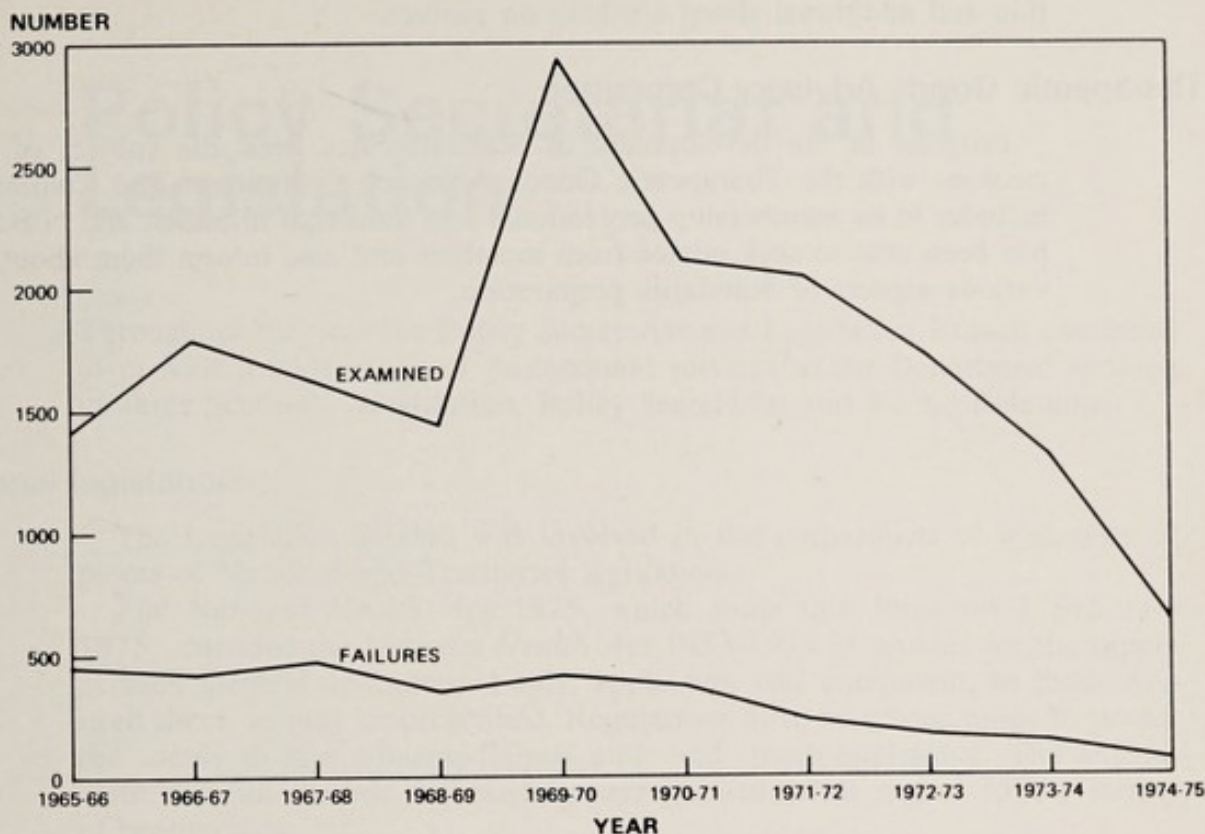
In the veterinary area, efforts were concentrated on avian virus vaccines. Strains of avian leucosis virus were isolated from field samples and detected as contaminants in avian vaccines. Their importance was confirmed by the serological testing of poultry flocks.

Several strains of infectious bronchitis virus were adapted to form plaques in the chick embryo tissue culture system, and a plaque-reduction test for the determination of neutralising antibody against this virus was developed. This technique will permit an evaluation of the relevance of the strains of Infectious Bronchitis virus used in current vaccines, and hence of their efficacy.

Quantitative dose-response experiments with Marek's Disease vaccines containing herpes virus of turkeys (H.V.T.) have shown that maternal antibody against H.V.T., induced by vaccination of parent flocks, may partially interfere with the successful vaccination of day-old progeny. This vaccine-induced maternal antibody is thought to be one cause of the Marek's disease vaccine breakdowns recently reported in the field. Collaborative work on this problem is being carried out with the New South Wales and Western Australian Departments of Agriculture.

Draft standards *Tests on Specified Pathogen Free flocks used in vaccine production* and *Tests for extraneous micro-organisms in Infectious Bronchitis, Infectious Laryngotracheitis and Marek's Disease vaccines* were circulated for public comment and revision is nearing completion. Another draft standard, *Tests on seed lot systems*, was further developed while draft standards

SUMMARY OF ALL SAMPLES—EXAMINATIONS AND FAILURES—  
1965-66 TO 1974-75



*The sampling and testing of therapeutic goods by the National Biological Standards Laboratory again declined during the year because of the need to divert resources to the preparation of standards. This situation will probably continue until general standards applicable to most important classes of therapeutic goods have been prepared.*

for Marek's Disease and Infectious Laryngotracheitis vaccines are being prepared.

The development of Specific Pathogen Free (S.P.F.) flocks for the production of S.P.F. eggs has been a part of the Section's work for some time, and the isolation systems which can be used for this work and for experimentation with avian viruses were further developed. A cage was successfully designed using a closed system to permit experiments to be carried out, without danger of cross-contamination, on poultry infected with a highly infective agent.

### Animal Breeding Section

Accommodation difficulties prevented expansion of animal production to meet present needs. More mice, but fewer guinea pigs and rats, were produced. As soon as the Brucella Vaccine Testing Laboratory becomes available, an S.P.F. guinea pig colony will be established.

Disease control in the various animal houses was improved, but some diseases remained and other new ones were detected. This situation is not expected to change as the elimination and prevention of certain diseases from conventional animal houses can never be attained. The success of the present disease control programs derives, to a considerable extent, from the greater expertise the staff has acquired.

Accommodation for sheep was made available and this proved to be most satisfactory. However, numbers required have now outgrown the accommodation and additional sheep are held on pasture.

### Therapeutic Goods Advisory Committee

Progress in the development of Standards has been the subject of discussions with the Therapeutic Goods Advisory Committee. The Committee includes in its membership professional and industrial interests, and N.B.S.L. has been able to seek advice from members and also inform them about the various aspects of Standards preparation.

# Policy Secretariat and Legislation

Throughout the year the Policy Secretariat and Legislation Branch continued to provide a wide range of professional services to the Department through its three Sections—Legislation, Policy Secretariat and Public Relations.

## National legislation

The Legislation Section was involved in the preparation of a number of pieces of National and Territories legislation.

*The National Health Act 1975*, which came into force on 1 February 1975, amended the *National Health Act 1953-1974* to provide for the supply of such medical and surgical aids, appliances and equipment, to those who need them, as may be prescribed. Regulations have now been made to permit the supply of home haemodialysis units and stoma appliances. The amendment did not disturb the existing arrangements with regard to the supply of hearing aids.

In addition to the supply of aids and equipment the legislation encompasses modifications to buildings, vehicles and equipment which may be necessary for the treatment and rehabilitation of a sick or disabled person.

Seven sets of regulations were promulgated during the year and, in addition, eleven proclamations, four statutory instruments and three instruments of appointment were made. Two Orders-in-Council were also promulgated. One of these effected changes to the composition of the National Health and Medical Research Council and the other authorised provision of assay standards for hospitals and laboratories under the National Health Act.

## Territories legislation

Amendments were made to five Ordinances of the Capital Territory during the year, and seven sets of regulations were made. In addition, work was finalised on the Ordinance to establish the Capital Territory Health Commission.

In the Northern Territory, eight Ordinances and two sets of regulations administered by the Department were made.

Amendments were made to the Pharmacy Ordinance of Norfolk Island to permit the registration of pharmacists who are registered pharmacists in New Zealand. Work is proceeding for an Ordinance to provide for the registration of medical practitioners and for legislation relating to standards for the sale of milk on the Island. A review is also in hand of the Norfolk Island Public Health legislation.

## Policy Secretariat

There was no diminution in the high level of Parliamentary interest in the activities of the Department during the year. The Policy Secretariat assisted



with the preparation of replies to 241 Parliamentary questions compared with 150 the previous year. It also assisted with the preparation of replies to more than 6000 representations addressed to the Minister.

In addition, it co-ordinated the preparation of a considerable number of briefs required by the Prime Minister and Ministers of other Departments on achievements by the Department in specific functional and geographical areas.

The Secretariat also continued to provide assistance with the formulation of proposals for consideration by the Government.

It prepared the briefs for two conferences of Health Ministers—one in Canberra on 18-19 August 1974 and the other in Perth on 8-9 May 1975—and also serviced several other top-level conferences.

## Public Relations Section

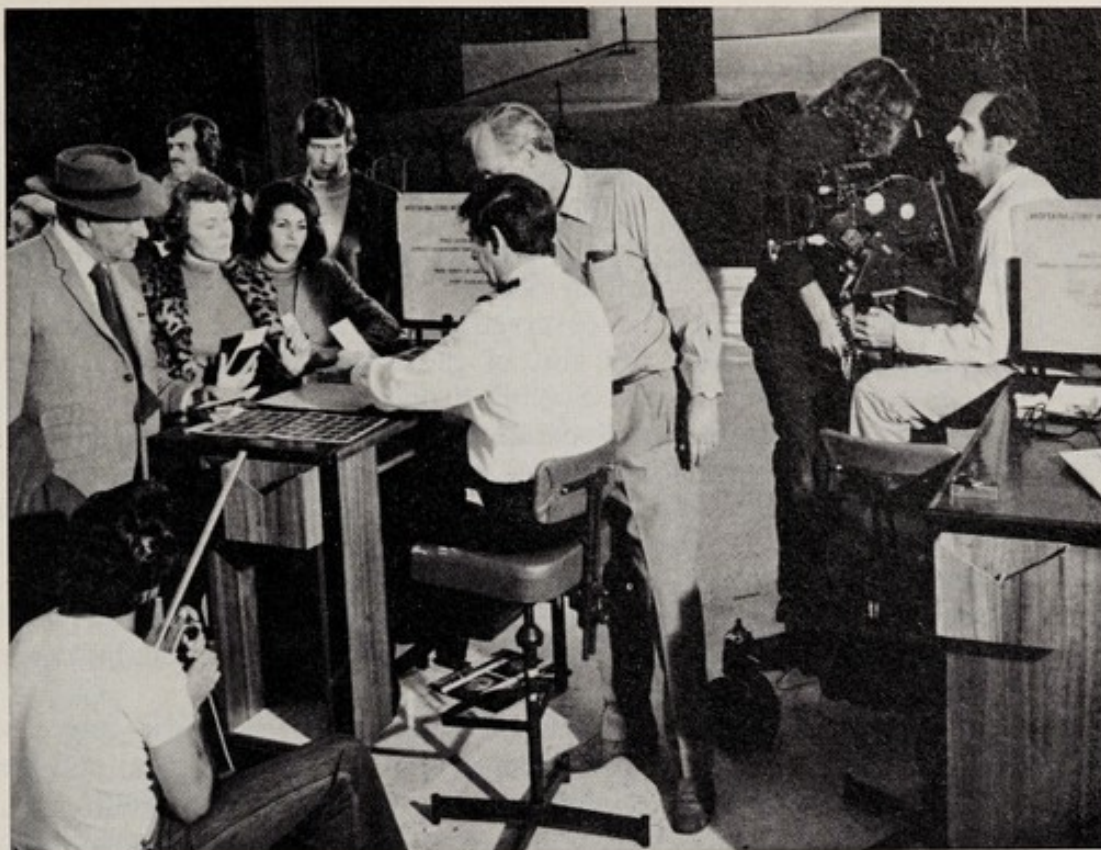
The services of the Public Relations Section continued to be in heavy demand during the year, and resources were stretched to provide essential support both to the Department and to the Hospitals and Health Services Commission. Growth was particularly heavy in the area of media relations, with an increase of more than fifty per cent in the number of Ministerial news releases prepared and issued by the Section in the twelve-month period, compared to the previous year. This growth was substantially created by heightened activity in the Community Health, Hospitals Development and School Dental Scheme programs, although all areas of the Department continued to require a steady flow of releases.

Coupled with this activity, a reappraisal of distribution methods was undertaken, and a major effort was made to target specific news releases to specific areas. Releases on community health projects, for instance, were sent in advance to local media in the area concerned while a special, additional, mailing list of media and professional organisations was compiled for releases of interest to country dwellers, mainly relating to quarantine matters. This targeting is, of course, in addition to traditional distribution through the Press Gallery in Canberra and through the normal Departmental mailing list. Efforts will continue in the coming year to ensure that all releases reach appropriate audiences.

In the publications field, the volume of material produced by the Section again increased. *Ad hoc* publications of every variety were prepared, while regular production of *Health*—the Department's official journal—was resumed. Section journalists produced a special, enlarged issue of the journal which detailed the Department's activities during the tragedy of Cyclone Tracy and its aftermath. The issue was well received by readers both in Australia and overseas, and a reprint was necessary to cope with the demand for copies. *Health* reaches an average of 25 000 readers each issue.

The other regular journal produced by the Section, *Animal Quarantine*, also continued to be in demand. The journal, which features technical articles of interest to veterinarians and other professionals in the animal health field, has become recognised as an authoritative publication, and is now circulated to nearly 3000 readers around the world.

The Section is also supervising production of a new technical journal, *Australian Prescriber*, which will keep medical practitioners, dentists and other health professionals abreast of new drugs and drug therapy. The first issue of the journal, which will be published every two months, was with the printer as the year ended.



*The cast receive last-minute instructions from a Film Australia production crew during the filming of the quarantine film Foot and Mouth — The Constant Threat at Sydney's international airport. The film was one of two on the subject of foot and mouth disease produced for the Department during the year.*

Activity in film-making increased and the Section was involved in supervision of five new films completed during the year—two on foot and mouth disease, *A Continent on Guard* and *The Constant Threat*; a Community Health Program film, *Community Health—The Australian Concept*; one on dental therapy, *The Care Behind The Smile*; and another on ultrasound, *The Use of Ultrasound in the Diagnosis of Brain-damaged Children*. The Section's involvement included not only script supervision and liaison with Film Australia but also the publicising and distribution of the completed films. Media previews were arranged and promotional materials were produced and distributed. As a result, the films have been screened widely throughout Australia.

Specialist services to individual Divisions continued with a high level of activity. In the National Health and Medical Research Council area, Council activities were again widely publicised while much effort was put into upgrading the *Medical Research Annual Report*. Emphasis in the quarantine area was again largely on publicising the Department's activities in relation to foot and mouth disease. A poster and multi-language pamphlets were produced, while feature articles were prepared and offered to the media outlining the reasons for the Department's concern about the landings by foreign fishermen on the north-west coast of Australia. A press conference was also arranged to demonstrate the need for, and effectiveness of, disinsection procedures aboard aircraft arriving from overseas. In the health education field, continued support was given to the drugs of dependence and smoking information programs, and resource materials were distributed to

the thousands of correspondents—mainly schoolchildren—who continued to write to the Section.

Towards the end of the year, the Section also began planning publicity for the Department's initiatives in the family planning field.

Other activities included supervision of the preparation of a demountable display unit for the National Acoustic Laboratories; negotiation with the *Australian Women's Weekly* for the reproduction in the mass-circulation magazine of the Nutrition Section publication *Eat Better For Less*; and arrangements of media coverage of the arrival of Vietnamese orphans in Australia, including the visit of the Prime Minister and Mrs Whitlam to North Head Quarantine Station, Sydney.

As the year ended, preparations were under way for a major new thrust in Community Health Program publicity to increase further the already wide coverage the Program has attracted in the media. These new initiatives—made possible by the filling of a staff vacancy—include publication of a regular Community Health news bulletin and other information materials, the active promotion of the Program in the media, particularly at local level, and the preparation of identifying symbols for use on buildings, vehicles, etc., used in the Program.

It is hoped that further staff increases in the near future will permit better promotion of the expanding role of the Department and the Hospitals and Health Services Commission in the delivery of health care, and with this a more satisfactory awareness to the health consumer of the programs and services available.

# Health Services Research and Planning Branch No. 1

The Health Services Research and Planning Branch No 1, became operational early in the year. It had its origins in the Planning and Research Branch which had been established in 1972 to undertake a wide range of research and planning functions for the Department. From early 1973, the services of this Branch were also made available to the Hospitals and Health Services Commission; this action greatly increased the demands on the Branch's resources and ultimately led to the establishment of a second Branch.

Under the present arrangements Branch No 1 has responsibility for research and planning activities in the areas of Community Health and Health Personnel. It also provides an Information Service for both Research and Planning Branches.

## Community health

The Community Health Section devoted the majority of its resources during the year to the development and analysis, on behalf of the Hospitals and Health Services Commission, of submissions for assistance under the Community Health Program.

In the first year of the Community Health Program the sheer volume of paper-work left little opportunity for officers to assist in the development of individual proposals. Fortunately, it became possible during 1974-75 for these officers to make direct contact with at least some of the initiators of proposals and, through visits to the communities involved, to assist them in a variety of ways. It is recognised that such personal contact, in bridging the gap between community and government, is of considerable benefit to both.

A closer working relationship between Federal and State officers involved in the Community Health Program developed during the year and considerably assisted in the preparation of proposals for consideration by the Commission.

Other members of the Community Health Section were heavily involved in two areas of inquiry on which the Commission hopes to issue reports early in 1975-76: health transport and rural health services. The inquiry into health transport has involved an investigation into the administrative and financial arrangements for Australia's various ambulance services, including aerial medical transport, and an examination of non-emergency transport arrangements for the handicapped and chronically ill.

The rural health inquiry has been aimed at identifying problems in the provision of health care to people living in rural and remote communities, with a view to hopefully providing solutions through existing Government

programs. One of the more important landmarks in this exercise was a seminar held in Armidale (N.S.W.) in January, which some 60 people attended. It afforded a wide perspective on rural health problems.

### Health personnel

In 1972 the Department was required to prepare a submission to the Australian Universities Commission's Committee on Medical Schools. From this experience there developed a nucleus for a team which would concern itself with issues related to health personnel. The Health Personnel Section's formal creation in 1974 has added a new dimension to the Department's activities at a time when the traditional health roles are coming increasingly under review.

Much was accomplished in this area during 1974-75 in developing some understanding of the country's health workforce, both in terms of the structures of the various professional careers and of the numbers of people involved. This is in addition to a wide variety of activities relating to a critical appraisal of the utilisation, training and education of health personnel.

The basic thrust of the Health Personnel Section has been to correct the absence of any broadly based but dependable record of Australia's health manpower resources. The first issue of the Department's *Handbook on Health Manpower* is due for release early in the new financial year. While the Handbook contains much informative material, it is recognised that there is still much to be added both in terms of additional careers and in the depth of its statistical information.

The Handbook complements the report on *Australian Health Manpower*, released during the year by the Hospitals and Health Services Commission, to which the Health Personnel Section made a major contribution.

### Information service

Any planning and research unit must rely heavily on its information sources. This applies not only to the storage and retrieval of information on specific areas of inquiry but also to the need to be kept broadly informed.

The Information Service devoted much time during the year to the abstracting of articles appearing in Australian and overseas periodicals. Its quarterly booklet, *Health Services Abstracts*, while prepared for use within the Department, has been sought by and is being made available to a variety of interested users elsewhere.

# Health Services Research and Planning Branch No. 2

A second Health Services Research and Planning Branch, created in the Department towards the end of the 1973-74 year, became operational in October 1974 with the recruitment of a nucleus of experienced staff. It provides research and planning resources to the Department and the Hospitals and Health Services Commission in several areas including institutional and allied services, regional planning, medical war planning, specific projects, evaluation and health administration.

So far it has not been possible to recruit suitable staff for the health administration area, and the section responsible for evaluation was effectively staffed only late in the year.

## Institutional services

The bulk of the workload for the Institutional Services Section flowed from the Government's decision to implement the five-year Hospitals Development Program.

The Section completed an analysis of the States' hospitals programs for the period 1974-75 to 1978-79 according to criteria of needs, and compared these with the existing distribution of facilities. As a bench mark for planning purposes, a bed/population ratio of 4.5 beds per thousand persons was used—the ratio recommended by the Hospitals and Health Services Commission in its *Report on Hospitals in Australia*.

On the basis of this 'needs analysis' the Section advised the Commission whether the States' hospitals programs would alleviate shortages of beds in areas of need or would preserve or augment facilities in regions already well provided with beds.

## Allied services

A major task for the Allied Services Section during the year was research and preparation of material for inclusion in the Commission's discussion document *A Proposal for a Scheme to Accredit Pathology Services in Australia*.

A Working Party including representatives of Federal and State health authorities and professional associations was established to develop interim standards, procedures and policies, and to discuss relevant details of the implementation of an accreditation scheme. The Section, with specialist pathology input from the Medical Laboratories Branch, is involved in providing research material for and co-ordinating the activities of the Working Party.

The accreditation and future of radiological services are also under review. A detailed investigation of present services was begun with a view to co-

ordination of future planning to allow optimal usage of manpower and equipment and the maintenance of standards. The Allied Services Section assisted the Commission to identify problem areas.

A considerable workload for the Section resulted from the tabling in Parliament in July 1974 of the *Report of the National Committee of Inquiry on Compensation and Rehabilitation in Australia*. A direct consequence of the report was the establishment in December 1974 of a National Advisory Council for the Handicapped (NACH) and, shortly afterwards, a Standing Interdepartmental Committee on Rehabilitation (SIDCOR). Both the Department and the Hospitals and Health Services Commission have representation on SIDCOR.

The main function of the Committee is to co-ordinate information and advice on rehabilitation for NACH, and to serve as an instrument in co-ordinating with Departments the implementation of various Government rehabilitation programs.

The Section has been involved in producing for SIDCOR and its sub-committees discussion documents and other material, with particular relevance to the observations and recommendations contained in the Hospitals and Health Services Commission Report *A Medical Rehabilitation Program for Australia*, which was tabled in Parliament in December 1973.

### Medical war planning

Long-term planning to meet the problem of the treatment of mass casualties resulting from a disaster continued during the year, with the completion of a proposed Model Plan for the treatment of mass casualties. However Cyclone Tracy highlighted the need for plans which are flexible, can be co-ordinated with State and Defence authorities and can be put into immediate effect. Arrangements have been made for staff to be available to co-ordinate health resources in an emergency. Investigations are being carried out to assist in the preparation of plans to meet any crisis in health services in an Australian disaster.

### Specific projects

The Branch undertook the servicing of the Working Party on Aids and Appliances, which has completed reports on the proposed provision by the Government of several types of health aids and appliances. Other investigations are continuing.

The Branch also has responsibility for development of initiatives concerning care of vision. In this regard the Department now has the services, part time, of a consultant ophthalmologist from the Department of Repatriation and Compensation, Dr R. Saad.

### Evaluation

In spite of the difficulties in staffing the Evaluation Section, work began on the formulation of an 'evaluation package' to be used by community health projects in evaluating their own activities. Arrangements have been made to make pilot tests of the package in a community health centre in each of three States. An evaluation has also begun of the role of the pharmacist in health care delivery.

The needs for health statistics within Australia were examined and recommendations were made to the Department and the Commission on ways of meeting these needs on a national basis.

## Regional planning

To assist in the analysis of future health care needs in Australia, the Regional Planning Section, with the assistance of the Central Statistical Unit, produced elementary population projections for each of the regions delineated by the Department of Urban and Regional Development. Moves are underway to obtain more detailed projections so that analyses can be more comprehensive.

The Section represented the Department and Commission on the Health Planning Team advising the Albury/Wodonga Development Corporation, and was directly involved in assisting the consultants engaged by the Corporation to incorporate appropriate provisions for health care facilities in their development plan. Officers also participated in a joint Federal/State study of facilities in the Moreton Region in Queensland.

Other joint Federal/State studies were concerned with the southern area of Brisbane, regions of Tasmania, and the Whyalla and Para regions of South Australia. These and similar studies in other areas and States will assist in the rational development of hospital and other institutional care facilities in those areas.

## Health administration

The Health Administration Section has been set up to serve the Department and the Commission in providing national initiatives and co-ordinating influences in the fields of health services productivity, health institutions efficiency, and the effectiveness of the delivery of health care to the people of Australia.

It is anticipated that initial studies will be in the area of hospital productivity. These studies will be closely related to the work being done in some States and in some hospitals and would be aimed at amplifying and co-ordinating work done throughout the nation.



# Establishments and Finance

A Personnel Management Section was created within the Establishments and Finance Branch during the year, thus allowing more emphasis to be placed on personnel matters such as training, recruitment and staff development.

The new section, together with the long-established Finance, Establishments, Administrative Services and Internal Audit Sections, had a busy and successful year providing a wide range of services to the Department.

## Personnel Management Section

The new Personnel Management Section evolved from a need to increase the range and level of personnel and related services, to meet increased demand and changing trends. The Section combines a number of traditional services such as personnel, industrial, recruitment, training, library and office services with new areas of endeavour associated with staff development programs. The emphasis is on increased service to the Department as a



*A vital nerve centre at the Department's Central Office in Canberra—the Central Registry Section where the thousands of Departmental files are stored and processed. The twenty-seven officers employed in the Section are also responsible for handling the huge Departmental mail.*

whole, together with formulation of staff development programs and the provision of advice on all aspects of the Section's activities.

From the time of its formation the Section became engaged on a number of significant services over and above the more routine activities of its sub-sections. It was, for example, heavily concerned with the personnel and conditions of service aspects for former Darwin-based staff following Cyclone Tracy. A Darwin liaison group was established to handle this work during the peak of activity following the cyclone. These activities will continue until all former Darwin staff are returned to their positions or redeployed.

The Section also had a major involvement with work associated with the Royal Commission on Australian Government Administration, and still continues to provide the point of co-ordination on matters passing to or raised by the Commission. Other activities included the carriage of the introduction and evaluation of a trial scheme of flexible working hours within the Department. In addition the Section fostered close and continuing liaison with the Public Service Board, other Departments and staff associations.

The Personnel and Industrial Sub-section continued its wide range of activities including the application of appropriate pay rates, allowances and conditions of service for staff, which are subject to continual variation. There are some 100 staff groups within the Department covering medical, science, sub-professional, para-medical, clerical/administrative, industrial and many other categories. During the year the Public Service Arbitrator made approximately 230 variations to the forty-odd determinations covering Departmental staff.

Another important task during the year was a review of stand-by and on-call allowances and a review of conditions of service for medical officers. The unit also provided advisory and consultancy services to the Divisional Offices on matters of Departmental personnel policy.

The Recruitment, Training and Development Sub-section had a busy year undertaking its many service, advisory and developmental activities. Among its responsibilities are the raising of requisitions and the calling and processing of tenders for supplies and equipment, the storage and control of supplies and equipment, and the provision of typing, registry, cafeteria, printing and courier services.

The large registry, typing and reproduction services continued to play a vital role in the efficient functioning of the Department. Another important task was the organisation of all local and overseas travel undertaken by Central Office personnel, including accommodation arrangements.

The Sub-section also continued to meet the demand for assistance with personnel recruitment flowing from the Department's expanded programs. Apart from general recruitment activities, a number of large scale campaigns were undertaken relating to the Diploma of Occupational Health, dental therapist trainees, drug evaluators and other personnel needed to meet special requirements.

The Training Centre continued to plan and develop a variety of training courses with a view to orienting newly appointed staff, improving communications skills and developing supervisory and management techniques. Subjects covered during the year included supervision, management, senior management, correspondence, selection interviewing, on-the-job instruction, stenosecretarial work, dictation techniques, induction, orientation and quarantine procedures. The Training Centre also continued to administer the Australian Public Service Study Assistance Scheme.



*The Department's busy central library offers its users close to 4000 titles of current periodicals. Its extensive collection of medical and health literature is widely used not only by Departmental officers but also by other Government Departments and agencies and by the general public. In the foreground, Therapeutics Division officer Mrs Kay Richmond carries out a literature search on adverse drug reactions, while Departmental Librarian Mr Bert Pribac helps library assistant Miss Monica Muirhead with the identification of an abstract.*

Another vital unit of the Personnel Management Section is the Departmental library, which has one of the largest collections of medical and health literature in Australia. There are 120 000 volumes on the shelves with an annual addition of over 7000 monograph titles, and a current subscription to over 6000 serial titles. A Departmental union catalogue (with parallel contributions to the National Union Catalogue of Monographs and Scientific Serials in Australian Libraries) has been established, adopting uniform bibliographic standards which are consistent with international practices for health literature.

The Library provided users outside the Department with approximately 4000 inter-library loans, and also prepared several bibliographies for the Hospitals and Health Services Commission and the Hospitals and Allied Services Advisory Council, as well as many local and overseas users.

The Library's major collections are being developed on a comprehensive basis in areas in which the Department specialises, such as hospitals and public health services, health services planning and research, pharmacology, immunology and bacteriology. Exchange of medical literature has been arranged with the United Kingdom, the United States, Canada, China, Rumania and Hungary.

## Finance Section

The Finance Section continued to control overall financial functions and to provide advice on financial and accounting matters to management and policy areas. A growing number of Branches sought assistance from the Section in the development of financial procedures, the installation of costing systems, and similar matters.

A significant development during the year was the introduction of a Departmental Estimates Committee, chaired by a Deputy Director-General, to give high-level, formal consideration to the estimates. The committee is designed to foster within all Divisions an awareness of the financial dimension of their operations. The Finance Section is, of course, closely involved with the committee.

The Section's costing unit designed a number of management information systems for specific areas, for introduction on 1 July 1975. The systems, which are designed to assist section 'managers' in controlling costs, are seen as important features of a general costing system. Work is under way to extend the systems to the whole Department.

In other activities, reviews were undertaken of a wide range of fees, including quarantine and hospital fees, while financial briefs were prepared for a number of individuals and organisations including the Australian delegation to the World Health Assembly, the Uniform Costing Committee of the Hospital and Allied Services Advisory Council, and Departmental representatives on inter-departmental bodies. Consideration was given to the need for introducing new management techniques, and a study is being undertaken of the use of program budgeting within the Department.

In line with the continued overall expansion of Departmental activities, the volume of accounts paid during the year increased substantially. The Accounts Sub-section in Central Office, in addition to processing accounts for normal continuing expenditure, also processes all payments made under the Hospitals Development and Community Health Programs, the School Dental Scheme, health education programs and other health initiatives. The Sub-section also makes payments and keeps the books of account for the Hospitals and Health Services Commission, and for the Woden Cafeteria which is controlled by the Department.

Financial procedures manuals for Central Office were compiled during the year and manuals for Divisional Offices are being prepared. The Section also developed financial procedures for the Hospitals and Health Services Commission.

## Establishments Section

The Establishments Section continued to provide advice and assistance on organisation and establishment, to ensure that the Department can effectively carry out its responsibilities and that systems, procedures and methods are efficient. The Section was involved with working parties established to carry out a continuing review of departmental functions and priorities and, in conjunction with the Public Service Board and a firm of management consultants, also took part in an efficiency review of the Pharmaceutical and A.D.P. areas of the Department.

Work was undertaken by the Bulk Establishments Sub-section to extend the Bulk Establishment Control Scheme, and by the end of the year the whole Department was covered. The scheme enables Departments to make quick responses to changes in work loads and priorities, to use establishments

more flexibly and to plan future requirements. During the year a number of vacant positions were withdrawn to the reserve pool for redeployment elsewhere in the Department, thus making it possible to assist priority work areas by the immediate allocation of positions.

The Public Service Board introduced a scheme of forward staffing estimates to improve the co-ordination of manpower requirements with financial and other physical resources. An important feature of the new arrangements is the submission each year of estimates covering a three-year cycle. The Section submitted estimates covering the period 1975-76 to 1977-78.

The establishment of the Department increased from 6693 to 7310 during the year—an increase of 617.

A number of major assignments was undertaken by the Organisation and Classification Sub-section. These included overall reviews of the Quarantine Division, the National Acoustic Laboratories and the Pathology Laboratories, and the establishment of the Health Services Division. Major reviews of the Public Health Division and National Health and Medical Research Council Division were started.

A significant assignment recently begun was a review of the psychologist staff category within the National Acoustic Laboratories. The review is of particular importance because it is one of the first to be undertaken by a departmental team without full-time involvement of the Public Service Board. The Sub-section also reviewed 236 Central Office positions in connection with the establishment of the reserve pool.

The Internal Consultancy Sub-section continued to investigate and recommend the adoption of new or altered administrative procedures, processing methods and office systems for various areas of the Department.

One of the major projects undertaken was a review of the operations and organisation of the Pathology Laboratories. Recommendations were aimed at ensuring the required high standard of service to the public.

In an attempt to provide a uniform, efficient and effective approach to administration within the National Acoustic Laboratories' Hearing Centres, the Sub-section designed for them a series of clerical procedures and forms. Clerical and administrative procedures were also developed for use within the Therapeutic Goods Branch, while consultancy services were provided to the professional and clerical staff of the School of Public Health and Tropical Medicine.

Officers of the Sub-section continued to provide expert advice on office machines and automated and mechanical systems which are available on the market. Following one extensive study, approval was obtained for the upgrading of automatic typewriting equipment in the Central Office Word Processing Centre, to provide a larger and more efficient facility. Similarly, a range of programmable calculators was approved for use in various areas of the Department.

## Administrative Services Section

The Administrative Services Section has responsibility for the Territories Secretariat, the financial administration and monitoring of grants to the States and certain non-profit organisations, and the co-ordination of Departmental programs concerning capital works and the provision of accommodation.

The main thrust of activities in the Territories Secretariat during the year concerned the Northern Territory for which the Sub-section acts as a liaison centre in Central Office. An information register is maintained to help in the



*Training Officer Mike Ryan explains some training theories to graduate clerks Liz Penhallurick and David Berman, while senior Training Officer Jenny Booth (right) looks on. Continuous internal training courses on a wide range of topics are provided for Departmental officers.*

task of co-ordinating Central Office activities as they affect the Territory operations. The Section prepares advice for the Minister and also drafts replies to representations concerning the Department's activities in the Territory.

The Works and Accommodation Sub-section continued to co-ordinate the Departmental program covering capital works, repairs and maintenance and the supply of furniture and fittings. The major works programmed during the year were in the A.C.T. and the Northern Territory. These included the establishment of a renal haemodialysis ward at Canberra Hospital (\$450 000) and the erection of a hostel for psychiatric patients in the Canberra suburb of Watson (\$1.6 million).

In the Northern Territory, major projects included the erection of new hospital buildings at Tennant Creek (\$6.5 million); the erection of an additional demountable ward block of twenty-eight beds at Darwin Hospital (\$446 000); the provision of additional air-conditioning capacity (\$448 000) and the extension of air-conditioning services to ward four (\$110 000) at Darwin Hospital; the erection of an orthodontic and dental therapists' clinic in Darwin (\$533 000); the erection of a flat and bed-sitter units for nursing staff (\$933 000) and the erection of a ward block of thirty-two beds (\$1.4 million) at Katherine Hospital; the erection of accommodation units for paramedical staff at Katherine (\$933 000); the erection of health centres and accommodation for sisters at Hooker Creek (\$535 000) and Delissaville (\$239 000); the erection of accommodation units for sisters at Oenpelli (\$226 000); the erection of health centres at Adelaide River (\$199 000), Yuendumu (\$360 000) and Ludmilla (\$425 000); and the erection of accommodation units for sisters at Umbakumba (\$240 000).

The more important works undertaken in the States were the erection of a community health centre at Deer Park in Melbourne (\$475 000) and pathology laboratories at Bendigo (\$773 000) and Lismore (\$163 000).

Officers of the Sub-section also participated during the year in the planning of a number of large building proposals, with officers of other Branches of the Department and of the Department of Housing and Construction. These were community health centres at East Preston, Victoria, and Eastern Shore, Hobart; pathology laboratories at Hobart, Launceston and Rockhampton; new accommodation for the National Acoustic Laboratories in Sydney; and an animal quarantine station at Wallgrove in N.S.W.

The Grants Sub-section continued its task of monitoring a large number of grants covering the initiatives of the Department and of the Hospitals and Health Services Commission. These grants are payable not only to the various States but also in some cases direct to institutions and organisations. In addition to undertaking the financial monitoring, the Sub-section also has responsibility for the administration of a number of the grants. The following paragraphs detail the amounts paid through the Sub-section during the year:

*Community Health Program:* Approved projects implemented by State and local governments, charitable organisations and other non-profit organisations were funded on the basis of 90 per cent of operating costs and 75 per cent of capital costs. Full capital and operating costs were paid for approved projects implemented by national voluntary organisations. Payments during the year amounted to \$28 417 554.

*Community Mental Health Program:* Under the *Mental Health and Related Services Assistance Act 1973*, unmatched grants totalling \$6 185 175 were paid to the States and to non-profit organisations for the full capital and operating costs of community mental health centres or other approved projects.

*Public Nursing Homes:* The five-year period during which State expenditure on the erection of public nursing homes was eligible for matching assistance under the *States Grants (Nursing Homes) Act 1969*, terminated on 30 June 1974. However, payments were made for carryover expenditure of \$220 102 during 1974-75.

*Paramedical Services:* Approved schemes for the provision of paramedical services to aged persons in their homes are eligible for Australian Government subsidy on a matching basis with the States. The scheme provides for such services as physiotherapy, occupational therapy, speech therapy and similar services. Payments to the three participating States—Victoria, South Australia and Tasmania—totalled \$362 419 during the year.

*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 based on the number of nurses employed full time on home nursing duties. Home Nursing organisations established prior to the start of the scheme are eligible for subsidy at the rate of \$6200 a year for each nurse employed over and above the number employed at 30 September 1956. Services established since 1956 are eligible for subsidy at the rate of \$3100 a year for each nurse. Total subsidies paid during the year amounted to \$4 765 934. (From 1 July 1975 the subsidy rates were to be increased to \$7100 and \$3550 respectively.)

*Blood Transfusion Service:* Australian Government assistance towards the blood transfusion services of the Australian Red Cross Society continued at the rate of 35 per cent of operating costs in the States and 95 per cent in

the Territories. Grants for Blood Transfusion Services in the States amounted to \$2 428 000, in the A.C.T. \$88 500, and in the Northern Territory \$86 500.

*Royal Flying Doctor Service:* The Australian Government has approved assistance to the aerial medical service operated by the Royal Flying Doctor Service totalling \$800 000 for capital expenditure and \$2.1 million for operating expenditure during the 1974-77 triennium. A special grant of \$547 727 has also been approved to meet the cost of changeover of twelve base radio stations to single sideband operation. During 1974-75 actual payments made were \$700 000 for operating expenditure and \$102 233 for capital expenditure. Payments under the special grant for single sideband conversion amounted to \$62 653, giving a total of payments to date on this project of \$547 492.

*Family Planning:* Australian Government assistance to family planning services continued. The Australian Federation of Family Planning Associations received \$311 931 and the Australian Catholic Social Welfare Commission \$142 380 during the year. Grants were also paid to other organisations and individuals for research projects and the development of family planning services. Total expenditure during 1974-75 was \$908 972.

*Hospitals Development Program:* Further payments were made during the year under the Hospitals Development Program. Payments made during the year totalled \$30 306 000. Payments for individual States were: N.S.W. \$8 830 000, Victoria \$7 330 000, Queensland \$5 084 000, South Australia \$3 236 000, Western Australia \$4 326 000 and Tasmania \$1 500 000.



*New automated typewriters were installed in the Department's Central Office during the year under an equipment modernisation program. At work on the new machines are (from left) Miss Julie Simpson, Miss Diane Klason and Mrs Margaret Pike.*



*Planning and Research Program:* Grants were paid under the three-year program of the Hospitals and Health Services Commission for Health Services Planning and Research. Grants were made on a \$2 for \$1 basis to the States and to Universities and other organisations on an unmatched basis. Payments during the year amounted to \$935 501.

*Walter and Eliza Hall and Howard Florey Medical Research Institutes:* Special grants to these two Institutes totalling \$3 million were approved for the three year period ending 30 June 1977. The grants are in addition to those normally provided through the National Health and Medical Research Council. Each Institute received \$500 000 during the year. The payment to the Howard Florey Institute included \$250 000 for building extensions.

*Wynnum Nursing Home:* A special grant of \$1 200 000, provided on a \$1 for \$1 basis, was approved towards the cost of completing the second stage of a public nursing home at Wynnum, in Brisbane. Payments totalling \$147 703 were made during the year.

*Control of Australian Arbo-encephalitis:* Matched grants totalling \$275 000 were approved for N.S.W., Victoria and South Australia to help finance a co-ordinated mosquito control campaign in the Murray River basin. Payments in 1974-75 amounted to \$150 811.

*Home Dialysis Program:* A grant of \$310 000 was provided to the States to help support existing home dialysis programs. Payments in 1974-75 totalled \$310 000.

## Internal Audit Section

In association with the traditional financial audit functions, the Internal Audit Section operates as a management control unit to ensure that approved procedures are being complied with, and that managerial policy is being properly implemented. Auditors are stationed at the Central Office and Divisional Offices of the Department, and report periodically to Central Office management on the results of their investigations.

Audit coverage has now been extended to such recent new or extended initiatives as the Drug Education Campaign, the Anti-Smoking Campaign, the Hospitals Development Program, the Community Health Program, the Community Mental Health Program, the Dental Health Program, and the Aboriginal Health Branch.

The rapid growth in Departmental activities over the past year, particularly in the grants area, added considerably to the Section's work load. This necessitated a complete review of the audit function and, to achieve the desired co-ordination, all audit activities have now been placed under the functional direction of Central Office. Staffing proposals, which will enable the Section to provide a wider and more effective service by restructuring the Central Office section, are being considered, together with the creation of a position to be devoted entirely to auditing the Department's extensive automatic data processing facilities.

Following Cyclone Tracy, the Northern Territory Divisional Office audit section experienced many staffing and administrative problems which made the provision of adequate audit coverage difficult. The Section is responsible for the audit of hospitals and dental clinics located at Darwin, Alice Springs and Gove. Staff are now based in Brisbane, where the accounting and personnel sections are located, and in Alice Springs and Darwin.

# Automatic Data Processing

The Automatic Data Processing Branch continued and expanded its principal role of servicing the data processing requirements of the Pharmaceutical Benefits Scheme throughout the year. Several interim communications links, which had been used to move data for the Scheme between Divisional Offices and the Central Office computer centre, were superseded during the year by the Post Office's Common User Data Network (CUDN). Officers of the Branch made significant contributions to the successful testing and commissioning of these new links.

Following the acquisition of the Medical Literature Information Retrieval Service, MEDLARS II, from the National Library of Medicine in the United States, the Branch began implementing the service on the Department's computer complex in a joint exercise with the National Library of Australia.

In other activities, officers took part in an efficiency review of the



*The main computer installation at the Department's Central Office in Canberra. The physical layout of the installation was reorganised during the year as part of a continuous process aimed at improving the performance and reliability of systems operating on the computer. The principal role of the installation is the processing of chemists' claims under the Pharmaceutical Benefits Scheme.*

Pharmaceutical Benefits Scheme administration, and action was initiated on proposals to ensure the more rapid handling of the checking and payment procedures for the millions of prescription items handled under the Scheme. Increasing use was made of visual display units for development work, and more of these units are to be acquired.

The Branch also continued to provide a service to other areas within the Department including the Medical Laboratories Branch, the Research and Planning Branches and the Australian Radiation Laboratory, and gave assistance to the interim committee of the Capital Territory Health Commission.

## Applications Section

The Applications Section introduced a number of major improvements into processing systems during the year. In some instances existing approaches were superseded by newly-developed concepts particularly designed to meet changing requirements.

The demand for ADP services continued to grow. An ADP Priorities Committee was established to determine relative priorities and to schedule and monitor the activities of the Branch.

Much time was devoted to the continued development and support of the system used to process chemists' claims for the dispensing of pharmaceutical benefits prescriptions. Final implementation of the on-line system was completed in New South Wales, Victoria, Queensland and Tasmania, while South Australia and Western Australia will be fully operational by September 1975. The on-line system, using CUDN, offers nation-wide accuracy, security, safety and economy in data transmission between the capital cities.

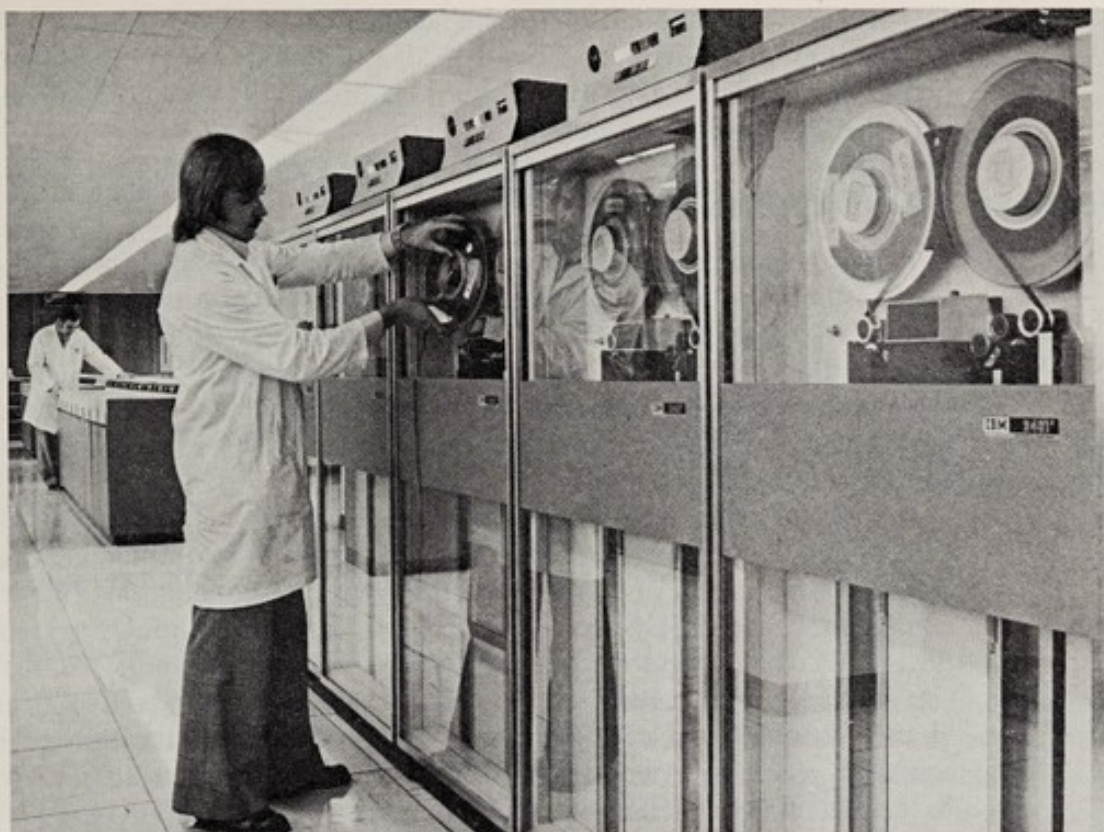
In May 1975, the U.S. National Library of Medicine introduced the newly-developed MEDLARS II Medical Literature Information Retrieval Service, which superseded the MEDLARS I system operated by this Department. On behalf of the National Library of Australia, the MEDLARS II system was acquired and implemented on the Department's installation. Much effort was required to overcome various incompatibilities and problems associated with the operation of the new system on the I.B.M. 360/65 computers operated by the Department.

Although the present system offers a three-day service, action has been taken to provide the National Library with visual display terminals for more rapid search formulations.

Major development work was also undertaken to process survey data and prepare detailed statistical information and tabulations for a comprehensive survey of pharmacy earnings, conducted by the Pharmacy Earnings and Projects Branch.

Work began on the development of a system to assist this Department and State Health Departments in the evaluation of the effects of dental clinic examinations and treatments on the oral health of children. It is estimated that three million treatments will be recorded annually by 1985.

Two senior officers from the Section were seconded to the Northern Territory Divisional Office of the Department of Health. They discussed with the Department of the Northern Territory the use of their computer installation, particularly in the areas of laboratory computing, inventory control, and health care delivery in hospitals and health centres. They also assisted in the preparation of a staffing proposal to establish an ADP Section in the Divisional Office.



*Senior Computer Operator Geoff Ely replaces a magnetic tape on one of the Central Office computers.*

Officers also began an investigation of the current and future requirements for ADP services in the Radiopharmaceutical Section of the Australian Radiation Laboratory. The radioactive materials are extremely volatile, with a short effective life, and ADP is able to assist in the prompt allocation and delivery of supplies to priority locations.

### Forward Planning, Strategic Design and Services Section

The Forward Planning and Strategic Design Group began an assessment of the probable future data processing requirements of the Department and their implications. The group is also participating in a study of the possible application of satellite communications technology to health care delivery, particularly in the Northern Territory and other parts of remote Australia not as yet serviced with a high quality telecommunications network.

The Services area continued to evaluate and introduce programming aids which make computer users more self-sufficient, and not continually dependent on the skills of Computer Systems Officers.

Pilot studies into the use of Departmental data banks, their construction, and the retrieval of information from them are now being undertaken. The project control system now being introduced uses a computer data bank to store and retrieve information on progress and manpower utilisation for ADP Branch projects.

