

HEALTH AND MEDICAL RESEARCH*

COMMITTEE OF INQUIRY INTO VICTORIA'S HOSPITAL AND HEALTH SERVICES

The Victorian Minister of Health appointed a two man Committee of Inquiry into Hospital and Health Services in Victoria in June 1973. The Committee, which consisted of Sir Colin Syme (chairman) and Sir Lance Townsend, submitted its Report to the Minister in July 1975. The Report has become known as the Syme-Townsend Report.

After the receipt of the Report by the Victorian Minister of Health, the Victorian Cabinet discussed its contents and recommendations. The Premier then announced that the Victorian Government agreed with the main recommendations in the Report and would establish a Health Commission. He appointed an Implementation Committee to prepare the necessary legislation. This Committee handed its report containing the drafted legislation to the Victorian Government in 1976 and the Victorian Government is now proceeding to introduce the new legislation in the Victorian Parliament.

A comprehensive article, summarising the Report, can be found on pages 671-5 of the *Victorian Year Book* 1976.

GOVERNMENT HEALTH SERVICES

Commonwealth Government

Commonwealth Department of Health

The Commonwealth Department of Health is concerned with development, planning, and administration in the fields of public health, hospitals, community health and dental services, hospital, medical and pharmaceutical benefits including Medibank, therapeutic goods, quarantine, grants for medical research, and Northern Territory and Norfolk Island health. To carry out its many roles, the Department is divided into eleven divisions, namely, the Quarantine, Public Health, Medical Services, Health Services, Therapeutics, National Health and Medical Research Council, National Biological Standards Laboratory, Policy and Planning, Management Services, Medical Insurance Services, and the Hospital Insurance and Nursing Homes Divisions.

The Commonwealth Minister for Health is responsible for the administration of the Department and four statutory authorities—the Hospitals and Health Services Commission (see pages 753-5), the Capital Territory Health Commission, the Commonwealth Serum Laboratories Commission (see pages 809-10), and the Health Insurance Commission (see pages 755-7).

The Commonwealth Department of Health is administered, subject to the Minister, by a Director-General of Health situated in Canberra. In Victoria, as

* The information contained in this chapter, which has been completely rewritten, was compiled in July to October 1976. It is more extensive than in previous editions and contains several new tables. In future years this chapter will again be somewhat shortened and tables will again be included on a continuing basis.

in the other States, there is a Commonwealth Director of Health responsible to the Director-General. As such, he and his officers represent the Department in any Central Office activities.

Hospitals and Health Services Commission

The Hospitals and Health Services Commission was established in April 1974, following the creation of an Interim Committee in February 1973. It has a broad charter to ascertain health care needs, to make recommendations concerning systems of providing care, the education of personnel, the accreditation of services, the levels of financing assistance to be made available to States, Territories, regions, local governments, and charities, and to make grants.

The Commission has been responsible for three major new initiatives—the Community Health Programme, the Hospitals Development Programme, and the Health Services Planning and Research Programme—as well as undertaking a number of other studies. These activities are outlined in the following sections.

Community Health Programme

The two major objectives of the Community Health Programme were to place emphasis on relatively neglected aspects of prevention, health maintenance, rehabilitation, and primary care; and to improve the availability and accessibility of health services outside hospitals and nursing homes.

The Programme was introduced in 1973 and has been designed to enable local communities, either independently or through State-administered activities, to improve the organisation and delivery of their own health services. Almost 800 projects have been initiated in three years of operations. Grants have been made for community health centres, some with general practitioners practising on the premises, others with associated staff located at the centres and working in close co-operation with neighbouring general practitioners.

Although by no means all community health services are supported under this one programme, it is seen as a major source of support for new initiatives in community health services. There is a clear preference for proposals in which the community itself has been involved in the planning of programmes, together with the relevant State health authorities. An approved project receives up to 75 per cent of capital and up to 90 per cent of operating costs.

Hospitals Development Programme

The Commission submitted a report entitled *Hospitals in Australia* to the Commonwealth Government in April 1974, and most of the principles contained in the report were accepted. Two of its major recommendations were that financial assistance should be based on assessed needs, not on a simple per capita distribution, and that the provision of additional capital funds by the Commonwealth Government should be dependent on the Commonwealth Government assuming a share of the responsibility of ensuring that needs are evenly met. To enable recommendations to be made on funds to satisfy needs, Joint Hospitals Works Councils were established for each State, comprising representatives from the Hospitals and Health Services Commission, State health authorities, and the Commonwealth Department of Health.

Several experts from the Commonwealth Department of Construction are attached to the Commonwealth Department of Health to assist in the evaluation of proposals and the preparation of a data bank of planning and design information for hospitals and other health facilities. Their contribution has been illustrated already by the improved project planning procedures which have been introduced in some major developments.