The ADP Training Subsection conducted courses for thirty-one programmers-in-training and programming assistants from the Department of Health and three other Departments. In addition a further seven courses on specialised ADP topics were presented and attended by 150 programmers from a number of Departments. Officers also assisted with the presentation of a number of seminars.

The Clerical Support Subsection continued to provide a data preparation service and to monitor and control all production work being submitted for processing. Officers also undertook a co-ordinating role for the Pharmaceutical Benefits on-line system.

### Systems Operations Section

A major focus of effort in the Systems Operations Section was the improvement of performance and reliability of systems operating on the Department's computers. Activities included the reorganisation of the physical layout of the installation, the implementation of an automated scheduling system, the formulation and introduction of improved operation procedures, and the development of a more comprehensive systems of recovery for the on-line communications system.

Instead of each data entry keyboard being connected by its own line to CUDN, a technique has been developed using mini-computers in State Offices to concentrate a group of keyboards on to one communications line, thus saving considerably on CUDN costs. In addition, a mini-computer system has been developed to provide a training facility whereby several trainee operators can key input data which is compared against a standard master file, previously stored. Any keying errors are drawn to the attention of the trainee operator concerned, and statistics are compiled on the number of characters keyed and the incidence of error for each operator.

Officers of the Section were actively involved in the progressive replacement of interim on-line facilities through the CUDN Centres. Other activities included the specification of improved security measures for the computer installation, the introduction of an automated magnetic tape library maintenance system, and the planning and preparation for the installation of additional on-line terminal facilities for program development and information retrieval.

# Pharmacy Earnings and Projects Branch

The Pharmacy Earnings and Projects Branch, established towards the end of the previous year, was able to begin effective operations in 1974-75 following the appointment of a number of senior officers. The Branch's functions are shared by its three operative Sections—Pharmacy Inquiry, Projects, and Commissions Secretariat.

## Pharmacy Enquiry Section

The Pharmacy Enquiry Section is responsible for planning and implementing studies into pharmacy earnings, costs and profits, which are conducted under the auspices of the Joint Committee on Pharmaceutical Benefits Pricing Arrangements. The current enquiry, covering the year 1972-73, was designed to provide factual information to enable the Joint Committee to make a recommendation on chemists' remuneration to the Minister. The Section provides a secretariat to the Joint Committee for processing of data and liaison with participating pharmacies.

The enquiry embraced 274 pharmacies throughout Australia—a representative sample selected by the Department's Central Statistical Unit. Final processing of the results has now been completed, using the resources of the A.D.P. Branch, and the results have been forwarded to the Joint Committee to form the basis of consultations between the Government and the Pharmacy Guild of Australia.

Pending completion of the enquiry, the Government agreed to an interim updating of fees for dispensing pharmaceutical benefits. The calculations associated with this updating were carried out in the Pharmacy Enquiry Section.

## Projects Section

Projects allocated to this Section are of a non-recurring nature, and relate to subjects which do not logically fall within the responsibility of the functional Divisions of the Department or which require co-ordination of activities. The range of subjects within this category is very wide.

During the year the Section brought to a successful conclusion negotiations for the manufacture under licence of an ultrasonic echoscope, known as the U.I. Octoson. The device was developed in the Ultrasonics Research Section of the National Acoustic Laboratories (the Section recently became the Ultrasonics Institute). It is being manufactured by an Australian company.

Other projects undertaken by the Section included preparation of the Department's submission to the Department of the Special Minister of State on the development of an Australian Library-Based Information System, and participation on the Inter-departmental Committee to Review the Industrial Research and Development Grants Act.

The Section is currently engaged in research activities at the direction of the departmental committee established to undertake a major review of quarantine legislation and administrative procedures. It is also servicing the Maternal, Perinatal, Infant and Child Health Information Project Steering Committee (comprised of appropriate medical experts from outside the Department, representatives of the N.H. & M.R.C. and Departmental officers), which is to conduct a feasibility study on the establishment of a system for monitoring congenital abnormalities in Australia and identifying possible causative agents. An officer of the Section has been on secondment to a task force established to plan occupational health standards for Australian Government employees.

### Commissions Secretariat Section

The Commissions Secretariat Section provides liaison facilities for the Minister for Health and the Commonwealth Serum Laboratories Commission.

During the year the Section prepared a submission to the Senate Standing Committee on Health and Welfare on the relationship between the Department of Health and the Commission. It was also involved in administrative matters relating to a number of working parties which were formed to review each major area of activity of the Commonwealth Serum Laboratories. Departmental staff were included in these working parties at the suggestion of C.S.L.

Further progress was made towards implementation of the Government's policy of acquiring an Australian pharmaceutical company. Just prior to the end of the financial year, the Government had taken options to purchase the shares of the operating subsidiaries of Fawnmac Industries Ltd. This well-known and established Australian drug company has three operating subsidiaries, Fawns & McAllan Pty Ltd, Rotary Tableting Corporation Pty Ltd and Croydon Investments Pty Ltd.

It is expected that this purchase will be completed in 1975-76.

The Section also continued to handle the programming of orders for the Government's requirements for vaccines used for national immunisation campaigns.

# Central Statistical Unit

The Department's Central Statistical Unit continued its role during the year of collecting, analysing and presenting statistical data, and providing statistical advice and technical assistance to areas of the Department and to the Hospitals and Health Services Commission.

Among highlights of the year's activity was the preparation and publication of a *Report of the Survey of Hospital Facilities and Services 1972-73*, undertaken for the Commission. The report contains statistical information tabulated from the data collected in the survey, together with some analysis, evaluation of the data, and notes on the methodology employed.

The Unit processed and tabulated data from a survey of patients receiving domiciliary nursing care, and from another concerning eye conditions of inhabitants of the Cocos and Christmas Islands. Expert statistical assistance was provided to the Food Microbiology (Reference) Sub-committee of the N.H. & M.R.C. for the design, conduct and processing of a survey to measure the microbiological status of foodstuffs, and to the *ad hoc* Smoking Survey Committee for processing a survey of smoking habits of school children. An analysis was made of data collected in the 'market basket' survey of pesticide residues in foodstuffs.

Specialist mathematical advice and assistance were again made available to officers of the National Biological Standards Laboratory and the Quarantine and Therapeutics Divisions in the analysis and interpretation of data and the application of statistical techniques. Assistance was also provided to the Secretariat for the 1972-73 Enquiry into Pharmacy Earnings, Costs and Profits in the analysis and interpretation of the data collected during the enquiry.

The past year saw a significant increase in the number of requests for statistical information, both from within and outside the Department. The regular dissemination of statistical information relating to health, together with the provision of data in response to requests, has now become a major function of the Unit. While the statistical appendix to this report is the only regular publication for which the Unit is responsible, the publication of a regular bulletin as part of a statistical information service is being considered.

During the year, the World Health Organisation was provided with data on a wide range of topics, including medical manpower, maternal and child health, notifiable diseases, vaccinations, malignant neoplasms, and hospitals and other health care establishments.

Other projects undertaken in the past year included the formulation of the Department's tabulation requirements from the Survey of Household Income and Expenditure, being conducted by the Australian Bureau of Statistics, and the preparation of approximate population estimates for local government areas to 1979. Current projects include the formulation of household health survey requirements and the development of an extensive health resources register.



The Unit again provided secretariat support to the Medical Statistics Committee of the National Health and Medical Research Council.

Consideration has been given to the role of the Unit in the light of the report of the Committee on Integration of Data Systems, headed by Professor L. F. Crisp. The Committee recognised the need for an overall co-ordinated approach to data systems and official statistics at the Federal level, to avoid incompatibilities, fragmentation and duplication, and considered that the Australian Bureau of Statistics should become the central statistical authority.

However, the Committee recognised that absolute centralisation of data systems and statistical expertise was neither practical nor desirable. The system of placing professional statisticians within various Departments, it said, had been built up to provide statistical expertise and a channel of communication between the host Departments and the Bureau of Statistics.

The Health Department's Central Statistical Unit is headed by an outposted Chief Statistical Officer and is able to provide, within the general recommendations and framework proposed by the Crisp Committee, specialist skills which can be applied to various aspects of Australian health statistics. It is recognised that the development, collection, collation, analysis and interpretation of integrated health statistical information is critical to the planning and implementation of effective and efficient health care delivery systems. Such information represents an important part of the entire official data system, enabling the Government to formulate well-informed health and other social policies for the better welfare of the Australian community.

# National Health and Medical Research Council

The National Health and Medical Research Council (N.H. & M.R.C.) continued its program during the year of advising the Australian and State Governments on public health legislation and on other matters relating to health, medical and dental care and medical research. Two sessions were held—the Seventy-ninth in Canberra in November 1974 and the Eightieth in Brisbane in May 1975.

The Order-in-Council under which the N.H. & M.R.C. is constituted was amended during the year to provide for two new members—a representative of the Australian and New Zealand College of Psychiatrists and a representative of the Australian Federation of Consumer Organisations.

## Medical research grants

A total of \$5 million was made available from the Medical Research Endowment Fund for the calendar year 1975 for research projects, research institutes, postgraduate and undergraduate scholarships and overseas travelling fellowships.

Of this sum almost \$3 million was allocated to support research projects. In addition the Government provided extra funds to cover the cost of salary increases for academic and technical staff during 1974-75. However, Council was unable to provide funds for a further 112 projects, valued at \$1.2 million, which were considered worthy of support.

The basis for awarding overseas fellowships was extended during the year. In addition to C. J. Martin Travelling Fellowships for basic research, awards have now been established for overseas study in clinical sciences and occupational health research. The fellowships are normally awarded for a period of three years of which two are to be spent overseas and the third in Australia.

At its Eightieth Session Council recommended the awarding of two C. J. Martin Travelling Fellowships and seven Clinical Sciences Fellowships—four in clinical pharmacology, two in epidemiology and one in psychiatric research. All these awards will be taken up during the latter part of 1975 or early in 1976.

## Social Psychiatry Research Unit

An important initiative taken by Council during the year was the establishment of a Social Psychiatry Research Unit at the Australian National University. The Unit is directed by Dr A. S. Henderson, who took up his appointment in January 1975. Council recommended a grant of \$139 000 for the Unit for 1975 in accordance with conditions negotiated with the Australian National University.

## Research Fellows in renal diseases and rheumatology

Two new areas in need of support for research were recognised by the Council with the appointment of Research Fellows in renal diseases and rheumatology. In both cases the appointments are for a period of seven years, with a review after five years and thereafter reappointment for periods of five years, subject to satisfactory progress.

Dr C. J. Clarris, who was appointed Research Fellow in Rheumatology, will work in the Department of Medicine at the University of Melbourne. Dr G. B. Ryan, Research Fellow in Renal Diseases, will work in association with renal specialists at St. Vincent's Hospital, Austin Hospital and the Royal Melbourne Hospital.

## Medicine Advisory Committee

A major project of the Medicine Advisory Committee during the year was the preparation of a report entitled *Health Problems of Alcohol*. The report, compiled by the Standing Committee on the Health Problems of Alcohol, made several important recommendations including one to limit the advertising of alcohol. Guidelines for the control of advertising were proposed, with a recommendation that only strictly factual details of alcoholic drinks be used in advertisements. The report also advocated medical treatment of law-breakers who have an alcohol-related problem, and recommended that surveys on health problems associated with alcohol be carried out in industry and in hospitals throughout Australia.

The Medicine Advisory Committee also considered a request by the Australian Health Ministers to arrange for uniform collection of child health data throughout Australia. Membership of a committee to co-ordinate the project is being finalised.

The Committee examined the problems caused by separate professional registration in individual States—problems highlighted by Cyclone Tracy. The Nursing Committee made recommendations concerning the registration of nurses in times of national emergency, and consideration of the registration of all paramedical staff is currently under way.

The Nursing and Occupational Health Committees jointly prepared an important document entitled *The Giving of Injections by Registered General Trained Nurses Working in Occupational Health*. This practical guide will be of value to those members of the nursing profession employed in this rapidly expanding branch of medicine. The document is being widely distributed.

## Public Health Advisory Committee

The Public Health Advisory Committee continued its examination of a wide range of matters during the year including food standards; uniform poison standards; environmental health problems including noise levels, pesticides, residues and the level of carbon monoxide in multi-storey and underground car parks; risks inherent in smoking 'little cigars'; communicable diseases; the possible hazard of lead used in the printing of rag books and comics; and the health of Aborigines.

The Committee made a number of recommendations as part of its continuing role of advising the Australian and State Governments through the N.H. & M.R.C. Its more important recommendations included:

*A baby monkey being hand-reared for studies of the central nervous system controlling limb movement, being conducted by Professor R. Porter of the Department of Physiology at Monash University. The research project is being funded by the National Health and Medical Research Council.*



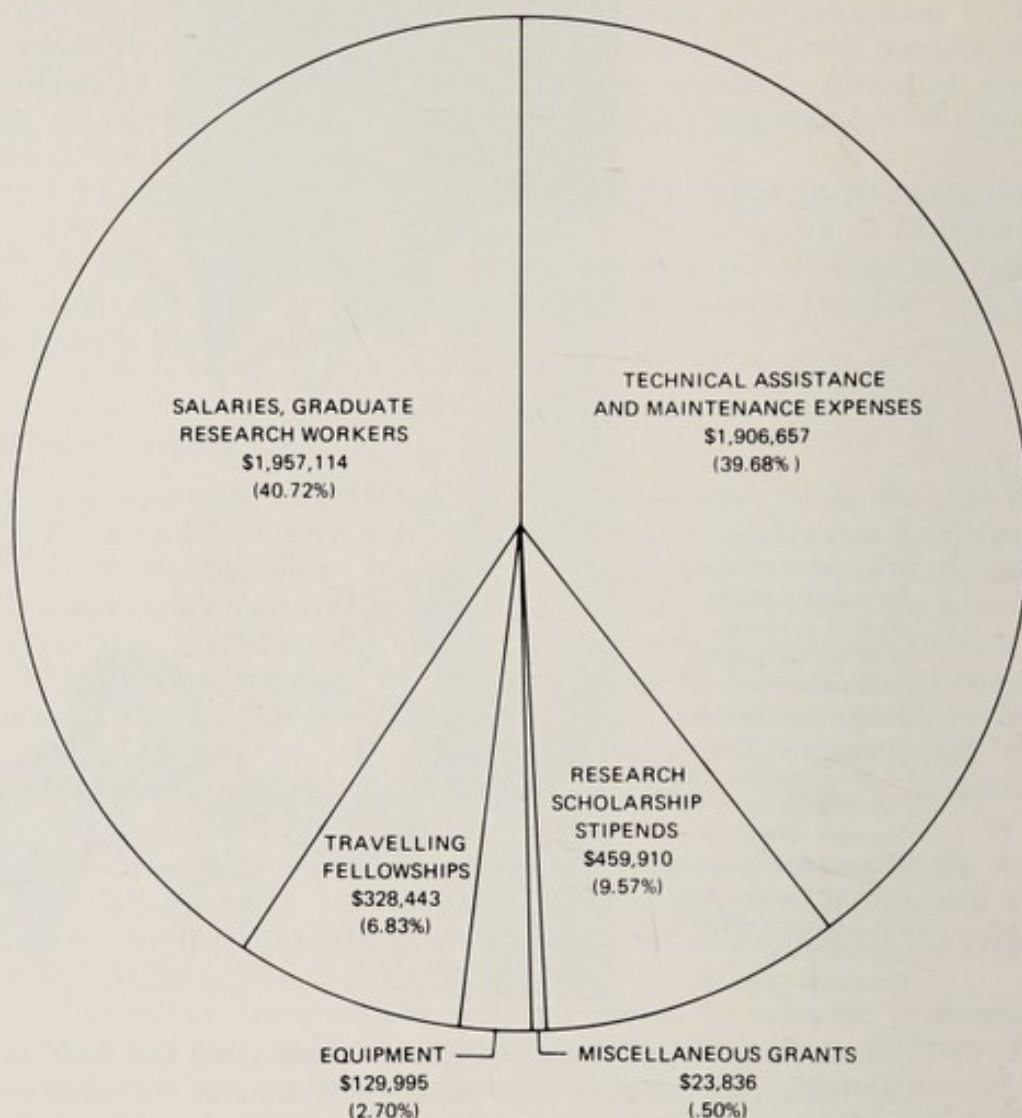
*Lead in rag books:* The Committee considered the lead content in some rag books and comics, and the possible hazards for children ingesting or sucking such articles. Council accepted a recommendation that rag books and comics available in Australia should not contain lead.

*Noise levels in the community:* The growing problems associated with community noise and its possible adverse effects on human health were considered. The Committee agreed that there was a need for State and Territory authorities to take action to minimise noise levels, that existing standards for the control of noise should be applied to all communities, and that information on the rights and obligations of people in respect of community noise and on avenues for action in the control of noise nuisance should be widely publicised. Subsequently Council accepted the Committee's recommendation that active steps should be taken by appropriate authorities in the States and Territories to educate the community on the need to reduce domestic noise.

*Lasers in secondary schools:* Council accepted the advice of the Committee on the potential hazard in the use of lasers in schools, and endorsed a document entitled *Code of Practice on the Safe Use of Lasers in Secondary Schools*. Council also agreed with the recommendation that the document should be published and widely distributed to appropriate institutions.

In accordance with its normal practice, the Committee recommended that five Public Health Travelling Fellowships be awarded in 1975. This was the first time that new eligibility qualifications for these fellowships, which are

GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—  
1974-75



*This graph shows the distribution of funds by the National Health and Medical Research Council during 1974-75 from the Medical Research Endowment Fund.*

now available also to qualified paramedical and nursing personnel, have applied.

Since 1971 the maximum amount available for any one fellowship had been \$8000. It was recommended to Council that, in view of the increasing costs of overseas travel and the widened eligibility conditions, the maximum amount available should be increased to \$10 000 for any one fellowship for the triennium 1976-78.

### Secretariat

The Secretariat for Council is provided by the National Health and Medical Research Council Division of the Department. The Secretariat comprises both medical and administrative officers who service the various working parties, sub-committees and committees of Council as well as Council itself.

The Section responsible for the support of Council bodies and the preparation of reports maintained a high level of work both in numbers of

meetings attended and in the quality of reports presented. Nearly sixty Council bodies are now serviced, with many holding four to six meetings a year. Two meetings of the Medicine Advisory Committee and three of the Medical Research Advisory Committee are also serviced annually, in addition to the two Sessions of Council.

A second Section carries out the administrative procedures relating to the payment of grants for medical research, fellowships, scholarships, etc. The workload in this area increased substantially during the year because of the rise in academic salaries of ancillary staff working on project grants. In addition the increasing number of overseas fellowships and scholarships increased the complexity of the Section's work.

### Hospital and Allied Services Advisory Council

The N.H. & M.R.C. Division also provides the secretariat for the Hospital and Allied Services Advisory Council (HASAC). This Council was established by the Australian Health Ministers' Conference in 1970 to advise on all aspects of hospital services and services allied to hospitals.

Members of HASAC are chief officers and senior administrative officers of Australian and State Health and Hospital Departments or Commissions and the Australian Department of Social Security, together with the Chairman of the Hospitals and Health Services Commission. The Department of Repatriation and Compensation provides representatives as observers. The Director-General of Health is the senior Departmental representative on the Council.

The areas in which HASAC is currently operating are indicated by the Committees that have been established to advise it. These are the Computer Committee, the Construction Planning Committee, the Postgraduate Accreditation Committee, the Research Committee and the Uniform Financial Procedures Committee. Several of the committees have technical sub-committees and working parties to investigate and report on particular fields of interest. HASAC itself sets up *ad hoc* bodies to examine other aspects of health care that come within its jurisdiction.

The Secretariat provides administrative and executive assistance to these bodies. During 1974-75 it serviced two meetings of the Council, eleven committee meetings, one sub-committee meeting and twenty-five working party meetings.

An important part of the secretariat's activities is the development and maintenance of the Council's library. Bibliographies covering each general area of the Council's activities are circulated to members on a regular basis as a part of the library's information service. Bibliographies are also produced to assist individual technical working parties.

# A.C.T. Health

The year under review was the last for A.C.T. Health Services as a branch of the Department of Health, since the close of the year saw the Capital Territory Health Commission ready to administer, from 1 July 1975, most of the functions of A.C.T. Health Services, as well as Canberra's two public hospitals.

Considerable preparation was necessary in the closing months of 1974-75 for the new form of administration, and for the forthcoming closer involvement with hospital matters. Extensive restructuring of staffing establishments was proposed; policies were developed for an A.C.T. Ambulance Subscription Scheme to be introduced on 1 July 1975; and budgetary and financial management systems were developed to meet the needs of the Commission.

At the same time implementation of the Government's policies for health centre development in the A.C.T. continued, with the opening of two new centres and the undertaking of construction of two more. Some officers of A.C.T. Health Services were also involved, under the guidance of senior executives of the Interim Committee of the Capital Territory Health Commission, in making preparations for the introduction of Medibank in A.C.T. public hospitals.

## Services

Development of a general services infrastructure to meet the requirements of the Capital Territory Health Commission was undertaken during the year. An Assistant Commissioner (Services) was appointed, together with section directors for personnel, finance and management consultancy areas.

Additional work preparing for the new Commission placed heavy demands on existing Services Branch staff, particularly those dealing with personnel, finance and office services matters. While maintaining a high standard of normal service, the staff concerned handled the additional workload efficiently in a period when constraints were placed on staff growth.

Among the major steps taken in preparation for the new Commission were negotiations with the Public Service Board on extensive restructuring of staffing establishments of the three units to be incorporated into the Commission—that is, A.C.T. Health Services, Canberra Hospital and Woden Valley Hospital—and preparatory work for the transfer of general accounting and personnel/payroll systems from the Sub-Treasury computer to ADP facilities operated by the Victorian Hospitals and Charities Commission at Monash University, Melbourne.

Policy development and planning was also undertaken for the introduction of an Ambulance Subscription Scheme for the A.C.T. from 1 July 1975, while preliminary work was done on the computerised processing of inventory control records and the registers of A.C.T. medical, nursing and other allied professional boards.

Other essential steps were the development of budgetary and financial



*Discussing the new Kippax Health Centre in the Belconnen area of Canberra are (from left) Mr Ken Fry, the Member for Fraser, Mrs Helen Crisp, the Deputy Chairman of the Capital Territory Health Commission, and Mr Howard Crozier, convener of the Centre's community steering committee. Mr Fry officially opened the centre in May 1975.*

management and control systems to meet the particular needs of the new Commission, and the expansion of library services to meet increasing demands by management and professional medical staff.

In addition to the special tasks associated with the formation of the Commission, the Services Branch helped to staff and equip two new community health centres and two hostels for intellectually handicapped children.

## Health centres

Two new health centres were opened in the A.C.T. during the year, one in Tuggeranong and the other in West Belconnen bringing to six the number of centres serving the public.

The Village Health Centre in Tuggeranong, opened on 4 March 1975, has two medical practitioners, a community health nurse and a clinic sister. Other health workers, including medical specialists, visit the centre regularly.

The centre, which cost about \$160 000 was built from pre-cast concrete modules. Woden Valley Hospital, which assisted in final commissioning of the building, is administering it.

Kippax Health Centre in West Belconnen, which was officially opened on 17 May 1975, is the largest centre established so far in the A.C.T. and also the first permanent centre building. It cost \$600 000.

Health workers at the centre include two salaried doctors and two fee-for-service doctors providing general practitioner services, a mental health team of psychiatrist, psychologist and social worker, together with a physiotherapist, speech therapist, nurses and others. Suites are available to accommodate more family doctors as the population of the area grows.



## Health facilities

The Health Facilities Section had another busy year with the completion of the two new health centres, plus two ten-bed hostels for the mentally retarded at Chapman and Melba and a Child Care Centre at Canberra Hospital. Construction continued on the 300-bed Calvary Hospital at Bruce, on stage one of the Central Services Complex at Crace and on the Phillip Health and Welfare Centre.

Work was started on forty-bed health service hostels at Narrabundah and Bruce, a ninety-six bed nursing home at Narrabundah, and a new health centre at Narrabundah.

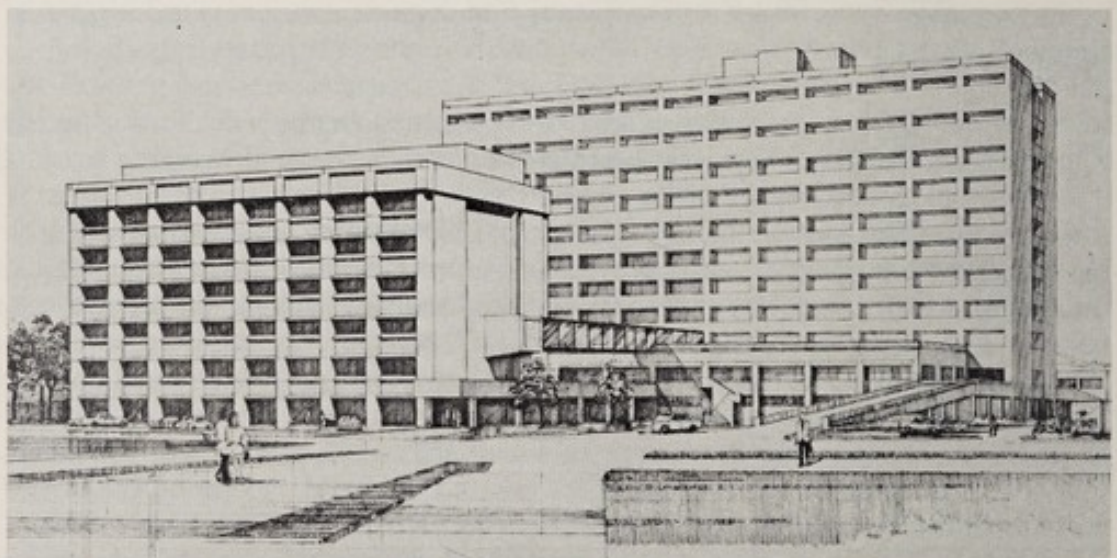
Planning continued for a headquarters building for the Capital Territory Health Commission, a health service hostel at North Watson, a central warehouse and workshop buildings as part of the second stage of development of the Crace Services Complex, a health centre at Kambah, the Queen Elizabeth II Home for Mothers and Babies, a National Fitness Camp at Tidbinbilla and a renal unit, additional clinical units and consulting suites at Canberra Hospital.

Progress was also made on planning of the Central Health Laboratory to be built next to Woden Valley Hospital, and on proposed stage one extensions to the podium area of Canberra Hospital.

## Public health

The increasing general awareness of potential environmental and consumer hazards increased the workload for all staff involved in public health matters. Considerable attention was given to environmental control, particularly regarding air pollution and recreation on water reservoirs. Health inspectors, in addition to their usual milk and water sampling activities, closely checked take away food outlets in conjunction with a National Health and Medical Research Council survey. Prosecutions relating to food increased from seven in the preceding year to twenty-one.

Occupational health and quarantine activities also increased significantly. Ten investigations of occupational health matters were undertaken at the



*An architect's drawing of the A.C.T. Central Health Laboratory (smaller building, in foreground) which is to be built adjacent to the Woden Valley Hospital (background) and linked to the hospital by a covered walkway. The Laboratory, estimated to cost \$6 million, is expected to open late in 1977.*

request of government institutions and three at the request of private firms or individuals. The help of the Occupational Health Section of the School of Public Health and Tropical Medicine was requested for three of them. In addition, the Australian Radiation Laboratory visited Canberra to test microwave ovens and X-ray units both for government bodies and for individuals.

The number of VIP planes arriving in Canberra from overseas continued to increase, and quarantine staff met and cleared more than forty aircraft, compared with twenty-five the preceding year and nine in 1972-73.

## Infectious diseases

Apart from an increase in infantile gastroenteritis, there was no significant difference in the number of notified infectious diseases in the A.C.T. from the previous year. Two cases of typhoid occurred.

## Public Health Laboratory

Further sewage overflows from the neighboring New South Wales town of Queanbeyan caused the Public Health Laboratory to test many extra water samples from the Molonglo River and Lake Burley Griffin. Regular testing of samples from the Murrumbidgee River also continued as part of a joint Federal/State project to monitor the quality of water in that river.

The increasing interest of doctors in monitoring the level of anti-epileptic drugs in the blood was reflected in the greater number of blood samples received by the Laboratory for drug assay. Continuous measurement of ambient air concentration of pollutants from motor vehicle exhausts was begun, following the acquisition of suitable monitoring equipment. This program is likely to be expanded in 1975-76.

Blood testing of people in contact with pesticides continued and officers also took part in the investigation of a number of industrial hygiene problems. A Laboratory chemist experienced in drug identification gave evidence in thirty court cases involving drugs such as LSD, cannabis and heroin.

## Veterinary services

Eradication of bovine tuberculosis and brucellosis in Territory cattle continued as part of a national campaign. Tuberculosis was introduced in one beef herd by the purchase of an infected cow. Infection was transmitted to the cow's calf and another heifer and all three were destroyed. Survey serum tests of cattle showed a bovine brucellosis incidence of less than 1.5 per cent.

In the cysticercosis (hydatids) eradication program, several areas of ground were set aside as testing strips. The program involves definition of the problem both by dog testing and abattoir surveys, with particular reference to education of the landholder in methods of control. A mobile laboratory will be utilised for this purpose.

An off-the-floor or Can Pak system of beef carcass dressing has been introduced at the Canberra Abattoir as the final stage in the upgrading of the system to conform with modern meat inspection practices.

## Mental health

General mental health clinical services were provided through four multidisciplinary teams, one working at Kippax, Melba and Scullin Health Centres in Belconnen, one at City Health Centre, one at the Woden Clinic, and one at the Kingston Clinic.

Two ten-bed residential hostels for intellectually handicapped children were built, one at Chapman and one at Melba. Work started on a 40-bed hostel at Bruce for the severely intellectually handicapped, and on psychiatric hostel facilities for thirty-two patients in the Narrabundah nursing home complex.

Throughout the year the Mental Health Branch continued its major input into community education and development. A Six-session Introductory Volunteers Course developed by the Branch is now sponsored by the A.C.T. Council for Social Services. About 130 new volunteers participated in the course during the year, and some thirty volunteers were trained to work as group leaders. The Branch also continued to provide specialised training for several voluntary agencies, and for A.C.T. Health Services staff. Student hospital nurses were placed in the Branch for periods of two to four weeks as part of their psychiatric training. Support was also given to a newly-established course for membership of the Australian and New Zealand College of Psychiatrists, which is open to psychiatric registrars at Canberra's hospitals.

Work began on developing behavioural approaches to psychosomatic problems, particularly cardiac and blood pressure malfunctions. Plans to staff a special psychosomatic unit and an adolescent unit are being developed.

A Mental Health Committee was established to advise the Capital Territory Health Commission on the need for, and development, implementation and evaluation of mental health services in the Territory, and to promote and provide community participation in the provision of mental health programs and activities for the prevention and treatment of mental illness.

A number of grants to community agencies engaged in mental health work were again made in April 1975. The agencies are Canberra Marriage Guidance Council, the Creative Leisure Movement, Woden Community Service, Belconnen Community Service, Canberra Senior Citizens Club, Canberra Life Line and Y.M.C.A. of Canberra Inc.

The Speech Therapy Section evolved new methods and techniques which helped officers meet the increasing workload. Group meetings of parents anxious about their children's speech were held at night so fathers could attend, while families were treated as units so the referred child was not singled out as 'sick'.

Children with similar problems receive therapy in groups, thus gaining support from each other, while parents meet in another group to talk about problems and progress. Treatment for the very young children is sometimes given in the home where eventually the mother takes over. With older children, too, parents sit in on individual treatments and eventually take over from the therapist.

## Child health

New infant welfare clinics were opened in the suburb of Flynn and at the Village and Kippax Health Centres during the year. Sisters continued to visit Wreck Bay and Jervis Bay on a fortnightly basis. Attendances at all clinics totalled 83 060 and 15 115 home visits were made.

Medical examination and screening of children in pre-schools and schools continued, with a total of 34 885 children examined. The incidence of notifiable defects was 15 per cent in the under-five age group and 9.9 per cent in the school-age group.

A total of 14 993 doses of Sabine vaccine was administered at immunisa-



*Make-up classes might seem an unusual facet of community health, but the Narrabundah (A.C.T.) Health Centre Community Committee believes this type of involvement with people served by the centre will increase the effectiveness of their more orthodox classes dealing with preventive health matters. Here committee member Mrs Faith Durr gives advice on the use of lipstick to 13-year-old Jennifer Jones.*

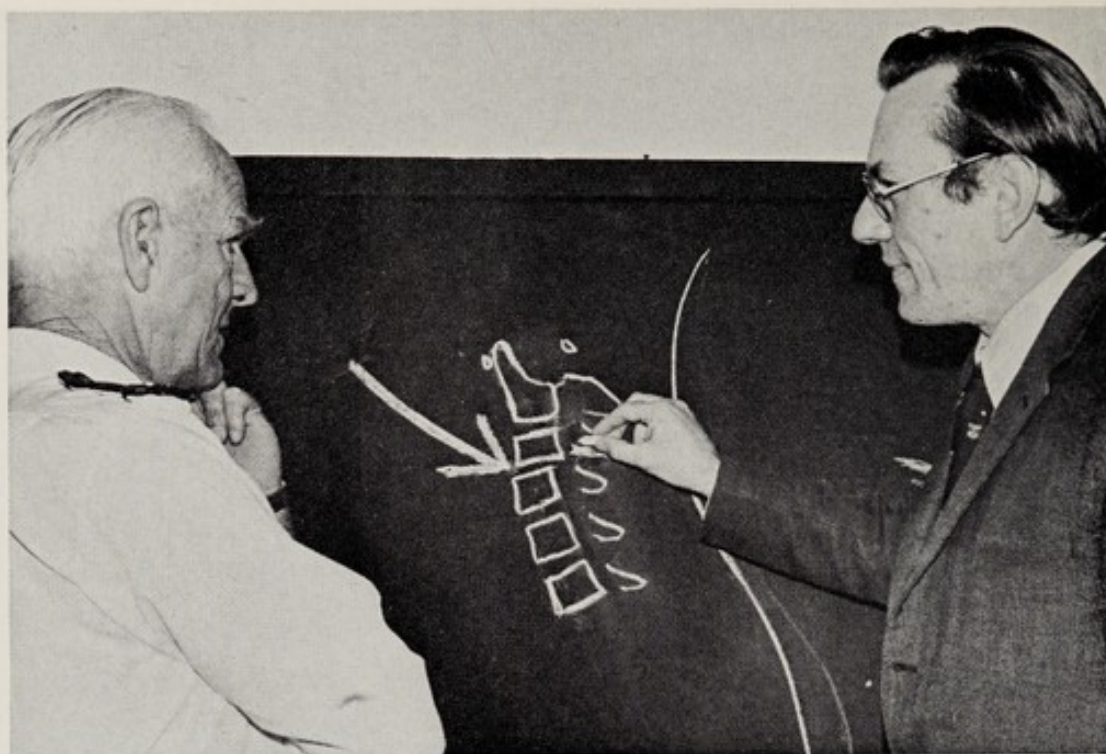
tion clinics, and 19 968 doses of either triple antigen and/or combined diphtheria and tetanus vaccine were given. Immunisation against measles was provided for 1487 children while 1300 girls in first form at Canberra secondary school were immunised against rubella.

The Griffith therapy centre for handicapped children cared for seventy-three newly-referred children and counselled their parents during the year, while physiotherapy services continued in schools for mentally handicapped children and in Koomarri Workshop.

Training courses in child health were held for trainee hospital nurses, community nurses and personnel of community health centres, while seminars on child health were arranged for health centre doctors and pre-school teachers. Anti-natal relaxation classes and monthly screenings of parenthood education films were well attended, as were weekly parenthood education discussion groups.

### School Dental Service

Four dental therapists who graduated from the Hobart training School in December 1974 began work in school dental clinics in January 1975. The Service now has sixteen dental officers and twenty-one therapists.



*Dr Ray Newcombe (right), Senior Specialist-in-Charge of the Neurosurgical Unit at Canberra Hospital, discusses with Mr George Harris, Superintendent of the A.C.T. Ambulance Service, methods by which ambulancemen should move patients who have fracture dislocation of the cervical spine. Dr Newcombe is helping train A.C.T. ambulancemen for a mobile life support role to improve their skills in handling patients with head and spinal injuries, and heart attack victims.*

The Service examined 25 952 children during the year. Staff also attended meetings of the various committees of the Australian Dental Services Advisory Council and gave talks on dental health to many community groups.

Continuing investigation of the results of fluoridation of Canberra's water supply showed steady improvement in the teeth of children who have lived in the A.C.T. since fluoridation began in 1964. These children had 61.6 per cent fewer defective permanent teeth and 76.2 per cent fewer decayed permanent teeth than children who had been examined at the corresponding age before fluoridation began.

### Chest Clinic

A total of twenty cases of tuberculosis was notified by the Canberra Chest Clinic in 1974, fifteen in A.C.T. residents and five in residents of Queanbeyan and other nearby areas of N.S.W. As expected, this number was fewer than the twenty-nine notifications in 1973 when a compulsory chest X-ray survey was undertaken. However, the fall in notifications appears to have been only temporary. During the first five months of 1975, seventeen cases of tuberculosis were notified.

The range of services available at the Clinic has gradually been expanded in keeping with modern chest clinic practice. There is now a consultative service and lung function testing in chronic non-tuberculous chest conditions, both at the Central Chest Clinic and for one session each week at the City Health Centre.

## Health education

The Health Education Section continued to develop programs to meet the needs of schools and the community. Emphasis was placed on community development and on a comprehensive information service. The film and pamphlet library expanded considerably and officers were made available as consultants, group leaders and lecturers on health education. A women's discussion group program was set up to provide a social and intellectual outlet for housewives and other women.

The Section also supervised the 'Education for Living' school discussion group program, which gives students an opportunity to discuss controversial issues, personal relationships, responsibility, and decision-making. Parents' discussion groups were organised in conjunction with school P. & C. Associations to consider family relationships and relevant contemporary issues. Drug education emphasised positive alternatives to drugs, and positive ways to cope with stress.

## Government medical officers

In 1974-75, Government medical officers carried out 14 868 clinical examinations, an increase of less than one per cent on figures for the preceding year. A total of 40 634 vaccinations was given, representing an increase of 6 per cent over the figure for the preceding year.

The Police Subsection attended 630 calls in 1974, 438 of them outside normal hours. One full-time medical officer, assisted by two part-time officers, handled the heavy workload. The officers made 321 court appearances, while twenty-two lectures were given to police and public bodies.

## Ambulance service

As mentioned earlier, plans were completed for the introduction of an Ambulance Subscription Scheme from 1 July 1975.

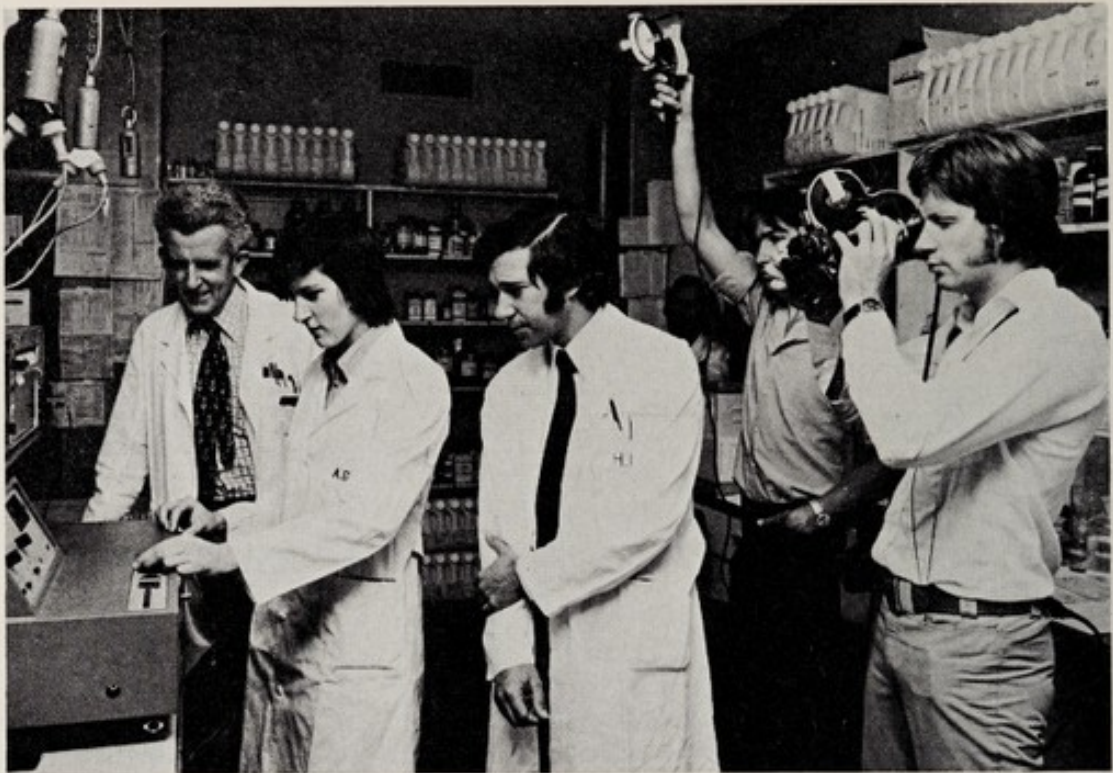
In other developments, a decision was taken to develop a mobile life support system as part of the A.C.T. Ambulance Service. The system will require special training for ambulance staff, together with provision of technically advanced equipment and minor modification of suitable ambulances.

When the system is functioning, one ambulance at each station will be available to handle heart-attack emergencies, and to transport patients suffering from head or spinal injuries. Through use of specially trained ambulancemen and of the advanced equipment, critically ill patients will be given the maximum chance of survival.

## Research

A major task for the Research Section continued to be the monitoring and evaluation of information relevant to the efficient operation and planning of health care services in the A.C.T. Some new data collection systems were begun and some existing systems modified.

As part of the evaluation of community health centres, studies were carried out on the teamwork concept in a health centre, information flow, the role of social workers and nurses in the centres, consumer attitudes to services received, operating costs, morbidity patterns, patient record designs, and means of linking medical information with inpatient institutions by ways of standardised records.



*Under the surveillance of a television team, trainee technical officer Mary Abbey operates a machine at the Pathology Laboratory at Canberra Hospital. She is watched by the Laboratory Director, Dr John Crotty (left), and the Specialist-in-Charge of the Biochemistry Section, Dr Peter Garcia-Webb.*

### Pathology laboratory

Planning continued during the year on ways to avoid duplication of pathology laboratory services between Canberra Hospital and Woden Valley Hospital, except where it is necessary for the benefit of the patients, or the hospital, or the laboratory itself. Progress was made toward solving problems in transport and communications, and staff were spread in approximately equal numbers between Canberra Hospital and Woden Valley Hospital. The workload of the laboratory again increased, this year by about 19 per cent.

The staff training program is becoming better known, and this helped in the recruiting of high-standard students. The laboratory now has twenty-eight trainee technical officers. Seven staff members are studying for science degrees at the Canberra College of Advanced Education.

# Northern Territory Health

For the Northern Territory Medical Service, the unforgettable event of the year was the arrival of Cyclone Tracy in Darwin on Christmas Eve. The death and devastation caused by Tracy was a supreme test for the Medical Service and its disaster plans, and for Darwin's hospital and community health services. The story of how the Department and its officers met the challenge has been told in a special issue of *Health* journal (Vol. 25, No. 2, 1975) and is re-told briefly in this chapter.

Despite the disruption of the cyclone, 1974-75 was still a productive year in the Territory. The program to re-equip and rebuild major hospitals continued with the calling of tenders for construction of the new Tennant Creek hospital. Community health services were strengthened with the appointment of additional District Medical Officers and the completion of health centres in Katherine, Tennant Creek, Alice Springs, Elliott and Borroloola. This strengthening was reflected in a reduced average length of stay in hospitals and, more significantly, in a further reduction in the infant mortality rate which confirmed the downward trend over the past four years.

A major advance was the installation of a 'cardiophone' at Darwin Hospital, with terminals at Gove, Katherine and Tennant Creek. This enables the telephone transmission of a coronary patient's electro-cardiogram from a terminal to Darwin where a specialist diagnosis can be made, thus enabling treatment to be given promptly at remote centres.

In other highlights, a decision was made to re-equip the Aerial Medical Service with Australian designed and built Nomad aircraft, and research into alternative forms of treatment for common Territory diseases was accelerated. On the political front, the Legislative Council was replaced by a fully-elected Legislative Assembly in November 1974, and as a result the Director of Health is no longer responsible to the Council for health matters. This function has been taken over by an Assembly member, Mr David Pollock, the Executive Member for Social Affairs.

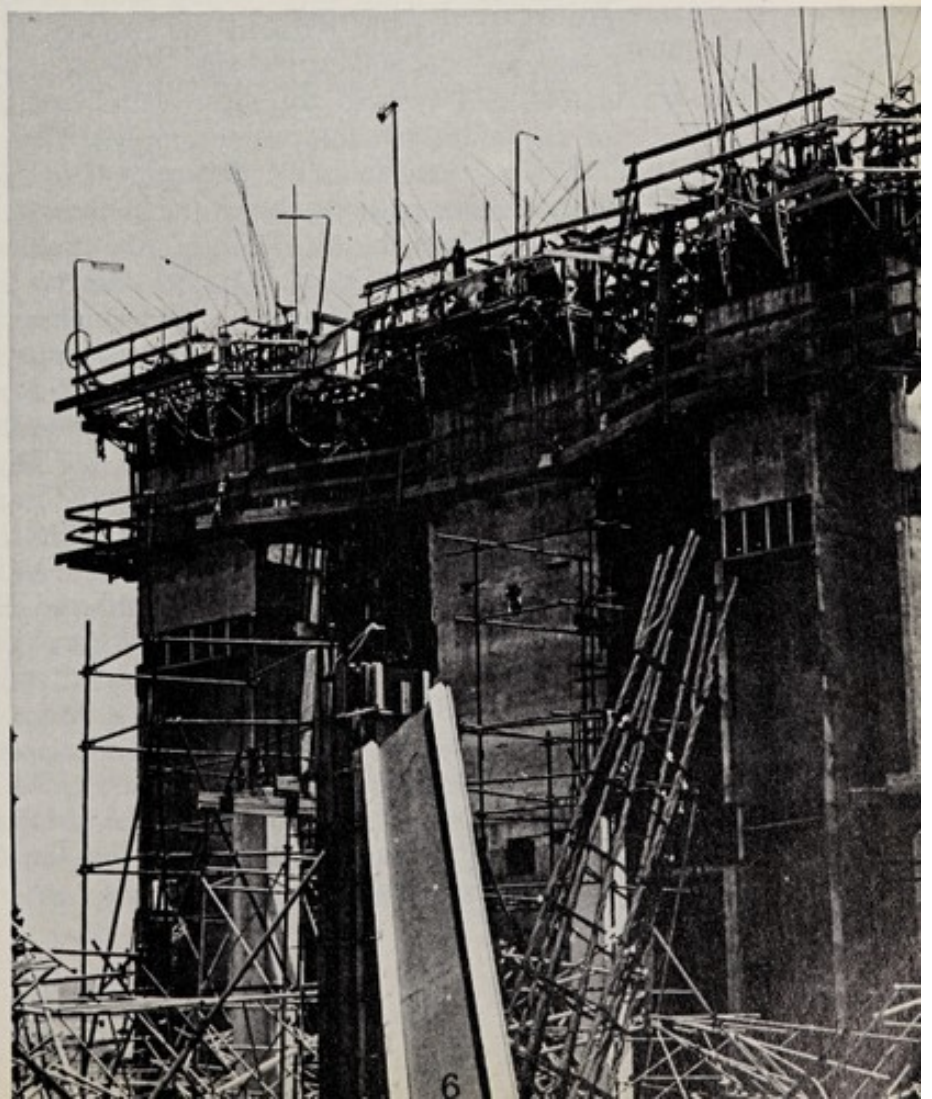
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*On the following two pages are photos of Darwin, taken after Cyclone Tracy devastated the town on Christmas Eve 1974. 1. The remains of the Convent of the Sacred Heart Sisters at the East Arm Leprosy Hospital. Seven sisters of the order were in the building at the time of its collapse, but all survived without major injury. 2. An Army sapper sprays disinfectant around the wreckage of a house which contained rotting foodstuffs. 3. A crop-duster aircraft spreads malathion over Darwin to combat fly breeding. In the background are two ships of the Royal Australian Navy, brought to Darwin to help in the clean-up following the Cyclone. 4. The foyer at Darwin Hospital early on Christmas Day. Between 500 and 1000 casualties were treated, 112 patients admitted, and thirty-two cases operated on in a non-stop surgical effort which continued until 1.30 a.m. on Boxing Day. 5. Standing emergency procedures were put into practice at Darwin Hospital at the first warning of Cyclone Tracy. Windows were taped to minimise the danger of flying glass, all possible curtains and screens were drawn and patients were moved to the safest areas. Although the hospital suffered considerable damage, none of the patients was injured. 6. Steel form-work on the partly-constructed Casuarina Hospital was bent at many angles by the cyclonic winds.*

—Photos by Departments of Health, Media, Defence and Housing and Construction







## Cyclone Tracy

A mass casualty plan had been incorporated in emergency procedures written for Darwin Hospital, and a cyclone subcommittee was in existence. As a result, staff were prepared for an emergency.

Although the hospital sustained widespread damage which affected general services, patient accommodation and staff facilities, fortunately no injuries were sustained by either patients or staff within the hospital. Essential clinical facilities remained functional, and the needs of the flood of casualties next morning were met by a willing response from all hospital staff. Over 500 casualties were treated at the hospital on Christmas Day—a figure which would have been much greater had it not been for the many hundreds treated at suburban first-aid stations which were set up immediately after the cyclone. A total of 112 patients was admitted.

Late on Christmas night, in response to an urgent request to the Natural Disasters Organisation in Canberra, two surgical teams from Canberra arrived and relieved the local surgical staff.

Following the immediate impact of the cyclone, the effective bedstate of the hospital was reduced to approximately 250, and to ensure adequate reserve facilities in the face of reduced services and an unpredictable future load, it was decided to evacuate many patients, including non-cyclone cases, to the southern States.

Meanwhile, thousands of homeless people sought refuge in Darwin high schools and other centres where Departmental officers attended to their medical needs and generally kept watch for signs of developing health hazards in a city without electricity or water supply.

The Department was represented on the Darwin emergency committee which held its first meeting early on Christmas afternoon. The committee agreed that a giant airlift to the south of some 30 000 people was essential. The airlift quickly reduced the chances of an outbreak of disease in the refugee centres and, at the same time, a mass immunisation campaign against tetanus and typhoid for those who remained was mounted. Arrangements for sanitation and safe water supplies were also made.

A vital element in the Department of Health's role was its medical and general stores organisation in the suburb of Fannie Bay. A skeleton staff had stood by through the night of the cyclone and was ready on Christmas morning to keep pace with the demand for additional supplies from the hospital and first aid centres. The organisation worked around the clock for the first week organising the receipt and distribution of medical supplies which poured into the city after the first day.

Having dealt with the immediate casualties and avoided the risk of disease outbreak in the emergency centres, the Department turned its attention to the overall environmental situation of the stricken city. Perishable food in shops and household refrigerators represented a major potential health hazard in terms of the breeding of flies and rats. The clean-up of this food was a formidable undertaking, and the Department asked the Director-General of the Natural Disasters Organisation, Major-General Stretton, who had taken charge of the emergency situation, to put the campaign under the command of the Army. With assistance from available health inspectors, the unenviable task was completed in a week.

At the same time an offer was accepted to provide regular twice-weekly aerial spraying of the city with ULV Malathion insecticide. This operation was complemented at ground level in the town area with powerful RAAF turbogenerators using Diazinon.

The combination of measures adopted, assisted of course by the mammoth evacuation exercise, resulted in a high standard of environmental control which undoubtedly made a major contribution to the virtual absence of disease.

While the disruption caused by Cyclone Tracy is still not over, particularly with the transfer of certain sections of the Department to Brisbane coupled with the strain of servicing the needs of the rapidly returning Darwin population, life has returned to an almost normal pattern. The Department is continuing to provide health care for Territory residents, while pre-cyclone planning is being actively reviewed in the light of anticipated future needs.

## Management services

Two Branches of the Management Services Division were relocated in Brisbane following Cyclone Tracy—Finance and Supply and Establishment and General Services. It is also proposed to locate a new Automatic Data Processing Branch in Brisbane.

The Operations and Institutions Branch continued its work on the implementation of assistance schemes to missions conducting their own health services. Wage subsidies were taken over from 1 July 1974, and capital works and equipment were due to be taken over on 1 July 1975.

The new Katherine Hospital kitchen was commissioned during the year and is operating well. The kitchen features the Ganymede centralised food service system which does away with bulk trolley food handling, allowing proper presentation of meals and correct serving temperatures. This system is already incorporated at Alice Springs Hospital and will be extended to other Territory hospitals.

After Cyclone Tracy a fire destroyed the Repatriation, Artificial Limb and Appliance Centre building at East Arm Hospital, including the machinery used in the manufacture of prostheses. Until suitable premises become available in Darwin prostheses are being manufactured in southern centres.

## Community health services

The concept of area-based health services was extended during the year into urban areas with the development of urban community health districts. At Katherine, Tennant Creek and Alice Springs modern urban community health centres incorporating dental facilities were opened, and rural centres were opened at Elliott and Borroloola. A new rural centre at Yirrkala was due to be opened early in the new financial year and two additional temporary centres will be operational in Darwin by the end of 1975.

The Aboriginal Health Worker Program continued, with plans to introduce the training scheme to all larger Aboriginal communities. Under the Program, Aborigines are encouraged to become more involved in the organisation and delivery of health care in their own communities. Wherever possible, training takes place close to the communities, and community members are encouraged to nominate their own trainees. An interim Health Worker Training School was completed at East Arm Hospital. In conjunction with other Government Departments in the Territory, a detailed proposal was prepared for a School of Community Health, Education and Welfare in Darwin.

The recommendations and comments by two WHO representatives, Dr J. H. Hirshman and Miss Joan Bentley, who visited the Territory during the year, are being taken into consideration in the planning and development of community health services and the training of Aboriginal health workers.



*The Borroloola Health Centre, opened in November 1974, was one of five completed in the Northern Territory during the year. Others are at Katherine, Elliott, Tennant Creek and Alice Springs.*

The first stage of a pilot program to control trachoma was completed in the Hooker Creek/Wave Hill area, and another to control chronic otitis media and conductive deafness is about to be introduced. A program to combat venereal disease is planned and one involving nutritional supplements is under consideration.

### Environmental health services

Extra precautions were taken by quarantine staff to prevent the importation of foot and mouth disease from Bali following an outbreak there and routine surveillance of all imported malaria cases continued.

The steady decline of new leprosy cases over the past decade continued, accompanied by simpler treatment regimes conducted closer to home with more emphasis on local surveillance. Modern drug therapy is being utilised and now over 90 per cent of patients on the leprosy register are being cared for at home.

The Entomology Section continued to increase its collection of local mosquito species—a project of major importance in the evaluation of the efficiency of airport and port quarantine operations against imported insects. Following the confirmation for the first time of *Culex annulirostris* breeding in Alice Springs and Tennant Creek, a detailed program to investigate the bionomics of this vector of encephalitis began. Several bulk mosquito collections for virus studies were made and one new virus was isolated from *Anopheles meraukensis*.

### Dental services

The steady growth of dental services continued. Nine therapists are now providing a service to school children while the first resident dentists have been appointed to Katherine and Tennant Creek.

Projects under way include the production of a videotape on dental

hygiene and nutrition which is designed to meet the special needs of Aboriginal school children, and another which aims to inform high school children about dental careers. A pilot project to determine the practicability of self-application of a decay-minimising preventive dental paste by school children has had encouraging results. A campaign to encourage school children to use mouthguards while taking part in contact sports was conducted in Tennant Creek.

## Nursing

The Community Nursing Division undertook a program to prepare nurses to cater for the needs of the whole family as a unit. A number of senior nurses are currently attending in-service training courses at the College of Nursing Australia and the New South Wales College of Paramedical Studies, studying nursing administration, nursing education and community health nursing.

The divisional nurse educator is currently designing a curriculum to be used for the education of Aboriginal people in their own areas.

In rural areas the adequate staffing of health centres is still a major problem.

## Planning and development

The planning and Development Division this year concentrated on plans for the next five and subsequent ten years for major hospitals, regions and community health services. A review of Departmental statistics was undertaken with emphasis on morbidity and mortality information from hospitals and health centres.

The Division reviewed plans for projects under construction or proposed for the Darwin area and for the restoration of buildings damaged by Cyclone



*Nursing sisters pay a visit to the Health Caravan at Yai Yai, in the Southern Region of the Northern Territory. The Caravan is staffed full-time by a traditional healer and his assistants.*

Tracy. Following a decision to delay completion of stage one of Casuarina Hospital until 1978, building work was undertaken at Darwin Hospital to provide for interim needs.

Mention has already been made of the completion of health centres in several areas during the year. Other building work supervised by the Division included accommodation units for staff at Papunya, Mataranka, Borrooloola, Elliott and Darwin; a mortuary and kitchen at Katherine Hospital; and professional officers' quarters and a psychiatric day centre at Alice Springs. Tenders for the Tennant Creek Hospital closed on 18 June 1975.

Research into the history of the Northern Territory Medical Service was undertaken, and it is hoped to prepare a history dating from the first expatriate settlement.

Seventy per cent of planning personnel were relocated in Brisbane where they have responsibility for manpower planning, statistics and special projects.

## Base hospitals

Considerable building had taken place at Darwin Hospital before the cyclone and staffing had been maintained at a satisfactory level. Following the cyclone the hospital was given foremost priority for repair work, and by the end of March all normal services were functioning fully although with varying degrees of difficulty.

The unexpectedly rapid return of Darwin's population caused a heavy load on the facilities of the hospital. This was aggravated by staff shortages at all levels, due to the overall problems of accommodation in the city and the reduced quality of life there.

At Alice Springs hospital too, staffing has been a problem. The establishment was under strength throughout the year with several periods of acute shortage. A large amount of building is continuing at Alice Springs and while this will continue for many months, a number of facilities have been completed or are nearing completion.

## Regions

In the Northern Region, a physiotherapist and a social worker were appointed in Katherine for the first time. Four aerial medical service aircraft were damaged during the cyclone, but other aircraft were chartered to ensure that the service continued.

In the Southern Region, the Aboriginal infant mortality rate was the lowest on record, reducing by some 40 per cent compared with the previous year. Since the Department accepted responsibility for health care on settlements, District Medical Officers have paid more frequent visits and provided better health care for outlying areas.

A proposal by the Central Australian Aboriginal Congress for an Aboriginal Health Service in Alice Springs is going ahead and could do much for many fringe dwellers to whom the existing hospital services are foreign and frightening. The Alice Springs Child Health Unit, through involvement of family groups, continues to play a significant role in the rehabilitation of malnourished children and those with chronic respiratory and bowel disease.

As a continuation of the regionalisation process, Milingimbi, Nangalala and Ramingining settlements were transferred this year to the administrative control of the East Arnhem Region. Efforts are being made to recruit additional staff. In this region too, infant mortality dropped by about 40 per cent during the year.

With the appointment of a medical officer qualified in industrial health, occupational hazards of mining operations at Gove and Groote Eylandt are being controlled, with emphasis on dust pollution, hearing conservation, industrial dermatitis and accident prevention. A full time District Medical Officer was appointed to Groote Eylandt for the first time.

One pleasing result of the movement of Aboriginals back to tribal lands has been an improvement in health. The Yirrkala community is a good example, with about 250 people in eight outstations living without alcohol in an atmosphere of relaxed pride.



# Divisional Offices

The year under review was one of considerable development in most functional areas administered by the Divisional Offices in the State capital cities. All recorded increased workloads in routine administration tasks in the fields of quarantine, pharmaceutical benefits, medical services, and pathology and acoustic laboratories, while officers also undertook a new role connected with the introduction of a Handicapped Child's Allowance.

In addition, some Offices were called on to cope with unexpected and considerable responsibilities following Cyclone Tracy in December 1974, while early in 1975 the Sydney and Melbourne Offices were actively involved in the evacuation and reception of war orphans from Vietnam.

## Handicapped Child's Allowance

Legislation to permit payment of an allowance of \$10 per week to parents or guardians caring for severely handicapped children in their own home was introduced by the Minister for Social Security in September 1974. Payment is made by the Department of Social Security but the medical assessment of eligible children under the age of 16 years is performed by Australian Government Medical Officers of this Department. A small working party chaired by the Director of our Victorian Division made recommendations on medical guidelines and design of the application form, enabling the scheme to be introduced on 1 January 1975.

Since that date, the Divisional Offices have processed 16 469 applications of which 15 668 were approved and 801 (or 4.9 per cent) were rejected. The most frequently encountered medical disabilities include Down's Syndrome, moderate and severe grades of mental retardation, cerebral spastic infantile paralysis, and spina bifida.

## Cyclone Tracy

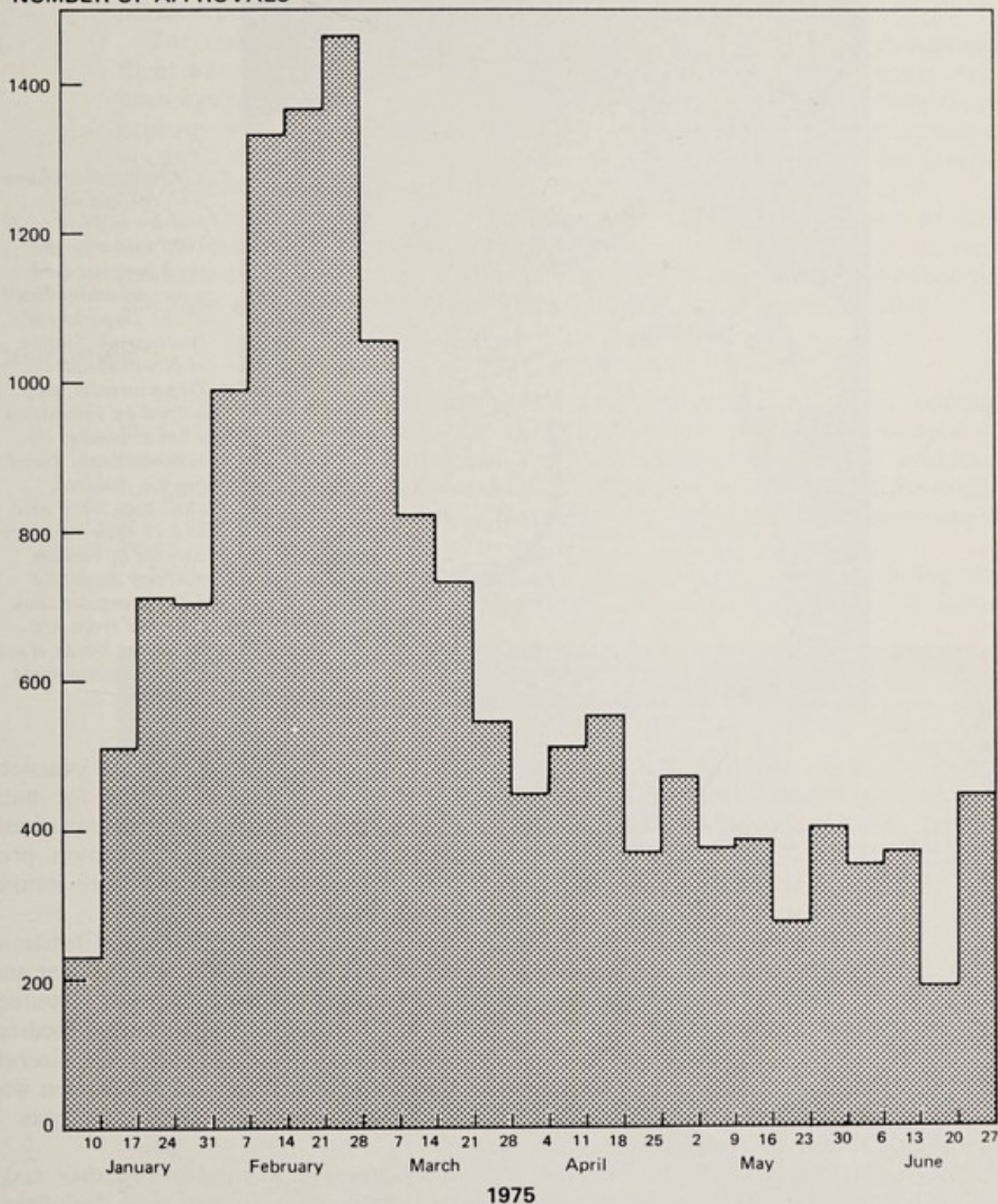
All State Divisional Offices were involved to some extent in coping with the emergency created by Cyclone Tracy, with the New South Wales, Victorian and South Australian Offices undertaking major roles.

The full impact of the disaster was not known until the early hours of Boxing Day when it was learned that medical and hospital supplies were urgently needed in Darwin. In New South Wales, the Divisional Office Director led a team which arranged for suppliers and contractors to open their factories and stores. Bulk supplies were delivered to the RAAF for air-lift to Darwin within hours of the extent of the emergency becoming known.

The first evacuees from Darwin, totalling more than 200 people, were housed at the Sydney Quarantine Station at North Head. That the Station was able to accommodate these people at such short notice showed the state of readiness in which the Station is maintained at all times to deal with a

HANDICAPPED CHILD'S ALLOWANCE—NUMBER OF APPROVALS—  
1 JANUARY 1975 TO 27 JUNE 1975

NUMBER OF APPROVALS



*Medical officers in the Department's Divisional Offices undertake the medical assessment of applicants for a new Handicapped Child's Allowance, introduced by the Government in January 1975. The graph shows the number of applications approved to the end of June 1975.*



*Vietnamese orphans who arrived in Sydney in May 1975 and who did need hospital care were accommodated at the Department's Quarantine Station at North Head. Departmental staff, helped by volunteers from a number of organisations, cared for the children until they were able to join their adoptive parents in various parts of Australia. This youngster took time out from his games at North Head to enjoy some party fare.*

major outbreak of a quarantinable disease. Later flights of Darwin evacuees were also received at North Head where they were well cared for until arrangements could be made for them to travel to their final destinations. Departmental officers worked long hours throughout the evacuation program either treating people at North Head or arranging for the more serious cases to be admitted to hospitals in the Sydney area.

In Victoria, Divisional Office staff were involved throughout the Christmas holiday period in a variety of emergency tasks, including the procurement and dispatch of urgently needed medical supplies and the recruitment of volunteer health personnel for Darwin, while in South Australia Departmental medical officers worked on a twenty-four hour roster system to meet all aircraft bringing evacuees to Adelaide. The South Australian Quarantine Station was also readied for use as an emergency accommodation centre in case it should be required.

Subsequently the Divisional Offices undertook a number of other tasks arising out of the disaster. Pharmaceutical Branches, for instance, deciphered water-damaged pharmaceutical benefits prescriptions and processed them, at the same time assisting Darwin pharmacists to establish claims for lost prescriptions. In some cases payment was based on previous monthly accounts.

Executive Services Branches handled the registration of all Darwin-based Health Department staff evacuated to the capital cities, arranged the payment of their salaries and allowances, and gave such other assistance as was necessary.

## Vietnamese war orphans

The evacuation to Australia of war orphans from South Vietnam in April 1975 posed further problems for the Divisional Offices in Sydney and Melbourne.

The task of arranging a medical team to accompany the first evacuation flight was undertaken at short notice by the New South Wales Director. And once again the North Head Quarantine Station was activated to receive those orphans who did not require hospital treatment on arrival. Departmental doctors, nurses and quarantine staff, assisted by volunteers from several organisations, cared for more than 100 orphans for almost a fortnight.

The Victorian Divisional Office Director undertook arrangements for the second evacuation flight, recruiting a team of doctors and nurses to accompany the aircraft and preparing for the reception of the children in Melbourne and their accommodation in the Fairfield Infectious Diseases Hospital.

## Quarantine

The growing number of wide-bodied aircraft arriving in Australia, resulting in a substantial increase in the volume of air passengers being cleared at international airports, has meant a corresponding increase in the workload for quarantine staffs in Divisional Offices. However, modification of the small-pox vaccination requirements in November 1974 resulted in far fewer people being placed in quarantine.

Difficulties in clearing passengers at Perth Airport occurred during the year because of inadequate facilities in the overseas terminal building. How-



*Sister Sylvia Culshaw, of the Department's Divisional Office in Hobart, prepares members of the Rosny Children's Choir for vaccination. The Department vaccinated free of charge fifty-six members of the choir and ten adults who accompanied them on a Government-sponsored tour of China and the Philippines.*

—The Mercury photograph

ever, a new transit lounge now being built is expected to overcome this problem.

In Queensland a new observation and isolation hospital was completed at the Cape Pallarenda Quarantine Station near Townsville. The new accommodation, together with the appointment of a full-time Quarantine Officer in Townsville, recognises the fact that North Queensland is now considered a 'quarantine frontier' area.

In the animal quarantine sphere, it became necessary to build a further eighty kennels at the Lytton Quarantine Station in Brisbane, to help cope with increased importations of dogs and cats from Papua New Guinea, while extra accommodation is being provided for cats at the Torrens Island Station in South Australia.

## Pharmaceutical Benefits

The number of prescriptions eligible for pharmaceutical benefits continued to increase throughout the year. This increase, coupled with a decrease in the number of chemists approved to supply benefits, caused a sharp rise in the average number of prescriptions per claim. However, the changeover to on-line data processing is reducing the average number of days needed to process claims.

The number of forged prescriptions is continuing to cause concern in all Divisional Offices. There is clearly a link between the forgeries and the number of thefts from pharmacies of drugs of dependence. Another continuing problem is the small number of pharmacists who are regularly late in submitting claims, some of them more than six months late. This creates a checking problem and has an adverse effect on the statistical reports of the prescribing habits of medical practitioners.

## Executive services

In addition to their traditional responsibilities for providing management services, the Executive Services Branches were involved in a number of non-routine tasks during the year, relating not only to emergencies like Cyclone Tracy but also to the growing Departmental involvement with Community Health Program projects.

In Victoria, for instance, the opening of the Deer Park Community Health Centre—the first such centre to be built by the Australian Government in a State—was the culmination of six hectic months in which the Executive Services Branch in the Melbourne Office was involved in the planning, design, equipping and establishment of the Centre.

The Tasmanian Division faced considerable problems caused by the breaching of the Tasman Bridge in Hobart. The introduction of flexible working hours helped overcome the attendance problems of staff living on the city's Eastern Shore.

## Automatic data processing

Procedures to speed up the processing of chemists' claims under the Pharmaceutical Benefits Scheme continued to be introduced in the Divisional Offices in 1974-75. It is expected that the changeover to the on-line system of processing will be completed in all States before the end of the year.

Following the installation of direct drive procedures in some States with a lower volume of ADP commitments, it became possible for them to assist



*These six puppies were born while the mother, a small Sydney Silky, was being held in Quarantine for nine months at the Lytton Quarantine Station, Brisbane. Alteration of quarantine regulations relating to the entry to Australia of dogs from Papua New Guinea and the Pacific Islands has necessitated the building of eighty additional dog kennels at Lytton.*

other States with a backlog of claims to process. The direct drive system is an interim measure being used until the full on-line system becomes available.

### National Acoustic Laboratories

The Divisional Offices undertook the major task of planning for decentralisation of facilities and services provided by the National Acoustic Laboratories.

The increased demand for acoustic services, both by pensioners and children, was evident Australia-wide. Early in the year, some States reported a shortage of hearing aids which resulted in lengthy waiting periods for pensioners. This shortage has now been overcome.

### Pathology laboratories

Increased activity in pathology laboratory services was reported by all States during the year.

To cope with increased demand, a program of extension or replacement of laboratory buildings continued.

In Queensland, the Toowoomba laboratory was extended by some 700 square metres, while a new laboratory was opened in Albury, N.S.W., to replace the one destroyed by fire in 1971. Other new laboratory buildings are planned for Canberra, Port Pirie, Hobart, Bendigo, Launceston, Rockhampton, Townsville and Darwin, and extensions are planned in Lismore and Tamworth.

### Medical activities

The Medical Branches in the Divisional Offices assumed responsibility for some additional functions during the year. In addition to undertaking assessment of applicants for the Handicapped Child's Allowance, the Branches are now responsible for all quarantine functions and the examination of invalid pensioners at some regional offices of the Department of Social Security.

Their traditional tasks of medical assessment and vaccinations and inoculations also continued.

Training schemes for medical practitioners and students were also carried out. In South Australia, for example, arrangements were made with the Royal Australian College of General Practitioners for lectures to be given in the Divisional Office to medical graduates who had not practised medicine for some time. They were given instruction on current legislation, procedures and requirements under the National Health Act. To make students more aware of their responsibilities under Australian Government legislation, arrangements were also made with the Professor of Community Medicine at the University of Adelaide for final-year medical students to attend the office and learn something of Departmental activities. Talks were given on smallpox vaccinal reactions, pharmaceutical benefits and hearing aid services.

# School of Public Health and Tropical Medicine

In the year under review, the School of Public Health and Tropical Medicine expanded its already broad scope of teaching activities and its consultative and advisory functions. In addition, it undertook a wide variety of research projects covering the fields of biochemistry, environmental health, medical entomology, nutrition, occupational health, parasitology, pathology and microbiology, preventive and social medicine, radiation biology and tropical medicine.

## Teaching

Seventeen Diplomas in Public Health, ten in Tropical Medicine and Hygiene and thirteen in Occupational Health were awarded during the year, while planning continued 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.

In addition, the First Regional Course in Occupational Health, organised in conjunction with the WHO Regional Office for the Western Pacific, was conducted by the School's Occupational Health Section. Plans are in progress for a similar course to be conducted at the School in November-December 1975.

## Research

### Environmental health

The medical and physiological results of the recent Combined Services trial in Darwin of liferaft survival rations were analysed and reported. It was found that the subjects lost 6 per cent of their body weight in four days, but remained in fairly good condition. Although the liferaft canopies were found to provide excellent protection against radiant heat, this was achieved at the expense of an 80 per cent reduction in air movement and increased temperature and humidity, all of which tended to increase heat stress and thus accelerate dehydration. Whether the net effect of the canopy is to reduce heat stress or increase it is not yet known, and further analyses are being made to resolve this important question.

Further examination of the physiological data collected in Papua New Guinea during the recent International Biological Program has shown that



although New Guinean villagers sweat much less than acclimatised Europeans at high levels of heat stress, the average sweat losses of the two groups are much the same at the levels of heat stress experienced during everyday life in Papua New Guinea.

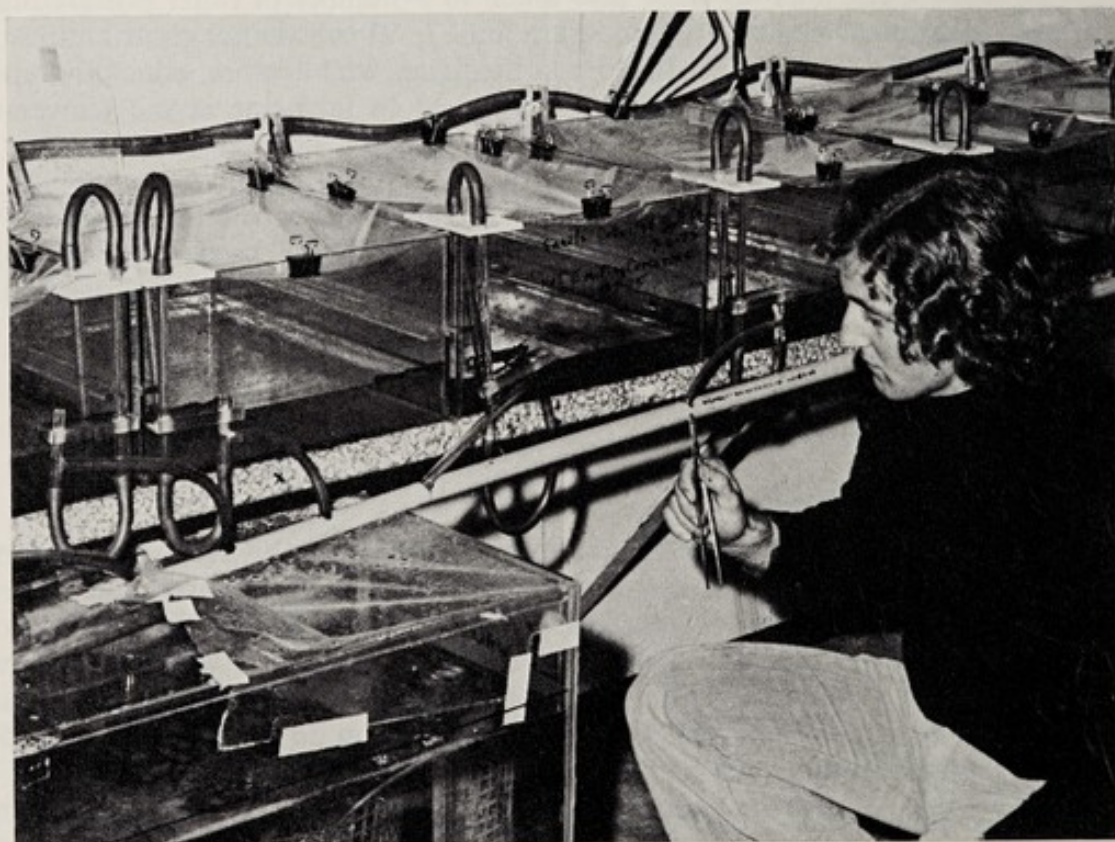
### Medical entomology

Work carried out in connection with the Department of Health's investigation into insect entry via international air traffic resulted in large collections of medically and agriculturally important insects being taken from aircraft of various types.

A study of the possible association of rainfall patterns throughout parts of Australia with outbreaks of Australian Arboencephalitis (formerly Murray Valley encephalitis) was undertaken following the most recent epidemic in January-June 1974. This work revealed certain correlations and enabled a prediction to be made of no outbreak in 1975.

Eggs of *Aedes notoscriptus*, an Australian mosquito which is a possible semi-domestic to sylvan host for yellow fever, are being supplied to the East African Virus Research Institute, Entebbe, Uganda, where research into the capacity of this species to act as a vector of yellow fever is being undertaken.

Investigations into the fungal pathogen *Culicinomyces* began during the year, with the culturing of the fungus and colonisation of mosquito hosts. A new edition of *Arthropod Bites and Stings*, prepared by Associate Professor D. J. Lee, was published and the preparation of a *Checklist of Australian Mosquitoes* is progressing.



Mr David Feugelman, a technologist at the School of Public Health and Tropical Medicine, attends to a colony of Australian freshwater molluscs maintained for testing susceptibility to human schistosome parasites.

## Nutrition

Work continued in the development of teaching programs for postgraduate science students. On the research side, work began on a project to determine calcium intake and excretion in older women whilst investigations into the prevalence of obesity in school children is being undertaken with a view to planning better nutrition programs.

## Biochemistry

The work of the Biochemistry Section in the past year was concerned with the development of iso-enzyme methodology for diagnostic purposes and the evaluation of instrumentation for use in clinical laboratories.

## Occupational health

Because of concern over possible effects of exposure to hazardous agents, including ionising radiation, the Occupational Health Section began a health survey of employees of the Atomic Energy Research Establishment at Lucas Heights, Sydney. The objects of the survey are to detect any chronic ill health resulting from past exposures, and to establish the general health of employees as a base for continuing health surveillance.

Screening was completed in the Post Office part of the Section's contribution to the National Blood Pressure Study and has now been extended to include the Taxation Department in Sydney. By the end of April nearly 9000 people of all ages had been screened.

The International Agency for Research on Cancer is sponsoring work on a counting trial of asbestos dust with a view to ensuring the comparability (and perhaps standardising) of asbestos dust counts in different countries. Ten countries, including Australia, have been included in the trial and the Occupational Health Section is the Australian Collaborating Laboratory. The results were to be presented at the Eighteenth International Congress in Occupational Health at Brighton, England, in September 1975.

Work carried out on sickness absence and respiratory impairment in relation to smoking in industry, which began in October 1973 with the aid of funds received through the National Health and Medical Research Council from the R. T. Hall Trust, is progressing well. Fifteen organisations, both governmental and private, have co-operated and approximately 2000 people have been sampled.

## Parasitology

The longitudinal study of the level of parasitism of different groups in the community continued. Snowy Mountains Engineering Corporation personnel returning from overseas projects maintained a low level of alimentary parasitism. Vietnamese war orphans were found to have an appreciable, but acceptable level of alimentary parasitism and no malaria, whilst veterinary research workers were frequently found to be infected with *Trichostrongylus*.

Investigations continued into the biology of fresh water and estuarine snails as intermediate hosts of human diseases. The number of colonies of fresh-water pulmonates maintained in the laboratory was increased to nineteen. Taxonomic studies were made of these species by morphological examination of the reproductive systems, by biochemical and immunological methods and by examination under the scanning electron microscope.

*Unsatisfactory posture, caused by inappropriately designed and incorrectly adjusted seating, is one of the facets of a study of working conditions of Post Office phonogram operators. The study is being undertaken by officers of the Occupational Health Section of the School of Public Health and Tropical Medicine.*



A request from the Indonesian Government for immunological study of hookworm infestation in that country was considered by a group visiting research centres in West Java.

## Pathology and microbiology

Food surveys in connection with overseas airline catering services have shown a noticeable diminution of infection among passengers and aircrew. Such findings reflect the response to control measures that have been introduced and indicate their importance in preventing the introduction of exotic food and water borne diseases into Australia.

Work continued on the examination of oysters for the presence of viral and bacteriological pathogens and showed that commercially produced oysters in New South Wales present no public health hazard. If this is to continue, however, the water from which such oysters are collected will need to remain unpolluted.

Six cases were examined during the year to exclude the diagnosis of small-pox. Five of these were varicella and the other possibly varicella with secondary staphylococcal infection. Specimens received for mycological examination suggest that foci of chromoblastomycosis exist in Australia and that dermatophytic infections could be a significant cause of minor morbidity.

## Preventive and social medicine

A preliminary national study of head and neck cancer was completed during the year. It will be the forerunner of a comprehensive nation-wide recording of the epidemiology and of the effects of treatment of this condition.

The ten-year epidemiological study of leprosy with its associated clinical trial in Karamui, Papua New Guinea, is in its final stages.

A mobile multiphasic screening system, for use in identifying high-risk groups with special needs for prevention or intervention, has been implemented. Other work concerned with small group counselling for families of the disabled has progressed well and has helped develop the School's expertise in modern teaching methods.

The Section's laboratory continued to develop foetal screening procedures for neural-tube defects and to refine techniques for handling large numbers of samples for processing by radioimmunoassay. Work also continued on the cytogenetics of infertility. Epidemiological and anti-natal detection programs for neural-tube defects were extended on a national co-operative basis.

Investigation of the health insurance status and health-care delivery problems of Greek migrants has shown that many migrant families were not covered by voluntary health insurance and faced difficulties in obtaining satisfactory health care.

## Radiation biology

The Radiation Biology Section continued its research into lymphocyte replicating ability (LRA). LRA describes the response in tissue culture of blood lymphocytes stimulated by some substance such as phytohaemagglutinin (PHA). LRA is reduced by many drugs used in cancer therapy and transplantation techniques and this provides some measure of the immunological impairment of these patients. In conjunction with the assay of radiation-induced chromosome damage, it can be used to assess exposure to ionising radiation.

Recent work in the Section on replacing PHA as the stimulant in the LRA test by a preparation of irradiated tumour cells provided a more sensitive indication of radiation exposure in the 0-200 rad range. These irradiated cells, following successful long term storage at the temperature of liquid air in the laboratory's cryopreservation machine, are now being evaluated as reference cells in gauging the general immune status of patients undergoing cancer therapy.

Further investigation has been undertaken using the capability of the cryopreservation machine for programmed temperature descent to determine optimal conditions of freezing and to ensure maximal viability of cells being stored at  $-196^{\circ}\text{C}$ . The large capacity of the machine has permitted the bulk storage of leukaemia cells collected from patients' blood and passed through the cell centrifuge at St. Vincent's Hospital. On subsequent thawing and following their irradiation, the cells have been shown to retain antigenicity by IRA testing—a necessary consideration in the supply of these cells by the School for an Australia-wide clinical research program at present under way.

## Tropical medicine

The major achievement of the year was the completion and publication of the final report of the Coasttown Project as Service Publications Nos. 10 and

11 of the School. These provide valuable material on the health and social conditions of the Coasttown Aborigines (1968-71) and a methodology for the implementation of the various recommendations.

The study showed that the Coasttown Aboriginal population was expanding by about 3 per cent annually, with a very low infantile mortality. Both children and adults, however, suffered very high morbidity. This community had about twice the age-adjusted death rate of Australia as a whole, twice the birth rate, three times the rate of invalid pensioners, ten times the unemployment rate, and also suffered severe educational disadvantages. In children there were high levels of communicable and non-communicable infections, anaemia, under-nutrition with growth retardation, middle ear diseases and gross dental decay. In adult morbidity emotional disturbance was significant—particularly in women and excessively so in mothers from multi-problem households. There was under-utilisation of services except in crisis situations.

The study showed clearly that a carefully selected Public Health Nurse could establish the necessary rapport which would lead to gradual improvements in the more obvious indicators of poor health. A major recommendation makes clear that specially selected and trained female nurses, working with Aboriginal aides, in multi-purposes roles, offer the best prospects for improvement in the health and social conditions of Aborigines. It would, however, be unrealistic to expect dramatic changes to flow from these or other efforts.

The report concludes by warning that the involvement of many field-workers from various agencies is more likely to produce a deterioration than an improvement in Aboriginal health, for stress must be relieved by acceptable support rather than increased by external pressure.

## Administration

In March 1975, Professor R. K. Macpherson officially retired as Principal of the School but accepted an offer to remain in the position pending the appointment of his successor.

A Committee of Review headed by the Chairman of the Hospitals and Health Services Commission, Dr S. Sax, undertook a review of teaching and research activities at the School. Its recommendations are expected to be released shortly.

Work continued during the year on re-cataloguing the School's extensive library collection. General administrative services were further strengthened by the setting up of a considerable items store and by the acquisition of sophisticated word processing equipment.

# Institute of Child Health

The Institute of Child Health expanded its research activities during the year, while continuing its primary function of undergraduate and postgraduate medical teaching.

## Child psychiatry

Lecture seminars in child psychiatry were again conducted for undergraduate medical students, social work students and postgraduate nurses, while lectures and demonstrations were given for candidates preparing for membership of the Australian and New Zealand College of Psychiatry.

The Professor of Child Psychiatry took an active part in seminars on a variety of topics including problems of migrant children, catering for a child's individuality and learning problems, breakdown in marriage, psychiatric problems of the single mother, attachment theory, death and the dying, and individuality and the emotional problems of early childhood.

## Research laboratories

Work continued during the year on folic acid metabolism, mammalian purine metabolism and central nervous system transmitters. The studies on folic acid metabolism progressed well and opened up a number of new areas of investigation.

The Associate Professor of Child Health attended a major symposium in Konstanz, West Germany, where research workers from a number of countries discussed mutual problems encountered in the analysis of the complex problem of human folate metabolism.

## Rheumatic fever, chorea and rheumatic heart disease

The long-term study of rheumatic fever and chorea continued. Many of the original patients at the Rheumatic Clinic are now adolescents or adults, and regular assessment of their cardiac status is still being made. The effects of residual heart damage on each patient's life-style is under constant review. Since the study began, nearly 300 patients have received regular prophylaxis, given as phenoxy-methyl penicillin tablets twice daily.

A large number of other patients who were initially admitted to the Royal Alexandra Hospital for Children were also studied, while paediatricians and general practitioners continued to refer children to the Clinic for an opinion on diagnosis or management of rheumatic fever and related disorders.

## Urinary tract infections

The high incidence of urinary tract infections in infancy and childhood continued as a major study, together with the difficulty in diagnosing the

condition, the frequency of recurrences of infection, and the common associations of congenital abnormalities of the urinary tract. Particular attention was paid to factors operating in infancy, as much of the chronic pyelonephritis of early adult life is now believed to have its origin in childhood.

### Thalassaemia

The treatment of children afflicted with  $\beta$  thalassaemia major using the hypertransfusion method also continued. Patients visit the clinic for small transfusions every three to four weeks. The children feel much better symptomatically and seem to have fewer infections, while bone changes improve and hepatosplenomegaly is decreased.

### Social work

In addition to their clinical work, the Institute's social workers continued their task of teaching medical students. They also supervised the work of undergraduate students from the Department of Social Work at the University of Sydney.

### Other activities

The library of the Royal Alexandra Hospital for Children, which is supported jointly by the Institute and the Hospital, was greatly enlarged following a grant from the Australian Universities Commission. It is considered now to be one of the finest paediatric libraries in Australia, receiving all English-language paediatric journals and many in foreign languages. It is receiving increasing use by undergraduate and postgraduate medical students, research workers and paediatricians.

The Professor of Child Health continued his active association as a member of several national and international bodies concerned with paediatrics and child welfare. As a member of the Protein-Calorie Advisory Group (P.A.G.) of the United Nations System—a group which provides expert advice to the World Health Organisation and associated bodies—he attended the annual meeting in Rome, and was later chairman of a regional seminar held in Singapore.

The seminar was a unique gathering at which paediatricians and Health Ministry officials from seven South-East Asian countries conferred with representatives of companies selling infant foods in the region. The representatives undertook to work towards the formation of an international industry council which would seek ways of implementing P.A.G.'s recommendations in such matters as codes of ethics in advertising and promoting infant foods. While the recommendations of the seminar were of great importance for the South-East Asian countries concerned, they are also of significance to Australia as a major supplier of food for export.

In other activities, a feasibility study on the future of the Royal Alexandra Hospital for Children was begun. The Institute was involved in discussions with the Hospital, the University of Sydney and the firm conducting the study.

Dr H. C. Chen from the People's Republic of China was given a grant to make a critical comparison of the treatments recommended in the main paediatric textbook used in China with current practice in Australia.

One of the Institute's social workers, Mr Warren Simmons, was awarded a Churchill Fellowship in 1974. He studied facilities for children at risk in England and the United States, and it is expected that his observations will help in developing similar services in New South Wales.

## APPENDIX 1—STATISTICS

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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., 1973, refer to the year ended 31 December 1973; those shown as, e.g., 1972-73, refer to the year ended 30 June 1973. Other yearly periods are specifically indicated.

Mean populations are calculated for 12 month periods to provide an average basis for calculations requiring allowance for the continuous change in population figures during such periods. Mean populations are used for the calculation of rates such as crude birth rate, death rates etc.

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 available.

— Nil.

A.B.S. Australian Bureau of Statistics.

W.H.O. World Health Organisation.

## HEALTH INDICATORS

## Life expectancy

TABLE 1 COMPARATIVE EXPECTATION OF LIFE—1881-1890 TO 1973

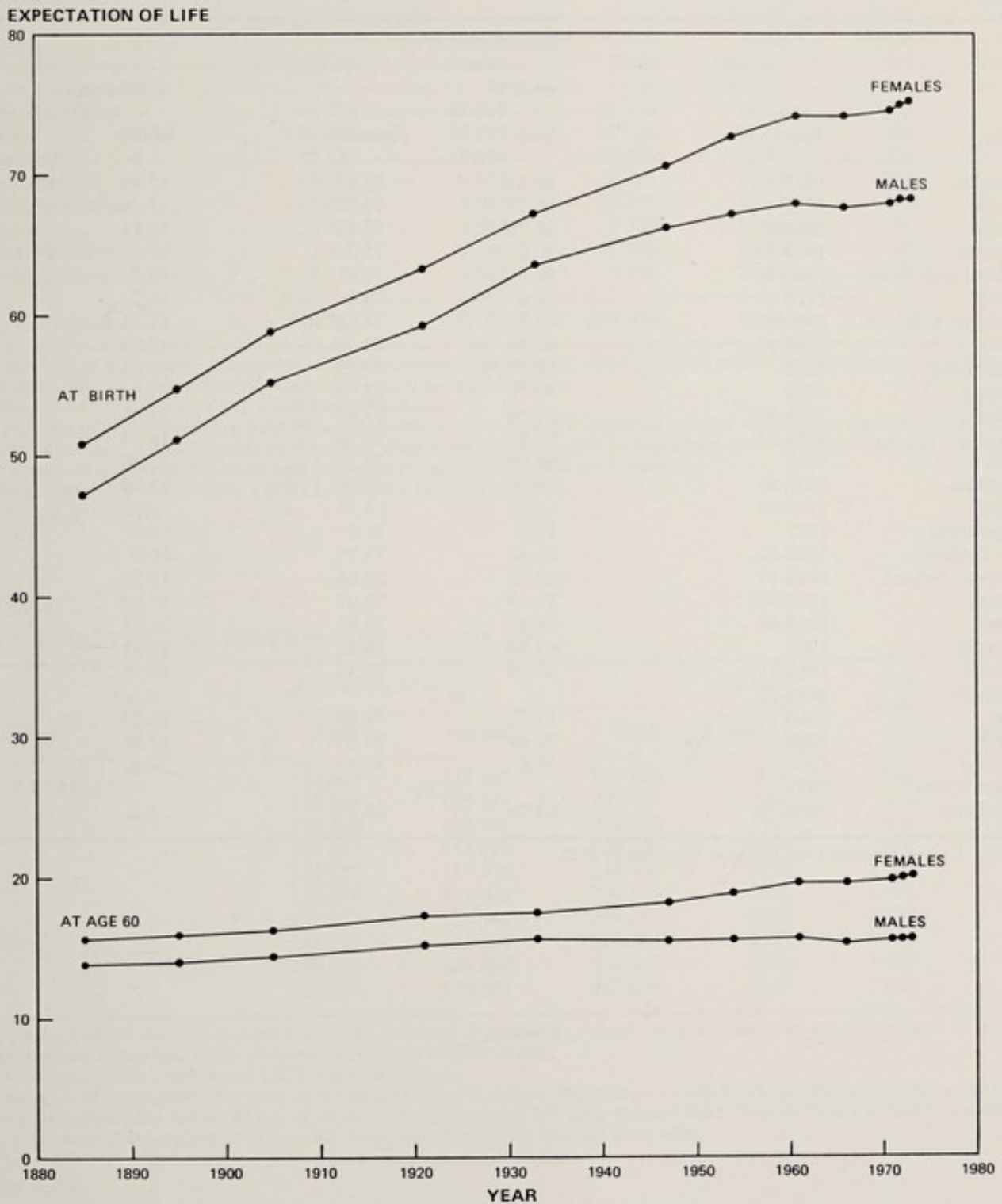
Year	Expectation of life			
	At birth		At 60 years	
	Males	Females	Males	Females
1881-1890 . . . . .	47.20	50.84	13.77	15.39
1891-1900 . . . . .	51.08	54.76	13.99	15.86
1901-1910 . . . . .	55.20	58.84	14.35	16.20
1920-1922 . . . . .	59.15	63.31	15.08	17.17
1932-1934 . . . . .	63.48	67.14	15.57	17.74
1946-1948 . . . . .	66.07	70.63	15.36	18.11
1953-1955 . . . . .	67.14	72.75	15.47	18.78
1960-1962 . . . . .	67.92	74.18	15.60	19.51
1965-1967 (a) . . . . .	67.63	74.16	15.27	19.52
1971 . . . . .	67.95	74.51	15.42	19.73
1972 . . . . .	68.19	74.99	15.45	19.97
1973 . . . . .	68.23	75.17	15.48	20.07
Increase in life expectancy since 1881-1890 . . . . .	21.03	24.33	1.71	4.68

(a) Figures from 1965-67 onwards are based on population and death statistics including Aborigines.

Source: Australian Government Actuary and A.B.S.

# Life expectancy

GRAPH 1 COMPARATIVE EXPECTATION OF LIFE—1881-1890 TO 1973





**Life expectancy****TABLE 2** COMPARATIVE EXPECTATION OF LIFE—SELECTED COUNTRIES—LATEST AVAILABLE YEAR

Country	Year	Expectation of life			
		At birth		At 60 years	
		Males	Females	Males	Females
Australia	1973	68.23	75.17	15.48	20.07
Austria	1971	66.57	73.72	15.18	19.05
Canada	1965-67	68.75	75.18	16.81	20.58
Denmark	1969-70	70.8	75.7	17.1	20.4
England and Wales	1969-71	68.8	75.1	15.2	19.8
France	1970	68.6	76.1	16.2	20.8
Germany, F.R.	1966-68	67.55	73.58	15.29	18.88
Greece	1960-62	67.46	70.70	17.00	18.85
Hong Kong	1968	66.74	73.29	15.65	20.54
Hungary	1970	66.28	72.05	n.a.	n.a.
Ireland	1965-67	68.58	72.85	15.63	18.37
Italy	1964-67	67.87	73.36	16.35	19.46
Japan	1968	69.05	74.30	15.90	19.18
Mauritius	1961-63	58.66	61.86	13.24	15.82
Mexico	1965-70	61.03	63.73	n.a.	n.a.
Netherlands	1971	71.0	76.7	16.9	20.6
New Zealand	1960-62	68.44	73.75	16.0	19.27
Northern Ireland	1969-71	67.75	73.66	15.10	18.95
Norway	1961-65	71.03	75.97	17.60	20.06
Poland	1965-66	66.85	72.83	16.07	19.27
Romania	1968	65.50	69.82	16.31	18.25
Scotland	1969-71	67.10	73.36	14.57	18.85
Singapore	1965-70		68.2	n.a.	n.a.
Spain	1960	67.32	71.90	16.28	18.77
Sweden	1969	71.69	76.50	17.40	20.30
Thailand	1960	53.6	58.7	n.a.	n.a.
United States	1971		71.1 p		18.50
Yugoslavia	1968-70	64.79	69.20	n.a.	n.a.

Source: United Nations Demographic Year Book, 1972.

## Births

TABLE 3 BIRTHS AND BIRTH RATES—STATES AND TERRITORIES—1973

State	Live births (a)			Crude birth rate (b)	Still-births (c)	Still-birth rate (d)
	Male	Female	Total			
New South Wales . . . . .	44 815	42 517	87 332	18.52	1 028	11.6
Victoria . . . . .	34 405	32 718	67 123	18.66	802	11.8
Queensland . . . . .	19 383	18 684	38 067	19.83	387	10.1
South Australia . . . . .	10 475	9 932	20 407	16.97	244	11.8
Western Australia . . . . .	10 557	9 953	20 510	19.12	270	13.0
Tasmania . . . . .	3 744	3 582	7 326	18.46	98	13.2
Northern Territory . . . . .	1 460	1 349	2 809	29.30	40	14.0
Australian Capital Territory . . . . .	2 130	1 966	4 096	24.24	53	12.8
Australia . . . . .	126 969	120 701	247 670	18.81	2 922	11.7

(a) A product of conception, irrespective of the duration of pregnancy, which, after expulsion or extraction from its mother, breathes, or shows any other evidence of life such as heart-beat.

(b) The number of live births per 1 000 mean population.

(c) A product of conception of at least 20 weeks gestation (or at least 400 grammes weight) which, after expulsion or extraction from its mother, did not breathe or show any other evidence of life such as heart-beat. Prior to 1972 a stillbirth was defined as a product of conception of at least 28 weeks gestation which was not born alive.

(d) The number of stillbirths per 1 000 of all births, live and stillborn.

Source: A.B.S.

## Births

TABLE 4 BIRTHS AND BIRTH RATES—1964 TO 1973

Year ended 31 December	Live births (a)			Crude birth rate (b)	Still-births (c)	Still-birth rate (d)
	Male	Female	Total			
1964 . . . . .	118 062	111 087	229 149	20.6	n.a.	n.a.
1965 . . . . .	114 466	108 388	222 854	19.7	n.a.	n.a.
1966 . . . . .	114 530	108 096	222 626	19.3	n.a.	n.a.
1967 . . . . .	117 680	111 616	229 296	19.4	n.a.	n.a.
1968 . . . . .	123 627	117 279	240 906	20.0	2 402	9.9
1969 . . . . .	128 271	121 905	250 176	20.4	2 464	9.8
1970 . . . . .	131 972	125 544	257 516	20.6	2 532	9.7
1971 . . . . .	141 114	135 248	276 362	21.6	2 519	9.0
1972 . . . . .	136 009	128 960	264 969	20.4	3 089	11.5
1973 . . . . .	126 969	120 701	247 670	18.8	2 922	11.7

(a) A product of conception, irrespective of the duration of pregnancy, which, after expulsion or extraction from its mother breathes, or shows any other evidence of life such as heart-beat.

(b) The number of live births per 1 000 mean population.

(c) A product of conception of at least 20 weeks gestation (or at least 400 grammes weight) which, after expulsion or extraction from its mother, did not breathe or show any other evidence of life such as heart-beat. Prior to 1972 a stillbirth was defined as a product of conception of at least 28 weeks gestation which was not born alive.

(d) The number of stillbirths per 1 000 of all births, live and stillborn.

Source: A.B.S.

**Births****TABLE 5 CRUDE BIRTH RATES (a)—SELECTED COUNTRIES—1964 TO 1973**

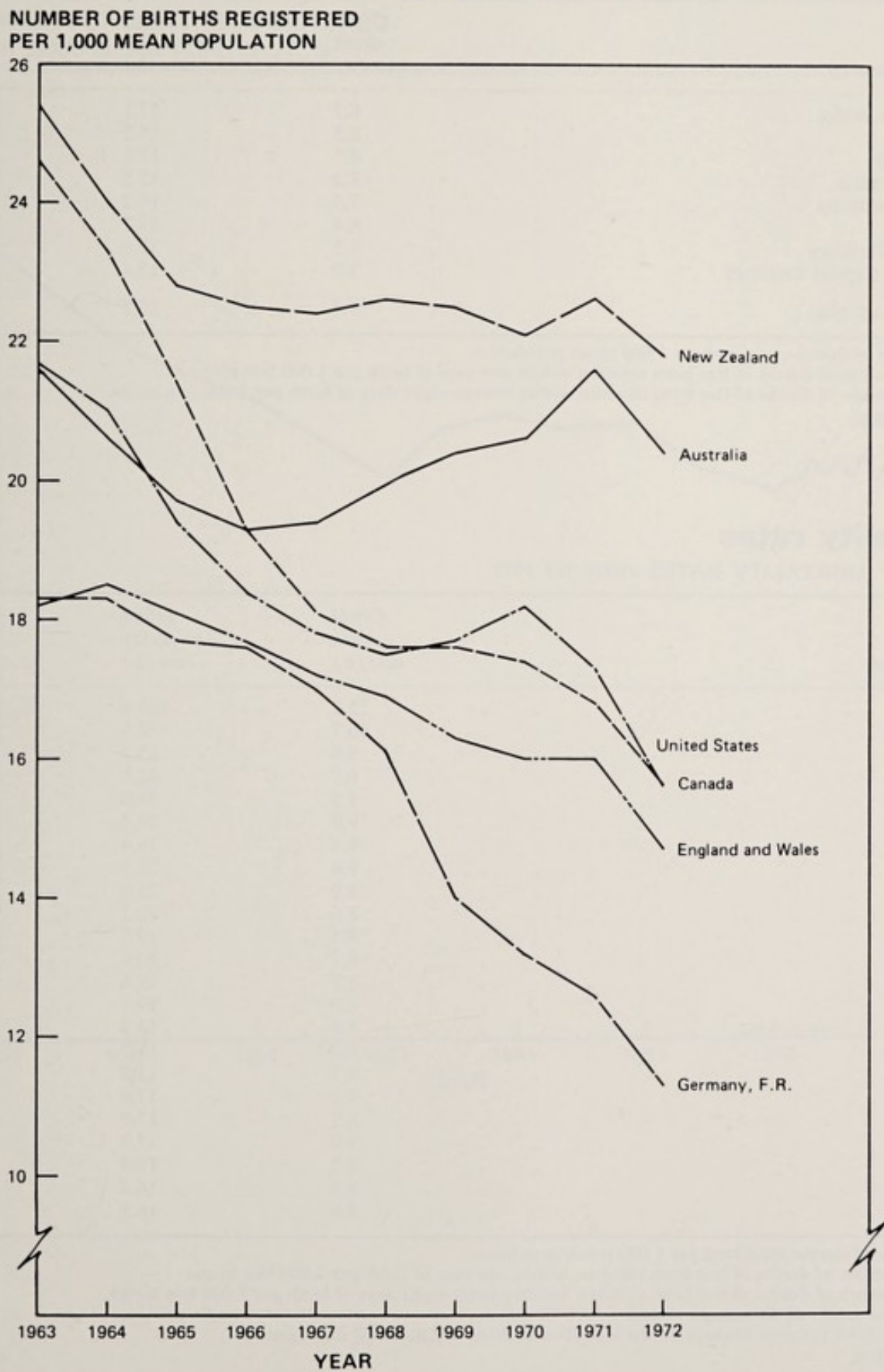
Country	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Australia . . . . .	20.6	19.7	19.3	19.4	20.0	20.4	20.6	21.6	20.4	18.8
Austria . . . . .	18.6	17.9	17.6	17.4	17.2	16.5	15.2	14.6	13.9	13.1
Canada . . . . .	23.5	21.4	19.3	18.1	17.6	17.6	17.4	16.8	15.9	15.5
Denmark . . . . .	17.6	18.0	18.4	16.8	15.3	14.5	14.4	15.2	15.1	14.3
England and Wales . . . . .	18.5	18.1	17.7	17.2	16.9	16.3	16.0	16.0	14.8	13.7
France . . . . .	18.1	17.7	17.5	17.0	16.7	16.7	16.8	17.2	16.9	16.5
Germany, F.R. . . . .	18.3	17.7	17.6	17.0	16.1	14.0	13.2	12.6	11.4	10.3
Greece . . . . .	18.0	17.7	17.9	18.7	18.2	17.4	16.5	16.0	15.7	15.3
Hong Kong . . . . .	29.4	27.7	24.9	24.6	21.3	20.6	19.6	19.0	19.7	19.3
Hungary . . . . .	13.1	13.1	13.6	14.6	15.1	15.0	14.7	14.6	14.7	15.0
Ireland . . . . .	22.5	22.1	21.6	21.1	21.0	21.5	21.9	22.7	22.4	22.3
Italy . . . . .	19.9	19.2	18.5	18.1	17.6	17.6	16.8	16.8	16.3	16.0
Japan . . . . .	17.7	18.6	13.7	19.4	18.6	18.4	18.8	19.3	19.3	19.4
Mauritius . . . . .	38.1	35.5	35.3	30.4	31.0	27.2	26.7	25.3	24.8	22.7
Mexico . . . . .	44.8	44.2	44.3	43.4	43.5	43.0	43.4	44.1	44.6	47.5
Netherlands . . . . .	20.7	19.9	19.2	18.9	18.6	19.2	18.3	17.2	16.1	14.5
New Zealand . . . . .	24.0	22.8	22.5	22.4	22.6	22.5	22.1	22.6	21.8	20.5
Northern Ireland . . . . .	23.6	23.1	22.5	22.4	22.1	21.4	21.1	20.7	19.4	18.7
Norway . . . . .	17.7	17.8	17.9	17.6	17.6	17.6	16.6	16.8	16.3	15.5
Poland . . . . .	18.1	17.3	16.7	16.3	16.2	16.3	16.7	17.2	17.4	17.9
Romania . . . . .	15.2	14.6	14.3	27.4	26.7	23.3	21.1	19.5	18.8	18.2
Scotland . . . . .	20.0	19.3	18.6	18.6	18.3	17.4	16.8	16.6	15.1	14.3
Singapore . . . . .	32.1	31.1	28.6	25.9	23.8	22.2	22.1	22.3	23.0	22.3
Spain . . . . .	22.0	21.1	20.8	20.9	20.3	20.0	19.7	19.7	19.4	n.a.
Sweden . . . . .	16.0	15.9	15.8	15.4	14.3	13.5	13.7	14.1	13.8	13.5
Thailand . . . . .	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	33.5	34.5	32.8	n.a.
United States . . . . .	21.0	19.4	18.4	17.8	17.5	17.7	18.2	17.3	15.6	15.0
Yugoslavia . . . . .	20.8	20.9	20.2	19.5	18.9	18.9	17.8	18.3	18.3	18.0

(a) The number of live births per 1 000 mean population.

Source: W.H.O. *Epidemiological and Vital Statistics*, Vols. 18 to 20, No. 12, 1965 to 1967.*World Health Statistics Report*: Vols. 21 to 24, No. 12, 1968 to 1971; Vol. 27, No. 3-4, 1974; Vol. 28, No. 4, 1975.

## Births

GRAPH 2 CRUDE BIRTH RATES—SELECTED COUNTRIES—1963 TO 1972



**Mortality rates**

TABLE 6 MORTALITY RATES—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

<i>State or territory</i>	<i>Crude death rate (a)</i>	<i>Infant mortality rate (b)</i>	<i>Neonatal mortality rate (c)</i>
New South Wales . . . . .	8.7	17.1	12.7
Victoria . . . . .	8.5	14.3	10.3
Queensland . . . . .	8.7	17.5	12.9
South Australia . . . . .	8.2	13.5	9.1
Western Australia . . . . .	7.3	19.2	12.9
Tasmania . . . . .	8.4	18.7	11.3
Northern Territory . . . . .	6.1	35.6	21.0
Australian Capital Territory . . . . .	3.9	15.4	12.5
Australia . . . . .	8.4	16.5	11.8

(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.

**Mortality rates**

TABLE 7 MORTALITY RATES—1901 TO 1973

<i>Year ended 31 December</i>	<i>Crude death rate (a)</i>	<i>Infant mortality rate (b)</i>	<i>Neonatal mortality rate (c)</i>
1901 . . . . .	12.2	103.6	n.a.
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 (d) . . . . .	9.7	38.4	25.5
1945 (d) . . . . .	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 (e) . . . . .	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
1973 . . . . .	8.4	16.5	11.8

(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) Excludes deaths of defence personnel.

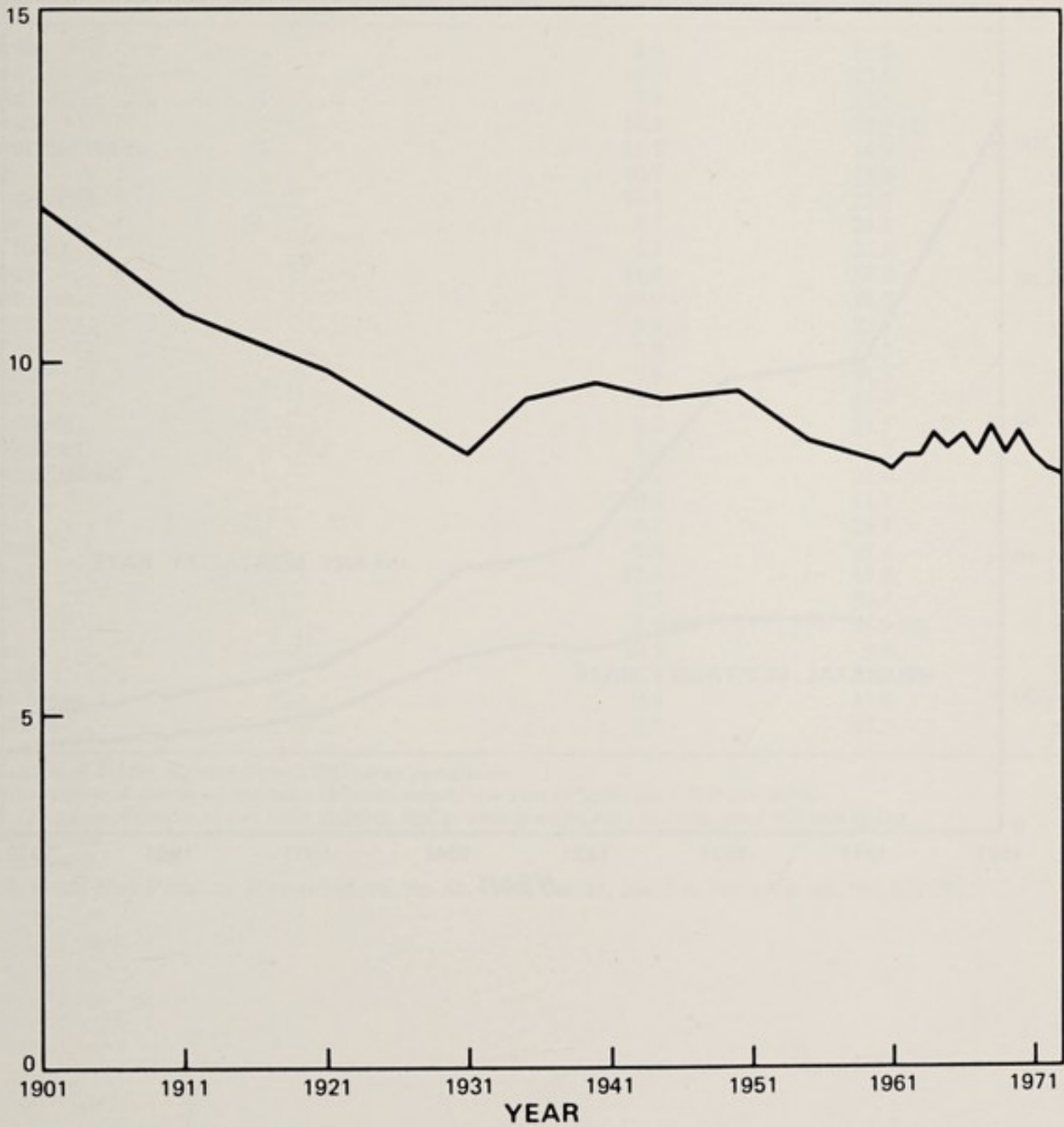
(e) Prior to 1966 the rates exclude deaths identified as those of full-blood Aborigines.

Source: A.B.S.

## Mortality rates

GRAPH 3 CRUDE DEATH RATES—1901 TO 1973

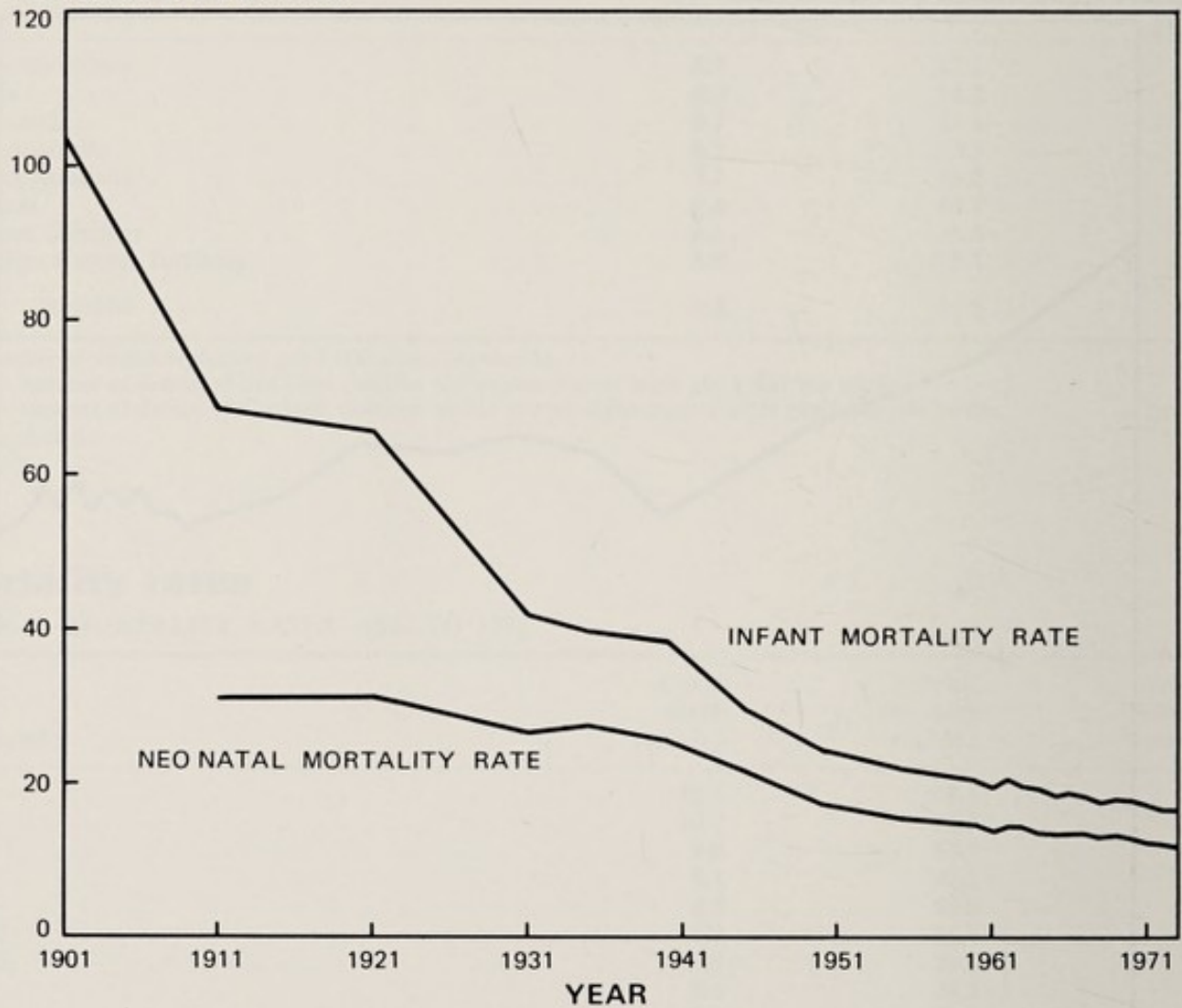
NUMBER OF DEATHS REGISTERED  
PER 1,000 MEAN POPULATION



## Mortality rates

GRAPH 4 INFANT AND NEONATAL MORTALITY RATES—1901 TO 1973

NUMBER OF DEATHS  
PER 1,000 LIVE BIRTHS



## Mortality rates

TABLE 8 MORTALITY RATES—SELECTED COUNTRIES—1973

Country	Crude death rate (a)	Infant mortality rate (b)	Neonatal mortality rate (c)
Australia . . . . .	8.4	16.5	12.0 (d)
Austria . . . . .	12.4	23.8	18.6 (d)
Canada . . . . .	7.4	15.5	12.4 (e)
Denmark . . . . .	10.1	12.2 (d)	n.a.
England and Wales . . . . .	11.9	16.9	11.6 (e)
France . . . . .	10.7	15.5	n.a.
Germany, F.R. . . . .	11.8	22.7	17.9 (e)
Greece . . . . .	8.7	24.1	n.a.
Hong Kong . . . . .	5.1	16.4	12.1 (e)
Hungary . . . . .	11.8	34.0	28.7 (e)
Ireland . . . . .	10.9	18.0	14.0 (d)
Italy . . . . .	9.9	25.7	n.a.
Japan . . . . .	6.6	11.3	7.7 (d)
Mauritius . . . . .	7.8	63.3	26.9 (e)
Mexico . . . . .	8.5	51.9	23.4 (d)
Netherlands . . . . .	8.2	11.5	8.6 (d)
New Zealand . . . . .	8.5	16.2	n.a.
Northern Ireland . . . . .	11.4	21.0	13.9 (d)
Norway . . . . .	10.1	11.8	9.4 (e)
Poland . . . . .	8.3	26.1	17.8 (e)
Romania . . . . .	9.8	38.1	15.3 (e)
Scotland . . . . .	12.4	19.0	13.5 (e)
Singapore . . . . .	5.5	20.4	14.4 (d)
Spain . . . . .	8.5 (d)	29.9 (d)	n.a.
Sweden . . . . .	10.5	9.9	8.8 (e)
Thailand . . . . .	6.8 (d)	27.0 (d)	n.a.
United States . . . . .	9.4	17.6	13.7 (d)
Yugoslavia . . . . .	8.7	43.3	n.a.

(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) 1972 figures.

(e) 1971 figures.

Source: *World Health Statistic Report*: Vol. 26, No. 12, 1973; Vol. 27, No. 3-4, 1974; Vol. 28, No. 4, 1975.



**Mortality rates****TABLE 9 AGE SPECIFIC DEATH RATES (a): SEX—AUSTRALIA—1921-25 TO 1973 (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+
<b>MALES</b>																			
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
1973	18.3	1.0	0.4	0.4	1.5	1.8	1.3	1.5	2.1	3.6	6.2	9.7	16.0	26.4	41.6	64.2	100.1	149.9	233.5
<b>FEMALES</b>																			
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
1973	14.1	0.7	0.3	0.3	0.6	0.5	0.6	0.8	1.3	2.1	3.6	5.2	8.2	12.5	19.6	34.5	58.7	102.6	195.6

(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.

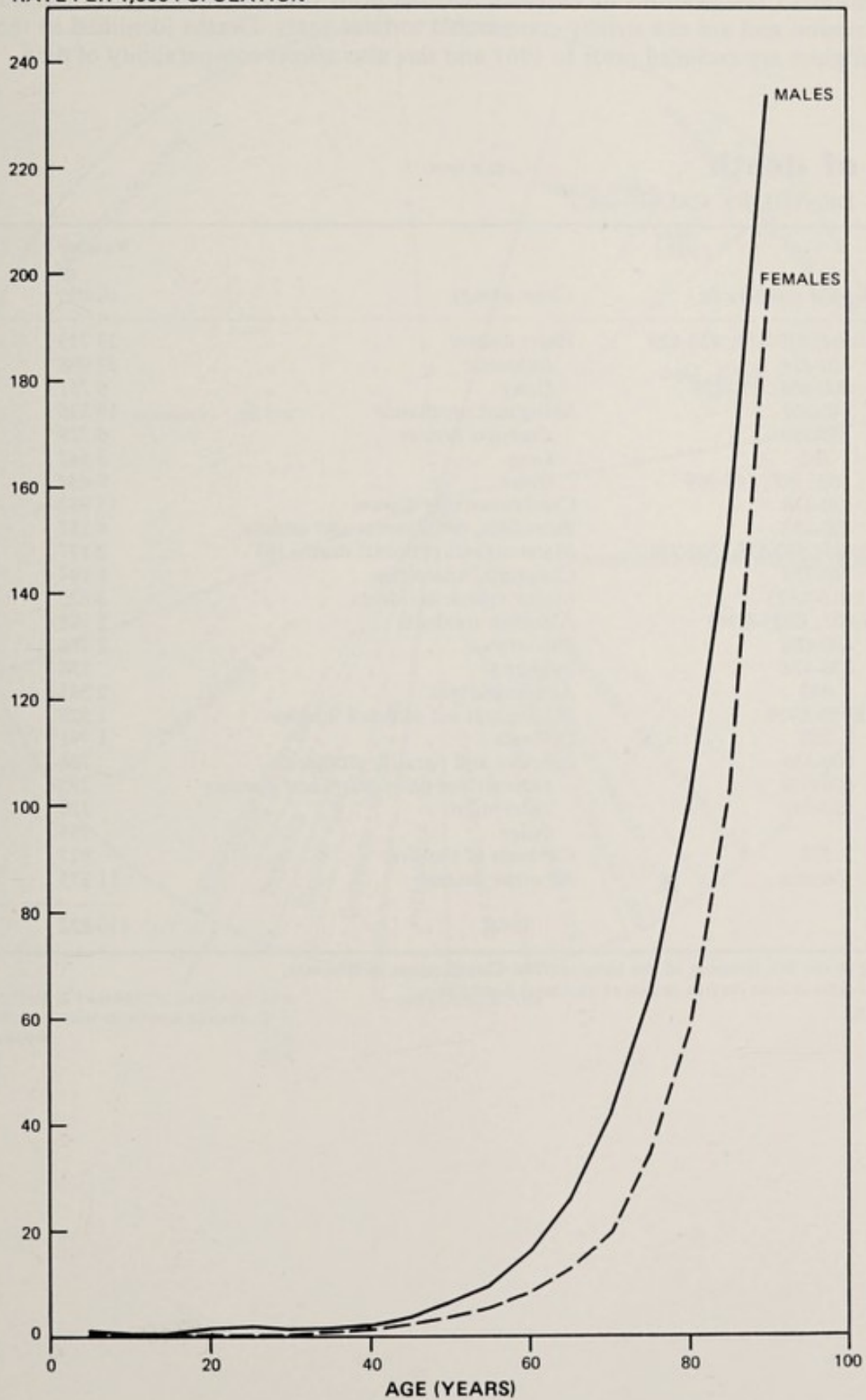
(c) Infant deaths per 1 000 live births registered.

(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.

**Mortality rates****GRAPH 5** AGE SPECIFIC DEATH RATES—1973

RATE PER 1,000 POPULATION



## Cause of death

Deaths by cause for 1968 and subsequent years are classified according to the Eighth Revision of the International Classifications of Diseases. Deaths prior to 1968 are classified according to the Seventh Revision and are not strictly comparable to later years. Deaths identified as those of full-blood Aborigines are excluded prior to 1967 and this also affects comparability of data.

## Cause of death

TABLE 10 DEATHS BY CAUSE—1973

<i>I.C.D. detailed list numbers (a)</i>	<i>Cause groups</i>	<i>Number of deaths</i>	<i>Percentage of all deaths</i>
393-398; 400-404; 410-414; 420-429	Heart disease . . . . .	39 739	35.86
410-414	Ischaemic . . . . .	32 988	29.77
393-398; 400-404; 420-429	Other . . . . .	6 751	6.09
140-209	Malignant neoplasms . . . . .	19 396	17.50
150-159	Digestive organs . . . . .	6 319	5.70
162	Lung . . . . .	3 643	3.29
140-149; 160; 161; 163-209	Other . . . . .	9 434	8.51
430-438	Cerebrovascular disease . . . . .	15 932	14.38
490-493	Bronchitis, emphysema and asthma . . . . .	4 117	3.71
630-639; 640-645; 650-678; 760-779	Maternal and perinatal deaths (b) . . . . .	2 177	1.96
740-759	Congenital anomalies . . . . .	1 194	1.08
E810-E823	Motor vehicle accidents . . . . .	3 825	3.45
E800-E807; E825-E949	All other accidents . . . . .	2 988	2.70
480-486	Pneumonia . . . . .	2 616	2.36
470-474	Influenza . . . . .	150	0.14
440	Arteriosclerosis . . . . .	2 381	2.15
E950-E959	Suicide and self-inflicted injuries . . . . .	1 528	1.38
250	Diabetes . . . . .	1 791	1.62
000-136	Infective and parasitic diseases . . . . .	786	0.71
008-009	Enteritis and other diarrhoeal diseases . . . . .	295	0.27
010-019	Tuberculosis . . . . .	126	0.11
	Other . . . . .	365	0.33
571	Cirrhosis of the liver . . . . .	927	0.84
Various	All other causes . . . . .	11 275	10.17
	Total . . . . .	110 822	100.00

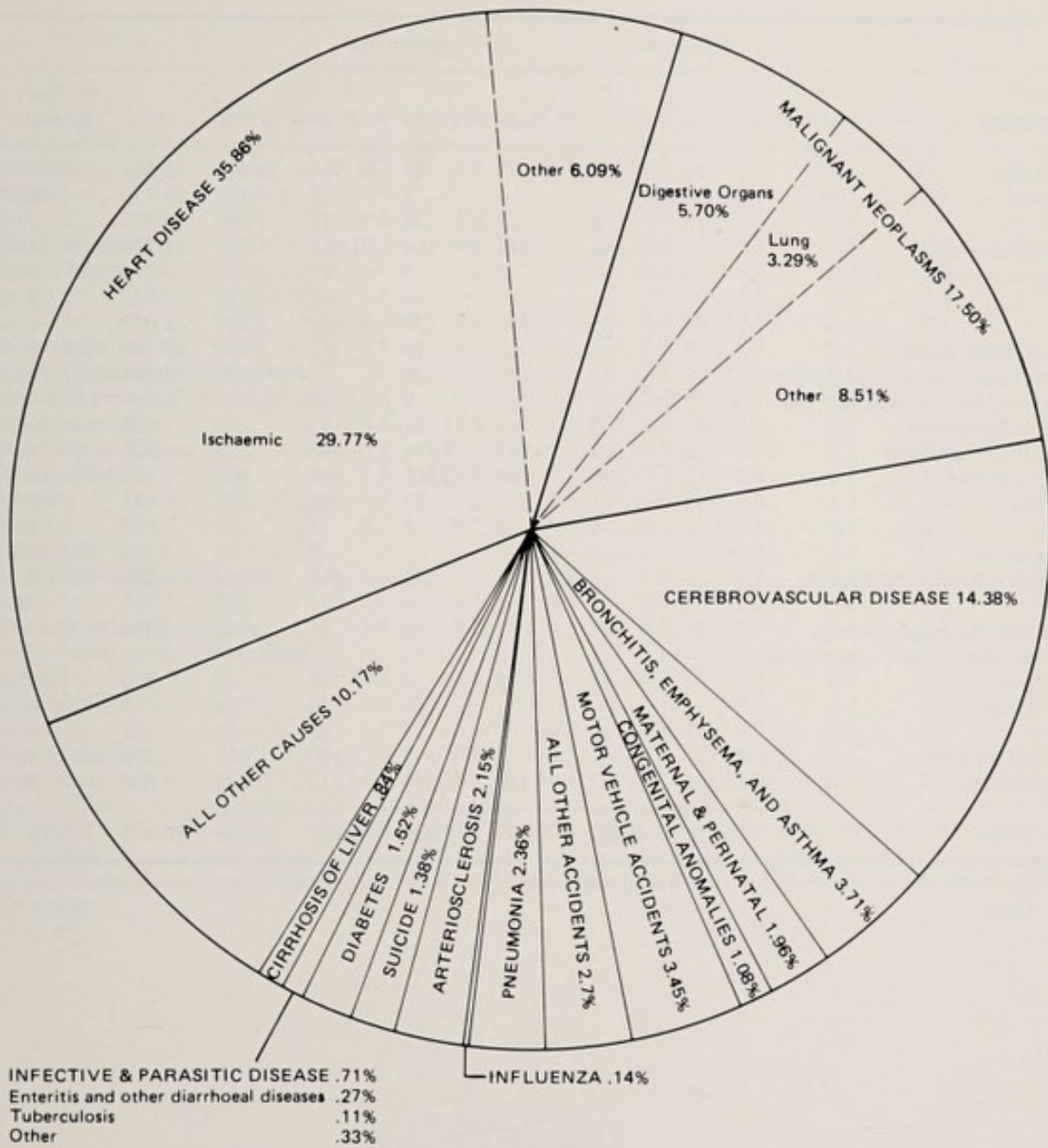
(a) According to the 8th Revision of the International Classification of Diseases.

(b) Includes deaths due to certain causes of perinatal morbidity.

Source: A.B.S.

# Cause of death

GRAPH 6 DEATHS BY CAUSE AS PERCENTAGE OF ALL DEATHS—1973



**Cause of death**TABLE 11 DEATHS BY CAUSE AND AGE GROUP—1973  
(Number)

Cause of death	Age group							Not stated	Total
	0	1-4	5-14	15-24	25-44	45-64	65+		
Heart disease . . . . .	11	9	11	37	944	10 209	28 511	7	39 739
<i>Ischaemic</i> . . . . .	—	—	—	5	727	9 112	23 139	5	32 988
<i>Other</i> . . . . .	11	9	11	32	217	1 097	5 372	2	6 751
Malignant neoplasms . . . . .	13	86	144	164	1 015	6 819	11 154	1	19 396
<i>Digestive organs</i> . . . . .	1	—	2	5	241	1 957	4 113	—	6 319
<i>Lung</i> . . . . .	—	—	—	—	86	1 538	2 018	1	3 643
<i>Other</i> . . . . .	12	86	142	159	688	3 324	5 023	—	9 434
Cerebrovascular disease . . . . .	5	4	11	26	313	2 450	13 121	2	15 932
Bronchitis, emphysema and asthma . . . . .	2	11	26	29	77	978	2 993	1	4 117
Maternal and perinatal deaths (a) . . . . .	2 139	7	2	9	20	—	—	—	2 177
Congenital anomalies . . . . .	842	113	63	31	43	67	35	—	1 194
Motor vehicle accidents . . . . .	16	122	267	1 374	848	696	501	1	3 825
All other accidents . . . . .	113	246	140	285	481	560	1 163	—	2 988
Pneumonia . . . . .	199	55	11	23	102	383	1 843	—	2 616
Influenza . . . . .	6	4	2	2	5	24	107	—	150
Arteriosclerosis . . . . .	—	—	—	—	3	56	2 322	—	2 381
Suicide and self-inflicted injuries . . . . .	—	—	4	242	515	557	209	1	1 528
Diabetes . . . . .	1	1	3	6	57	367	1 356	—	1 791
Infective and parasitic diseases . . . . .	157	77	22	18	56	162	294	—	786
<i>Enteritis and other diarrhoeal diseases</i> . . . . .	87	48	5	3	6	20	126	—	295
<i>Tuberculosis</i> . . . . .	1	—	—	—	10	56	59	—	126
<i>Other</i> . . . . .	69	29	17	15	40	86	109	—	365
Cirrhosis of the liver . . . . .	—	5	3	2	130	567	219	1	927
All other causes . . . . .	581	142	158	281	812	2 691	6 605	5	11 275
<b>Total</b> . . . . .	<b>4 085</b>	<b>882</b>	<b>867</b>	<b>2 529</b>	<b>5 421</b>	<b>26 586</b>	<b>70 433</b>	<b>19</b>	<b>110 822</b>

(a) Includes deaths due to certain causes of perinatal morbidity.

Source: A.B.S.

## Cause of death

TABLE 12 DEATHS BY CAUSE AND AGE GROUP—PERCENTAGE DISTRIBUTION—1973  
(%)

Cause of death	Age group							Not stated	Total
	0	1-4	5-14	15-24	25-44	45-64	65+		
Heart disease . . . . .	0.3	1.0	1.3	1.5	17.4	38.4	40.5	36.8	35.9
<i>Ischaemic</i> . . . . .	—	—	—	0.2	13.4	34.3	32.9	26.3	29.8
<i>Other</i> . . . . .	0.3	1.0	1.3	1.3	4.0	4.1	7.6	10.5	6.1
Malignant neoplasms . . . . .	0.3	9.8	16.6	6.5	18.7	25.6	15.8	5.3	17.5
<i>Digestive organs</i> . . . . .	—	—	0.2	0.2	4.4	7.4	5.8	—	5.7
<i>Lung</i> . . . . .	—	—	—	—	1.6	5.8	2.9	5.3	3.3
<i>Other</i> . . . . .	0.3	9.8	16.4	6.3	12.7	12.5	7.1	—	8.5
Cerebrovascular disease . . . . .	0.1	0.5	1.3	1.0	5.8	9.2	18.6	10.5	14.4
Bronchitis, emphysema and asthma . . . . .	—	1.2	3.0	1.1	1.4	3.7	4.2	5.3	3.7
Maternal and perinatal deaths (a) . . . . .	52.4	0.8	0.2	0.4	0.4	—	—	—	2.0
Congenital anomalies . . . . .	20.6	12.8	7.3	1.2	0.8	0.3	—	—	1.1
Motor vehicle accidents . . . . .	0.4	13.8	30.8	54.3	15.6	2.6	0.7	5.3	3.5
All other accidents . . . . .	2.8	27.9	16.1	11.3	8.9	2.1	1.7	—	2.7
Pneumonia . . . . .	4.9	6.2	1.3	0.9	1.9	1.4	2.6	—	2.4
Influenza . . . . .	0.1	0.5	0.2	0.1	0.1	0.1	0.2	—	0.1
Arteriosclerosis . . . . .	—	—	—	—	0.1	0.2	3.3	—	2.1
Suicide and self-inflicted injuries . . . . .	—	—	0.5	9.6	9.5	2.1	0.3	5.3	1.4
Diabetes . . . . .	—	0.1	0.3	0.2	1.1	1.4	1.9	—	1.6
Infective and parasitic diseases . . . . .	3.8	8.7	2.5	0.7	1.0	0.6	0.4	—	0.7
<i>Enteritis and other diarrhoeal diseases</i> . . . . .	2.1	5.4	0.6	0.1	0.1	0.1	0.2	—	0.3
<i>Tuberculosis</i> . . . . .	—	—	—	—	0.2	0.2	0.1	—	0.1
<i>Other</i> . . . . .	1.7	3.3	2.0	0.6	0.7	0.3	0.2	—	0.3
Cirrhosis of the liver . . . . .	—	0.6	0.3	0.1	2.4	2.1	0.3	5.3	0.8
All other causes . . . . .	14.2	16.1	18.2	11.1	15.0	10.1	9.4	26.3	10.2
<b>Total</b> . . . . .	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Includes deaths due to certain causes of perinatal morbidity.

Source: A.B.S.

**Cause of death**

TABLE 13 AGE SPECIFIC DEATH RATE (a)—1973

Cause of death	Age group							Total
	0	1-4	5-14	15-24	25-44	45-64	65+	
Heart disease . . . . .	—	9	4	16	277	3 896	25 847	3 027
<i>Ischaemic</i> . . . . .	—	—	—	2	213	3 477	20 977	2 513
<i>Other</i> . . . . .	—	9	4	14	64	419	4 870	514
Malignant neoplasms . . . . .	—	84	59	72	298	2 602	10 112	1 477
<i>Digestive organs</i> . . . . .	—	—	1	2	71	747	3 729	481
<i>Lung</i> . . . . .	—	—	—	—	25	587	1 829	278
<i>Other</i> . . . . .	—	84	58	70	202	1 268	4 554	719
Cerebrovascular disease . . . . .	—	4	4	11	92	935	11 895	1 214
Bronchitis, emphysema and asthma . . . . .	—	11	11	13	23	373	2 713	314
Maternal and perinatal deaths (b) . . . . .	9	7	1	4	6	—	—	166
Congenital anomalies . . . . .	3	110	26	14	13	26	32	91
Motor vehicle accidents . . . . .	—	119	109	605	249	266	454	291
All other accidents . . . . .	—	240	57	126	141	214	1 054	228
Pneumonia . . . . .	1	54	4	10	30	146	1 671	199
Influenza . . . . .	—	4	1	1	1	9	97	11
Arteriosclerosis . . . . .	—	—	—	—	1	21	2 105	181
Suicide and self-inflicted injuries . . . . .	—	—	2	107	151	213	189	116
Diabetes . . . . .	—	1	1	3	17	140	1 229	136
Infective and parasitic diseases . . . . .	1	75	9	8	16	62	267	60
<i>Enteritis and other diarrhoeal diseases</i> . . . . .	—	47	2	1	2	8	114	22
<i>Tuberculosis</i> . . . . .	—	—	—	—	3	21	53	10
<i>Other</i> . . . . .	—	28	7	7	12	33	99	28
Cirrhosis of the liver . . . . .	—	5	1	1	38	216	199	71
All other causes . . . . .	2	138	64	124	238	1 027	5 988	859
<b>Total</b> . . . . .	<b>16</b>	<b>860</b>	<b>354</b>	<b>1 114</b>	<b>1 590</b>	<b>10 145</b>	<b>63 852</b>	<b>8 442</b>

(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.

(b) Includes deaths due to certain causes of perinatal morbidity.

Source: Figures calculated from A.B.S. tables of deaths by cause and population estimates.

## Cause of death

TABLE 14 DEATHS BY CAUSE—1964 TO 1973

(Number)

Cause of death	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Heart disease . . . . .	37 453	37 389	39 102	38 327	41 312	39 982	41 445	40 683	39 964	39 739
<i>Ischaemic</i> . . . . .	31 393	31 530	33 035	32 760	33 441	32 711	33 939	33 573	33 156	32 988
<i>Other</i> . . . . .	6 060	5 859	6 067	5 567	7 901	7 271	7 506	7 110	6 808	6 751
Malignant neoplasms . . . . .	15 166	15 131	15 787	16 170	17 118	17 350	18 119	18 338	18 786	19 396
<i>Digestive organs</i> . . . . .	5 328	5 383	5 606	5 659	5 788	5 897	6 018	6 004	6 167	6 319
<i>Lung</i> . . . . .	2 325	2 395	2 576	2 768	2 893	3 037	3 244	3 406	3 474	3 643
<i>Other</i> . . . . .	7 513	7 353	7 605	7 743	8 437	8 416	8 857	8 928	9 145	9 434
Cerebrovascular disease	13 122	13 644	13 920	13 523	15 364	14 633	15 686	15 731	15 769	15 932
Bronchitis, emphysema and asthma . . . . .	2 681	2 707	3 024	2 879	3 602	3 675	4 205	3 911	4 078	4 117
Maternal and perinatal deaths (a) . . . . .	2 612	2 493	2 468	2 398	2 426	2 493	2 605	2 605	2 414	2 177
Congenital anomalies . . . . .	1 212	1 141	1 035	1 127	1 210	1 243	1 293	1 280	1 322	1 194
Motor vehicle accidents	2 961	3 163	3 266	3 335	3 455	3 688	3 952	3 847	3 571	3 825
All other accidents . . . . .	3 010	2 957	2 971	3 269	3 044	2 738	2 978	2 955	3 068	2 988
Pneumonia . . . . .	3 722	3 370	3 950	3 332	2 952	2 666	3 143	2 725	2 547	2 616
Influenza . . . . .	302	142	249	55	323	215	813	96	191	150
Arteriosclerosis . . . . .	2 482	2 220	2 333	2 283	2 574	2 261	2 560	2 350	2 209	2 381
Suicide and self-inflicted injuries . . . . .	1 620	1 683	1 623	1 778	1 527	1 502	1 551	1 738	1 625	1 528
Diabetes . . . . .	1 475	1 472	1 638	1 644	1 955	1 757	1 878	1 801	1 840	1 791
Infective and parasitic diseases . . . . .	1 071	951	961	977	969	919	942	914	805	786
<i>Enteritis and other   diarrhoeal diseases</i> . . . . .	253	282	259	327	321	344	322	352	280	295
<i>Tuberculosis</i> . . . . .	413	294	321	275	243	213	203	182	150	126
<i>Other</i> . . . . .	405	375	381	375	405	362	417	380	375	365
Cirrhosis of the liver . . . . .	546	547	598	604	697	676	703	768	805	927
All other causes . . . . .	11 159	10 705	11 004	11 002	11 019	10 698	11 175	10 908	10 766	11 275
<b>Total . . . . .</b>	<b>100 594</b>	<b>99 715</b>	<b>103 929</b>	<b>102 703</b>	<b>109 547</b>	<b>106 496</b>	<b>113 048</b>	<b>110 650</b>	<b>109 760</b>	<b>110 822</b>

(a) Includes deaths due to certain causes of perinatal morbidity.

Source: A.B.S.



**Cause of death**TABLE 15 DEATHS BY CAUSE—PERCENTAGE DISTRIBUTION—1964 TO 1973  
(%)

<i>Cause of death</i>	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Heart disease . . . . .	37.2	37.5	37.6	37.3	37.7	37.5	36.7	36.8	36.4	35.9
<i>Ischaemic</i> . . . . .	31.2	31.6	31.8	31.9	30.5	30.7	30.0	30.3	30.2	29.8
<i>Other</i> . . . . .	6.0	5.9	5.8	5.4	7.2	6.8	6.6	6.4	6.2	6.1
Malignant neoplasms . . . . .	15.1	15.2	15.2	15.7	15.6	16.3	16.0	16.6	17.1	17.5
<i>Digestive organs</i> . . . . .	5.3	5.4	5.4	5.5	5.3	5.5	5.3	5.4	5.6	5.7
<i>Lung</i> . . . . .	2.3	2.4	2.5	2.7	2.6	2.9	2.9	3.1	3.2	3.3
<i>Other</i> . . . . .	7.5	7.4	7.3	7.5	7.7	7.9	7.8	8.1	8.3	8.5
Cerebrovascular disease . . . . .	13.0	13.7	13.4	13.2	14.0	13.7	13.9	14.2	14.4	14.4
Bronchitis, emphysema and asthma . . . . .	2.7	2.7	2.9	2.8	3.3	3.4	3.7	3.5	3.7	3.7
Maternal and perinatal deaths (a) . . . . .	2.6	2.5	2.4	2.3	2.2	2.3	2.3	2.4	2.2	2.0
Congenital anomalies . . . . .	1.2	1.1	1.0	1.1	1.1	1.2	1.1	1.2	1.2	1.1
Motor vehicle accidents . . . . .	2.9	3.2	3.1	3.2	3.2	3.5	3.5	3.5	3.3	3.5
All other accidents . . . . .	3.0	3.0	2.9	3.2	2.8	2.6	2.6	2.7	2.8	2.7
Pneumonia . . . . .	3.7	3.4	3.8	3.2	2.7	2.5	2.8	2.5	2.3	2.4
Influenza . . . . .	0.3	0.1	0.2	0.1	0.3	0.2	0.7	0.1	0.2	0.1
Arteriosclerosis . . . . .	2.5	2.2	2.2	2.2	2.3	2.1	2.3	2.1	2.0	2.1
Suicide and self-inflicted injuries . . . . .	1.6	1.7	1.6	1.7	1.4	1.4	1.4	1.6	1.5	1.4
Diabetes . . . . .	1.5	1.5	1.6	1.6	1.8	1.6	1.7	1.6	1.7	1.6
Infective and parasitic diseases . . . . .	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.8	0.7	0.7
<i>Enteritis and other diarrhoeal diseases</i> . . . . .	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<i>Tuberculosis</i> . . . . .	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1
<i>Other</i> . . . . .	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3
Cirrhosis of the liver . . . . .	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8
All other causes . . . . .	11.1	10.7	10.6	10.7	10.1	10.1	9.9	9.9	9.8	10.2
Total . . . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Includes deaths due to certain causes of perinatal morbidity.

Source: A.B.S.

## Cause of death

TABLE 16 DEATHS BY CAUSE—RATE PER 100 000 MEAN POPULATION—1964 TO 1973

Cause of death	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Heart disease . . . . .	335	329	337	325	344	326	331	318	308	302
<i>Ischaemic</i> . . . . .	281	277	285	278	278	267	271	263	255	251
<i>Other</i> . . . . .	54	51	52	47	66	59	60	56	52	51
Malignant neoplasms . . . . .	136	133	136	137	142	141	145	143	145	147
<i>Digestive organs</i> . . . . .	48	47	48	48	48	48	48	47	47	48
<i>Lung</i> . . . . .	21	21	22	23	24	25	26	27	27	28
<i>Other</i> . . . . .	67	65	66	66	70	69	71	70	70	72
Cerebrovascular disease . . . . .	117	120	120	115	128	119	125	123	121	121
Bronchitis, emphysema and asthma . . . . .	24	24	26	24	30	30	34	31	31	31
Maternal and perinatal deaths (a) . . . . .	23	22	21	20	20	20	21	20	19	17
Congenital anomalies . . . . .	11	10	9	10	10	10	10	10	10	9
Motor vehicle accidents . . . . .	27	28	28	28	29	30	32	30	27	29
All other accidents . . . . .	27	26	26	28	25	22	24	23	24	23
Pneumonia . . . . .	33	30	34	28	25	22	25	21	20	20
Influenza . . . . .	3	1	2	—	3	2	6	1	1	1
Arteriosclerosis . . . . .	22	19	20	19	21	18	20	18	17	18
Suicide and self-inflicted injuries . . . . .	15	15	14	15	13	12	12	14	13	12
Diabetes . . . . .	13	13	14	14	16	14	15	14	14	14
Infective and parasitic diseases . . . . .	10	8	8	8	8	7	8	7	6	6
<i>Enteritis and other diarrhoeal diseases</i> . . . . .	2	2	2	3	3	3	3	3	2	2
<i>Tuberculosis</i> . . . . .	4	3	3	2	2	2	2	1	1	1
<i>Other</i> . . . . .	4	3	3	3	3	3	3	3	3	3
Cirrhosis of the liver . . . . .	5	5	5	5	6	6	6	6	6	7
All other causes . . . . .	100	94	95	93	92	87	89	85	83	86
Total . . . . .	901	875	896	870	911	868	902	866	845	842

(a) Includes deaths due to certain causes of perinatal morbidity.

Source: Figures calculated from tables of deaths by cause, A.B.S., and population estimates.

**Cause of death****TABLE 17 DEATHS FROM DISEASES OF THE CIRCULATORY SYSTEM—1964 TO 1973**

<i>Disease</i>	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	NUMBER									
Active rheumatic fever .	23	18	13	14	21	23	13	12	10	14
Chronic rheumatic heart disease . . . . .	773	799	798	736	996	919	965	931	870	772
Hypertensive disease .	2 300	2 125	2 141	1 988	1 866	1 694	1 743	1 629	1 497	1 464
Ischaemic heart disease .	31 393	31 530	33 035	32 760	33 411	32 711	33 939	33 573	33 156	32 988
Other forms of heart disease . . . . .	3 794	3 673	3 909	3 528	5 039	4 658	4 798	4 550	4 441	4 515
Cerebrovascular disease .	13 122	13 644	13 920	13 523	15 364	14 633	15 686	15 731	15 769	15 932
Diseases of arteries, arterioles and capillaries . . . . .	3 279	3 005	3 235	3 243	3 941	3 622	3 914	3 842	3 702	3 982
Diseases of veins and lymphatics, and other diseases of the circulatory system . . . . .	336	339	371	429	292	265	318	344	289	344
<b>Total . . . . .</b>	<b>55 020</b>	<b>55 133</b>	<b>57 422</b>	<b>56 221</b>	<b>60 930</b>	<b>58 525</b>	<b>61 376</b>	<b>60 612</b>	<b>59 734</b>	<b>60 011</b>
	DEATHS PER 100 000 MEAN POPULATION									
Active rheumatic fever .	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Chronic rheumatic heart disease . . . . .	6.9	7.0	6.9	6.2	8.3	7.5	7.7	7.3	6.7	5.9
Hypertensive disease .	20.6	18.7	18.5	16.8	15.5	13.8	13.9	12.7	11.5	11.1
Ischaemic heart disease .	281.1	276.8	284.7	277.6	277.9	266.5	270.9	262.7	255.2	250.5
Other forms of heart disease . . . . .	34.0	32.2	33.7	29.9	41.9	37.9	38.3	35.6	34.2	34.3
Cerebrovascular disease .	117.5	119.8	120.0	114.6	127.8	119.2	125.2	123.1	121.4	121.0
Diseases of arteries, arterioles and capillaries . . . . .	29.4	26.4	27.9	27.5	32.8	29.5	31.2	30.1	28.5	30.2
Diseases of veins and lymphatics, and other diseases of the circulatory system . . . . .	3.0	3.0	3.2	3.6	2.4	2.2	2.5	2.7	2.2	2.6
<b>Total . . . . .</b>	<b>492.6</b>	<b>484.0</b>	<b>494.9</b>	<b>476.4</b>	<b>506.8</b>	<b>476.8</b>	<b>489.9</b>	<b>474.2</b>	<b>459.8</b>	<b>455.7</b>

Source: A.B.S.

## Cause of death

TABLE 18 DEATHS FROM ISCHAEMIC HEART DISEASE—AGE GROUPS—1964 TO 1973

Age group	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	NUMBER									
0-9 . . . . .	11	7	5	6	—	—	1	—	—	—
10-19 . . . . .	9	10	6	7	—	1	3	5	2	2
20-29 . . . . .	25	27	19	42	17	20	21	25	30	18
30-39 . . . . .	252	231	256	231	248	225	232	238	244	230
40-44 . . . . .	506	522	487	508	468	488	471	487	493	482
45-49 . . . . .	893	868	900	1 023	958	1 039	1 023	1 087	1 043	1 004
50-54 . . . . .	1 627	1 721	1 749	1 696	1 705	1 691	1 639	1 658	1 644	1 739
55-59 . . . . .	2 436	2 539	2 541	2 728	2 819	2 757	2 808	2 769	2 719	2 569
60-64 . . . . .	3 446	3 307	3 519	3 514	3 793	3 742	3 815	3 816	3 850	3 800
65-69 . . . . .	4 159	4 233	4 594	4 492	4 620	4 650	4 830	4 597	4 503	4 540
70-74 . . . . .	5 249	5 221	5 290	5 076	5 150	4 986	5 297	5 200	5 119	5 093
75 and over . . . . .	12 772	12 841	13 666	13 431	13 632	13 108	13 799	13 687	13 509	13 506
Not stated . . . . .	8	3	3	6	1	4	—	4	—	5
Total . . . . .	31 393	31 530	33 035	32 760	33 411	32 711	33 939	33 573	33 156	32 988
	DEATHS PER 100 000 MEAN POPULATION IN EACH AGE GROUP									
0-9 . . . . .	0.5	0.3	0.2	0.3	—	—	—	—	—	—
10-19 . . . . .	0.4	0.5	0.3	0.3	—	—	0.1	0.2	0.1	0.1
20-29 . . . . .	1.7	1.8	1.2	2.5	1.0	1.1	1.1	1.2	1.4	0.8
30-39 . . . . .	17.2	15.9	17.6	15.8	16.9	15.1	15.4	15.5	15.6	14.4
40-44 . . . . .	67.3	67.8	62.7	65.3	59.8	61.8	59.8	61.8	63.4	63.2
45-49 . . . . .	137.6	133.0	132.8	146.0	131.5	137.8	132.7	140.2	134.3	128.7
50-54 . . . . .	263.3	271.2	271.4	262.7	266.5	267.7	257.8	250.9	240.6	245.1
55-59 . . . . .	476.9	482.7	467.4	488.2	492.3	468.5	468.1	458.9	448.0	425.1
60-64 . . . . .	827.4	779.4	809.6	786.9	822.7	786.4	782.6	762.7	751.6	721.9
65-69 . . . . .	1 217.1	1 212.2	1 290.8	1 244.2	1 261.9	1 242.9	1 270.1	1 182.8	1 136.1	1 112.5
70-74 . . . . .	1 904.6	1 895.8	1 907.0	1 835.4	1 851.2	1 792.3	1 870.1	1 805.2	1 730.1	1 681.0
75 and over . . . . .	3 860.9	3 758.0	3 871.7	3 710.1	3 687.2	3 501.2	3 629.4	3 562.6	3 479.7	3 445.5
Total . . . . .	282.3	278.0	284.8	277.6	278.2	266.7	271.4	263.2	255.9	251.2

Source: A.B.S.

**Cause of death****TABLE 19 DEATHS FROM ISCHAEMIC HEART DISEASE—SELECTED COUNTRIES—RATE PER 100 000 MEAN POPULATION—1963 TO 1972**

(Number)

Country	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Australia . . . . .	268.3	282.3	278.0	284.8	277.6	278.2	266.7	271.4	263.2	255.9
Austria . . . . .	230.5	224.1	243.6	237.6	256.9	257.9	221.0	232.2	239.1	240.1
Canada . . . . .	241.5	241.1	247.2	241.3	237.9	238.2	229.8	230.1	227.1	229.3
Denmark . . . . .	263.2	273.3	290.5	327.7	318.5	303.3	293.7	297.1	303.3	n.a.
England and Wales . . . . .	329.2	306.8	317.6	317.6	308.2	285.2	285.6	284.4	293.2	308.9
France . . . . .	84.7	79.8	82.0	81.4	83.0	77.4	79.5	80.4	85.6	n.a.
Germany, F.R. . . . .	210.5	204.3	219.7	222.1	226.1	157.1	170.5	171.5	184.3	n.a.
Greece . . . . .	82.5	83.9	88.0	91.2	99.9	55.5	64.4	65.8	71.2	n.a.
Hong Kong . . . . .	21.6	27.5	28.8	30.2	31.1	27.7	15.5	25.3	27.3	29.3
Hungary . . . . .	219.2	222.0	253.7	232.0	258.7	275.0	217.6	227.8	236.6	236.4
Ireland . . . . .	312.8	299.6	310.2	326.1	294.1	249.6	270.3	263.9	257.6	n.a.
Italy . . . . .	205.4	191.1	204.8	191.4	199.6	126.6	133.0	134.0	137.6	134.3
Japan . . . . .	51.6	52.3	57.8	55.6	59.1	35.3	36.8	37.6	36.4	36.2
Mauritius . . . . .	36.6	43.9	47.1	46.5	46.5	38.2	37.2	44.9	48.9	n.a.
Mexico . . . . .	16.4	17.1	17.7	18.8	18.8	18.9	18.9	21.1	18.8	19.5
Netherlands . . . . .	189.2	182.1	188.5	184.5	186.3	190.2	171.6	181.5	182.0	188.3
New Zealand . . . . .	255.8	255.7	251.0	262.2	254.4	252.3	240.6	237.9	243.0	n.a.
Northern Ireland . . . . .	335.6	309.1	317.2	316.1	302.1	381.6	292.2	295.1	293.8	n.a.
Norway . . . . .	263.5	256.5	248.4	260.5	263.3	266.2	264.4	262.9	266.8	n.a.
Poland . . . . .	73.1	80.6	83.2	86.1	92.1	95.6	44.2	57.8	62.7	65.8
Romania . . . . .	97.4	117.8	140.7	132.3	144.1	139.0	68.3	72.7	76.0	n.a.
Scotland . . . . .	375.7	352.3	367.1	366.5	344.6	331.7	343.1	337.8	338.4	36.47
Singapore . . . . .	27.4	32.4	33.7	35.9	34.4	38.6	42.0	39.7	44.3	43.8
Spain . . . . .	70.8	66.4	68.2	68.2	68.5	43.7	48.6	46.5	59.4	n.a.
Sweden . . . . .	298.0	306.7	313.2	310.8	319.9	330.4	314.2	333.6	365.3	n.a.
Thailand . . . . .	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.1	n.a.
United States . . . . .	319.7	312.9	316.0	320.0	316.3	337.6	331.7	326.2	326.7	n.a.
Yugoslavia . . . . .	116.3	129.9	121.4	113.7	128.6	45.9	56.0	53.5	n.a.	n.a.

Source: W.H.O. *Statistical Annual*, Vol. 1, 1970.*World Health Statistics Report*, Vol. 27, No. 2, 1974.

## Cause of death

TABLE 20 DEATHS FROM CEREBROVASCULAR DISEASE—AGE GROUPS—1964 TO 1973

Age group	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	NUMBER									
0-9 . . . . .	10	7	11	13	15	9	12	14	11	12
10-19 . . . . .	22	17	19	14	20	14	22	17	24	17
20-29 . . . . .	41	32	34	38	35	41	38	45	28	48
30-39 . . . . .	123	132	135	107	136	142	158	115	139	119
40-44 . . . . .	176	170	194	172	183	166	168	182	174	163
45-49 . . . . .	285	290	253	323	301	296	316	300	292	342
50-54 . . . . .	439	501	482	459	479	474	432	432	448	429
55-59 . . . . .	677	658	658	651	722	648	717	670	667	660
60-64 . . . . .	966	972	947	938	1 045	1 020	1 037	1 037	1 040	1 019
65-69 . . . . .	1 318	1 414	1 428	1 360	1 551	1 520	1 655	1 443	1 519	1 486
70-74 . . . . .	2 156	2 083	2 151	2 072	2 192	2 097	2 263	2 253	2 230	2 270
75 and over . . . . .	6 908	7 366	7 608	7 375	8 685	8 204	8 867	9 221	9 197	9 365
Not stated . . . . .	1	2	—	1	—	2	1	2	—	2
Total . . . . .	13 122	13 644	13 920	13 523	15 364	14 633	15 686	15 731	15 769	15 932
	DEATHS PER 100 000 MEAN POPULATION IN EACH AGE GROUP									
0-9 . . . . .	0.4	0.3	0.5	0.6	0.6	0.4	0.5	0.6	0.4	0.5
10-19 . . . . .	1.1	0.8	0.9	0.6	0.9	0.6	1.0	0.7	1.0	0.7
20-29 . . . . .	2.8	2.1	2.1	2.2	2.0	2.2	1.9	2.2	1.3	2.2
30-39 . . . . .	8.4	9.1	9.3	7.3	9.3	9.5	10.5	7.5	8.9	7.5
40-44 . . . . .	23.4	22.1	25.1	22.1	23.4	21.0	21.3	23.1	22.4	21.4
45-49 . . . . .	43.9	44.4	39.4	46.1	41.3	39.3	41.0	38.7	37.6	43.8
50-54 . . . . .	71.0	78.9	75.0	71.1	74.9	75.0	68.0	65.4	65.6	60.5
55-59 . . . . .	132.5	125.1	121.4	116.5	126.1	110.1	119.5	111.0	109.9	109.2
60-64 . . . . .	231.9	229.1	218.4	210.1	226.7	214.3	212.7	207.3	203.0	193.6
65-69 . . . . .	385.7	404.9	402.3	376.7	423.6	406.3	435.2	371.3	383.3	364.1
70-74 . . . . .	782.3	756.4	777.4	749.2	787.9	753.8	798.9	782.2	753.3	749.2
75 and over . . . . .	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	2 389.1
Total . . . . .	118.0	120.3	120.5	114.6	127.9	119.3	125.4	123.3	121.7	121.3

Source: A.B.S.

**Cause of death****TABLE 21 DEATHS FROM CEREBROVASCULAR DISEASE—SELECTED COUNTRIES—RATE PER 100 000 MEAN POPULATION—1963 TO 1972**

(Number)

Country	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Australia . . . . .	115.3	118.0	120.3	120.5	114.6	127.9	119.3	125.4	123.3	121.7
Austria . . . . .	179.1	169.7	187.1	178.4	188.8	189.9	198.4	199.4	198.4	196.8
Canada . . . . .	81.6	78.1	80.1	78.2	75.7	74.8	74.3	73.7	74.5	75.9
Denmark . . . . .	125.4	125.6	120.1	120.5	105.1	104.9	102.4	107.1	103.6	n.a.
England and Wales . . . . .	170.8	156.0	163.6	164.3	159.7	165.4	163.3	161.9	163.7	166.9
France . . . . .	139.2	128.9	132.3	128.3	129.6	144.0	152.2	146.3	149.4	n.a.
Germany, F.R. . . . .	178.3	173.9	182.5	182.2	175.2	179.2	179.1	173.4	176.8	n.a.
Greece . . . . .	94.3	95.3	101.7	100.4	108.0	115.1	110.9	116.1	123.8	n.a.
Hong Kong . . . . .	45.3	46.5	50.8	49.0	49.8	45.9	47.1	45.8	48.0	46.7
Hungary . . . . .	136.5	141.5	165.6	156.7	158.9	164.4	169.1	169.2	170.4	158.3
Ireland . . . . .	148.5	137.9	151.0	150.4	144.0	152.7	162.3	155.8	153.2	n.a.
Italy . . . . .	134.1	129.1	136.3	131.5	131.4	133.6	132.0	131.9	134.1	n.a.
Japan . . . . .	171.4	171.7	175.8	173.8	172.0	172.5	174.4	174.9	169.6	164.8
Mauritius . . . . .	54.0	51.7	49.4	49.9	50.0	49.9	48.1	56.8	63.8	n.a.
Mexico . . . . .	21.9	23.0	22.2	22.2	22.2	24.5	22.9	24.7	24.8	24.4
Netherlands . . . . .	97.3	93.3	98.7	98.9	94.6	101.5	94.0	97.2	91.9	96.8
New Zealand . . . . .	109.2	106.1	108.6	114.3	103.5	112.8	110.3	112.6	116.1	n.a.
Northern Ireland . . . . .	153.2	151.7	154.9	144.0	139.3	154.7	153.9	160.8	162.5	n.a.
Norway . . . . .	156.3	148.9	153.8	153.6	153.5	154.8	158.5	157.4	152.5	n.a.
Poland . . . . .	35.9	29.9	31.7	31.3	32.9	33.7	35.0	37.8	42.0	43.4
Romania . . . . .	116.4	114.5	125.4	122.3	126.6	129.3	135.1	130.8	129.9	n.a.
Scotland . . . . .	190.9	194.4	201.6	198.8	189.0	197.8	194.4	191.4	191.6	199.3
Singapore . . . . .	36.1	35.5	37.6	40.0	44.3	30.6	42.8	50.2	52.3	50.3
Spain . . . . .	125.0	123.1	126.0	122.3	125.1	109.4	118.6	113.7	125.4	n.a.
Sweden . . . . .	128.1	120.9	120.9	117.9	116.9	116.3	109.3	105.5	111.6	n.a.
Thailand . . . . .	4.5	4.7	5.7	5.8	6.5	6.1	6.8	7.1	6.9	n.a.
United States . . . . .	106.7	103.6	103.7	104.6	102.2	105.8	102.6	101.7	100.6	101.0
Yugoslavia . . . . .	60.8	65.8	69.4	68.9	73.2	75.3	79.4	77.2	n.a.	n.a.

Source: W.H.O. *Statistical Annual*, Vol. 1, 1970. *World Health Statistics Report*, Vol. 27, No. 2, 1974.

## Cause of death

TABLE 22 DEATHS FROM NEOPLASMS—1964 TO 1973

<i>Disease</i>	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	NUMBER									
Malignant neoplasm of buccal cavity and pharynx . . . . .	279	277	292	318	341	335	362	338	363	390
Malignant neoplasm of digestive organs and peritoneum . . . . .	5 328	5 383	5 606	5 659	5 788	5 897	6 018	6 004	6 167	6 319
Malignant neoplasm of respiratory system (a) . . . . .	2 508	2 574	2 768	2 973	3 096	3 241	3 458	3 622	3 701	3 863
Malignant neoplasm of bone, connective tissue, skin and breast . . . . .	1 927	1 898	2 012	2 046	2 072	2 149	2 191	2 300	2 255	2 343
Malignant neoplasm of genitourinary organs . . . . .	2 713	2 662	2 685	2 728	2 905	2 911	3 026	2 990	3 046	3 188
Malignant neoplasm of other and unspecified sites . . . . .	998	979	1 013	1 006	1 295	1 220	1 368	1 386	1 513	1 476
Neoplasm of lymphatic and haematopoietic tissue . . . . .	1 413	1 358	1 411	1 440	1 621	1 597	1 696	1 698	1 741	1 817
Benign neoplasm . . . . .	129	113	129	120	110	135	124	113	130	136
Neoplasm of unspecified nature . . . . .	60	72	68	59	64	64	72	76	60	71
<b>Total</b> . . . . .	<b>15 355</b>	<b>15 316</b>	<b>15 984</b>	<b>16 349</b>	<b>17 292</b>	<b>17 549</b>	<b>18 315</b>	<b>18 527</b>	<b>18 976</b>	<b>19 603</b>
	DEATHS PER 100 000 MEAN POPULATION									
Malignant neoplasm of buccal cavity and pharynx . . . . .	2.5	2.4	2.5	2.7	2.8	2.7	2.9	2.6	2.8	3.0
Malignant neoplasm of digestive organs and peritoneum . . . . .	47.7	47.3	48.3	48.0	48.1	48.0	48.0	47.0	47.5	48.0
Malignant neoplasm of respiratory system (a) . . . . .	22.5	22.6	23.9	25.2	25.8	26.4	27.6	28.3	28.5	29.3
Malignant neoplasm of bone, connective tissue, skin and breast . . . . .	17.3	16.7	17.3	17.3	17.2	17.5	17.5	18.0	17.4	17.8
Malignant neoplasm of genitourinary organs . . . . .	24.3	23.4	23.1	23.1	24.2	23.7	24.2	23.4	23.4	24.2
Malignant neoplasm of other and unspecified sites . . . . .	8.9	8.6	8.7	8.5	10.8	9.9	10.9	10.8	11.6	11.2
Neoplasm of lymphatic and haematopoietic tissue . . . . .	12.7	11.9	12.2	12.2	13.5	13.0	13.5	13.3	13.4	13.8
Benign neoplasm . . . . .	1.2	1.0	1.1	1.0	0.9	1.1	1.0	0.9	1.0	1.0
Neoplasm of unspecified nature . . . . .	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.5
<b>Total</b> . . . . .	<b>137.5</b>	<b>134.5</b>	<b>137.8</b>	<b>138.5</b>	<b>143.8</b>	<b>143.0</b>	<b>146.2</b>	<b>144.9</b>	<b>146.1</b>	<b>148.9</b>

(a) For lung cancer, which constitutes a majority of these cases, see Table 24.

Source: A.B.S.



**Cause of death****TABLE 23 DEATHS FROM MALIGNANT NEOPLASMS—SELECTED COUNTRIES—RATE PER 100 000 MEAN POPULATION—1963 TO 1972**

(Number)

Country	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Australia	134.9	135.8	132.8	136.1	136.9	142.4	141.3	144.6	143.5	144.6
Austria	256.4	256.7	261.6	261.3	262.3	263.1	257.8	262.1	260.2	255.4
Canada	132.7	133.3	133.1	134.1	137.3	137.9	140.7	142.6	143.8	147.6
Denmark	221.4	222.2	225.6	216.5	213.1	214.0	221.1	221.9	231.7	n.a.
England and Wales	217.8	220.9	222.6	225.4	227.9	231.6	234.9	236.2	239.5	242.2
France	203.2	203.7	203.6	206.6	207.3	211.9	211.1	206.3	211.5	213.8
Germany, F.R.	221.4	224.6	228.3	230.1	230.3	235.3	234.0	231.4	236.7	n.a.
Greece	113.3	114.3	117.4	119.0	122.4	124.1	128.2	130.0	134.0	n.a.
Hong Kong	75.1	79.0	85.4	87.0	88.2	91.3	99.8	100.6	104.5	107.7
Hungary	178.2	185.7	191.4	197.2	201.7	204.1	209.6	215.5	224.6	224.8
Ireland	173.8	174.2	173.3	179.4	175.8	181.8	189.5	188.3	191.2	n.a.
Italy	155.9	158.6	162.0	164.1	165.6	170.9	177.1	179.1	184.0	184.7
Japan	105.5	107.3	108.4	110.9	112.3	113.9	116.2	115.8	117.7	119.0
Mauritius	37.9	37.8	38.6	35.4	36.8	41.4	43.6	43.0	34.7	41.5
Mexico	36.8	37.7	36.2	35.6	34.4	33.7	35.0	37.5	36.2	36.6
Netherlands	178.0	182.4	183.0	186.8	190.7	197.5	195.5	194.6	194.7	193.1
New Zealand	147.5	141.4	144.2	143.2	141.1	148.2	150.4	157.2	157.9	n.a.
Northern Ireland	162.7	165.3	170.9	170.5	164.9	184.1	186.2	184.3	186.6	175.2
Norway	172.0	168.5	172.0	172.2	175.8	187.0	187.5	186.1	187.6	n.a.
Poland	112.4	119.3	123.7	125.4	128.6	133.0	135.2	137.5	143.6	144.0
Romania	120.1	121.2	121.0	118.2	117.0	120.4	122.1	119.9	122.9	123.7
Scotland	225.2	226.3	229.1	230.6	234.0	239.9	242.1	242.8	244.8	247.9
Singapore	74.0	73.2	74.3	70.8	77.3	76.5	76.0	76.9	80.0	82.6
Spain	126.4	129.3	128.7	129.6	134.8	132.1	131.1	135.1	139.4	n.a.
Sweden	191.0	191.4	187.6	189.8	191.7	195.3	203.0	203.0	215.6	n.a.
Thailand	10.4	10.7	12.2	11.7	12.9	11.5	11.9	13.3	12.4	n.a.
United States	151.4	151.3	153.5	155.1	157.2	159.4	160.0	162.8	160.9	166.8
Yugoslavia	81.0	83.3	83.5	86.5	90.2	92.0	94.9	98.3	97.8	n.a.

Source: W.H.O. *Statistical Annual*, Vol. 1, 1970. *World Health Statistics Report*, Vol. 27, No. 5, 1974.

## Cause of death

TABLE 24 DEATHS FROM LUNG CANCER (a)—AGE GROUPS—1964 TO 1973

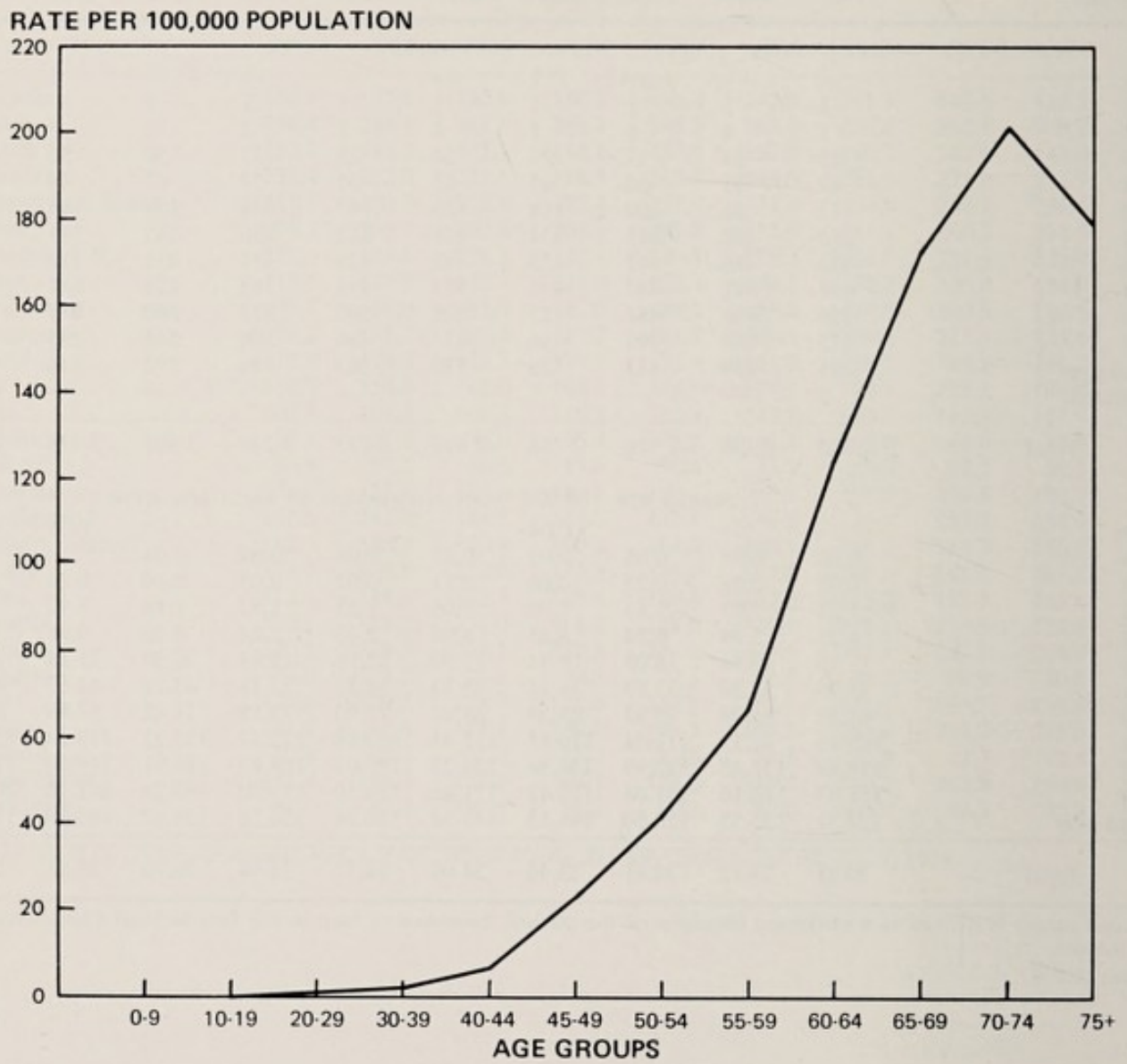
Age group	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	NUMBER									
0-9 . . . . .	—	—	—	1	—	—	—	—	2	—
10-19 . . . . .	1	1	1	1	1	1	1	1	—	—
20-29 . . . . .	1	4	4	1	2	1	1	2	5	1
30-39 . . . . .	23	33	27	29	24	23	23	30	30	27
40-44 . . . . .	47	43	64	65	63	61	57	67	46	58
45-49 . . . . .	111	91	109	118	126	167	146	159	165	186
50-54 . . . . .	210	205	217	234	226	232	236	285	291	295
55-59 . . . . .	323	346	347	355	393	429	451	431	412	404
60-64 . . . . .	438	391	487	495	523	494	597	628	611	653
65-69 . . . . .	396	466	484	523	528	580	627	660	671	703
70-74 . . . . .	375	386	393	416	477	486	509	548	595	611
75 and over . . . . .	398	429	443	529	530	563	596	595	646	704
Not stated . . . . .	2	—	—	1	—	—	—	—	—	1
Total . . . . .	2 325	2 395	2 576	2 768	2 893	3 037	3 244	3 406	3 474	3 643
	DEATHS PER 100 000 MEAN POPULATION IN EACH AGE GROUP									
0-9 . . . . .	—	—	—	0.04	—	—	—	—	0.08	—
10-19 . . . . .	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	—	—
20-29 . . . . .	0.07	0.26	0.25	0.06	0.11	0.05	0.05	0.10	0.24	0.05
30-39 . . . . .	1.57	2.27	1.86	1.98	1.63	1.55	1.52	1.96	1.92	1.69
40-44 . . . . .	6.25	5.59	8.24	8.35	8.04	7.72	7.24	8.50	5.91	7.60
45-49 . . . . .	17.10	13.94	16.08	16.84	17.30	22.15	18.93	20.50	21.24	23.84
50-54 . . . . .	33.99	32.30	33.67	36.25	35.33	36.73	37.13	43.13	42.58	41.58
55-59 . . . . .	63.23	65.78	63.83	63.53	68.63	72.90	75.19	71.42	67.88	66.86
60-64 . . . . .	105.16	92.15	112.04	110.85	113.44	103.81	122.47	125.51	119.28	124.05
65-69 . . . . .	115.89	133.45	135.99	144.86	144.22	155.03	164.87	169.81	169.30	172.26
70-74 . . . . .	136.07	140.16	141.68	150.42	171.46	174.70	179.70	190.24	201.10	201.66
75 and over . . . . .	120.31	125.55	125.50	146.13	143.36	150.38	156.76	154.87	166.40	179.60
Total . . . . .	20.91	21.12	22.21	23.46	24.09	24.77	25.94	26.70	26.81	27.74

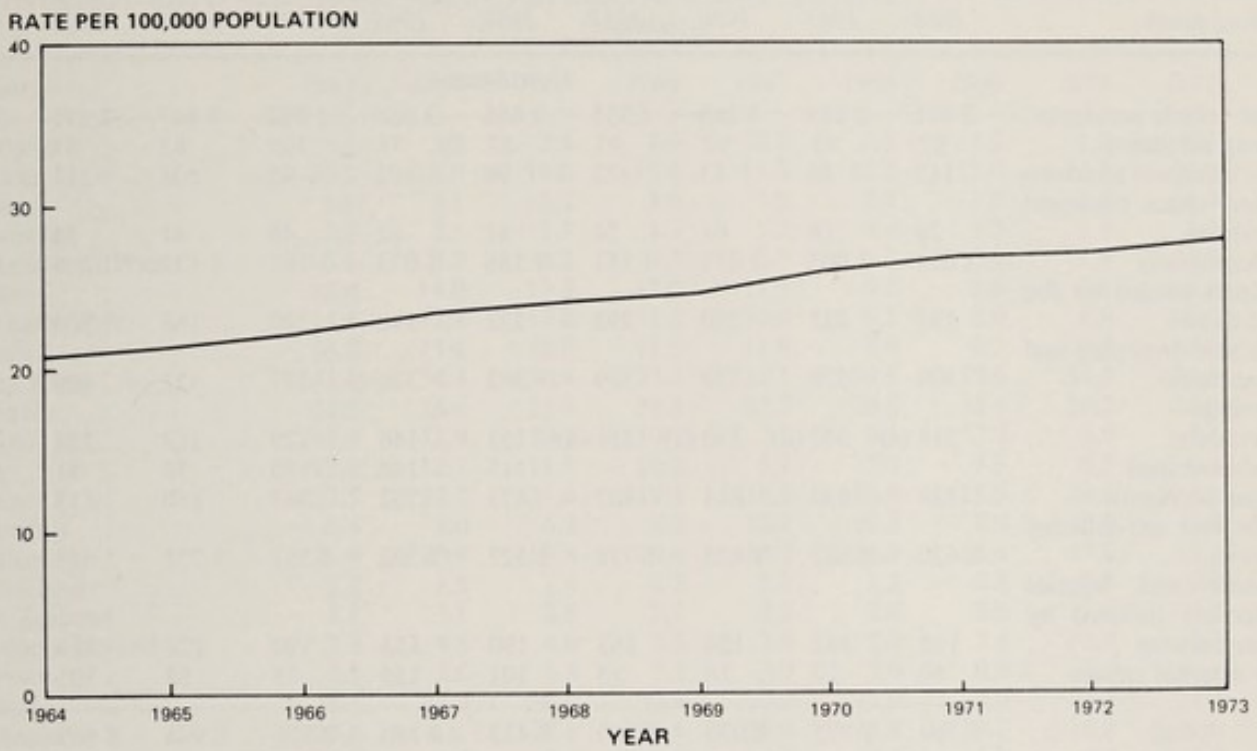
(a) Lung cancer is defined as a malignant neoplasm of the trachea, bronchus or lung in the International Classification of Diseases.

Source: A.B.S.

### Cause of death

**GRAPH 7 LUNG CANCER—NUMBER OF DEATHS PER 100 000 POPULATION—  
AGE GROUPS—1973**



**Cause of death****GRAPH 8 LUNG CANCER—DEATHS PER 100 000 POPULATION—1964 TO 1973**

**Cause of death****TABLE 25 DEATHS DUE TO ACCIDENTS, POISONINGS AND VIOLENCE—1964 TO 1973**

<i>Cause of death</i>	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	NUMBER									
Motor vehicle accidents . . . . .	2 961	3 163	3 266	3 335	3 455	3 688	3 952	3 847	3 571	3 825
Railway accidents . . . . .	87	93	92	93	87	77	103	83	81	75
Water transport accidents . . . . .	113	86	83	122	90	102	93	101	111	108
Air and space transport accidents . . . . .	28	18	61	54	41	62	48	41	54	28
Accidental falls . . . . .	1 023	1 005	1 011	1 151	1 186	1 073	1 161	1 171	1 264	1 153
Accidents caused by fire and flames . . . . .	193	225	210	292	232	190	220	168	208	174
Accidental drowning and submersion . . . . .	409	378	370	399	382	326	377	422	409	437
Poisonings—										
Accidental . . . . .	318 (a)	302 (a)	330 (a)	351 (a)	153	146	129	119	128	121
Undetermined . . . . .					115	144	130	78	81	76
Other accidents . . . . .	839	850	814	807	873	762	847	850	813	892
Suicide and self-inflicted injuries . . . . .	1 620	1 683	1 623	1 778	1 527	1 502	1 551	1 738	1 625	1 528
Homicide and injuries purposely inflicted by other persons . . . . .	168	162	154	163	190	153	190	228	219	253
Other external causes . . . . .	10	10	16	15	101	115	75	98	105	114
<b>Total . . . . .</b>	<b>7 769</b>	<b>7 975</b>	<b>8 030</b>	<b>8 560</b>	<b>8 432</b>	<b>8 340</b>	<b>8 876</b>	<b>8 944</b>	<b>8 669</b>	<b>8 784</b>
	DEATHS PER 100 000 MEAN POPULATION									
Motor vehicle accidents . . . . .	26.5	27.8	28.1	28.3	28.7	30.0	31.5	30.1	27.5	29.0
Railway accidents . . . . .	0.8	0.8	0.8	0.8	0.7	0.6	0.8	0.6	0.6	0.6
Water transport accidents . . . . .	1.0	0.8	0.7	1.0	0.7	0.8	0.7	0.8	0.9	0.8
Air and space transport accidents . . . . .	0.3	0.2	0.5	0.5	0.3	0.5	0.4	0.3	0.4	0.2
Accidental falls . . . . .	9.2	8.8	8.7	9.8	9.9	8.7	9.3	9.2	9.7	8.8
Accidents caused by fire and flames . . . . .	1.7	2.0	1.8	2.5	1.9	1.5	1.8	1.3	1.6	1.3
Accidental drowning and submersion . . . . .	3.7	3.3	3.2	3.4	3.2	2.7	3.0	3.3	3.1	3.3
Poisonings—										
Accidental . . . . .	2.8 (a)	2.7 (a)	2.8 (a)	3.0 (a)	1.3	1.2	1.0	0.9	1.0	0.9
Undetermined . . . . .					1.0	1.2	1.0	0.6	0.6	0.6
Other accidents . . . . .	7.5	7.5	7.0	6.8	7.3	6.2	6.8	6.6	6.3	6.8
Suicide and self-inflicted injuries . . . . .	14.5	14.8	14.0	15.1	12.7	12.2	12.4	13.6	12.5	11.6
Homicide and injuries purposely inflicted by other persons . . . . .	1.5	1.4	1.3	1.4	1.6	1.2	1.5	1.8	1.7	1.9
Other external causes . . . . .	0.1	0.1	0.1	0.1	0.8	0.9	0.6	0.8	0.8	0.9
<b>Total . . . . .</b>	<b>69.6</b>	<b>70.0</b>	<b>69.2</b>	<b>72.5</b>	<b>70.1</b>	<b>67.9</b>	<b>70.8</b>	<b>70.0</b>	<b>66.7</b>	<b>66.7</b>

(a) For years prior to 1968 accidental and undetermined poisonings are combined.

Source: A.B.S.

## Cause of death

TABLE 26 DEATHS FROM TUBERCULOSIS OF THE RESPIRATORY SYSTEM—SELECTED COUNTRIES—RATE PER 100 000 MEAN POPULATION—1963 TO 1972  
(Number)

Country	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Australia	3.8	3.5	2.4	2.6	2.1	1.5	1.2	1.0	0.9	0.8
Austria	20.2	18.0	18.0	15.4	15.6	13.2	12.0	11.2	10.9	9.4
Canada	3.6	3.1	3.2	3.0	3.0	2.7	1.8	1.7	1.4	1.3
Denmark	2.7	2.1	1.8	1.5	1.5	1.4	1.3	1.8	1.2	n.a.
England and Wales	5.5	4.7	4.2	4.3	3.7	3.0	2.2	1.9	1.9	n.a.
France	16.4	14.0	13.2	12.0	11.7	9.5	8.8	7.1	6.4	n.a.
Germany, F.R.	13.5	11.8	12.0	11.2	10.0	9.2	8.0	6.8	5.9	n.a.
Greece	13.2	13.1	12.0	11.3	11.8	9.8	9.2	8.9	7.9	n.a.
Hong Kong	43.4	34.3	30.4	37.3	36.1	34.5	35.8	34.8	29.0	n.a.
Hungary	24.5	24.6	23.9	21.3	22.3	20.6	18.4	16.7	14.9	12.9
Ireland	13.7	12.9	10.5	10.7	7.3	9.1	7.7	6.8	5.6	n.a.
Italy	13.2	12.1	11.9	10.2	8.7	7.7	7.3	6.1	6.1	5.4
Japan	22.5	22.1	21.4	19.1	16.6	15.8	15.3	14.6	14.6	n.a.
Mauritius	8.4	9.0	6.2	8.2	10.7	10.3	7.5	5.9	5.2	n.a.
Mexico	21.9	20.8	19.8	19.4	18.2	16.9	16.6	17.6	15.7	n.a.
Netherlands	1.8	1.5	1.4	1.2	1.1	1.2	0.8	0.8	0.9	n.a.
New Zealand	3.1	3.1	2.8	3.7	2.3	2.8	2.6	1.9	0.9	n.a.
Northern Ireland	7.1	4.8	4.6	3.5	3.4	2.9	3.4	2.9	1.7	n.a.
Norway	3.8	3.6	3.3	3.2	3.0	3.0	0.9	0.6	n.a.	n.a.
Poland	38.4	38.5	36.0	32.4	30.7	27.0	27.0	24.7	23.4	17.6
Romania	25.8	n.a.	22.1	20.5	20.9	19.8	19.1	16.9	n.a.	n.a.
Scotland	9.0	6.5	6.1	4.7	4.3	4.3	3.3	4.0	2.9	3.0
Singapore	36.4	37.6	33.3	29.0	27.0	23.8	20.0	21.6	n.a.	n.a.
Spain	19.1	17.7	16.1	14.8	12.7	12.1	11.6	n.a.	n.a.	n.a.
Sweden	5.2	4.5	4.2	3.8	4.0	4.2	3.2	3.1	3.0	n.a.
Thailand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	21.1	19.4	n.a.
United States	4.6	4.0	3.8	3.6	3.2	2.5	2.2	n.a.	1.6	n.a.
Yugoslavia	32.0	29.6	23.8	19.4	18.6	18.7	17.6	16.5	n.a.	n.a.

Source: W.H.O. *Epidemiological and Vital Statistics*, Vol. 19, No. 1, 1966 and Vol. 20, No. 1, 1967.  
*World Health Statistics Report*, Vols. 21 to 27, No. 1, 1968-74.

## Tobacco and alcohol

TABLE 27 TOBACCO—CONSUMPTION OF TOBACCO—1964-65 TO 1973-74

Year ended 30 June	Total consumption ('000 kg)				Consumption per head of population (kg)			
	Tobacco (a)	Cigars	Cigarettes	Total	Tobacco (a)	Cigars	Cigarettes	Total
1965	4 714.5	167.3	22 069.2	26 951.0	0.42	0.02	1.96	2.39
1966	4 466.0	166.1	22 664.6	27 296.7	0.39	0.01	1.97	2.37
1967	4 219.4	173.5	22 175.4	26 568.3	0.36	0.02	1.89	2.27
1968	4 230.6	215.3	23 655.5	28 101.4	0.35	0.02	1.98	2.36
1969	4 195.9	213.8	24 732.2	29 141.9	0.35	0.02	2.03	2.39
1970	4 134.4	236.6	25 301.6	29 672.6	0.33	0.02	2.03	2.38
1971	4 287.6	224.4	25 778.5	30 290.5	0.34	0.02	2.04	2.40
1972	4 388.8	256.8	26 429.9	31 075.5	0.34	0.02	2.05	2.41
1973	3 512.6	293.9	27 557.0	31 363.5	0.27	0.02	2.11	2.40
1974	3 886.1	340.5	28 349.0	32 575.7	0.29	0.03	2.14	2.46

(a) Includes all loose tobacco. Excludes snuff.

Source: A.B.S.

**Tobacco and alcohol****TABLE 28 ALCOHOL—CONSUMPTION OF ALCOHOLIC BEVERAGES—1964-65 TO 1973-74**

Year ended 30 June	Total consumption			Consumption per head of population		
	Beer ( <sup>'000</sup> litres)	Wine (a) ( <sup>'000</sup> litres)	Spirits ( <sup>'000</sup> litres alcohol)	Beer (litres)	Wine (a) (litres)	Spirits (litres alcohol)
1965 . . . . .	1 239 296	62 572	10 564	109.88	5.55	0.94
1966 . . . . .	1 266 219	69 587	9 572	110.10	6.05	0.83
1967 . . . . .	1 323 497	79 438	9 693	113.04	6.78	0.83
1968 . . . . .	1 391 972	89 944	11 073	116.87	7.55	0.93
1969 . . . . .	1 462 730	100 182	11 169	120.45	8.25	0.92
1970 . . . . .	1 532 326	110 856	12 657	123.53	8.94	1.02
1971 . . . . .	1 600 942	111 111	13 124	126.48	8.78	1.04
1972 . . . . .	1 640 925	116 284	14 253	127.24	9.02	1.11
1973 . . . . .	1 719 782	130 015	16 384	131.45	9.94	1.25
1974 . . . . .	1 874 277	148 075	16 734	141.26	11.16	1.26

(a) Part of the apparent increase in consumption could be due to increased stocks of wine held for maturing.

Source: A.B.S.

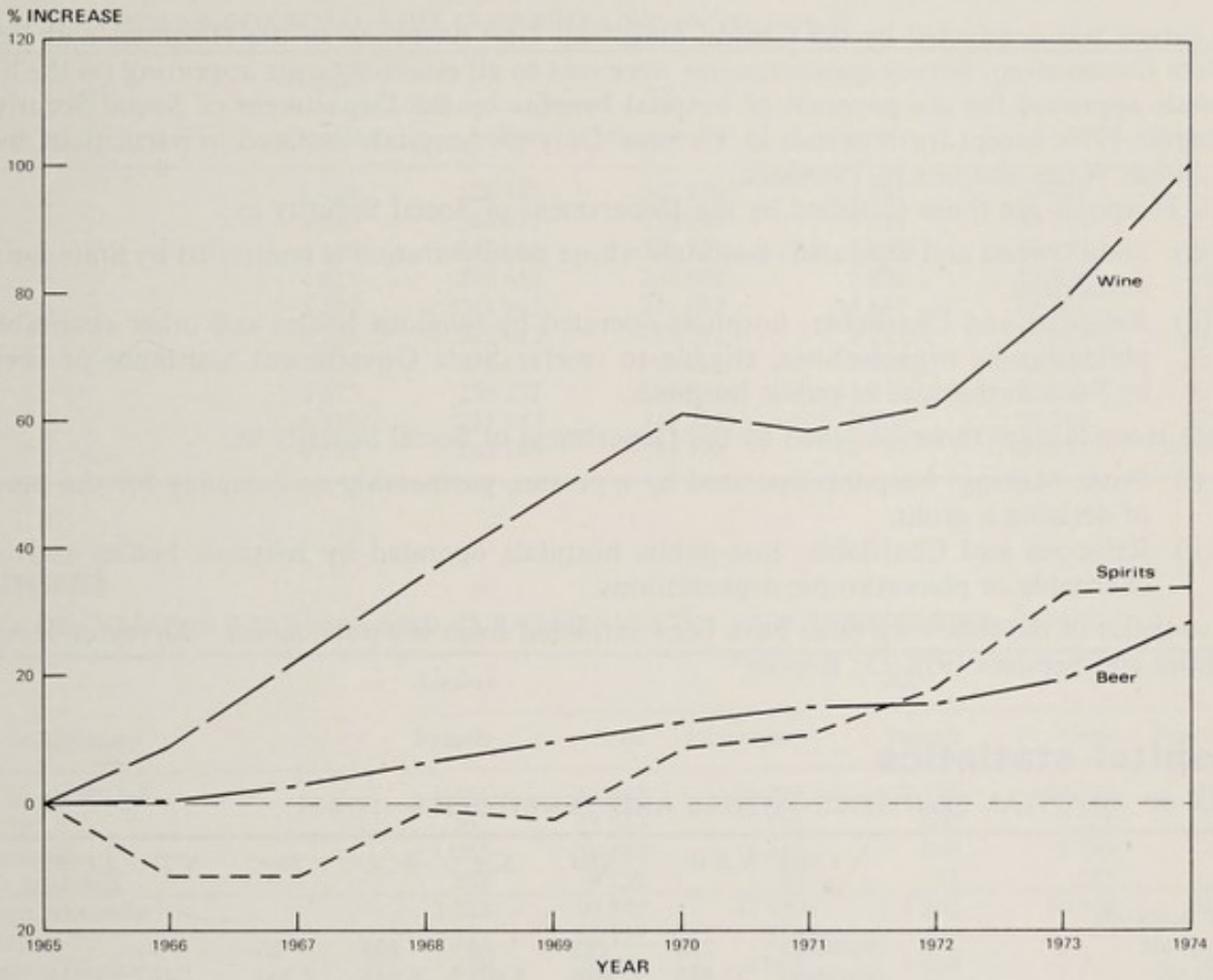
**Tobacco and alcohol****TABLE 29 TOBACCO AND ALCOHOL—PERSONAL CONSUMPTION EXPENDITURE AND PERCENTAGE OF ALCOHOL AND TOBACCO EXPENDITURE TO TOTAL CONSUMPTION EXPENDITURE—1969-70 TO 1973-74**

	Total expenditure (\$ Million)					Average expenditure per head of population (\$)				
	1969-70	1970-71	1971-72	1972-73	1973-74	1969-70	1970-71	1971-72	1972-73	1973-74
Alcoholic drinks . . . . .	1 183	1 306	1 416	1 550	1 805	95.37	103.18	109.80	118.47	136.04
Cigarettes & tobacco . . . . .	510	556	605	654	785	41.11	43.93	46.91	50.00	59.16
Food . . . . .	3 570	3 819	4 101	4 528	5 327	287.81	301.72	318.00	346.10	401.47
Rent . . . . .	2 226	2 544	2 863	3 206	4 038	179.46	200.99	222.00	245.05	304.33
Household durables . . . . .	1 314	1 429	1 569	1 783	2 344	105.93	112.90	121.66	136.28	176.66
Travel & communication . . . . .	2 617	2 920	3 247	3 613	4 482	210.98	230.69	251.78	276.16	337.79
Clothing . . . . .	1 659	1 793	1 928	2 142	2 666	133.75	141.66	149.50	163.72	200.93
Other . . . . .	4 713	5 174	5 851	6 575	7 641	379.95	408.77	453.70	502.56	575.87
Total . . . . .	17 791	19 540	21 579	24 052	29 088	1 434.28	1 543.75	1 673.27	1 838.40	2 192.25
Alcohol as % of total . . . . .	6.65	6.68	6.56	6.44	6.20					
Tobacco as % of total . . . . .	2.87	2.85	2.80	2.72	2.70					

Source: A.B.S.

## Tobacco and alcohol

**GRAPH 9** ALCOHOL—PERCENTAGE INCREASE IN CONSUMPTION OF BEER, WINE AND SPIRITS PER HEAD OF POPULATION—1965 TO 1974





## HOSPITAL STATISTICS

### Survey of hospital facilities and services—1972-73

This survey was conducted by the Central Statistical Unit on behalf of the Hospitals and Health Services Commission. Survey questionnaires were sent to all establishments appearing on the list of hospitals approved for the payment of hospital benefits by the Department of Social Security at 30 August 1973, except for hospitals in Victoria. Only six hospitals declined to participate, five in New South Wales and one in Tasmania.

Public Hospitals are those classified by the Department of Social Security as:

- (i) State Owned and Operated: hospitals whose administration is controlled by State hospital authorities.
- (ii) Religious and Charitable: hospitals operated by religious bodies and other charitable or philanthropic organisations, eligible to receive State Government assistance or licensed by State authorities as public hospitals.

Private Hospitals are those classified by the Department of Social Security as:

- (i) Profit Making: hospitals operated by a person, partnership or company for the purpose of deriving a profit.
- (ii) Religious and Charitable: non-public hospitals operated by religious bodies and other charitable or philanthropic organisations.

The statistics in the following table have been extracted from the publication "Survey of Hospital Facilities and Services 1972-73: Report".

### Hospital statistics

TABLE 30 HOSPITAL STATISTICS—STATES AND TERRITORIES—1972-73

	Units	N.S.W.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Total
<b>Public hospitals</b>									
Hospitals . . . . .	(number)	251	142	68	103	25	5	3	597
Beds (a) . . . . .	(number)	27 482	12 676	5 601	6 545	2 300	741	1 133	56 478
Hospital benefit beds (b) . . . . .	(number)	26 010	11 897	5 435	5 598	2 300	741	1 133	53 114
Average occupancy rate (c) . . . . .	(per cent)	72.7	57.1	73.7	68.7	69.3	72.7	57.8(d)	68.4
Average length of stay (c) . . . . .	(days)	8.9	8.2	9.1	8.1	10.0	9.1	7.7	8.7
<b>Private hospitals</b>									
Hospitals . . . . .	(number)	94	35	50	22	8	—	1	210
Beds (a) . . . . .	(number)	4 225	2 185	1 965	1 673	390	—	46	10 484
Hospital benefit beds (b) . . . . .	(number)	4 224	2 148	1 948	1 575	388	—	46	10 329
Average occupancy rate (c) . . . . .	(per cent)	69.4	80.8	72.1	69.5	66.5	—	52.2	72.1
Average length of stay (c) . . . . .	(days)	9.2	9.7	7.9	7.5	6.2	—	3.0	8.5
<b>Total</b>									
Hospitals . . . . .	(number)	345	177	118	125	33	5	4	807
Beds (a) . . . . .	(number)	31 707	14 861	7 566	8 218	2 690	741	1 179	66 962
Hospital benefit beds (b) . . . . .	(number)	30 234	14 045	7 383	7 173	2 688	741	1 179	63 443
Average occupancy rate (c) . . . . .	(per cent)	72.3	60.7	73.3	68.9	68.9	72.7	57.6(d)	69.0
Average length of stay (c) . . . . .	(days)	9.0	8.5	8.8	8.0	9.2	9.1	7.3	8.7
Beds per 1 000 population (e) . . . . .	(number)	6.7	7.8	6.3	7.7	6.8	7.7	7.0	7.0

(a) Beds available for patient care at 30 June 1973.

(b) Beds approved for the payment of hospital benefits by the Department of Social Security.

(c) Average occupancy rates and average length of stay statistics relate only to beds approved for payment of hospital benefits.

(d) Statistics for A.C.T. include data for the Woden Valley Hospital (beds 406, average number occupied 50) which opened during the latter part of the year ended 30 June 1973.

(e) Population at 30 June 1973.

## QUARANTINE

### General

TABLE 31 VESSELS BOARDED AND CLEARED—1965-66 TO 1974-75

Year ended 30 June	Surface			Air		
	Vessels	Crew	Passengers	Vessels	Crew	Passengers
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
1975 . . . . .	6 515	243 186	84 198	12 757	104 021	1 007 845

### General

TABLE 32 VESSELS BOARDED AND CLEARED—STATES AND TERRITORIES—1974-75

State or Territory	Surface			Air		
	Vessels	Crew	Passengers	Vessels	Crew	Passengers
New South Wales . . . . .	1 466	56 682	21 238	8 995	68 117	701 642
Victoria . . . . .	592	19 867	7 111	640	7 526	77 761
Queensland . . . . .	1 085	38 682	6 443	699	5 783	35 527
South Australia . . . . .	248	9 229	28	15	181	1 017
Western Australia . . . . .	2 323	99 546	47 950	1 342	14 946	145 295
Tasmania . . . . .	383	10 125	333	—	—	—
Northern Territory . . . . .	418	9 055	1 095	1 039	7 272	46 169
Australian Capital Territory . . . . .	(a)	(a)	(a)	27	196	434
Australia . . . . .	6 515	243 186	84 198	12 757	104 021	1 007 845

(a) Not applicable.

**General****TABLE 33 CASES (a) OF INFECTIOUS DISEASES ON OVERSEAS VESSELS (b) ARRIVING IN AUSTRALIA—1970-71 TO 1974-75**

<i>Disease</i>	(Number)				
	<i>1970-71</i>	<i>1971-72</i>	<i>1972-73</i>	<i>1973-74</i>	<i>1974-75</i>
Chickenpox . . . . .	54	33	36	37	37
Dysentery . . . . .	—	—	2	3	8
Gastroenteritis . . . . .	1	12	45	25	3
Glandular fever . . . . .	2	2	2	2	—
Herpes . . . . .	1	—	—	—	7
Infectious dermatitis . . . . .	1	1	5	2	2
Infectious hepatitis . . . . .	22	12	4	5	11
Influenza . . . . .	5	1	13	6	7
Leprosy . . . . .	1	—	15	1	3
Measles . . . . .	223	44	53	24	9
Meningitis . . . . .	—	—	5	—	1
Mumps . . . . .	23	24	16	28	7
Rubella . . . . .	9	32	2	7	7
Salmonella infection . . . . .	—	—	4	3	3
Scarlet fever . . . . .	—	2	—	—	—
Tuberculosis . . . . .	2	2	1	3	—
Venereal disease . . . . .	218	312	308	262	147
<b>Total</b> . . . . .	<b>562</b>	<b>477</b>	<b>511</b>	<b>408</b>	<b>252</b>

(a) As notified by Quarantine Officers.

(b) Includes air and surface vessels.

**General****TABLE 34 PEOPLE QUARANTINED—1965-66 TO 1974-75**  
(Number)

<i>Year ended 30 June</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>	<i>Adelaide</i>	<i>Perth</i>	<i>Darwin</i>	<i>Total</i>
1966 . . . . .	33	2	1	—	4	9	49
1967 . . . . .	57	3	6	1	4	n.a.	71 (a)
1968 . . . . .	76	—	18	1	13	n.a.	108 (a)
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
1975 . . . . .	120	4	12	—	31	13	180

(a) Excludes Darwin.

## General

TABLE 35 PASSENGERS VACCINATED AGAINST SMALLPOX ON ARRIVAL IN AUSTRALIA—1965-66 TO 1974-75

(Number)

Year ended 30 June	Sydney	Melbourne	Brisbane	Adelaide	Perth	Darwin	Total
1966 . . . . .	2 102	2	94	—	160	763	3 121
1967 . . . . .	1 860	7	120	—	189	n.a.	2 176 (a)
1968 . . . . .	2 417	15	130	—	185	n.a.	2 747 (a)
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
1975 . . . . .	3 260	1 125	270	—	813	369	5 837

(a) Excludes Darwin.

## Animal

TABLE 36 ANIMALS IMPORTED—1970-71 TO 1974-75

(Number)

Type	1970-71	1971-72	1972-73	1973-74	1974-75
Animals for permanent quarantine in registered zoological gardens and circuses . . . . .	111	252	299	131	42
Cats and dogs— from New Zealand . . . . .	644	694	861	1 331	1 211
from United Kingdom . . . . .	—	752	852	1 026	855
from Papua New Guinea . . . . .	—	—	49	107	126
Cattle— from New Zealand . . . . .	1 471	2 509	2 959	2 458	1 208
Horses— from New Zealand . . . . .	964	924	1 124	1 339	1 430
from United Kingdom . . . . .	175	170	58	504	749
Monkeys . . . . .	300	—	630	548	356
Pigs— from New Zealand . . . . .	9	23	16	18	10
Laboratory animals for scientific institutions . . . . .	3 682	4 718	8 185	5 440	3 996
Goats— from New Zealand . . . . .	—	—	—	3	7
Sheep— from New Zealand . . . . .	—	—	—	159	238

## Animal

TABLE 37 ANIMALS EXPORTED—1974-75

Type	Number	Type	Number
Birds . . . . .	1 014	Goats . . . . .	343
Buffaloes . . . . .	854	Horses . . . . .	667
Camels . . . . .	4	Laboratory animals . . . . .	924
Cats . . . . .	918	Pigs . . . . .	719
Cattle . . . . .	15 925	Poultry . . . . .	546 015
Dogs . . . . .	3 391	Sheep . . . . .	1 298 323
Fish . . . . .	15 578	Zoological animals . . . . .	309

**Animal**TABLE 38 IMPORTATION OF CATTLE SEMEN—DOSES—1974-75  
(Number)

<i>Breed</i>	<i>Imports from</i>				<i>Total</i>
	<i>Ireland</i>	<i>Canada</i>	<i>New Zealand</i>	<i>United Kingdom</i>	
Aberdeen Angus . . . . .	—	1 637	5 939	1 988	9 564
Ayrshire . . . . .	—	—	200	2 857	3 057
Blonde d'Aquitaine . . . . .	—	3 044	500	17 176	20 720
Brown Swiss . . . . .	—	500	—	—	500
Canadian Holstein . . . . .	—	9 327	—	16 478	25 805
Charolais . . . . .	—	11 709	4 473	29 436	45 618
Chianina . . . . .	—	30 914	—	5 454	36 368
Devon . . . . .	—	—	—	6 755	6 755
Friesian (Holstein) . . . . .	—	6 832	29 898	16 196	52 926
Galloway . . . . .	—	—	—	250	250
Gelbvieh . . . . .	—	1 572	—	615	2 187
Guernsey . . . . .	—	—	—	5 784	5 784
Hays Converter . . . . .	—	275	—	—	275
Hereford . . . . .	—	2 155	2 791	25 701	30 647
Highland . . . . .	—	—	—	200	200
Jersey . . . . .	—	—	13 490	401	13 891
Limousin . . . . .	—	9 881	4 441	45 529	59 851
Lincoln Red . . . . .	—	888	—	1 856	2 744
Maine Anjou . . . . .	—	14 448	—	17 273	31 721
Meuse-Rhine-Issel . . . . .	—	—	—	4 015	4 015
Pinzgazer . . . . .	—	1 627	—	—	1 627
Porthenaise . . . . .	—	1 468	—	—	1 468
Red Dane . . . . .	—	1 003	—	235	1 238
Shorthorn . . . . .	—	—	1 001	1 314	2 315
Simmental . . . . .	2 573	29 896	4 498	71 955	108 922
South Devon . . . . .	—	—	9 803	9 964	19 767
Welsh Black . . . . .	—	—	—	200	200
<b>Total</b> . . . . .	<b>2 573</b>	<b>127 176</b>	<b>77 034</b>	<b>281 632</b>	<b>488 415</b>

**Animal**

**TABLE 39 EXPORTS OF CATTLE SEMEN—DOSES—1974-75**  
(Number)

<i>Breed</i>	<i>Exports to</i>							<i>Total</i>
	<i>Indonesia</i>	<i>Malaysia</i>	<i>New Zealand</i>	<i>Pakistan</i>	<i>United Kingdom</i>	<i>United States of America</i>	<i>Other</i>	
Aberdeen Angus . . . . .	—	50	400	—	—	—	—	450
Australian Illawarra Shorthorn . . . . .	—	2 600	—	10 100	—	9 413	1 993	24 106
Australian Milking Zebu . . . . .	150	1 520	—	1 000	—	—	160	2 830
Bradford . . . . .	—	200	—	—	—	—	300	500
Brahman . . . . .	50	—	—	—	—	—	700	750
Dairy Shorthorn . . . . .	—	—	274	—	2 537	—	—	2 811
Droughtmaster . . . . .	—	—	—	—	—	—	925	925
Friesian (Holstein) . . . . .	—	270	2 076	—	—	—	930	3 276
Hereford . . . . .	—	—	1 386	—	—	—	—	1 386
Jersey . . . . .	—	100	1 850	—	—	—	1 100	3 050
Murray Grey . . . . .	—	—	4 832	—	—	—	—	4 832
Poll Hereford . . . . .	—	—	1 064	—	—	—	—	1 064
Poll Shorthorn . . . . .	—	—	200	—	—	—	440	640
Sahiwal . . . . .	313	—	—	—	—	2 907	243	3 463
Sahiwal/Friesian . . . . .	50	—	—	—	—	—	—	50
Sahiwal/Santa Gertrudis/ Poll Hereford . . . . .	—	—	—	—	—	—	30	30
Santa Gertrudis . . . . .	150	—	1 150	—	—	—	—	1 300
<b>Total . . . . .</b>	<b>713</b>	<b>4 740</b>	<b>13 232</b>	<b>11 100</b>	<b>2 537</b>	<b>12 320</b>	<b>6 821</b>	<b>51 463</b>

## THERAPEUTICS

The figures in tables 40, 42 and 43 are based on actual cash payments and for the years 1972-73, 1973-74 and 1974-75 include amounts of \$703 000, \$2 654 000 and \$2 478 000 respectively which were paid in those years but relate to prescriptions processed during 1971-72, 1972-73 and 1973-74.

Tables 44 to 51 include these payments with the years to which they relate instead of years of payment and will not therefore agree with the totals of tables 40, 42 and 43.

### Pharmaceutical benefits

**TABLE 40 COST OF PHARMACEUTICAL BENEFITS—1965-66 TO 1974-75**  
(S'000)

	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
<b>Australian Government Payments</b>										
<b>Benefit prescriptions</b>										
General (a) — — — — —	53 078	56 656	56 800	64 025	73 228	88 176	90 062	87 431	108 066	131 341
Pensioner (b) — — — — —	24 071	29 280	32 115	36 609	41 069	45 181	52 005	58 139	66 803	80 587
<b>Total — — — — —</b>	<b>77 149</b>	<b>85 936</b>	<b>88 915</b>	<b>100 634</b>	<b>114 297</b>	<b>133 357</b>	<b>142 067</b>	<b>145 571</b>	<b>174 869</b>	<b>211 928</b>
<b>Patients' contributions on general benefit prescriptions — — — — —</b>										
	17 481	18 347	18 504	20 129	21 942	24 384	35 467	48 640	59 015	66 828
<b>Total cost of benefit prescriptions — — —</b>	<b>94 630</b>	<b>104 283</b>	<b>107 420</b>	<b>120 764</b>	<b>136 238</b>	<b>157 741</b>	<b>177 534</b>	<b>194 211</b>	<b>233 885</b>	<b>278 756</b>
<b>Australian Government payments to public hospitals and through miscellaneous services — — — — —</b>										
	14 635	15 344	16 219	17 739	22 422	26 918	31 201	32 062	43 427	50 368
<b>Total cost of pharmaceutical benefits — —</b>	<b>109 265</b>	<b>119 628</b>	<b>123 639</b>	<b>138 503</b>	<b>158 660</b>	<b>184 659</b>	<b>208 735</b>	<b>226 273</b>	<b>277 311</b>	<b>329 125</b>
<b>TOTAL AUSTRALIAN GOVERNMENT PAYMENTS — — — — —</b>	<b>91 784</b>	<b>101 281</b>	<b>105 134</b>	<b>118 373</b>	<b>136 718</b>	<b>160 275</b>	<b>173 268</b>	<b>177 633</b>	<b>218 296</b>	<b>262 297</b>

(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 41 PHARMACEUTICAL CHEMISTS AND MEDICAL PRACTITIONERS DISPENSING PHARMACEUTICAL BENEFITS PRESCRIPTIONS—STATES AND TERRITORIES—1965-66 TO 1974-75**

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.

(Number)

At 30 June	New South Wales (a)		Victoria		Queensland		South Australia (a)		Western Australia		Tasmania		Northern Territory (a)		Australian Capital Territory (a)		Australia	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
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	21	—	69	—	5 817	63
1974	2 102	29	1 573	2	897	6	502r	6	408	4	146	14	20	—	71	—	5 719r	61
1975	2 034	26	1 532	2	883	10	490	4	396	4	146	11	20	—	65	—	5 566	57

(a) Figures for years prior to 1973 for Northern Territory and Australian Capital Territory are included in South Australia and New South Wales, respectively.

## Pharmaceutical benefits

TABLE 42 PAYMENTS TO PUBLIC HOSPITALS AND THROUGH MISCELLANEOUS SERVICES—STATES AND TERRITORIES—1965-66 TO 1974-75

(\$'000)

Year ended 30 June	<i>Payments to public hospitals</i>									
	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory (a)	Australian Capital Territory (b)	Miscellaneous	Total
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	251	255	955	32 062
1974	14 387	12 047	6 295	3 334	4 406	1 157	349	326	1 126	43 427
1975	16 050	13 152	7 771	4 264	5 686	1 301	366	463	1 316(c)	50 368

(a) Figures for years prior to 1973 for Northern Territory are not included in this table. Related costs were charged to Northern Territory expenditure as Medical Supplies.

(b) Figures for years prior to 1973 for Australian Capital Territory are included in New South Wales.

(c) In 1974-75 miscellaneous services expenditure consisted of:—

	\$'000
Biological products and prophylactic materials	673
Australian Government Medical Officers and Immigration Medical Services	64
Royal Flying Doctor Service	54
Bush Nursing Organisations	123
Special Issues for Research	104
Colostomy and Ileostomy Association	298
Total	1 316

## Pharmaceutical benefits

TABLE 43 COST OF BENEFIT PRESCRIPTIONS—STATES AND TERRITORIES—1974-75

(\$'000)

State or Territory	<i>Australian Government payments (a)</i>			<i>Patients' contributions on general benefit prescriptions</i>	<i>Total cost of benefit prescriptions</i>
	<i>Benefit prescriptions</i>				
	<i>General</i>	<i>Pensioner</i>	<i>Total</i>		
New South Wales	51 170	33 429	84 600	24 969	109 568
Victoria	35 981	18 983	54 963	18 568	73 531
Queensland	19 077	12 891	31 968	10 115	42 083
South Australia	11 064	7 370	18 434	5 787	24 220
Western Australia	8 761	5 310	14 071	4 649	18 720
Tasmania	3 259	2 278	5 537	1 753	7 290
Northern Territory	297	30	327	154	482
Australian Capital Territory	1 732	296	2 028	834	2 862
Australia	131 341	80 587	211 928	66 828	278 756

(a) Excludes payments for pharmaceutical benefits provided by public hospitals and through miscellaneous services (see Table 42).



**Pharmaceutical benefits****TABLE 44** DISSECTION OF BENEFIT PRESCRIPTION COSTS (a) INTO INGREDIENT AND CONTAINER COST AND APPROVED SUPPLIERS' REMUNERATION—1965-66 TO 1974-75  
(S'000)

<i>Year ended 30 June</i>	<i>Cost of ingredients and containers (b)</i>	<i>Suppliers' remuneration (c)</i>	<i>Total cost of benefit prescriptions</i>
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	196 162
1974 . . . . .	139 856	93 852 r	233 708 r
1975 . . . . .	158 304	113 617	271 921

(a) Includes patients' contributions. Excludes costs in relation to pharmaceutical benefits provided by public hospitals and through miscellaneous services (see Table 42).

(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 45** DISSECTION OF BENEFIT PRESCRIPTION COSTS (a) INTO INGREDIENT AND CONTAINER COST AND APPROVED SUPPLIERS' REMUNERATION—STATES AND TERRITORIES—1974-75  
(S'000)

<i>State or Territory</i>	<i>Cost of ingredients and containers (b)</i>	<i>Suppliers' remuneration (c)</i>	<i>Total cost of benefit prescriptions</i>
New South Wales . . . . .	60 932	43 410	104 341
Victoria . . . . .	42 491	30 384	72 874
Queensland . . . . .	24 123	17 582	41 706
South Australia . . . . .	13 900	10 101	24 001
Western Australia . . . . .	10 758	7 794	18 552
Tasmania . . . . .	4 194	3 030	7 224
Northern Territory . . . . .	284	192	476
Australian Capital Territory . . . . .	1 622	1 123	2 746
Australia . . . . .	158 304	113 617	271 921

(a) See footnote (a) Table 44.

(b) See footnote (b) Table 44.

(c) See footnote (c) Table 44.

## Pharmaceutical benefits

TABLE 46 BENEFIT PRESCRIPTIONS AND AVERAGE COST PER BENEFIT PRESCRIPTION (a)—1965-66 TO 1974-75

Year ended 30 June	Benefit prescriptions ('000)			Average cost per benefit prescription (\$)		
	General	Pensioner	Total	General	Pensioner	Total
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	2.31	2.64
1974	59 500	27 788	87 288	2.81 r	2.40 r	2.68 r
1975	67 351	30 324	97 674	2.88	2.56	2.78

(a) See footnote (a) Table 44.

## Pharmaceutical benefits

TABLE 47 BENEFIT PRESCRIPTIONS AND AVERAGE COST PER BENEFIT PRESCRIPTION (a)—STATES AND TERRITORIES—1974-75

State or Territory	Benefit prescription ('000)			Average cost per benefit prescription (\$)		
	General	Pensioner	Total	General	Pensioner	Total
New South Wales	25 186	12 141	37 326	2.91	2.56	2.80
Victoria	18 717	7 210	25 927	2.89	2.61	2.81
Queensland	10 161	5 076	15 237	2.85	2.51	2.74
South Australia	5 839	2 858	8 696	2.86	2.55	2.76
Western Australia	4 691	2 051	6 742	2.83	2.56	2.75
Tasmania	1 763	874	2 637	2.82	2.58	2.74
Northern Territory	153	11	164	2.91	2.80	2.90
Australian Capital Territory	841	104	945	2.94	2.65	2.91
Australia	67 351	30 324	97 674	2.88	2.56	2.78

(a) See footnote (a) Table 44.

**Pharmaceutical benefits****TABLE 48** BENEFIT PRESCRIPTIONS PER HEAD OF POPULATION AND AVERAGE COST PER HEAD OF POPULATION (a)—1965-66 TO 1974-75

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
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	45.41	14.98
1974	5.00	20.99	6.60	13.89	49.77	17.48
1975	5.59	21.29	7.25	16.11	54.57	20.17

(a) See footnote (a) Table 44.

(b) Population excluding persons eligible to receive pensioner pharmaceutical benefits.

(c) Population of persons eligible to receive pensioner pharmaceutical benefits.

**Pharmaceutical benefits****TABLE 49** BENEFIT PRESCRIPTIONS PER HEAD OF POPULATION AND AVERAGE COST PER HEAD OF POPULATION (a)—STATES AND TERRITORIES—1974-75

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	5.91	22.91	7.79	17.21	58.58	21.79
Victoria	5.66	19.79	7.07	16.36	51.59	19.86
Queensland	5.75	22.69	7.65	16.38	57.04	20.95
South Australia	5.34	20.57	7.05	15.27	52.51	19.46
Western Australia	4.67	18.73	6.06	13.24	48.01	16.66
Tasmania	4.93	18.71	6.52	13.88	48.30	17.85
Northern Territory	1.80	2.00	1.81	5.23	5.59	5.25
Australian Capital Territory	4.64	17.92	5.05	13.64	47.44	14.68
Australia	5.59	21.29	7.25	16.11	54.57	20.17

(a) See footnote (a) Table 44.

(b) See footnote (b) Table 48.

(c) See footnote (c) Table 48.

## Pharmaceutical benefits

TABLE 50 RESTRICTED AND UNRESTRICTED DRUGS—COST, PRESCRIPTION VOLUME AND AVERAGE COST PER PRESCRIPTION (a)—1974-75

	<i>Benefit prescriptions</i>		<i>Total cost of benefit prescriptions</i>		<i>Average cost per benefit prescription</i>
	<i>Number</i>	<i>Percentage of total</i>	<i>Amount</i>	<i>Percentage of total</i>	
	'000	%	\$'000	%	\$
TYPE OF RESTRICTION:					
Authority required	790	0.81	5 169	1.90	6.55
Authority not required—purpose specified	12 640	12.94	51 633	18.99	4.08
Available as a pensioner benefit only	1 993	2.04	3 212	1.18	1.61
For use in approved private hospitals only	2	0.00	20	0.01	10.62
UNRESTRICTED BENEFITS	82 250	84.21	211 887	77.92	2.58
Total	97 674	100.00	271 921	100.00	2.78

(a) See footnote (a) Table 44.

**Pharmaceutical benefits****TABLE 51** BENEFIT PRESCRIPTIONS AND COST OF MORE FREQUENTLY PRESCRIBED DRUG GROUPS (a)—1974-75

<i>Drug groups</i>	<i>Benefit prescriptions</i>		<i>Total cost of benefit prescriptions</i>	
	<i>Number</i>	<i>Percentage of total</i>	<i>Amount</i>	<i>Percentage of total</i>
	<i>'000</i>	<i>%</i>	<i>\$'000</i>	<i>%</i>
Analgesics . . . . .	9 392	9.62	23 550	8.66
Anovulants . . . . .	5 823	5.96	14 260	5.24
Antacids . . . . .	2 516	2.58	4 742	1.74
Anti-cholinergics . . . . .	1 345	1.38	4 767	1.75
Anti-convulsants . . . . .	480	0.49	2 280	0.84
Anti-depressants . . . . .	3 431	3.51	8 283	3.05
Anti-diabetics . . . . .	770	0.79	4 971	1.83
Anti-histamines . . . . .	4 750	4.86	10 547	3.88
Blood vessels—Drugs acting on . . . . .	3 929	4.02	18 387	6.76
Broad spectrum antibiotics . . . . .	6 771	6.93	22 528	8.28
Bronchial spasm preparations . . . . .	4 079	4.18	16 604	6.11
Corticosteroids . . . . .	786	0.80	2 421	0.89
Diuretics . . . . .	5 344	5.47	19 183	7.05
Expectorants and cough suppressants . . . . .	1 413	1.45	1 691	0.62
Eye drops . . . . .	1 615	1.65	3 365	1.24
Gastro intestinal sedatives . . . . .	1 047	1.07	2 806	1.03
Genito-urinary infections—Drugs acting on . . . . .	1 637	1.68	5 311	1.95
Heart—Drugs acting on . . . . .	2 372	2.43	10 666	3.92
Iron preparations . . . . .	1 439	1.47	2 166	0.80
Parkinsons disease—Drugs used for . . . . .	392	0.40	2 079	0.76
Penicillins . . . . .	6 752	6.91	20 688	7.61
Sedatives and hypnotics . . . . .	4 617	4.73	6 408	2.36
Sera, vaccines . . . . .	928	0.95	1 598	0.59
Sulphonamides . . . . .	2 156	2.21	6 735	2.48
Tranquillisers . . . . .	6 183	6.33	14 505	5.33
Water and electrolyte replacement . . . . .	2 377	2.43	5 814	2.14
Other drug groups . . . . .	15 331	15.70	35 568	13.08
<b>Total . . . . .</b>	<b>97 674</b>	<b>100.00</b>	<b>271 921</b>	<b>100.00</b>

(a) See footnote (a) Table 44.

## Therapeutic goods

TABLE 52 ADVERSE DRUG REACTION REPORTS—SOURCE OF REPORTS—1965 TO 1974

Year ended 31 December	Hospitals	Medical practitioners			Other (including dentists, pharmacists and pharmaceutical companies)	Total	Per cent from hospitals
		General practitioners	Specialists	Total			
	No.	No.	No.	No.	No.	%	
1965 . . . . .	49	(a)	(a)	183	—	21.1	
1966 . . . . .	69	(a)	(a)	253	—	21.4	
1967 . . . . .	52	(a)	(a)	287	—	15.3	
1968 . . . . .	133	(a)	(a)	387	16	24.8	
1969 . . . . .	175	(a)	(a)	802	44	17.1	
1970 . . . . .	396	405	241	646	66	35.7	
1971 . . . . .	846	455	181	636	75	54.3	
1972 . . . . .	1 102	494	224	718	97	57.5	
1973 . . . . .	839	415	268	683	128	50.8	
1974 . . . . .	796	356	243	1 395	88	50.6	

(a) Prior to 1970, separate figures for specialists and general practitioners are not available.

## Therapeutic goods

TABLE 53 CONSUMPTION (LICIT) OF THE PRINCIPAL NARCOTIC DRUGS—1965 TO 1974

Principal narcotic drug	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
KILOGRAMS										
Morphine . . . . .	99	100	82	92	58	60	76	60	62	53
Codeine (a) . . . . .	3 221	3 030	3 334	3 699	4 136	4 027	3 839	4 078	3 471	3 877
Ethylmorphine (a) . . . . .	11	9	10	13	15	13	11	9	8	9
Cocaine . . . . .	18	16	19	20	13	16	15	16	18	18
Pethadine . . . . .	235	207	236	297	194	249	244	263	265	272
Methadone . . . . .	21	14	9	18	8	15	11	17	23	25
Dextromoramide . . . . .	6	6	8	8	7	11	10	10	9	10
Total . . . . .	3 611	3 382	3 698	4 147	4 431	4 391	4 206	4 453	3 856	4 264
KILOGRAMS PER MILLION PERSONS										
Morphine . . . . .	8.71	8.66	6.98	7.65	4.72	4.78	5.97	4.66	4.73	3.98
Codeine (a) . . . . .	283.54	262.54	283.72	307.46	336.37	320.88	301.57	316.12	264.96	291.50
Ethylmorphine (a) . . . . .	0.97	0.78	0.85	1.08	1.22	1.04	0.86	0.72	0.61	0.68
Cocaine . . . . .	1.58	1.39	1.62	1.66	1.06	1.27	1.18	1.27	1.37	1.35
Pethadine . . . . .	20.69	17.94	20.08	24.69	15.78	19.84	19.17	20.37	20.23	20.33
Methadone . . . . .	1.85	1.21	0.77	1.50	0.65	1.20	0.86	1.30	1.76	1.88
Dextromoramide . . . . .	0.53	0.52	0.68	0.66	0.57	0.88	0.79	0.74	0.69	0.75
Total . . . . .	317.59	292.81	314.72	344.72	360.54	349.88	330.40	345.19	294.35	318.74

(a) Includes quantities of these drugs used in the manufacture of preparations for export.

**Radio and television scripts on medical matters**

TABLE 54 SCRIPTS EXAMINED—1970-71 TO 1974-75

<i>Type of script</i>	<i>Approved</i>		<i>Approved as amended</i>		<i>Rejected</i>		<i>Examined</i>	
	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>
<b>Radio—</b>								
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
1974-75 . . . . .	181	48.9	112	30.3	77	20.8	370	100.0
<b>Television—</b>								
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
1974-75 . . . . .	145	51.8	98	35.0	37	13.2	280	100.0
<b>Total—</b>								
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
1974-75 . . . . .	326	50.2	210	32.3	114	17.5	650	100.0

## PUBLIC HEALTH

### Notifiable diseases

**TABLE 55** NOTIFIABLE DISEASES—CASES NOTIFIED FOR DISEASES NOTIFIABLE IN ALL STATES AND TERRITORIES—1970 TO 1974

(Number)

Disease	1970	1971	1972	1973	1974
Anthrax . . . . .	—	—	11	—	1
Brucellosis . . . . .	137	77	66	74	41
Cholera . . . . .	—	—	41	—	—
Diphtheria . . . . .	75	31	61	82	32
Gonorrhoea . . . . .	9 542	10 539	11 037	11 337	12 570
Hepatitis, infective . . . . .	7 571	7 509	6 118	4 358	3 289
Hydatid . . . . .	37	43	31	24	20
Leprosy . . . . .	67	32	46	38	33
Leptospirosis . . . . .	72	97	67	50	74
Malaria . . . . .	234	215	189	203	216
Ornithosis . . . . .	4 (a)	2 (a)	10	6	3
Plague . . . . .	—	—	—	—	—
Poliomyelitis . . . . .	1	1	7	—	1
Smallpox . . . . .	—	—	—	—	—
Syphilis . . . . .	946	1 077	1 217	1 430	2 185
Tetanus . . . . .	21	24	18	17	12
Tuberculosis . . . . .	1 712	1 482	1 475	1 561	1 408
Typhoid fever . . . . .	19	36	15	18	18
Typhus (all forms) . . . . .	5	7	3	4	2
Yellow fever . . . . .	—	—	—	—	—

(a) Not notifiable in all States and Territories.

### Notifiable diseases

**TABLE 56** NOTIFIABLE DISEASES—CASES NOTIFIED FOR DISEASES NOTIFIABLE IN ALL STATES AND TERRITORIES—STATES AND TERRITORIES—1974

(Number)

Disease	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Anthrax . . . . .	1	—	—	—	—	—	—	—	1
Brucellosis . . . . .	19	17	1	2	2	—	—	—	41
Cholera . . . . .	—	—	—	—	—	—	—	—	—
Diphtheria . . . . .	7	—	25	—	—	—	—	—	32
Gonorrhoea . . . . .	3 606	2 049	1 952	2 091	2 027	248	563	34	12 570
Hepatitis, infective . . . . .	1 309	768	536	193	247	43	168	25	3 289
Hydatid . . . . .	9	3	—	2	—	6	—	—	20
Leprosy . . . . .	—	2	5	—	10	—	16	—	33
Leptospirosis . . . . .	9	19	42	2	1	1	—	—	74
Malaria . . . . .	36	34	54	17	4	1	48	22	216
Ornithosis . . . . .	2	—	1	—	—	—	—	—	3
Plague . . . . .	—	—	—	—	—	—	—	—	—
Poliomyelitis . . . . .	—	1	—	—	—	—	—	—	1
Smallpox . . . . .	—	—	—	—	—	—	—	—	—
Syphilis . . . . .	599	128	505	257	419	5	272	—	2 185
Tetanus . . . . .	2	4	2	4	—	—	—	—	12
Tuberculosis . . . . .	532	321	241	101	125	45	31	12	1 408
Typhoid fever . . . . .	4	8	2	1	1	—	—	2	18
Typhus (all forms) . . . . .	—	—	2	—	—	—	—	—	2
Yellow fever . . . . .	—	—	—	—	—	—	—	—	—



**Notifiable diseases**

**TABLE 57** ADDITIONAL NOTIFIABLE DISEASES—CASES NOTIFIED FOR DISEASES NOT NOTIFIABLE IN ALL STATES AND TERRITORIES—1970 TO 1974  
(Number)

<i>Disease</i>	1970	1971	1972	1973	1974
Acute rheumatism . . . . .	56	36	25	14	19
Amoebiasis . . . . .	24	7	11	14	17
Ankylostomiasis . . . . .	94	82	254	254	220
Arbovirus infection . . . . .	—	—	—	—	60 (a)
Diarrhoea, infantile . . . . .	738	982	1 044	1 000	1 636
Dysentery bacillary . . . . .	544	268	736	480	293
Encephalitis . . . . .	76	64	52	54	106
Hepatitis, serum . . . . .	—	72	90	96	129
Paratyphoid fever . . . . .	1	5	7	5	6
Puerperal fever . . . . .	16	12	11	14	54
Q fever . . . . .	140	168	140	124	117
Rubella . . . . .	1 134	731	827	861	597
Salmonella infection . . . . .	644	641	455	699	485
Scarlet fever . . . . .	383	370	248	184	188
Shigella . . . . .	218	241	272	227	112
Trachoma . . . . .	4	12	2	1	—

(a) An outbreak of Australian Arbo-encephalitis (Murray Valley Encephalitis), occurred in late 1973 and early 1974 with a total of 60 cases being recorded.

**Notifiable diseases**

**TABLE 58** ADDITIONAL DISEASES—CASES NOTIFIED FOR DISEASES NOT NOTIFIABLE IN ALL STATES AND TERRITORIES—STATES AND TERRITORIES—1974  
(Number)

<i>Disease</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Acute rheumatism . . . . .	(a)	4	8	—	(a)	(a)	7	—	19
Amoebiasis . . . . .	(a)	4	5	1	2	—	5	—	17
Ankylostomiasis . . . . .	(a)	—	—	—	3	—	217	—	220
Arbovirus infection . . . . .	—	—	(a)	—	(a)	—	5	—	60 (b)
Diarrhoea, infantile . . . . .	767	(a)	67	9	(a)	(a)	640	153	1 636
Dysentery bacillary . . . . .	(a)	15	72	—	165	(a)	41	—	293
Encephalitis . . . . .	23	44	16	14	—	(a)	6	3	106
Hepatitis, serum . . . . .	40	79	(a)	6	—	—	—	4	129
Paratyphoid fever . . . . .	3	(a)	—	3	—	—	—	—	6
Puerperal fever . . . . .	(a)	3	4	—	—	—	47	—	54
Q fever . . . . .	19	—	98	(a)	—	—	—	(a)	117
Rubella . . . . .	(a)	429	29	40	(a)	(a)	99	—	597
Salmonella infection . . . . .	(a)	40	(a)	159	149	53	69	15	485
Scarlet fever . . . . .	(a)	148	15	15	8	(a)	1	1	188
Shigella . . . . .	(a)	—	—	31	—	—	81	—	112
Trachoma . . . . .	—	(a)	(a)	—	(a)	—	—	—	—

(a) Not notifiable.

(b) An outbreak of Australian Arbo-encephalitis (Murray Valley Encephalitis), occurred in late 1973 and early 1974 with a total of 60 cases being recorded. Cases were located as follows:— N.S.W. 6, Vic. 29, Qld 9, S.A. 10, W.A. 1, N.T. 5.

## Notifiable diseases

TABLE 59 VENEREAL DISEASE—ALL FORMS—NOTIFICATIONS AND DEATHS—STATES AND TERRITORIES—1965 TO 1974

State or Territory	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
NOTIFICATIONS										
New South Wales	4 539	4 991	4 841	5 343	4 463	3 945	4 305	4 026	3 719	4 205
Victoria	1 625	1 811	1 927	1 639	1 750	2 151	2 229	2 344	2 074	2 177
Queensland	1 490	1 630	1 553	1 693	2 087	1 739	2 052	2 270	2 554	2 457
South Australia	4 (a)	263	420	548	741	724	939	1 194	1 650	2 348
Western Australia	462	701	838	778	1 026	1 325	1 492	1 727	1 958	2 446
Tasmania	202	173	220	179	99	82	127	156	166	253
Northern Territory	219	237	508	531	501	463	432	478	609	835
Australian Capital Territory	54	28	36	61	53	59	40	59	37	34
Australia	8 595 (a)	9 834	10 343	10 772	10 720	10 488	11 616	12 254	12 767	14 755
Rate per 100 000 population	83.26 (b)	84.75	87.61	89.61	87.34	83.71	90.87	94.32	96.97	110.30
DEATHS (c)										
New South Wales	35	26	30	11	3	12	6	10	7	n.a.
Victoria	27	22	18	9	6	7	4	7	5	n.a.
Queensland	7	11	6	9	6	4	5	1	1	n.a.
South Australia	6	3	2	1	2	3	1	2	3	n.a.
Western Australia	1	7	4	2	3	1	5	4	1	n.a.
Tasmania	1	2	1	2	1	1	—	2	1	n.a.
Northern Territory	—	—	1	—	—	1	—	—	—	n.a.
Australian Capital Territory	—	—	—	1	—	—	—	—	—	n.a.
Australia	77	71	62	35	21	29	21	26	18	n.a.

(a) Not notifiable in South Australia prior to 4 November 1965.

(b) Based on population excluding South Australia.

(c) Source: A.B.S.

## Dental health

TABLE 60 AUSTRALIAN SCHOOL DENTAL SERVICE—CHILDREN TREATED—STATES AND TERRITORIES—1973 AND 1974

State or Territory	Children treated (a)		As percentage of population aged 3 to 14 years inclusive	
	1973	1974	1973	1974
	Number	Number	%	%
New South Wales	23 311	34 812	2.32	3.46
Victoria	24 783	24 903	3.06	3.05
Queensland	17 000	15 247	3.82	3.38
South Australia	27 137	36 585	9.96	13.43
Western Australia	1 679 (b)	10 987	0.67	4.25
Tasmania	50 871	53 304	52.99	55.81
Northern Territory	4 792	8 441	19.05	30.27
Australian Capital Territory	22 203	22 978	52.96	48.93
Total	171 776	207 257	5.83	6.96

(a) Number of children who received routine dental examinations.

(b) Excludes children treated in rural and remote areas.

**Dental health**

**TABLE 61 AUSTRALIAN SCHOOL DENTAL SERVICE—CLINICS AND PERSONNEL EMPLOYED—STATES AND TERRITORIES—1972-73 TO 1974-75**  
(Number at 30 June)

State or Territory	Clinics						Personnel					
	Static			Mobile			Dental therapists (a)			Total personnel (a)		
	1973	1974	1975	1973	1974	1975	1973	1974	1975	1973	1974	1975
New South Wales	14	14	14	18	13	18	9	10	15	82	101	115
Victoria	2	2	2	11	11	11	—	—	4	70	69	75
Queensland	—	—	1	4	4	4	—	—	3	24	32	42
South Australia	28	34	41	11	11	14	54	66	72	143	184	228
Western Australia	28	33	36	3	3	3	9	23	36	21 (b)	104	115
Tasmania	33	33	34	23	26	26	34	34	34	96	100	117
Northern Territory	6	6	9	4	4	4	1	3	7	9	11	17
Australian Capital Territory	38	41	44	—	—	—	13	15	21	65	67	80
Total	149	163	181	74	72	80	120	151	192	510	668	789

(a) Excludes trainee dental therapists.

(b) Excludes personnel in rural and remote areas.

**Dental health**

**TABLE 62 AUSTRALIAN SCHOOL DENTAL SERVICE—EXPENDITURE—STATES—1973-74 AND 1974-75**  
(S'000)

State	Training schools				Field service			
	Capital		Current		Capital		Current	
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
New South Wales	685	2 788	60	306	—	426	598	673
Victoria	794	3 038	—	58	—	143	550	858
Queensland	193	1 982	41	181	—	370	237	448
South Australia	340	1 454	451	733	555	793	615	967
Western Australia	491	1 065	139	332	170	244	252	426
Tasmania	497	1	330	461	52	68	488	778
Total	3 000	10 328	1 021	2 071	777	2 044	2 740	4 150

## HEALTH SERVICES

### Community health

TABLE 63 COMMUNITY AND MENTAL HEALTH, ALCOHOLISM AND DRUG DEPENDENCY PROGRAMS—STATES—1974-75

(Number)

<i>Nature of project (a)</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>National</i>	<i>Total</i>
Main community health centre . . . . . (including primary medical care)	4	20	4	12	5	3	—	48
Community health sub-centre . . . . .	—	—	7	—	—	—	—	7
Minor community health centre . . . . .	69	—	1	—	—	—	—	70
Main community health resource centre . . . . . (excluding primary medical care)	49	17	9	4	3	3	—	85
Minor community health resource centre . . . . .	48	11	4	2	—	2	—	67
"Shop Front"/"Drop In" centre . . . . .	23	1	—	1	—	—	—	25
Day hospital . . . . .	2	11	1	—	—	—	—	14
Day care centre . . . . .	8	3	—	—	1	2	—	14
Community health rehabilitation centre . . . . .	4	2	—	3	2	—	—	11
Hostel/Halfway house/Group home . . . . .	10	3	21	5	12	2	—	53
Referral/Assessment centre . . . . .	5	5	2	1	2	3	—	18
Domiciliary service . . . . .	2	1	—	2	2	—	—	7
Youth and adolescent service . . . . .	2	4	3	—	—	2	—	11
Geriatric service . . . . .	14	—	—	4	1	—	—	19
Maternal and child care service . . . . .	2	1	1	—	—	—	1	5
Specific disability/disease service . . . . .	5	1	—	—	—	—	—	6
Specific counselling service . . . . .	3	2	—	—	1	—	—	6
Health education service . . . . .	9	1	2	—	2	1	1	16
Health service training . . . . .	9	—	2	8	2	1	4	26
Mobile health facility . . . . .	4	—	—	1	1	1	—	7
Co-ordination/administrative service . . . . .	24	4	3	5	3	4	1	44
Research/evaluation team . . . . .	3	3	1	—	—	—	2	9
Other intra-state projects . . . . .	8	2	—	—	—	—	—	10
National secretariat . . . . .	—	—	—	—	—	—	4	4
<b>Total . . . . .</b>	<b>307</b>	<b>92</b>	<b>61</b>	<b>48</b>	<b>37</b>	<b>24</b>	<b>13</b>	<b>582</b>

(a) The above categorisation of projects has been based on the *primary* function of each project, as some projects have characteristics of more than one category.

## MEDICAL SERVICES

### Tuberculosis

TABLE 64 ALLOWANCES, NOTIFICATIONS, REACTIVATIONS AND DEATHS—1965 TO 1974  
(Number)

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
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
1974.	325	1 173	1 408	8.8	10.5	137	n.a.	n.a.

(a) Excludes reactivations.

### Tuberculosis

TABLE 65 ALLOWANCES, NOTIFICATIONS, REACTIVATIONS AND DEATHS—STATES AND TERRITORIES—1974  
(Number)

State or Territory	Allowances current at 31 December 1974	Notifications (a) 1974			Reactivations 1974		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	102	454	532	9.5	11.2	63	36	0.8
Victoria	69	262	321	7.2	8.8	31	45	1.3
Queensland	80	214	241	10.9	12.2	12	12	0.6
South Australia	13	78	101	6.4	8.3	12	9	0.7
Western Australia	23	91	125	8.3	11.4	8	13	1.2
Tasmania	25	40	45	10.0	11.2	8	7	1.8
Northern Territory	13	25	31	24.5	30.4	—	2	2.1
Australian Capital Territory	—	9	12	5.0	6.6	3	2	1.2
Australia	325	1 173	1 408	8.8	10.5	137	126	1.0

(a) Excludes reactivations.

## Tuberculosis

TABLE 66 NOTIFICATIONS OF PULMONARY DISEASE (a)—AGE GROUPS—STATES AND TERRITORIES—1974

Age Group	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
NUMBER									
0-4 . . . . .	18	19	2	2	3	—	2	—	46
5-9 . . . . .	3	2	3	1	1	—	—	—	10
10-14 . . . . .	—	3	2	7	1	—	1	—	14
15-19 . . . . .	18	8	3	—	2	1	—	—	32
20-24 . . . . .	21	11	4	4	1	4	3	—	48
25-29 . . . . .	22	14	8	1	7	1	3	3	59
30-34 . . . . .	20	17	12	3	2	1	4	—	59
35-39 . . . . .	25	12	12	3	2	1	—	—	55
40-44 . . . . .	31	13	16	4	4	3	2	—	73
45-49 . . . . .	52	29	25	8	8	6	2	2	132
50-54 . . . . .	42	34	23	6	12	11	4	1	133
55-59 . . . . .	49	23	21	5	8	4	—	3	113
60-64 . . . . .	44	16	26	7	11	3	1	—	108
65-69 . . . . .	39	26	27	10	12	3	1	—	118
70-74 . . . . .	29	19	6	10	8	—	1	—	73
75 and over . . . . .	41	16	23	7	9	2	1	—	99
Not stated . . . . .	—	—	1	—	—	—	—	—	1
<b>Total . . . . .</b>	<b>454</b>	<b>262</b>	<b>214</b>	<b>78</b>	<b>91</b>	<b>40</b>	<b>25</b>	<b>9</b>	<b>1 173</b>
PERCENTAGE									
0-4 . . . . .	4.0	7.3	0.9	2.6	3.3	—	8.0	—	3.9
5-9 . . . . .	0.7	0.8	1.4	1.3	1.1	—	—	—	0.9
10-14 . . . . .	—	1.1	0.9	9.0	1.1	—	4.0	—	1.2
15-19 . . . . .	4.0	3.1	1.4	—	2.2	2.5	—	—	2.7
20-24 . . . . .	4.6	4.2	1.9	5.1	1.1	10.0	12.0	—	4.1
25-29 . . . . .	4.8	5.3	3.7	1.3	7.7	2.5	12.0	33.3	5.0
30-34 . . . . .	4.4	6.5	5.6	3.8	2.2	2.5	16.0	—	5.0
35-39 . . . . .	5.5	4.6	5.6	3.8	2.2	2.5	—	—	4.7
40-44 . . . . .	6.8	5.0	7.5	5.1	4.4	7.5	8.0	—	6.2
45-49 . . . . .	11.5	11.1	11.7	10.3	8.8	15.0	8.0	22.2	11.3
50-54 . . . . .	9.3	13.0	10.7	7.7	13.2	27.5	16.0	11.1	11.3
55-59 . . . . .	10.8	8.8	9.8	6.4	8.8	10.0	—	33.3	9.6
60-64 . . . . .	9.7	6.1	12.1	9.0	12.1	7.5	4.0	—	9.2
65-69 . . . . .	8.6	9.9	12.6	12.8	13.2	7.5	4.0	—	10.1
70-74 . . . . .	6.4	7.3	2.8	12.8	8.8	—	4.0	—	6.2
75 and over . . . . .	9.0	6.1	10.7	9.0	9.9	5.0	4.0	—	8.4
Not stated . . . . .	—	—	0.5	—	—	—	—	—	0.1
<b>Total . . . . .</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Excludes reactivations.

**Tuberculosis****TABLE 67 NOTIFICATIONS OF ALL FORMS OF DISEASE (a)—AGE GROUPS—STATES AND TERRITORIES—1974**

<i>Age group</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
	NUMBER								
0-4 . . . . .	26	26	11	4	13	—	2	1	83
5-9 . . . . .	3	8	4	3	3	—	2	1	24
10-14 . . . . .	4	4	5	8	1	—	2	—	24
15-19 . . . . .	19	8	3	1	3	1	1	—	36
20-24 . . . . .	28	12	6	4	3	5	3	—	61
25-29 . . . . .	30	21	9	2	9	2	3	3	79
30-34 . . . . .	26	20	14	4	2	1	4	—	71
35-39 . . . . .	29	19	12	4	5	1	1	—	71
40-44 . . . . .	39	17	18	4	7	4	3	1	93
45-49 . . . . .	59	34	27	10	10	6	2	2	150
50-54 . . . . .	46	38	25	9	12	11	4	1	146
55-59 . . . . .	52	28	22	8	8	4	—	3	125
60-64 . . . . .	54	19	27	8	16	4	1	—	129
65-69 . . . . .	41	29	27	10	13	4	1	—	125
70-74 . . . . .	29	20	6	11	10	—	1	—	77
75 and over . . . . .	47	18	24	11	9	2	1	—	112
Not stated . . . . .	—	—	1	—	1	—	—	—	2
<b>Total . . . . .</b>	<b>532</b>	<b>321</b>	<b>241</b>	<b>101</b>	<b>125</b>	<b>45</b>	<b>31</b>	<b>12</b>	<b>1 408</b>
	PERCENTAGE								
0-4 . . . . .	4.9	8.1	4.6	4.0	10.4	—	6.5	8.3	5.9
5-9 . . . . .	0.6	2.5	1.7	3.0	2.4	—	6.5	8.3	1.7
10-14 . . . . .	0.8	1.2	2.1	7.9	0.8	—	6.5	—	1.7
15-19 . . . . .	3.6	2.5	1.2	1.0	2.4	2.2	3.2	—	2.6
20-24 . . . . .	5.3	3.7	2.5	4.0	2.4	11.1	9.7	—	4.3
25-29 . . . . .	5.6	6.5	3.7	2.0	7.2	4.4	9.7	25.0	5.6
30-34 . . . . .	4.9	6.2	5.8	4.0	1.6	2.2	12.9	—	5.0
35-39 . . . . .	5.4	5.9	5.0	4.0	4.0	2.2	3.2	—	5.0
40-44 . . . . .	7.3	5.3	7.5	4.0	5.6	8.9	9.7	8.3	6.6
45-49 . . . . .	11.1	10.6	11.2	9.9	8.0	13.3	6.5	16.7	10.7
50-54 . . . . .	8.6	11.8	10.4	8.9	9.6	24.4	12.9	8.3	10.4
55-59 . . . . .	9.8	8.7	9.1	7.9	6.4	8.9	—	25.0	8.9
60-64 . . . . .	10.2	5.9	11.2	7.9	12.8	8.9	3.2	—	9.2
65-69 . . . . .	7.7	9.0	11.2	9.9	10.4	8.9	3.2	—	8.9
70-74 . . . . .	5.5	6.2	2.5	10.9	8.0	—	3.2	—	5.5
75 and over . . . . .	8.8	5.6	10.0	10.9	7.2	4.4	3.2	—	8.0
Not stated . . . . .	—	—	0.4	—	0.8	—	—	—	0.1
<b>Total . . . . .</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Excludes reactivations.

## Tuberculosis

TABLE 68 RESULTS OF MASS X-RAY SURVEYS—1965 TO 1974

Year ended 31 December	Number examined	Active and probably active T.B. cases	
		Number found	Rate per 1 000 examined
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
1974	1 090 038	226	0.21

## Tuberculosis

TABLE 69 RESULTS OF MASS X-RAY SURVEYS—STATES AND TERRITORIES—1974

State or Territory	Number examined	Active and probably active T.B. cases	
		Number found	Rate per 1 000 examined
New South Wales	340 697	75	0.22
Victoria	354 256	70	0.20
Queensland	251 585	51	0.20
South Australia	64 880	17	0.26
Western Australia	—	—	—
Tasmania	62 562	7	0.11
Northern Territory	16 058	6	0.37
Australian Capital Territory	—	—	—
Australia	1 090 038	226	0.21

## Tuberculosis

TABLE 70 SOURCES OF NOTIFICATIONS AND REACTIVATIONS—PULMONARY—STATES AND TERRITORIES—1974

Source of discovery	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	% of total
Mass X-ray surveys	89	68	60	9	—	7	9	—	242	18.63
Private medical practitioners	106	53	5	17	22	3	—	3	209	16.09
General and chest hospitals	116	47	110	13	29	13	8	—	336	25.87
Chest clinics	144	86	39	23	33	21	8	8	362	27.87
Repatriation clinics and hospitals	33	25	6	5	5	2	—	—	76	5.85
Death certificates (a)	7	6	4	6	4	1	—	—	28	2.16
Special surveys:										
Mental hospital surveys	13	5	1	—	—	—	—	—	19	1.46
Gaol surveys	—	—	—	—	—	—	—	—	—	—
Others	7	1	—	15	4	—	—	—	27	2.08
Total	515	291	225	88	97	47	25	11	1 299	100.00
% from mass X-ray surveys	17.28	23.37	26.67	10.23	—	14.89	36.00	—	18.63	

(a) Persons who died from active tuberculosis, not previously notified.



**Tuberculosis****TABLE 71 EXPENDITURE UNDER THE TUBERCULOSIS ACT (1948)—1965-66 TO 1974-75**  
(S'000)

Year ended 30 June	Australian Government reimbursements to States and payments in Territories		Allowances paid to sufferers through Department of Social Security	Total
	Capital (a)	Maintenance		
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
1975 . . . . .	131	13 571	759	14 460

(a) Excludes capital expenditure for N.T. and A.C.T.

**Tuberculosis****TABLE 72 EXPENDITURE UNDER THE TUBERCULOSIS ACT (1948)—STATES AND TERRITORIES**  
—1974-75

(S'000)

State or Territory	Australian Government reimbursements to States and payments in Territories		Allowances paid to sufferers through Department of Social Security	Total
	Capital	Maintenance (a)		
New South Wales . . . . .	34	3 923	274	4 231
Victoria . . . . .	10	4 128	161	4 299
Queensland . . . . .	56	2 979	148	3 183
South Australia . . . . .	31	1 114	38	1 183
Western Australia . . . . .	—	992	56	1 048
Tasmania . . . . .	—	435	58	492
Northern Territory . . . . .	n.a.	—	23	23 (b)
Australian Capital Territory . . . . .	n.a.	—	1	1 (b)
Australia . . . . .	131(c)	13 571	759	14 460 (c)

(a) Includes \$516 854 payable from the Consolidated Revenue Fund.

(b) Excludes capital expenditure.

(c) Excludes capital expenditure for N.T. and A.C.T.

## International health

TABLE 73 TRAINING—STATES AND TERRITORIES—1973-74 AND 1974-75

State or Territory	Number of persons in training during 1974-75 (a)			Number of institutional places (b) involved in training in 1974-75		Man-months of training in 1974-75 (f)
	Type of course			Type of course		
	Formal (c)	Ad hoc (d)	Group (e)	Formal (c)	Ad hoc (d)	
New South Wales . . . . .	21	15	—	25	74	188.2
Victoria . . . . .	23	15	—	28	64	208.0
Queensland . . . . .	2	6	—	3	18	24.2
South Australia . . . . .	5	1	—	5	18	40.2
Western Australia . . . . .	5	1	—	1	17	40.2
Tasmania . . . . .	—	—	—	1	4	—
Northern Territory . . . . .	—	—	—	—	—	—
Australian Capital Territory . . . . .	—	1	—	—	14	4.4
Interstate (g) . . . . .	4	43	—	(h)	(h)	15.24
Australia—1974-75 . . . . .	60	82	—	63	209	657.6
1973-74 . . . . .	28	98	20	79	186	650.5

(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.

(h) Not applicable.

**International health**

TABLE 74 PERSONS IN TRAINING (a)—1974-75

<i>Type of course(b)</i>	<i>In training at beginning of year</i>		<i>Training commenced during 1974-75</i>		<i>Training completed during 1974-75</i>		<i>In training at end of year</i>	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
<b>Formal courses: (c)</b>								
Australian Government (d) .	13	13	6	3	9	11	10	5
Other . . . . .	3	7	8	2	3	7	8	2
<b>Total</b> . . . . .	<b>16</b>	<b>20</b>	<b>14</b>	<b>5</b>	<b>12</b>	<b>18</b>	<b>18</b>	<b>7</b>
<b>Ad hoc courses: (e)</b>								
Australian Government (d) .	22	7	19	—	26	7	15	—
Other . . . . .	5	2	21	8	22	9	4	1
<b>Total</b> . . . . .	<b>27</b>	<b>9</b>	<b>40</b>	<b>8</b>	<b>48</b>	<b>16</b>	<b>19</b>	<b>1</b>
<b>All courses:</b>								
Australian Government (d) .	35	20	25	3	35	18	25	5
Other . . . . .	8	9	29	10	25	16	12	3
<b>Total</b> . . . . .	<b>43</b>	<b>29</b>	<b>54</b>	<b>13</b>	<b>60</b>	<b>34</b>	<b>37</b>	<b>8</b>

(a) See footnote (a) Table 73.

(b) Excludes English and induction courses.

(c) See footnote (c) Table 73.

(d) Training courses arranged through Australian Government training schemes such as the Colombo Plan.

(e) See footnote (d) Table 73.

## Pathology laboratories

TABLE 75 PATHOLOGY EXAMINATIONS AND LABORATORY TESTS PERFORMED AND PATIENT REQUESTS—1973-74 AND 1974-75

(Number)

Health laboratory	Examinations and tests		Patient requests(a)	
	1973-74	1974-75	1973-74	1974-75
Albury . . . . .	139 797	171 503	38 391	47 024
Alice Springs . . . . .	67 741	94 859	22 767	44 271
Bendigo . . . . .	197 172	220 658	65 247	69 828
Cairns . . . . .	373 621	442 140	137 655	152 465
Canberra (b) . . . . .	955 406	1 147 626	218 985	248 648
Darwin (c) . . . . .	312 874	221 979	95 695	78 500
Hobart . . . . .	251 762	265 683	68 017	57 195
Kalgoorlie . . . . .	101 363	98 331	34 529	37 857
Launceston . . . . .	155 980	172 644	53 491	53 073
Lismore . . . . .	325 107	391 233	85 078	94 611
Port Pirie . . . . .	32 936	24 375	10 727	7 578
Rockhampton . . . . .	245 271	298 352	75 184	80 328
Tamworth . . . . .	237 578	287 980	73 761	78 842
Toowoomba . . . . .	281 473	369 488	91 290	103 974
Townsville . . . . .	315 934	338 368	102 741	103 528
Total . . . . .	3 994 015	4 545 219	1 173 558	1 257 722

(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 the work done for patients in more than one of the areas.

(b) Includes figures for Woden Valley hospital.

(c) Includes figures for Katherine.

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 76 NEW CASES EXAMINED—1970-71 TO 1974-75

Category	1970-71	1971-72	1972-73	1973-74	1974-75
Persons under 21 years (a) . . . . .	9 800	11 322	13 036	14 495	17 304
Pensioners (excluding Repatriation) (b) . . . . .	8 907	8 765	9 119	11 414	13 150
Repatriation (c) . . . . .	5 885	5 586	4 983	4 833	5 539
Armed Forces (serving) . . . . .	982	877	728	753	761
Australian Government Departments (d) . . . . .	719	571	540	531	611
State Departments (Queensland only) (e) . . . . .	309	238	133	150	229
Other . . . . .	991	1 119	912	913	1 371
Sub-total . . . . .	27 593	28 478	29 451	33 089	38 965
Civil aviation referrals (f) . . . . .	1 166	806	616	746	684
Total . . . . .	28 759	29 284	30 067	33 835	39 649

(a) All persons under 21 years of age included in this category irrespective of source of referral.

(b) Pensioners and their dependants are defined in the National Health Act.

(c) Persons referred by Department of Repatriation and Compensation.

(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 77 NEW CASES EXAMINED—STATES AND TERRITORIES—1974-75

Category	N.S.W. and A.C.T.	Vic.	Qld	S.A. and N.T.	W.A.	Tas.	Aust.
Persons under 21 years (a)	5 365	3 830	4 593	1 702	1 270	544	17 304
Pensioners (excluding Repatriation) (b)	4 217	3 573	2 163	1 784	934	479	13 150
Repatriation (c)	2 278	1 446	857	423	378	157	5 539
Armed Forces (serving)	391	165	102	32	58	13	761
Australian Government Departments (d)	249	82	139	99	21	21	611
State Departments (Queensland only) (e)	—	—	229	—	—	—	229
Other	98	34	922	185	65	67	1 371
Sub-total	12 598	9 130	9 005	4 225	2 726	1 281	38 965
Civil aviation referrals (f)	234	205	80	61	84	20	684
Total	12 832	9 335	9 085	4 286	2 810	1 301	39 649

(a), (b), (c), (d), (e) and (f); see footnotes, Table 76.

**National Acoustic Laboratories**

TABLE 78 CALAID HEARING AIDS FITTED—1970-71 TO 1974-75

Recipients	1970-71	1971-72	1972-73	1973-74	1974-75
Persons under 21 years (a)	2 035	2 981	2 774	2 451	4 154
Pensioners (excluding Repatriation) (b)	8 497	9 272	9 772	12 029	15 286
Repatriation (c)	3 462	2 945	3 425	3 292	4 097
Armed Forces (serving)	20	12	14	21	23
Australian Government Departments (d)	23	35	51	55	60
Other	—	—	—	—	—
Total	14 037	15 245	16 036	17 848	23 620

(a), (b), (c) and (d); see footnotes, Table 76.

**National Acoustic Laboratories**

TABLE 79 CALAID HEARING AIDS FITTED—STATES AND TERRITORIES—1974-75

Recipients	N.S.W. and A.C.T.	Vic.	Qld	S.A. and N.T.	W.A.	Tas.	Aust.
Persons under 21 years (a)	1 922	628	755	422	238	189	4 154
Pensioners (excluding Repatriation) (b)	5 661	3 115	2 568	2 288	1 076	578	15 286
Repatriation (c)	1 699	689	695	497	308	209	4 097
Armed Forces (serving)	8	5	5	3	2	—	23
Australian Government Departments (d)	26	5	12	17	—	—	60
Other	—	—	—	—	—	—	—
Total	9 316	4 442	4 035	3 227	1 624	976	23 620

(a), (b), (c) and (d); see footnotes, Table 76.

## National Acoustic Laboratories

TABLE 80 CALAID HEARING AIDS ON LOAN—1970-71 TO 1974-75

<i>Borrower</i>	<i>At 30 June</i>				
	1971	1972	1973	1974	1975
Persons under 21 years (a) . . . . .	11 619	13 816	15 700	17 396	20 380
Pensioners (excluding Repatriation) (b) . . . . .	26 490	33 417	40 194	48 698	60 059
Repatriation (c) . . . . .	22 266	23 191	24 581	26 174	28 898
Armed Forces (serving) . . . . .	128	139	147	170	193
Australian Government Departments (d) . . . . .	1 907	1 926	1 971	2 020	2 104
Other . . . . .	1	—	—	—	—
<b>Total</b> . . . . .	<b>62 411</b>	<b>72 489</b>	<b>82 593</b>	<b>94 458</b>	<b>111 634</b>

(a), (b), (c) and (d); see footnotes, Table 76.

## National Acoustic Laboratories

TABLE 81 CALAID HEARING AIDS ON LOAN—STATES AND TERRITORIES—AT 30 JUNE 1975

<i>Borrower</i>	<i>N.S.W. and A.C.T.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A. and N.T.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
	Persons under 21 years (a) . . . . .	6 561	5 551	3 695	2 477	1 386	710
Pensioners (excluding Repatriation) (b) . . . . .	24 720	12 969	9 210	6 619	4 434	2 107	60 059
Repatriation (c) . . . . .	11 848	6 800	3 522	2 852	2 698	1 178	28 898
Armed Forces (serving) . . . . .	69	57	22	31	12	2	193
Australian Government Departments (d) . . . . .	1 258	58	26	479	277	6	2 104
Other . . . . .	—	—	—	—	—	—	—
<b>Total</b> . . . . .	<b>44 456</b>	<b>25 435</b>	<b>16 475</b>	<b>12 458</b>	<b>8 807</b>	<b>4 003</b>	<b>111 634</b>

(a), (b), (c) and (d); see footnotes, Table 76.

## Australian Radiation Laboratory

TABLE 82 EXPENDITURE FROM THE NATIONAL WELFARE FUND ON RADIOPHARMACEUTICALS FOR MEDICAL DIAGNOSIS AND THERAPY PURPOSES—1965-66 TO 1974-75

(S)

<i>Year ended 30 June</i>	<i>Expenditure</i>	<i>Year ended 30 June</i>	<i>Expenditure</i>
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
1970 . . . . .	410 144	1975 . . . . .	2 439 415

**Australian Radiation Laboratory****TABLE 83 RADIOPHARMACEUTICALS ISSUED FOR MEDICAL DIAGNOSIS AND THERAPY PURPOSES—1965-66 TO 1974-75**

<i>Year ended 30 June</i>	<i>Issues(a)</i>	<i>Year ended 30 June</i>	<i>Issues(a)</i>
1966 . . . . .	24 751	1971 . . . . .	202 566
1967 . . . . .	37 549	1972 . . . . .	246 467
1968 . . . . .	64 237	1973 . . . . .	679 400
1969 . . . . .	86 944	1974 . . . . .	932 900
1970 . . . . .	123 381	1975 . . . . .	932 238

(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 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 84 RADIOPHARMACEUTICALS PROCURED—1965-66 TO 1974-75**

<i>Year ended 30 June</i>	<i>Shipments received</i>		<i>Total</i>
	<i>From overseas</i>	<i>From Australian Atomic Energy Commission</i>	
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	14 002	15 514
1974 . . . . .	1 527	13 457	14 984
1975 . . . . .	1 549	16 665	18 214

**Australian Radiation Laboratory****TABLE 85 RADIOCHEMISTRY AND LOW LEVEL MEASUREMENT OF RADIOACTIVITY—1965-66 TO 1974-75**

<i>Year ended 30 June</i>	<i>Samples processed</i>	<i>Year ended 30 June</i>	<i>Samples processed</i>
1966 . . . . .	1 717	1971 . . . . .	7 404
1967 . . . . .	10 370	1972 . . . . .	7 209
1968 . . . . .	4 737	1973 . . . . .	4 669
1969 . . . . .	8 622	1974 . . . . .	5 028
1970 . . . . .	3 312	1975 . . . . .	9 365

## Australian Radiation Laboratory

TABLE 86 FILM-BADGE SERVICE (a)—FILMS ASSESSED AND CENTRES REGISTERED—1965-66 TO 1974-75

<i>Year ended 30 June</i>	<i>Films assessed during year</i>	<i>Centres registered at end of year</i>
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
1975	92 132	2 048

(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 87 RADON SERVICES—ISSUES (a)—1965-66 TO 1974-75 (mCi)

<i>Year ended 30 June</i>	<i>Hospitals</i>	<i>Private practitioners</i>	<i>Veterinary use</i>	<i>Miscellaneous purposes</i>	<i>Total all purposes</i>
1966	19 922	11 250	116	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
1975	10 347	8 467	1 341	109	20 264

(a) The activities of radon in millicuries (mCi) at time of use.

## Australian Dental Standards Laboratory

TABLE 88 SAMPLES TESTED FOR WHICH LABORATORY REPORTS WERE ISSUED—1967-68 TO 1974-75

<i>Year ended 30 June</i>	(Number)				
	<i>Local manufacturers and distributors</i>	<i>Overseas manufacturers</i>	<i>Public instrumentalities</i>	<i>Internal</i>	<i>Total</i>
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
1975	120	34	220	39	413



## Australian Dental Standards Laboratory

TABLE 89 SAMPLES TESTED FOR WHICH LABORATORY REPORTS WERE ISSUED—1974-75  
(Number)

Type of product	Local manufacturers and distributors	Overseas manufacturers	Public instrumentalities	Internal	Total
Mineral products . . . . .	9	1	42	1	53
Cements . . . . .	11	11	39	1	62
Metals and alloys . . . . .	28	2	—	—	30
Synthetic resins . . . . .	28	8	8	—	44
Waxes and impression materials . . . . .	16	11	85	25	137
Instruments and devices . . . . .	8	—	17	—	25
Therapeutic materials . . . . .	20	1	29	12	62
Total . . . . .	120	34	220	39	413

## Australian Government Medical Officers

TABLE 90 CLINICAL EXAMINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS—1966-67 TO 1974-75  
(Number)

Year ended 30 June	Staff of Australian Government Departments and Authorities	Seamen	Pensioners	Others	Total
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
1975 . . . . .	75 948	2 735	16 746	5 036	100 465

## Australian Government Medical Officers

TABLE 91 CLINICAL EXAMINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS—STATES AND TERRITORIES—1974-75  
(Number)

State or Territory	Staff of Australian Government Departments and Authorities	Seamen	Pensioners	Others	Total
New South Wales . . . . .	27 141	1 503	5 214	757	34 615
Victoria . . . . .	17 939	442	3 232	14	21 627
Queensland . . . . .	7 110	327	2 354	—	9 791
South Australia . . . . .	4 696	75	3 209	714	8 694
Western Australia . . . . .	4 120	290	1 938	105	6 453
Tasmania . . . . .	1 100	45	347	79	1 571
Northern Territory . . . . .	1 770	53	184	839	2 846
Australian Capital Territory . . . . .	12 072	—	268	2 528	14 868
Australia . . . . .	75 948	2 735	16 746	5 036	100 465

## Australian Government Medical Officers

TABLE 92 VACCINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS (a)—  
1970-71 TO 1974-75

(Number)

Vaccination type	1970-71	1971-72	1972-73	1973-74	1974-75
Cholera . . . . .	99 270	112 520	171 805	184 725	186 711
Combined Cholera and Typhoid . . . . .	17 721	25 880	31 148	57 638	60 831
Gamma Globulin . . . . .	703	511	370	367	227
Influenza . . . . .	21 740	1 204	94	25	80
Plague . . . . .	358	330	207	165	171
Smallpox . . . . .	102 716	134 810	148 722	137 737	167 912
Tetanus . . . . .	2 061	2 729	2 662	1 302	2 641
Typhoid . . . . .	13 223	19 982	25 010	27 789	42 912
Typhus . . . . .	190	151	374	72	111
Yellow Fever . . . . .	4 528	4 790	5 961	6 553	8 409
Other (b) . . . . .	—	2 799	44	130	13
<b>Total . . . . .</b>	<b>262 510</b>	<b>305 706</b>	<b>386 397</b>	<b>416 503</b>	<b>470 018</b>

(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) Includes Diphtheria, C.D.T., Rubella, Sabin, and Triple Antigen.

## Australian Government Medical Officers

TABLE 93 VACCINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS (a)—  
STATES AND TERRITORIES—1974-75

(Number)

Vaccination type	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Cholera . . . . .	73 138	42 994	13 517	10 112	8 348	3 324	14 665	20 613	186 711
Combined Cholera and Typhoid . . . . .	50 430	108	6 127	—	2 063	2 103	—	—	60 831
Gamma Globulin . . . . .	20	70	—	—	—	—	93	44	227
Influenza . . . . .	10	3	10	3	—	—	50	4	80
Plague . . . . .	58	4	27	1	12	—	21	48	171
Smallpox . . . . .	74 098	42 955	13 946	10 652	6 013	3 820	6 364	10 064	167 912
Tetanus . . . . .	99	142	230	294	216	37	1 411	212	2 641
Typhoid . . . . .	1 113	23 755	1 171	3 342	54	—	4 205	9 272	42 912
Typhus . . . . .	64	—	—	25	—	3	10	9	111
Yellow Fever . . . . .	3 265	1 905	733	703	1 158	186	91	368	8 409
Other (b) . . . . .	—	1	9	—	—	—	3	—	13
<b>Total . . . . .</b>	<b>202 295</b>	<b>111 937</b>	<b>35 770</b>	<b>25 132</b>	<b>17 864</b>	<b>9 473</b>	<b>26 913</b>	<b>40 634</b>	<b>470 018</b>

(a) See footnote (a) Table 92.

(b) See footnote (b) Table 92.

## 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.

Information relating to the number of nurses employed by home nursing organisations and the number of visits made by those nurses has been derived from the quarterly claim forms submitted to the Department by the organisations.

## Home nursing organisations

TABLE 94 HOME NURSING ORGANISATIONS—STATES—1969-70 TO 1973-74  
(Number)

<i>At 30 June</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Total</i>
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
1974 . . . . .	87	57	8	1	4	18	175

## Home nursing organisations

TABLE 95 VISITS MADE BY HOME NURSING ORGANISATIONS—STATES—1964-65 TO 1973-74  
('000)

<i>Year ended 30 June</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Total</i>
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
1974 . . . . .	939	847	946	270	511	131	3 644

## Home nursing organisations

TABLE 96 VISITS MADE BY HOME NURSING ORGANISATIONS PER 1000 MEAN POPULATION—STATES—1964-65 TO 1973-74

Year ended 30 June	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Total
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
1974 . . . . .	198	234	486	223	471	328	280

## Home nursing organisations

TABLE 97 AVERAGE NUMBER OF NURSES EMPLOYED (a) BY HOME NURSING ORGANISATIONS—STATES—1964-65 TO 1973-74

Year ended 30 June	N.S.W.	Vic.	Qld (b)	S.A.	W.A.	Tas.	Total
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
1974 . . . . .	319	363	261	86	161	43	1 233

(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 are not strictly comparable with those for other States.

# NATIONAL BIOLOGICAL STANDARDS LABORATORY

## Samples examined

TABLE 98 SUMMARY OF ALL SAMPLES EXAMINED—1973-74 AND 1974-75

Type	Number examined		Failures		Percentage failures	
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
For Department of Health—						
Products on the Pharmaceutical Benefits list . . . . .	796	348	64	23	8.0	6.6
Products recommended by the Pharmaceutical Benefits Advisory Committee . . . . .	31	57	1	2	3.2	3.5
New brands of existing Pharmaceutical Benefits . . . . .	75	60	7	6	9.3	1.0
Veterinary products—						
Viral vaccines . . . . .	13	13	1	3	7.7	2.3
Veterinary antibiotics . . . . .	61	21	26	3	42.6	1.4
Bacterial vaccines . . . . .	60	42	12	8	20.0	1.9
Miscellaneous . . . . .	13	8	3	—	23.1	—
For other Federal Departments (a) . . . . .	164	82	19	14	11.6	1.7
Dressings . . . . .	7	—	3	—	42.9	—
Medical equipment (b) . . . . .	121	—	1	—	0.8	—
Miscellaneous drug samples (c) . . . . .	28	11	13	5	46.4	4.5
<b>Total . . . . .</b>	<b>1 307</b>	<b>642</b>	<b>145</b>	<b>64</b>	<b>11.1</b>	<b>10.0</b>

(a) 1973-74 figures include 62 samples examined and 5 failures included elsewhere.

(b) Number of batches tested.

(c) Samples of products about which complaints have been received, samples taken prior to granting authorities to import subject to Customs (Prohibited Imports) Regulations and samples tested on behalf of other authorities.

## Samples examined

TABLE 99 SAMPLES EXAMINED—REASONS FOR FAILURE AS PERCENTAGE OF TOTAL FAILURES—1973-74 AND 1974-75

(%)

Reason for failure	Products for human use (a)		Products for veterinary use (b)	
	1973-74	1974-75	1973-74	1974-75
Acidity or alkalinity . . . . .	2.3	—	—	—
Container content . . . . .	3.1	22.0	—	7.1
Disintegration . . . . .	4.7	4.0	—	—
Dressings (various reasons other than sterility)(c)	3.9	—	—	—
Labelling . . . . .	7.0	8.0	13.0	7.1
Loss on drying . . . . .	—	—	—	—
Miscellaneous (e.g. colouring, physical appearance) . . . . .	11.7	14.0	13.0	—
Particulate matter . . . . .	11.7	12.0	4.3	—
Potency . . . . .	36.7	24.0	39.3	85.7
Safety, contamination or misidentification . . . . .	0.8	—	—	—
Sterility . . . . .	3.9	—	30.4	—
Uniformity of weight . . . . .	14.2	16.0	—	—
Total . . . . .	100.0	100.0	100.0	100.0

(a) Includes samples which failed for two or more reasons: 1973-74, 15; 1974-75, 2.

(b) Includes samples which failed for two or more reasons: 1973-74, 6; 1974-75, 1.

(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.

## Safety tests

TABLE 100 SAFETY TESTS PERFORMED—1973-74 AND 1974-75

Type	Examined		Failed		Indeterminable	
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
Disposable medical equipment . . . . .	160	15	1	—	5	—
Histamine-like substances . . . . .	57	4	—	—	—	—
Pyrogens . . . . .	163	32	—	—	1	—
Sterility . . . . .	536	68	6	—	9	1
Toxicity . . . . .	128	27	—	—	—	1
Viral vaccine identity and safety testing . . . . .	11	53	—	16	—	—
Total . . . . .	1 055	199	7	16	15	2

## MANAGEMENT SERVICES

### Expenditure on health

TABLE 101 DEPARTMENTAL EXPENDITURE—1970-71 TO 1974-75

(\$'000)

Type	1970-71	1971-72	1972-73	1973-74	1974-75
<b>SPECIAL APPROPRIATIONS</b>					
Remuneration Tribunals Act . . . . .	(a)	(a)	(a)	(a)	13
Payments to or for the States—					
Mental health and related services assistance . . . . .	(a)	(a)	(a)	6 725	6 185
Mental health institutions—					
Contributions to capital expenditure . . . . .	4 199	4 207	3 430	2 249	—
States grants—Nursing homes . . . . .	337	460	1 019	658	220
States grants—Paramedical services . . . . .	—	7	77	97	99
<b>TOTAL PAYMENTS TO OR FOR THE STATES</b>	<b>4 536</b>	<b>4 674</b>	<b>4 526</b>	<b>9 729</b>	<b>6 504</b>
<b>National Welfare Fund—</b>					
Medical benefits . . . . .	95 604	132 574	} (b)		
Medical services for pensioners . . . . .	19 898	27 804			
Hospital benefits . . . . .	49 812	67 305			
Payments to public hospitals for pensioners . . . . .	23 555	24 065			
Nursing home benefits . . . . .	49 477	70 593			
Handicapped persons' homes—Children's benefit . . . . .	456	438			
Pharmaceutical benefits . . . . .	115 094	121 263	119 493	151 493	181 643
Pharmaceutical benefits for pensioners . . . . .	45 181	52 005	58 139	66 803	80 699
Milk for school children . . . . .	10 160	11 845	11 717	8 079	47
Tuberculosis medical services and allowances (c) . . . . .	11 256	10 226	11 635	12 047	14 293
Miscellaneous . . . . .	6 612	8 436	9 723	12 444	17 782
<b>TOTAL NATIONAL WELFARE FUND</b>	<b>427 105</b>	<b>526 554</b>	<b>210 707</b>	<b>250 866</b>	<b>294 464</b>
<b>TOTAL SPECIAL APPROPRIATIONS</b>	<b>431 641</b>	<b>531 228</b>	<b>215 233</b>	<b>260 595</b>	<b>300 981</b>
<b>CONSOLIDATED REVENUE FUND</b>					
Administrative expenditure . . . . .	21 610	26 420	29 633(d)	34 205	50 676
Hospitals and Health Services Commission . . . . .	(a)	(a)	(a)	596	1 198
Northern Territory Hospitals . . . . .	} 9 420	8 295	10 128	13 649	17 672
Northern Territory Health Services other than Hospitals . . . . .		3 618	4 566	6 804	10 355
<b>Total Northern Territory Health Services</b> . . . . .	<b>9 420</b>	<b>11 913</b>	<b>14 694</b>	<b>20 453</b>	<b>28 027</b>
Australian Capital Territory Hospitals . . . . .	4 310	4 754	5 921	11 108	18 014
Australian Capital Territory Health Services other than Hospitals . . . . .	2 155	2 632	3 101	4 568	9 172
<b>Total Australian Capital Territory Health Services</b>	<b>6 465</b>	<b>7 386</b>	<b>9 022</b>	<b>15 676</b>	<b>27 186</b>
Capital works and services . . . . .	5 707	2 262	4 786	4 527	11 261
Payments to or for the States . . . . .	2 128	2 561	3 275	23 397	82 193
<b>TOTAL CONSOLIDATED REVENUE FUND</b>	<b>45 330</b>	<b>50 542</b>	<b>61 410</b>	<b>98 854</b>	<b>200 541</b>
<b>TOTAL EXPENDITURE</b>	<b>476 971</b>	<b>581 770</b>	<b>276 643</b>	<b>359 449</b>	<b>501 552</b>

(a) Not applicable.

(b) These items came under the control of the Department of Social Security from 1 March 1973. Expenditure for the whole of 1972-73 is excluded.

(c) Includes allowances paid through the Department of Social Security—see Tables 71 and 72.

(d) 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.

## Expenditure on health

TABLE 102 EXPENDITURE AND EXPENDITURE AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT—1968-69 TO 1972-73

	1968-69	1969-70	1970-71	1971-72	1972-73
	\$ MILLION				
Public Sector—					
Final consumption expenditure . . . . .	418	475	578	669	769
Expenditure on new fixed assets . . . . .	80	89	102	118	112
Final expenditure (1) . . . . .	498	564	680	787	881
Cash benefits . . . . .	282	335	410	509	582
Other transfers to the private sector and expenditure on existing fixed assets (net)	1	1	2	2	2
Outlay . . . . .	781	900	1 092	1 298	1 465
Private Sector—					
Final consumption expenditure . . . . .	965	1 074	1 225	1 423	1 609
Expenditure on new fixed assets . . . . .	24	30	42	43	45
Final expenditure (2) . . . . .	989	1 104	1 267	1 466	1 654
Less transfers from the public sector and sales of existing fixed assets (net) . . . . .	-283	-336	-412	-511	-584
Expenditure financed from the private sector's own resources . . . . .	706	768	855	955	1 070
Total expenditure on health (1) + (2) . . . . .	1 487	1 668	1 947	2 253	2 535
Gross Domestic Product . . . . .	26 972	29 733	32 656	36 202	40 983
	PERCENTAGE				
Expenditure on health as percentage of Gross Domestic Product—					
Final consumption expenditure					
Public . . . . .	1.5	1.6	1.8	1.8	1.9
Private . . . . .	3.6	3.6	3.8	3.9	3.9
Total . . . . .	5.1	5.2	5.6	5.7	5.8
Expenditure on new fixed assets					
Public . . . . .	0.3	0.3	0.3	0.3	0.3
Private . . . . .	0.1	0.1	0.1	0.1	0.1
Total expenditure . . . . .	5.5	5.6	6.0	6.2	6.2
By financing sector—					
Public . . . . .	2.9	3.0	3.3	3.6	3.6
Private . . . . .	2.6	2.6	2.6	2.6	2.6

Source: A.B.S.



**Health Grants**

TABLE 103 ALLOCATION OF GRANTS—1970-71 TO 1974-75

(\$'000)

Type	1970-71	1971-72	1972-73	1973-74	1974-75
COMMUNITY HEALTH GRANTS					
Community Health Programme . . . . .	—	—	—	9 877	28 418
Community Mental Health Programme . . . . .	—	—	—	6 725	6 185
Hospital Development Programme . . . . .	—	—	—	2 365	30 306
Planning and Research Programme . . . . .	—	—	—	547	936
GENERAL HEALTH GRANTS					
Arbo-encephalitis (Mosquito control) . . . . .	—	—	—	—	151
Family Planning Programme . . . . .	—	—	—	—	909
Home Dialysis . . . . .	—	—	—	—	310
Home Nursing Subsidy Scheme . . . . .	1 450	1 835	2 502	3 390	4 766
Howard Florey Institute . . . . .	—	—	—	—	500
Mental Health Institutes—Capital Grants . . . . .	4 199	4 207	3 430	2 249	—
Milk for School Children Scheme . . . . .	10 160	11 845	11 717	8 079	58
Nursing Home—Capital Grants . . . . .	337	460	1 019	658	220
Paramedical Services Scheme . . . . .	—	7	77	164	362
Red Cross Blood Transfusion Service . . . . .	885	1 049	1 262	1 976	2 604
Walter and Eliza Hall Institute . . . . .	—	—	—	—	500
Wynnum Public Nursing Home . . . . .	—	—	—	—	148

**Health Grants**

TABLE 104 ALLOCATION OF GRANTS—STATES AND TERRITORIES—1974-75

(\$'000)

Type	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Other	Aust.
COMMUNITY HEALTH GRANTS										
Community Health Programme . . . . .	11 495	3 804	2 445	1 888	3 536	727	—	—	4 523	28 418
Community Mental Health Programme . . . . .	2 794	1 171	728	529	467	299	—	—	197	6 185
Hospital Development Programme . . . . .	8 830	7 330	5 084	3 236	4 326	1 500	—	—	—	30 306
Planning and Research Programme . . . . .	116	52	53	87	127	—	—	—	501	936
GENERAL HEALTH GRANTS										
Arbo-encephalitis (Mosquito control) . . . . .	16	120	—	15	—	—	—	—	—	151
Family Planning Programme . . . . .	—	—	—	—	—	—	—	—	909	909
Home Dialysis . . . . .	75	140	30	30	30	5	—	—	—	310
Home Nursing Subsidy Scheme . . . . .	1 354	1 316	855	344	765	132	—	—	—	4 766
Howard Florey Institute . . . . .	—	—	—	—	—	—	—	—	500	500
Milk for School Children Scheme . . . . .	20	17	—	—	21	—	—	—	—	58
Nursing Homes—Capital Grants . . . . .	108	112	—	—	—	—	—	—	—	220
Paramedical Services Scheme . . . . .	—	242	—	112	—	8	—	—	—	362
Red Cross Blood Transfusion Service . . . . .	590	643	416	364	358	57	87	89	—	2 604
Walter and Eliza Hall Institute . . . . .	—	—	—	—	—	—	—	—	500	500
Wynnum Public Nursing Home . . . . .	—	—	148	—	—	—	—	—	—	148

**Health Grants**

TABLE 105 ROYAL FLYING DOCTOR SERVICE—1965-66 TO 1974-75

(\$)

<i>Year ended 30 June</i>	<i>Current</i>	<i>Capital</i>	<i>Special Capital(a)</i>
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
1975 . . . . .	700 000	102 233	62 653

(a) Mandatory changeover of twelve base radio stations from double sideband to single sideband radio operation.

# NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL

## Research Grants

TABLE 106 GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—TYPE OF INSTITUTION—1970-71 TO 1974-75

(S)

<i>Universities, institutions and hospitals</i>	1970-71	1971-72	1972-73	1973-74	1974-75
<b>Universities—</b>					
Sydney . . . . .	274 462	300 253	372 675	544 268	395 585
New South Wales . . . . .	142 551	184 367	309 156	420 317	342 747
Newcastle . . . . .	—	1 000	3 922	11 142	5 000
New England . . . . .	—	—	—	7 740	8 789
Wollongong . . . . .	—	—	—	—	12 108
Melbourne . . . . .	536 877	430 590	571 753	815 500	652 428
Monash . . . . .	324 627	297 564	320 086	427 437	373 429
Latrobe . . . . .	—	1 500	4 833	550	—
Queensland . . . . .	167 362	209 837	265 384	363 854	286 613
Griffith . . . . .	—	—	—	550	—
James Cook . . . . .	—	12 090	830	—	—
Adelaide . . . . .	133 134	162 675	157 460	200 255	215 548
Flinders . . . . .	—	—	—	19 332	39 694
Western Australia . . . . .	148 012	132 966	135 524	212 713	156 984
Tasmania . . . . .	16 246	24 415	50 156	81 389	48 303
Australian National University . . . . .	12 329	12 329	13 683	—	6 159
<b>Total . . . . .</b>	<b>1 755 600</b>	<b>1 769 586</b>	<b>2 205 462</b>	<b>3 105 047</b>	<b>2 543 387</b>
<b>Institutes and hospitals—</b>					
New South Wales . . . . .	161 856	245 507	309 534	529 242	372 933
Victoria (a) . . . . .	458 880	609 183	891 560	1 179 842	1 400 243
Queensland . . . . .	18 839	29 066	21 828	77 249	65 979
South Australia . . . . .	21 571	11 906	33 196	117 920	32 187
Western Australia . . . . .	9 762	16 331	24 503	29 856	28 257
Tasmania . . . . .	3 744	2 975	2 000	14 296	6 038
Australian Capital Territory . . . . .	7 605	550	1 698	4 500	26 444
Special Grants . . . . .	—	7 500 (b)	40 000 (c)	64 000 (d)	330 487 (e)
<b>Total . . . . .</b>	<b>682 257</b>	<b>923 018</b>	<b>1 324 319</b>	<b>2 016 905</b>	<b>2 262 568</b>
<b>Grand total . . . . .</b>	<b>2 437 857</b>	<b>2 692 604</b>	<b>3 529 781</b>	<b>5 121 952</b>	<b>4 805 955</b>

(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
1974-75	\$649 164	\$350 185

(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.

(e) Includes a grant of \$23 836 to the Multiphasic Health Screening Survey, Phase V.

## Research Grants

TABLE 107 GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—ANALYSIS OF GRANTS—1965-66 TO 1974-75

(\$)

Year ended 30 June	Salaries, graduate research workers	Research scholarship stipends		Technical assistance and main- tenance expenses	Equip- ment	Travelling fellow- ships	Miscel- laneous grants	Total
		Under- graduate	Post- graduate (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
1975	1 957 114	24 000	435 910	1 906 657	129 995	328 443	23 836	4 805 955

(a) Includes \$500 basic consumable allowance for medical and dental postgraduate scholars prior to 1973-74. This was increased to \$600 in 1973-74.

(b) Figures for travelling fellowships and miscellaneous grants have been included in the figures for salaries and technical assistance and maintenance expenses.

**Research Grants****TABLE 108 GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND— 1974-75 (a)**  
(S)

<i>Universities institutions and hospitals</i>	<i>Salaries, graduate research workers</i>	<i>Research scholarship stipends</i>		<i>Technical assistance and main- tenance expenses</i>	<i>Equip- ment</i>	<i>Travelling fellow- ships</i>	<i>Miscel- laneous grants</i>	<i>Total</i>
		<i>Under- graduate</i>	<i>Post- graduate (b)</i>					
<b>Universities—</b>								
Sydney . . . . .	180 010	1 800	87 182	115 942	10 651	—	—	395 585
New South Wales . . . . .	164 497	4 800	40 370	118 253	14 827	—	—	342 747
Newcastle . . . . .	2 785	—	—	2 215	—	—	—	5 000
New England . . . . .	6 245	—	—	2 544	—	—	—	8 789
Wollongong . . . . .	9 960	—	—	2 148	—	—	—	12 108
Melbourne . . . . .	253 007	4 200	78 700	288 152	28 369	—	—	652 428
Monash . . . . .	141 415	6 000	48 342	154 909	22 763	—	—	373 429
Queensland . . . . .	160 977	3 600	7 462	107 454	7 120	—	—	286 613
Adelaide . . . . .	92 234	1 200	23 916	93 644	4 554	—	—	215 548
Flinders . . . . .	11 814	—	—	27 880	—	—	—	39 694
Western Australia . . . . .	64 263	1 800	7 972	69 269	13 680	—	—	156 984
Tasmania . . . . .	19 515	600	—	24 877	3 311	—	—	48 303
Australian National University . . . . .	—	—	—	6 159	—	—	—	6 159
<b>Total . . . . .</b>	<b>1 106 722</b>	<b>24 000</b>	<b>293 944</b>	<b>1 013 446</b>	<b>105 275</b>	<b>—</b>	<b>—</b>	<b>2 543 387</b>
<b>Institutes and hospitals—</b>								
New South Wales . . . . .	236 502	—	32 398	91 714	8 720	3 599	—	372 933
Victoria . . . . .	534 820	—	102 106	753 350	5 500	4 467	—	1 400 243 (c)
Queensland . . . . .	39 912	—	—	19 399	2 700	3 968	—	65 979
South Australia . . . . .	6 245	—	7 462	4 244	7 800	6 436	—	32 187
Western Australia . . . . .	10 543	—	—	14 392	—	3 322	—	28 257
Tasmania . . . . .	2 993	—	—	3 045	—	—	—	6 038
Australian Capital Territory . . . . .	19 377	—	—	7 067	—	—	—	26 444
Special Grants . . . . .	—	—	—	—	—	306 651 (d)	23 836 (e)	330 487
<b>Total . . . . .</b>	<b>850 392</b>	<b>—</b>	<b>141 966</b>	<b>893 211</b>	<b>24 720</b>	<b>328 443</b>	<b>23 836</b>	<b>2 262 568</b>
<b>Grand total . . . . .</b>	<b>1 957 114</b>	<b>24 000</b>	<b>435 910</b>	<b>1 906 657</b>	<b>129 995</b>	<b>328 443</b>	<b>23 836</b>	<b>4 805 955</b>

(a) Recommended by the 78th Session of Council, May 1974 and 79th Session, November 1974, for use in 1974-75.

(b) Includes \$600 basic consumable allowance for Medical and Dental Postgraduate Scholars.

(c) Includes grants totalling \$649 164 to the Walter and Eliza Hall Institute of Medical Research, Melbourne and \$350 185 to the Howard Florey Institute of Experimental Physiology and Medicine, Melbourne.

(d) Overseas travelling fellowships for clinical science and C. J. Martin Fellows.

(e) Grant of \$23 836 for Phase V of Multiphasic Health Screening Survey.

## TERRITORY HEALTH

### Australian Capital Territory health

TABLE 109 LICENCES ISSUED UNDER THE PUBLIC HEALTH ORDINANCE—1970 TO 1974  
(Number)

Type	1970	1971	1972	1973	1974
Barber shops . . . . .	104	98	105	106	95
Boarding houses . . . . .	68	73	68	71	73
Eating houses . . . . .	109	110	97	104	83
Hawkers . . . . .	5	9	10	12	16
Meat vendors . . . . .	94	87	85	94	93
Milk distributors . . . . .	87	97	(a)	—	—
Milk vendors . . . . .	239	280	(a)	—	—
Prepared meat vendors . . . . .	275	271	335	301	257
<b>Total . . . . .</b>	<b>981</b>	<b>1 025</b>	<b>700</b>	<b>688</b>	<b>617</b>

(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 110 NEW REGISTRATIONS GRANTED—1970-71 TO 1974-75  
(Number)

Type	1970-71	1971-72	1972-73	1973-74	1974-75
Dental practitioners . . . . .	13	8	15	16	12
Medical practitioners . . . . .	71	50	56	60	109
Nurses . . . . .	343	359	546	438	560
Nursing aides . . . . .	63	94	97	114	154
Optometrists . . . . .	—	2	—	2	—
Pharmacists . . . . .	23	20	27	26	20
Veterinary surgeons . . . . .	1	2	4	8	4
<b>Total . . . . .</b>	<b>514</b>	<b>535</b>	<b>745</b>	<b>664</b>	<b>859</b>

### Australian Capital Territory health

TABLE 111 SAMPLES COLLECTED BY HEALTH INSPECTION SECTION—1973-74 AND 1974-75  
(Number)

Type	For bacteriological examination		For chemical examination	
	1973-74	1974-75	1973-74	1974-75
Cream . . . . .	208	220	204	161
Meat . . . . .	299	645	54	60
Milk . . . . .	1 822	2 223	932	1 377
Other foods . . . . .	370	1 516	107	192
Sewage . . . . .	76	32	55	42
Water—				
City Supply . . . . .	1 456	1 104	156	152
Fluoride Tests . . . . .	—	—	202	220
Lake Burley Griffin and Molonglo River . . . . .	2 428	1 074	95	157
Lake Ginninderra . . . . .	—	226	—	26
Picnic resorts and other supplies . . . . .	435	354	293	259
Swimming pools . . . . .	260	226	48	100
<b>Total . . . . .</b>	<b>7 354</b>	<b>7 620</b>	<b>2 146</b>	<b>2 746</b>

## Australian Capital Territory health

TABLE 112 SCHOOL MEDICAL SERVICE EXAMINATIONS—1970-71 TO 1974-75  
(Number)

	1970-71	1971-72	1972-73	1973-74	1974-75
Number examined . . . . .	19 610	19 162	23 863	26 609	28 148
Defects notified—					
Hearing . . . . .	263	224	435	212	378
Psychological and emotional . . . . .	72	142	103	92	93
Severe dental caries . . . . .	11	6	16	17	26
Speech . . . . .	56	42	60	32	47
Squint . . . . .	50	42	59	157	197
Vision . . . . .	718	796	1 176	924	1 337
All others . . . . .	317	346	539	739	714
Total . . . . .	1 487	1 598	2 388	2 173	2 792
Referrals—					
Child Guidance Clinic . . . . .	99	153	102	67	73
Acoustic Laboratory . . . . .	112	104	138	41	117
Educational Clinic . . . . .	14	34	84	28	30
Parent interviews . . . . .	1 480	2 599	2 421	1 805	3 144

## Northern Territory health

TABLE 113 LICENCES ISSUED UNDER THE PUBLIC HEALTH ORDINANCE—YEAR ENDED  
31 DECEMBER 1974

Type	(Number)				
	Darwin	Alice Springs	Katherine	Tennant Creek	Gove
Barber shops . . . . .	25	10	2	1	—
Boarding houses and caravan parks (a) . . . . .	109	48	22	6	—
Dairies—Dairymen . . . . .	1	2	—	—	—
Eating houses . . . . .	73	35	8	8	—
Food shops (milk) . . . . .	86	55	25	6	—
Itinerant food vendors . . . . .	8	3	—	—	—
Milk vendors . . . . .	—	—	—	—	—
Septic tank applications . . . . .	70	62 (b)	3	11	13 (c)
Total . . . . .	372	215	60	32	13

(a) Figures do not include licences issued to motels and roadside inns located within the Northern Territory.

(b) Includes 54 in rural areas.

(c) Includes 8 in rural areas.

## Northern Territory health

TABLE 114 NEW REGISTRATIONS GRANTED—1973-74 AND 1974-75

Type	(Number)	
	1973-74	1974-75
Dental practitioners . . . . .	22	9
Dental therapists (a) . . . . .	2	5
Medical practitioners . . . . .	112	192
Nurses . . . . .	350	508
Optometrists . . . . .	1	2
Pharmacists . . . . .	18	3
<b>Total</b> . . . . .	<b>505</b>	<b>719</b>

(a) Registration requirement introduced 12 July 1973 by amendment to Dentists Registration Ordinance 1953-1973.

## Northern Territory health

TABLE 115 IMMUNISATIONS—SUMMARY OF DOSES ADMINISTERED AT MAIN HOSPITALS AND INFANT HEALTH CENTRES—1970-71 TO 1974-75

	(Number)									
	Hospitals					Infant Health Centres (a)				
	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75
Darwin . . . . .	2 620	1 202	1 676	1 585	810	10 156	10 634	11 323	14 012	16 770 (b)
Alice Springs . . . . .	1 642	1 196	2 332	1 233	2 237	1 064	1 258	1 184	1 023	672
Katherine . . . . .	1 022	879	1 047	1 037	1 436	651	478	570	1 320	1 136
Tennant Creek . . . . .	1 823	383	623	553	1 315	902	1 221	1 500	1 657	529
Gove . . . . .	1 580	2 265	1 445	298	310	—	—	300(b)	937	1 129
Adelaide River . . . . .	(d)	(d)	(d)	(d)	(d)	n.a.	n.a.	34	34	22
Batchelor . . . . .	(d)	(d)	(d)	(d)	(d)	n.a.	n.a.	70	108	52

(a) Figures for Darwin include immunisations at Infant Health Centres conducted by Schools Medical Staff.

(b) Excludes figures for December 1974.

(c) Infant Health Service operative from October 1972.

(d) Not applicable.

## Northern Territory health

TABLE 116 SAMPLES COLLECTED FOR BACTERIOLOGICAL EXAMINATION BY HEALTH INSPECTION SECTION—1974-75

(Number)

Type	Darwin	Alice Springs	Katherine	Tennant Creek	Gove
Milk . . . . .	59	219	4	12	—
Water—City Supply . . . . .	640	446	89	67	35
Fluoride tests . . . . .	374	120	—	—	—
Picnic resorts and other supplies . . . . .	233	101	—	—	—
Swimming pools . . . . .	76	—	—	—	—



**Northern Territory health**

TABLE 117 AERIAL MEDICAL SERVICE—1974-75

	<i>Darwin</i>	<i>Alice Springs</i>	<i>Gove</i>	<i>Total</i>
Northern Territory Aerial Medical Service—				
Routine flights . . . . .	296	179	110	585
Emergency flights . . . . .	169	31	87	287
Inter-hospital transfers . . . . .	11	16	32	59
Mercy flights . . . . .	—	4 (b)	—	4
Miles flown . . . . .	215 661	138 381	104 536	458 578
Hours flown . . . . .	1 574	1 014	774	3 362
Landings made . . . . .	1 343	730	689	2 762
Patients carried . . . . .	1 025	374	598	1 997
Royal Flying Doctor Service—				
Emergency flights . . . . .	—	305	—	305
Patients carried . . . . .	—	434	—	434
Charter and diversion flights—				
Number of flights . . . . .	37	45	61	143
Patients carried . . . . .	40	61	82	183
Commercial flights—				
Patients carried . . . . .	909	8	98	1 015
Radio medical consultations (a) . . . . .	1 974	1 345	—	3 319
Charter boats—				
Number of boats . . . . .	4	—	—	4
Patients carried . . . . .	4	—	—	4

(a) Excludes radio telephone consultations.

(b) Air search flights.

## Northern Territory health

TABLE 118 HEALTH SERVICES PROVIDED AT MAIN NORTHERN TERRITORY HOSPITALS—1974-75

	<i>Darwin</i>	<i>Alice Springs</i>	<i>Katherine</i>	<i>Tennant Creek</i>	<i>Gove</i>
Average daily number of in-patients . . . . .	225	128	39	14	34
Number of—Admissions . . . . .	9 436	5 279	1 945	940	1 610
Bed days . . . . .	81 972	46 798	14 142	5 110	12 291
Births . . . . .	1 058	587	146	60	132
Deaths in hospital (a) . . . . .	119	59	23	14	8
Major operations . . . . .	1 394	489	82	—	24
Minor operations . . . . .	2 919	1 327	709	325	236
Dental operations . . . . .	74	50	3	5	13
Out-patient attendances . . . . .	112 266	58 396	11 373	18 893	29 832
Postmortem examinations . . . . .	143	78	36	22	3
<b>Ambulance Services</b>					
Number of—Trips . . . . .	2 257 (c)	1 067	367	286	366
Miles travelled . . . . .	23 256	34 157	21 055	10 319	4 714
Patients carried . . . . .	3 277	1 087	404	278	339
<b>Dispensaries—Prescriptions dispensed</b>					
Average number of prescriptions dispensed per working day . . . . .	1098.76	531.44	127.90	110.82	359.29
<b>Physiotherapy Department (b)</b>					
Number of—Patients . . . . .	5 758	1 820	—	—	—
Treatments . . . . .	27 708	9 797	—	—	—
<b>Occupational Therapy Department (b)</b>					
Number of—Patients . . . . .	749	—	—	—	—
Treatments . . . . .	7 163	—	—	—	—
<b>Speech Therapy Department</b>					
Number of—Patients . . . . .	374 (d)	—	—	—	—
Treatments . . . . .	661	—	—	—	—
<b>X-ray Department (b)</b>					
Number of exposures . . . . .	59 461	17 204	4 967	3 960	4 019

(a) Does not include neonatal non-admitted or dead on arrival.

(b) In-patients and out-patients.

(c) Statistics to 25 December 1974, when Ambulance Service ceased. Service now being provided by St John Ambulance Brigade.

(d) Speech Therapy Service inoperative since 24 December 1974.

**Northern Territory health**

TABLE 119 DENTAL SERVICES PROVIDED IN THE NORTHERN TERRITORY—1974-75

	Darwin	Nightcliff	Aerial	Overland	Alice Springs		Gove	Tennant	Total
	Dental Clinic	Dental Clinic (c)	Mobile— Darwin based	Mobile— Darwin based	Clinic	Mobile	Dental Clinic	Creek Dental Clinic (d)	
Amalgam . . . . .	4 224	3 447	267	914	8 770	802	2 901	862	22 187
Bridges . . . . .	11	6	—	—	—	—	—	2	19
Consultations and examinations . . . . .	2 368	1 687	410	624	5 752	766	1 540	746	13 893
Crowns . . . . .	52	22	—	—	40	1	35	8	158
Dressings . . . . .	2 245	856	43	125	1 554	123	946	385	6 277
Extractions . . . . .	3 246	824	116	242	2 587	321	1 460	240	9 036
General anaesthetics (a) . . . . .	79	—	—	1	36	—	16	—	132
Inlays . . . . .	17	15	—	—	6	2	4	—	44
Jaw fracture . . . . .	30	1	—	—	24	—	1	—	56
Oral surgery . . . . .	261	20	4	17	89	12	66	15	484
Orthodontist . . . . .	2 820	2	—	—	1 044	—	26	4	3 896
Periodontal treatment . . . . .	265	159	8	34	551	35	45	90	1 187
Prosthetic . . . . .	2 562	175	7	55	1 512	50	1 246	468	6 075
Recements . . . . .	150	43	—	2	128	3	52	8	386
Root treatment . . . . .	538	53	5	22	390	25	217	89	1 339
Scale and clean . . . . .	233	773	5	33	270	31	521	221	2 087
Silicates . . . . .	1 471	589	40	229	1 381	118	1 033	169	5 030
Study models . . . . .	58	3	—	1	35	—	81	—	178
X-rays . . . . .	2 038	712	10	182	1 284	113	927	284	5 550
Other treatments . . . . .	1 945	1 258	15	88	3 318	36	638	13	7 311
<b>Total treatments . . . . .</b>	<b>24 613</b>	<b>10 645</b>	<b>930</b>	<b>2 569</b>	<b>28 771</b>	<b>2 438</b>	<b>11 755</b>	<b>3 604</b>	<b>85 325</b>
<b>Patients treated</b>									
Aboriginal adults—									
Paying . . . . .	—	—	1	35	21	1	22	11	91
Exempt . . . . .	230	2	135	79	315	234	507	20	1 522
Non-aboriginal adults—									
Paying . . . . .	11 146	2 327	28	556	7 465	438	4 442	801	27 203
Exempt . . . . .	473	109	41	55	460	147	122	174	1 581
Children—									
Aboriginal . . . . .	70	—	440	283	597	276	143	31	1 840
Non-aboriginal . . . . .	8 045	4 407	54	293	11 405	301	1 878	1 282	27 665
<b>Total patients treated . . . . .</b>	<b>19 964(b)</b>	<b>6 845</b>	<b>699</b>	<b>1 301</b>	<b>20 263</b>	<b>1 397</b>	<b>7 114</b>	<b>2 319</b>	<b>59 902</b>

(a) For dental surgery performed in hospitals.

(b) Patients treated figures for January and February estimated.

(c) Contains clinic figures for 1 July to 30 November only; December figures lost in Cyclone Tracey. Clinic has not operated since 24 December 1974.

(d) Commissioned 28 October 1974.

## DIVISIONAL OFFICES

### Handicapped child's allowance

TABLE 120 APPLICATIONS PROCESSED, APPROVED OR REJECTED—STATES—  
1 JANUARY 1975 TO 30 JUNE 1975

<i>State</i>	<i>Applications processed</i>	<i>Applications approved</i>	<i>Applications rejected</i>	<i>% of Applications rejected</i>
New South Wales . . . . .	5 576	5 400	176	3.2
Victoria . . . . .	4 529	4 282	247	5.5
Queensland . . . . .	2 687	2 521	166	6.2
South Australia . . . . .	1 777	1 697	80	4.5
Western Australia . . . . .	1 430	1 354	76	5.3
Tasmania . . . . .	470	414	56	11.9
Total . . . . .	16 469	15 668	801	4.9

## SCHOOL OF PUBLIC HEALTH AND TROPICAL MEDICINE

### Laboratory and clinical examinations

TABLE 121 LABORATORY AND CLINICAL EXAMINATIONS—1970-71 TO 1974-75

<i>Sub-section</i>	<i>Number of examinations</i>				
	<i>1970-71</i>	<i>1971-72</i>	<i>1972-73</i>	<i>1973-74</i>	<i>1974-75</i>
<b>Occupational health—</b>					
Medical examinations . . . . .	679	337	647	2 317	9 435
Laboratory examinations:					
Routine . . . . .	497	182	212	283	191
Consultative . . . . .	81	50	49	134	35
Medical examinations at Australian Government factories in New South Wales . . . . .	40 030	29 388	29 303	27 003	(a)
Total . . . . .	41 287	29 957	30 211	29 737	9 661
<b>Parasitology—</b>					
Routine . . . . .	240	1 648	1 134	1 782	2 119
Research . . . . .	5 427	2 903	2 033	3 414	2 356
Total . . . . .	5 667	4 551	3 167	5 196	4 475
<b>Pathology and microbiology—</b>					
Histopathology (consultant) . . . . .	736	765	902	1 135	1 234
Serology . . . . .	1 295	1 871	1 884	2 135	1 557
Bacteriology . . . . .	176	288	605	434	869
Mycology . . . . .	473	152	140	157	106
Quarantine exclusion tests . . . . .	14	23	669	47	63
Total . . . . .	2 694	3 099	4 200	3 908	3 829
<b>Total examinations performed</b> . . . . .	49 648	37 607	37 578	38 841	17 965

(a) Not applicable.

## APPENDIX 2—PUBLICATIONS 1974-75

### NATIONAL BIOLOGICAL STANDARDS LABORATORY

WITHELL, J. 'A focus-forming technique for the assay of HVT vaccines against Marek's Disease.' *Develop. Biol. Standard.*, 1974, **25**: 287.

### NATIONAL ACOUSTIC LABORATORIES

BYRNE, D. J. 'Loudness summation with binaural hearing aids.' *Scand. Audiol.*, 1975, **4** (1): 23-28.

BYRNE, D. J. 'The National Acoustic Laboratories' study of binaural hearing aids.' *Contact* (Bulletin of North Shore Deaf Children's Association), 1975, **10** (1): 1-3.

BYRNE, D. J. 'A new look at the gain and frequency response requirements of hearing aids.' *Proceedings of Conference of Audiological Society of Australia*, Sydney, September 1974 (in press).

BYRNE, D. J. and DERMODY, P. 'Binaural hearing aids.' *Hearing Instruments*, 1975 (in press).

BYRNE, D. J. and DERMODY, P. 'Localisation of sounds with binaural body-worn hearing aids.' *Brit. J. Audiol.*, 1975 (in press).

DERMODY, P. and BYRNE, D. J. 'Auditory localisation by hearing-impaired persons using binaural hearing aids.' *Brit. J. Audiol.*, 1975 (in press).

GOODALL, LORRAINE. 'Permanent childhood deafness in Australia; incidence and trends 1957-1973.' *J. Oto-Laryngol. Soc. Aust.*, December 1974.

MACRAE, J. M. 'Problems of improving speech perception for the deaf.' *Proceedings of Conference of Audiological Society of Australia*, Sydney, September 1974 (in press).

MACRAE, J. H. 'A theoretical investigation of cochlear effects on the acoustic impedance of the ear.' *J. Auditory Res.*, 1972, **12**: 265-270.

PIESSE, R. A. 'The requirements of conservation and compensation hearing tests.' *Proceedings of Conference of Audiological Society of Australia*, Sydney, September 1974 (in press).

TONISSON, W. 'Measuring in-the-ear gain of hearing aids by the acoustic reflex method.' *J. Speech Hearing Res.*, March 1975, **18** (1).

TONISSON, W. 'Using the acoustic reflex to determine real-ear gain of a body-worn hearing aid.' *Proceedings of Conference of Audiological Society of Australia*, Sydney, September 1974 (in press).

WALKER, G. 'Directional hearing aids: New hope for the hearing-impaired.' *Proceedings of Conference of Audiological Society of Australia*, Sydney, September 1974 (in press).

WALKER, G. 'Principles and new developments of hearing aids for children and adults.' *Proceedings of Conference of Audiological Society of Australia*, September 1974 (in press).

WAUGH, R. L. 'Recent developments in the evaluation and selection of ear protectors.' *Control*, May 1975 (in press).

## ULTRASONICS INSTITUTE

- CROCKER, E. F., JELLINS, J. and KOSSOFF, G. 'Grey scale ultrasonic examination of the thyroid gland.' *Qrtly. J. Royal Prince Alfred Hospital*, Sydney 1975 (in press).
- CROCKER, E. F., McLAUGHLIN, A. F., MORRIS, J. G. and KOSSOFF, G. 'Ultrasound and thyroid malignancy.' *J. Clin. Ultrasound*, 1974, 2: 305-306.
- CROCKER, E. F., McLAUGHLIN, A. F., UREN, R. F., BANTOVICH, G. J., MORRIS, J. G., JELLINS, J. and KOSSOFF, G. 'Comparison of caesium scintiscanning with grey scale echography in the investigation of solitary non-functioning thyroid modules.' *Proceedings of Second European Congress on Diagnostic Ultrasound*, Munich, May 1975.
- DADD, M. J., HUGHES, H. L. and KOSSOFF, G. 'Ultrasonic characteristics of choroidal melanoma.' *Ultrasonography in Ophthalmology, Bibl. Ophthalm.*, No. 83. Basel, Karger, 1975. pp. 155-162.
- FISHER, D., GARRETT, W. J. and KOSSOFF, G. 'Anencephaly in one of twins diagnosed by ultrasonic echography.' *Aust. N.Z.J. Obstet. Gynecol.*, 1975 (in press).
- GARRETT, W. J., FISHER, C. C. and KOSSOFF, G. 'Hydrocephaly, microcephaly and anencephaly diagnosed in pregnancy by ultrasonic echography.' *Med. J. Aust.*, 1975 (in press).
- GARRETT, W. J. and KOSSOFF, G. 'An obstetrical test for resolution by ultrasonic echoscopes.' *Ultrasonics*, 1975 (in press).
- GARRETT, W. J. and KOSSOFF, G. 'Study of the foetus and placenta by grey scale echography.' *Diagnostic Ultrasound*, Brussels, 1975 (in press).
- GARRETT, W. J., KOSSOFF, G., HUGHES, H. and REEVE, T. S. 'Diagnostic ultrasound today.' *Modern Medicine of Australia*, February 1975, 15-19.
- GARRETT, W. J., KOSSOFF, G. and FISHER, C. 'Ultrasonic diagnosis of congenital abnormalities in the foetal chest and abdomen.' *Proceedings of Second European Congress on Diagnostic Ultrasound*, Munich, May 1975.
- GARRETT, W. J., KOSSOFF, G. and CARPENTER, D. A. 'Grey scale compound scan echography of the normal upper abdomen.' *J. Clin. Ultrasound*, 1975 (in press).
- GARRETT, W. J., KOSSOFF, G. and JONES, R. F. C. 'Ultrasonic cross-sectional visualization of hydrocephalus in infants.' *Neuroradiology*, March 1975, 8 (5): 273-288.
- GARRETT, W. J., KOSSOFF, G. and LAWRENCE, R. 'Grey scale echography in the diagnosis of hydrops due to foetal lung tumour.' *J. Clinical Ultrasound*, March 1975, 3 (i): 45-50.
- GARRETT, W. J., KOSSOFF, G. and OSBORN, R. A. 'The diagnosis of foetal hydronephrosis, megaurether and urethral obstruction by ultrasonic echography.' *J. Obstet. Gynaecol. Brit. Commonwealth*, February 1975, 82: 115-120.
- GARRETT, W. J., WARD, J., KOSSOFF, G. and DE LEON, A. 'Ultrasonic and radiological investigation of abdominal pregnancy.' *Australas. Radiol.*, 1975 (in press).
- JELLINS, J., KOSSOFF, G. and REEVE, T. S. 'The ultrasonic appearance of pathology in the male breast.' *Ultrasound in Med. Biol.*, 1975 (in press).
- JELLINS, J., KOSSOFF, G., REEVE, T. S. and BARRACLOUGH, H. 'Ultrasonic grey scale visualisation of breast disease.' *Ultrasound in Med. Biol.*, 1975 (in press).
- JELLINS, J., KOSSOFF, G., WISEMAN, J., REEVE, T. S. and HALES, I. 'Ultrasonic grey scale visualisation of the thyroid gland.' *Ultrasound in Med. Biol.*, 1975 (in press).
- KOSSOFF, G. 'An historical review of ultrasonic investigations at the National Acoustic Laboratories.' *J. Clinical Ultrasound*, March 1975, 3: 39-43.
- KOSSOFF, G. 'Measurement of acoustic output generated by ultrasonic diagnostic equipment.' In *Fundamentals of Medical Ultrasonography*, Ed. G. Baum, New York, Putnam, 1975.

- KOSSOFF, G. 'Technical procedures and imaging.' *Diagnostic Ultrasound*, Brussels, 1975.
- KOSSOFF, G., CARPENTER, D. A., RADOVANOVICH, G., ROBINSON, D. E. and GARRETT, W. J. 'U.I. Octoson, a new rapid multi-transducer general purpose water coupling echoscope.' *Proceedings of Second European Congress on Ultrasonics in Medicine*, Munich, 1975.
- KOSSOFF, G., GARRETT, W. J. and RADOVANOVICH, G. 'Ultrasonic atlas of brain of normal infant.' *Ultrasound in Med. Biol.*, 1974, 1: 259-266.
- KOSSOFF, G., GARRETT, W. J. and RADOVANOVICH, G. 'Ultrasonic examination of a nonuplet pregnancy.' *Aust. N.Z. Obstet. Gynecol.*, 1975 (in press).
- KOSSOFF, G., RADOVANOVICH, G., GARRETT, W. J. and ROBINSON, D. E. 'Annular phased arrays in ultrasonic obstetrical examinations.' In *Proceedings of a Meeting on Ultrasonic Diagnostics*, Milan, 1974 (in press).
- MCCREADY, R., TAYLOR, K. J. W. and CARPENTER, D. A. 'Ultrasound and scintigraphy in the differential diagnosis of obstructive jaundice.' *Journal of Nuclear Medicine*, 1974.
- ROBINSON, D. E. 'Acoustic exposure—current status of possible effects.' *Proc. Soc. Photo Opt. Inst. Eng. Seminar*, Optics in Medicine, Kansas City, 1974 (in press).
- ROBINSON, D. E., GARRETT, W. J. and KOSSOFF, G. 'Ultrasonic assessment of foetal progress.' *NICH and HD Workshop on Perinatal Intensive Care*, June 1974 (in press).
- ROBINSON, D. E. and KOSSOFF, G. 'The imaging properties of an ultrasonic pulse echo visualisation system.' *Proc. Soc. Photo Opt. Inst. Eng. Seminar*, Optics in Medicine, Kansas City, 1974 (in press).
- ROBINSON, D. E. and KOSSOFF, G. 'Pulse echo visualisation.' In *Ultrasound: Its Application in Medicine and Biology*, Ed. F. J. Fry, Amsterdam, Elsevier (in press).
- ROBINSON, D. E., KOSSOFF, G. and GARRETT, W. J. 'Seeing with sound.' *Proceedings 4th Annual Deliveration of Birth Defects Conference*, Newport Beach, USA, 1974, Symposia Associates (in press).
- ROBINSON, D. E., LEES, S. and BESS, L. 'Near field transient radiation patterns for circular pistons.' *IEEE Trans. Acoustics, Speech and Signal Processing*, ASSP—22 December 1974, 395-403.
- TAYLOR, K. J. W. and CARPENTER, D. A. 'Grey scale ultrasonography in the investigation of obstructive jaundice.' *The Lancet*, 7 September 1974.
- TAYLOR, K. J. W., CARPENTER, D. A. and BARRETT, J. J. 'Grey scale ultrasonography in the diagnosis of thyroid swellings.' *Journal of Clinical Ultrasound*, Vol. 2, No. 4, 327-330.

#### **AUSTRALIAN RADIATION LABORATORY**

- BULLOCK, G. E., DUGGLEBY, J. C., KOTLER, L. H. and WISE, K. N. 'Strontium-90 and caesium-137 in the Australian environment during 1971, 1972 and 1973.' (in press).
- BULLOCK, G. E., DUGGLEBY, J. C., NUNN, R. O. and WISE, K. N. 'Fallout over Australia from nuclear weapons tested by France in Polynesia from June to September, 1974.' (in press).
- DUGGLEBY, J. C., JOHANNESSEN, J. C., KOTLER, L. H. and STEWART, F. M. 'Measurements of total beta-activity in the fallout.' Chapter 4 of Report AIRAC No. 1 *Fallout over Australia from nuclear weapons tested by France in Polynesia during July and August 1973*, Australian Ionising Radiation Advisory Council, May 1974, Australian Government Publishing Service, 1974.
- DUGGLEBY, J. C., KOTLER, L. H., WILKS, M. J. and WISE, K. N. 'Measurements of iodine-131 in milk supplies.' Chapter 5 of Report AIRAC No. 1.
- JOHANNESSEN, J. C. and STEWART, F. M. 'The monitoring program.' Chapter 2 of Report AIRAC No. 1.

- LEITH, I. S. and BURNS, P. A., with ROBOTHAM, F. P. J., REYNOLDS, K. M. and WOOD, A. K. W. 'Radiation protection in equine radiography.' *Aust. Vet. J.*, 1974, **50**: 373-379.
- MORONEY, J. R. and STEVENS, D. J. 'Radiation doses to the Australian population from fresh fission products in fallout.' Chapter 1 of Report AIRAC No. 1.
- MORONEY, J. R. and STEVENS, D. J. 'Radiation doses to the Australian population from fallout.' (in press).
- PEGGIE, J., SOFER, D. H. and WISE, K. N. 'Measurements of artificial radio-nuclides present in ground-level air.' Chapter 3 of Report AIRAC No. 1.

#### AUSTRALIAN DENTAL STANDARDS LABORATORY

- OHASHI, M. and WARE, A. L. 'A comparison of methods for determining setting rate of amalgam.' *Aust. Dent. J.*, 1975, **20** (3): 176-182.

#### SCHOOL OF PUBLIC HEALTH AND TROPICAL MEDICINE

- ATHANASOU, J. A. 'Smoking behaviour and its modification through hypnosis: A review and evaluation.' *Terpnos Logos*, 1974, **2**: 4-15.
- ATHANASOU, J. A. 'Sickness absence, respiratory disease and smoking in industry.' *J. Occup. Med.* (in press).
- BAKER, R. S. U. 'Cell biology of senescence.' *Proc. Aust. Assoc. Geron.*, 1974, **2**: 104-106.
- BAKER, R. S. U. and AW, E. J. 'Growth enhancement of myogenic tumour cells in agar suspension by conditioned medium.' *J. Cell. Physiol.* (in press).
- BANFIELD, J. 'Medical and related services in the Western Metropolitan Health Region.' Duplicated document, 92 pp, 1974.
- BLACK, R. H. 'Malaria in Australia, 1973: And a review of the period 1969-1973.' *Mod. Med. Aust.*, 1974, **17** (24): 11-23.
- BLACK, R. H. 'Human ecological factors of significance.' In *Man-made Lakes and Human Health*, ed. Stanley, N. F., and Alpers, M. A., London: Academic Press, 1975.
- BLACK, R. H. 'Malaria.' *Papua New Guinea Med. J.* (in press).
- BLACK, R. H., BROOKE, M. M. and RICHTER, B. 'Report on the M.P.H. course majoring in malaria and other parasitic diseases to be given in English at the University of Teheran, Iran, 1 September, 1975-31 December, 1976.' Duplicated document, 66 pp. Geneva: World Health Organization, 1974.
- BLACK, R. H. with others. *W.H.O. Expert Committee on Malaria; Sixteenth Report*, W.H.O. Tech. Rep. Ser. No. 549, 1974.
- BOHDANOWICZ, T., FAGUE, R. A. and ILBERY, P. L. T. 'Leukaemia cell antigenicity following a cryostorage schedule.' *Aust. N.Z. J. Med.*, 1975, **5**: 185 (abstract).
- BUDD, G. M., FOX, R. H., HENDRIE, A. L. and HICKS, K. E. 'A field survey of thermal stress in New Guinea villagers.' *Phil. Trans R. Soc. Lond. B.*, 1974, **268**: 393-400.
- BUDD, G. M. 'The King Penguin *Aptenodytes patagonica* at Heard Island.' In *The Biology of Penguins*, ed. Stonehouse, B., pp. 337-352. London: Macmillan, 1974.
- BUDD, G. M. 'Physiological research at Australian stations in the Antarctic and the Sub-Antarctic.' In *Human Adaptability*, ed. Gunderson, E. K. E. *Antarctic Research Series* vol. 22, pp. 27-54. Washington, D.C.: American Geophysical Union, 1974.
- CAMPBELL, C. H. 'The effects of snake venoms and their neurotoxins on the nervous system of man and animals.' In *Topics on Tropical Neurology*, ed. Hornabrook, R. N. Philadelphia: F. A. Davis, 1975.
- CAMPBELL, C. H. (ed.). *Lay Course in Tropical Medicine*. Canberra: Australian Government Publishing Service (in press).
- CHEE, C. A. K. and ILBERY, P. L. T. 'Dose response relationships between chromosome damage and absorbed radiation.' *Aust. Radiol.*, 1975, **19**: 60-71.



- DAKIN, W. P. H., HOWELL, D. J., SUTTON, R. G. A., O'KEEFE, M. F. and THOMAS, PATRICIA. 'Gastroenteritis due to non-agglutinable (non-cholera) vibrios.' *Med. J. Aust.*, 1974, **II**: 487-490.
- DEBENHAM, MARGARET L. 'A revision of the Australian and New Guinea predatory Ceratopogonidae (Diptera:Nematocera) of the tribes Heteromyiini and Sphaeromyiini.' *Aust. J. Zool., Suppl. Ser.* No. 28, 1974, 1-92.
- DUNCAN, JOAN and FERGUSON, D. A. 'Keyboard operating posture and symptoms in operating.' *Ergon.*, 1974, **17**: 651-662.
- FERGUSON, D. A. 'Occupational fatigue.' *Bull. Postgrad. Com. Med. Univ. Syd.*, 1974, **30**: 138-147.
- FERGUSON, D. A. 'Transport of handicapped persons by car.' *Med. J. Aust.*, 1974, **1**: 914-919.
- FERGUSON, D. A. 'Application of ergonomics: Safety and health of the worker.' *Proc. 17th N.S.W. Indust. Safety Conven. & Exhibition*, 1974, pp. 109-115.
- FERGUSON, D. A. *Teaching in Occupational Health in Relation to its Organization and Practice in Some Western Pacific Countries*. Duplicated document, 68 pp., 1974.
- FERGUSON, D. A. 'Sickness absence.' In *Scientific Proceedings Annual Conference, Australian and New Zealand Society of Occupational Medicine and New Zealand Occupational Health Nurses' Association*. Rotorua, September 1973, pp. 24-26.
- FERGUSON, D. A. 'Three types of repetition disorders affecting the region of the wrist.' In *Scientific Proceedings Annual Conference, Australian and New Zealand Society of Occupational Medicine and New Zealand Occupational Health Nurses' Association*. Rotorua, September 1973, pp. 63-70.
- FERGUSON, D. A. 'A study of occupational stress and health.' In *Man Under Stress*, ed. Welford, A. T., pp. 83-98. London: Taylor & Francis, 1974.
- FERGUSON, D. A. 'Lighting code changes.' *Appl. Ergon.*, 1975, **6**: 47 (correspondence).
- FERGUSON, D. A. 'Back injury—work causes and remedy.' *Patient Management*, 1975, **4**: 5-10.
- FERGUSON, D. A. 'Transport of handicapped persons by car.' *Socialmedizin offentlichen Gesundheitsdienst Arbeitsmedizin* (abstract), (in press).
- FERGUSON, D. A. 'Mental health aspects of worker wellbeing.' *Proc. Environment 75, Sydney* (in press).
- FERGUSON, D. A. 'Health effects of environmental degradation.' *Syd. Univ. Environment Group* (in press).
- FERGUSON, D. A. and DUNCAN, JOAN. 'Keyboard design and operating posture.' *Ergon.*, 1974, **17**: 731-744.
- FERGUSON, D. A., MAJOR, G. and KELDOULIS, T. 'Visual defect and the visual demand of tasks.' *Appl. Ergon.*, 1974, **5**: 84-93.
- FIELD, BARBARA and KERR, C. B. 'Twinning and neural-tube defects.' *Lancet*, 1974, **2**: 964-965 (correspondence).
- FIELD, BARBARA and KERR, C. B. 'Ovulation stimulation and defects of neural-tube closure.' *Lancet*, 1974, **2**: 1511 (correspondence).
- FIELD, BARBARA, MITCHELL, GILLIAN, GARRETT, W. and KERR, C. B. 'Prenatal diagnosis and selective abortion for anencephaly and spina bifida.' *Aust. Paed. J.*, 1974, **10**: 245 (abstract).
- FOX, R. H., BUDD, G. M., WOODWARD, PATRICIA M., HACKETT, A. J. and HENDRIE, A. L. 'A study of temperature regulation in New Guinea people.' *Phil. Trans. R. Soc. Lond.*, 1974, **B.**, **268**, 375-391.
- FRITH, NANCY C. *Experiences in Public Health Nursing*. School of Public Health and Tropical Medicine, University of Sydney, Service Publication No. 10. Canberra: Australian Government Publishing Service (in press).
- FRITH, NANCY C., HAUSFELD, R. G. and MOODIE, P. M. *The Coasttown Project: Action Research in Aboriginal Community Health*. School of Public Health and Tropical Medicine, University of Sydney, Service Publication No. 11. Canberra: Australian Government Publishing Service, 1974.

- HAUSFELD, R. G. 'Basic value orientations, change and stress in two Aboriginal communities.' In *Social and Cultural Change*, ed. Berndt, R. N. Canberra: Australian Institute of Aboriginal Studies (in press).
- HEYWOOD, P. F. 'Fibre.' *Med. J. Aust.* (in press).
- HOBBS, M. S. T., CARNEY, A., FIELD, BARBARA, SIMPSON, D. and KERR, C. 'Incidence of anencephalus and spina bifida and variation in risks according to parental birthplaces in three Australian states.' *Brit. J. prev. soc. Med.*, 1974, **28**: 66 (abstract).
- ILBERY, P. L. T. 'Effects of radiation upon lymphocyte replicating ability.' *Radiation Research*, 1974, **59**: 25.
- ILBERY, P. L. T. 'General immune status in cancer therapy.' *Med. J. Aust.* (in press).
- ILBERY, P. L. T. 'Prophylactic immunotherapy.' *Med. J. Aust.* (in press).
- KERR, C. B. 'Application of recent advances in medical genetics.' *Bull Postgrad. Com. Med. Univ. Syd.*, 1974, **30**: 151-163.
- KERR, C. B. 'Genetic counselling in hereditary disorders of blood coagulation.' In *The Etiology of Inherited Disorders*, pp. 9-17. New York: MSS Information Corp., 1974.
- KERR, C. B. 'Development of a sociological approach to teaching social medicine.' *Proc. Geigy Psychiatric Symp.*, Melbourne (in press).
- KERR, C. B. 'Better health and busier hospitals—solutions for an Australian paradox.' *J. Aust. Coll. Biomed. Sci.* (in press).
- KERR, C. B. 'Prevention and health centres.' *Aust. Fam. Physician* (in press).
- KERR, C. B. 'Medical practice in Australia.' *Clinical Medicine* (in press).
- KERR, C. B. 'Characteristics of informal systems in population education.' *Proc. Summer School on Family Planning, Population Education Issues*. Macquarie Univ. (in press).
- KERR, C. B. 'Responsibility for socio-medical management in rare diseases.' In *The Problems of Medical Care*. London: Tavistock Press (in press).
- KERR, C. B. 'Life expectancy and the growing incidence.' In *Handbook of Hemophilia*. Amsterdam: Excerpt. Med. (in press).
- KERR, C. B. 'Modern scientific developments—boon or catastrophe?' *Proc. Med. Leg. Soc. N.S.W.* (in press).
- LITTLE, J. M., PETRITSI-JONES, DORA and KERR, C. B. 'Vascular amputees: A study in disappointment.' *Lancet*, 1974, **1**: 793-795.
- MACPHERSON, R. K. 'Thermal stress and thermal comfort.' In *Man Under Stress*, ed. Welford, A. T., pp. 45-56. London: Taylor & Francis, 1974.
- MACPHERSON, R. K. and O'BRIEN, J. P. 'The effects of heat.' In *Tropical Medicine*, 5th edn, eds Hunter, III, G. W. et al. Philadelphia, P.A.: W. B. Saunders Company (in press).
- MEHER-HOMJI, K. M., BENNETT, GEORGINA and PEARSON, LYRA. 'Counter immune electrophoresis in rapid diagnosis of pox virus infections.' *Med. J. Aust.* (in press).
- MOODIE, P. M. 'The part-Aboriginal community.' In *Better Health for Aborigines? Report of a National Seminar at Monash University*, eds Hetzel, B. S. et al., pp. 88-96. St. Lucia, Queensland: University of Queensland Press, 1974.
- MOODIE, P. M. 'The Aboriginal population and population education: Aboriginal fertility patterns compared with other populations.' In *Family Planning, Population Education Issues*. Proceedings and Education Issues, ed. Cochrane, R. H., pp. 158-168. Sydney: Australian and New Zealand Book Company, 1974.
- MCGLYNN, SHIRLEY P. 'Profiles of the specials: The School of Public Health and Tropical Medicine Library, Sydney.' *Australian Special Libraries News*, 1975, **8**: 20-27.
- MCGLYNN, SHIRLEY P. 'Canadian medical libraries.' *Australian Special Libraries News* (in press).
- MCLEOD, J. G., BAKER, W.DEC., SHOREY, C. B. and KERR, C. B. 'Mitochondrial myopathy with multisystem abnormalities and normal ocular movements.' *J. Neurol. Sciences*, 1975, **24**: 39.

- McMILLAN, B. 'Intestinal nematodioses in Australia.' *Current Therapeutics*, 1974, **15** (9): 21-23.
- McMILLAN, B. 'Thiabendazole in strongyloidiasis.' *Current Therapeutics*, 1975, **16** (1): 47 (correspondence).
- McMILLAN, B. and BANCROFT, B. JOSEPHINE. 'On the morphology of *Trypanosoma binneyi* Mackerras, 1959 from the platypus *Ornithorynchus anatinus*.' *Internat. J. for Parasit.*, 1974, **4**: 441-442.
- McMILLAN, B. and CLAFFEY, J. E. 'Obituary—Arthur Joseph Bearup.' *Med. J. Aust.*, 1974, **2**: 109-110.
- SMITH, G. C. 'Occupational medicine—its scope and advancement.' *Bull. Postgrad. Com. Med. Univ. Syd.* (in press).
- SUTTON, R. G. A. 'An outbreak of cholera in Australia due to food served in flight on an international aircraft.' *J. Hyg.*, 1974, **72**: 441-451.
- SUTTON, R. G. A. 'Some quantitative aspects of *Vibrio parahaemolyticus* in oysters in the Sydney area.' In *Proceedings of 1st International Congress on Vibrio parahaemolyticus* (in press).
- SWEENEY, A. W. 'The mode of infection of the insect pathogenic fungus *Culicinomyces* in larvae of the mosquito *Culex fatigans*.' *Aust. J. Zool.*, 1975, **23**: 49-57.
- WALKER, J. C. and McMILLAN, B. '*Breinlia mackerrasae* n.sp. (Nematoda: Filarioidea) from the peramelid marsupial, *Isoodon macrourus*, with a note on *Breinlia* sp. from the "mumut" (Peramelidae).' *J. Helminth.*, 1974, **48**: 39-45.
- WEBSTER, I. W. 'Health screening (1974)—relevance to primary care.' *Aust. Family Physician*, 1974, **3**: 427-433.
- WEBSTER, I. W. 'Ageing in human populations—a contribution from biochemical screening.' *Proc. Technicon Internat. Symp.*, 1974, 89-91.
- WEBSTER, I. W. 'The use of preventive health technology in a large urban population.' *Search*, 1974, **5**: 485-488.
- WEBSTER, I. W. 'Age and breathlessness.' *Proc. Aust. Assoc. Geron.*, 1974, **2**: 78-80.
- WEBSTER, I. W. 'Busselton, a community study in cardiovascular disease.' *Aust. N.Z. J. Med.*, 1974, **4**: 412-414.
- WEBSTER, I. W. 'A volunteer crisis service: Pattern of utilisation and referral.' *Med. J. Aust.* (in press).
- WEBSTER, I. W. 'Screening for health.' *Aust. Radiol.* (in press).
- WEBSTER, I. W. 'Wayside Chapel, Kings Cross.' *Australasian Nurses Journal* (in press).
- WEBSTER, I. W. and LOGIE, A. R. 'An assessment of ageing based on screening data.' *J. Am. Geriat. Soc.*, 1974, **22**: 360-364.

#### INSTITUTE OF CHILD HEALTH

- BAXTER, R. and ROWE, P. B. 'Folic acid binding by serum albumin.' *Proc. Paed. Res. Soc. Australia*, 1974, **6**.
- BAXTER, R. C. and ROWE, P. B. 'Folic acid binding by protein of rat liver.' *Proc. Aust. Biochem. Soc.*, 1974, **5**: 45.
- DOWD, B. and WALKER-SMITH, J. 'Samuel Gee, Aretaeus and The Coeliac Affection.' *Brit. Med. J.*, 1974, **2**: 45.
- DUBOIS, R. D., GOTLIN, R. W. and RODGERSON, D. O. 'Lack of dietary regulation of jejunal glycolytic enzymes in obesity. The role of insulin.' *Gastroenterology*, 1975, **67**.
- DUBOIS, R. D. and SILVERMAN, A. 'Treatment of chronic active hepatitis in children.' *Postgrad. med. J.*, 1974, **50**: 386.
- FRIIS-HANSEN, B. and STAPLETON, T. 'The pediatrician and population changes.' *Bull. Int. Paed. Assoc.* (Series 2), April 1975, **18**.
- KATZ, J. 'Commentary on three facets of childhood depression.' *Mod. Med. of Aust.*, 1974, **17**: No. 20:100.

- KATZ, J. 'Catering for a child's individuality.' *Aust. Nurses J.*, November 1974, **22**.
- KATZ, J. 'The nature of infantile autism.' In *Symposium on Autism*, ed. William and Sprague Abbott, Sydney, 1974.
- KATZ, J. 'Individuality and emotional problems of early childhood.' (in press).
- KATZ, J. 'Attachment theory.' (in press).
- LEWIS, G. P. and ROWE, P. B. 'The regulation of methyl tetrahydrofolate methyltransferase by folates.' *Proc. Aust. Biochem. Soc.*, 1974, **7**: 45.
- MADSEN, G. and ROWE, P. B. 'The purine biosynthetic enzyme complex.' *Proc. Aust. Biochem. Soc.*, 1975, **8**: 40.
- ROWE, P. B., REDDEL, R. and SILINK, M. 'Gamma glutamyl carboxypeptidase: Properties and function.' *Proc. Paed. Res. Soc. of Aust.*, 1974, **9**.
- ROWE, P. B., and MADSEN, G. 'The purine biosynthetic enzyme complex.' *Proc. Paed. Res. Soc. of Aust.*, 1975, **65**.
- ROWE, P. B., SILINK, M. and REDDEL, R. 'The properties of gamma glutamyl hydrolase (conjugase) from bovine liver.' *Proc. V. International Pteridine Symposium*, Konstanz, West Germany, 1975.
- SILINK, M. and ROWE, P. B. 'The localisation of glutamate carboxypeptidase in rat liver lysosomes.' *Biochim. Biophys. Acta.*, 1975, **381**: 28.
- SILINK, M., REDDEL, R., BETHEL, M. and ROWE, P. B. 'Gamma glutamyl hydrolase (conjugase): purification and properties of the bovine liver enzyme.' (in press).
- STAPLETON, T. 'Themes for delivering health care.' *Papua New Guinea Med. J.*, 1974, **17**: 186.
- STAPLETON, T. 'Infant feeding in the People's Republic of China.' *PAG Bull.*, 1974, **4**: 31.
- STAPLETON, T. 'Practical difficulties in applying existing knowledge about nutrition and infections.' *J. Trop. Paed. & Environ. Child Hlth.* (in press).

#### CENTRAL AND DIVISIONAL OFFICES

- CORDEN, MARGARET W. 'The nutritional value of dairy products in present day health concepts.' *Australian J. Dairy Tech.*, June, **9**.
- CORDEN, MARGARET W. 'Food and nutrition standards—help or hindrance?' *Food Tech. Aust.* (accepted for publication).
- CUMMING THOM, A. S. 'Health issues in environmental management.' Second National Conference on The Environment, Canberra, 1975, *National Conference Publication No. 75/5*, The Institution of Engineers, Australia.
- ENGLISH, RUTH M. 'Nutrition information in the market place.' *Food Tech. Aust.* (accepted for publication).
- GREEN, ALLEN C. 'Dermatology in Dacca.' *Aust. J. Dermat.*, 1974, **15**: 84.
- GREEN, ALLEN C., BOUGHTON, CLEMENT R., DIXON, GRAHAME F. and MOGYOROSY, LAURENT M. 'A glimpse at Bangladesh.' *South Australian Clinics*, The Adelaide Children's Hospital Issue, 1974, **6**: 406.
- GREEN, ALLEN C. and NUTTING, W. B. 'Pathogenesis associated with hair follicle mites (*Demodex* spp.) in Australian Aborigines.' Provisionally accepted for publication in the *British Journal of Dermatology*, 1975.
- GURD, C. H., BROMWICH, A. and QUINN, J. V. 'The health management of Cyclone Tracy.' *Med. J. Aust.*, 1975, **1**: 21, 641-644.
- HENNESSY, B. L. 'Primary care health centres in the context of the Community Health Program.' *Australian Family Physician* (in press).
- HENNESSY, B. L. 'The role and funding of voluntary agencies in community health services—the Australian health view.' In *Role and Funding of Voluntary Agencies—Guidelines and Communication*, publication of papers from seminar conducted by Health Advisory Council of New South Wales, February 1975.
- HENNESSY, B. L. 'Mental health implications of recent Australian health initiatives.' *Aust. N.Z. J. Psychiat.*, 1974, **8**: 219.

- HIPSLEY, E. H. 'Dietary fat and heart disease.' *Med. J. Aust.*, 1975, 2: 179 (letter).
- HIPSLEY, E. H. 'Dietary fibre and pregnancy toxæmia.' *Med. J. Aust.*, 1975, 2: 341 (letter).
- HIPSLEY, E. H. 'A saccharine disease?' *Med. J. Aust.* (accepted for publication).
- JANKUS, A. 'Inflammatory changes in the cardiac conducting system in sudden infant death syndrome.' *Med. J. Aust.*, 1975, 1: 594-595.
- MACARTHUR, E. B., with DERICK A. MARTIN. 'Carcinoma of the duodenojejunal junction presenting as chronic anaemia.' *Med. J. Aust.*, 1975, 1: 387-391.
- MANTON, I. D. 'Present responsibilities for future health care.' In *Urban Futures*, Department of Urban and Regional Development publication (in press).
- MYHILL, J. 'Aspects of regionalisation and localisation.' Discussion paper presented at national seminar on *New Directions in Health Policies*, Sydney, April 1975.
- MYHILL, J. 'A report on hospitals in Australia.' Paper presented at the regional conference of hospital executives of the North Coast and New England regions of New South Wales, Lismore, April 1975.
- SOONG, F. S. 'Nurses' attitudes toward abortion: Report of a survey carried out in the Northern Territory.' *Australian Nurses Journal*, 1974, 4: 29-30.
- SOONG, F. S. 'Nurses' perceptions of their health education role in cross-cultural health programmes in northern Australia.' In *Papers on Theoretical Issues in Health Education*, Dorothy Nyswander, International Symposium, San Francisco, 1974.
- SOONG, F. S. 'Health education as a means of improving Aboriginal health—a study of the nurse's role.' *Med. J. Aust.*, 1975, special supplement 1, pp. 4-8.
- TILLEY, E. 'Prevention of undernutrition in Aboriginal children.' *Australian Nurses Journal*, 1974, 4:3: 37-40.
- WEBB, R. C. 'The hospital program for Australia.' *National Hospital*, 1975, 19: 2.

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