Health Services Planning and Research Programme

Through this Programme the Commission supports research activities concerned with the planning, organisation, staffing, financing, management, operation, and use of health services. Initially, the three year programme made available \$500,000 per annum from 1973-74 to 1975-76, allocated on a \$2 for \$1 basis to the States to develop and expand State health planning agencies; an amount of \$500,000 per annum was made available to universities and other organisations for independent research and evaluation of health care systems.

While the Commission is advised of the activities undertaken by the States under the Programme, it is only minimally involved in the details of the projects. A Standing Committee comprising representatives from the Universities Commission, the National Health and Medical Research Council, and the Hospital and Allied Services Advisory Council considers applications for funds under the Programme.

The Commission has also conducted a number of important investigations, publishing reports and discussion papers. The reports on rehabilitation, accreditation of pathology services, and university departments of community practice have already had an effect on development in these areas. Reports on Australian health manpower and on continuing education have long-term implications.

Rehabilitation

In December 1974, the National Advisory Council for the Handicapped was established. The Council's role is to advise the Commonwealth Government on all aspects of policies affecting the rehabilitation of the injured and the handicapped, including the implementation of the rehabilitation aspects of the Woodhouse Report on Compensation and Rehabilitation.

A Standing Interdepartmental Committee on Rehabilitation was also established, with representatives from the relevant departments and commissions, including the Hospitals and Health Services Commission. It was envisaged that this Committee would consider proposals being considered by the National Advisory Council for the Handicapped.

Specific rehabilitation projects have been supported under the Community Health Programme, especially those concerned with mental health, alcoholism, drug dependency, day hospitals, handicapped assessment, and special transport for the disabled. Similarly, in the Hospitals Development Programme, many hospitals being constructed, extended, or renovated will be assisted to provide rehabilitation facilities.

Occupational health

The Joint Working Party on Occupational Health, established in December 1974, is responsible for the planning and evaluation of an Occupational Health Service for Commonwealth Government employees. The Working Party's report on proposals for the Service was completed in May 1975.

Health transport

Along with the substantial expansion of hospital and medical services there has been a rapid growth in demand for related transportation, affecting not only conventional road ambulance systems but also air transport. Consequently it was decided that a programme should be formulated to support the development of adequate health transport services in an acceptably co-ordinated manner. A Health Transport Working Party was established to examine arrangements for the provision of patient transport and mobile health services, and to make recommendations on future policies for Australia.

The Working Party prepared a report entitled *Health transport policies for the 1970s and 1980s*, containing preliminary recommendations after an analysis of the submissions received from the appropriate bodies. The report was

submitted to the Commonwealth Minister for Health for his consideration. The final report has now been tabled in the Commonwealth Parliament.

Rural health services

In rural areas distant from the main centres of coastal population, there is a continuing problem of attracting general practitioners, and this shortage of practitioners restricts the rural population's access to health care. To examine the existing situation and prepare a report, the Commission established a Working Party and an Advisory Committee on the provision of rural health services.

The Working Party sought written submissions on rural health problems and approximately 300 submissions were subsequently received. On-site visits were made to health facilities in three States and discussions were held with residents in more than 30 rural communities. A three day seminar was convened for 60 rural health practitioners, hospital authorities, State Government representatives, and academics to discuss the rural health issues arising from the submissions and the experience of the participants.

The Commission's report on this topic, entitled *Rural health in Australia*, was tabled in the Commonwealth Parliament in August 1976.

Child Health Advisory Committee

This Committee advises both the Hospitals and Health Services Commission and the Office of Child Care on matters relating to child and family health, and development, particularly in the areas of child health care, prevention, treatment, and rehabilitation, and on the relationships between these and other health and child care services.

Health manpower

The Committee on Health Careers (Personnel and Training) was set up to advise the Commission on manpower requirements for Australian health care delivery systems and on the range, nature, and location of the training appropriate to health workers. The Committee's report on Australian health manpower was tabled in the Commonwealth Parliament in March 1975. The report recognised that the provision of appropriately trained health manpower is an extremely complex process involving many different interests and authorities, hospitals, universities, other educational institutions, registration authorities, professional and occupational associations, and Commonwealth, State, and local governments. The report could well stimulate interest in, and promote debate on, health manpower matters.

Family Medicine Programme

The Family Medicine Programme, sponsored by the Royal Australian College of General Practitioners, commenced as a national project under the Community Health Programme in 1973-74. The objectives of the programme are to improve standards in general practice, recruit medical graduates to general practice, and make available general practitioners to needy areas. There are two schemes to achieve these objectives: a vocational training programme, which is a formal postgraduate course in general practice; and a re-orientation course for medical practitioners (especially women) who have been away from general practice for some time. It is believed that the drift away from general practice is now being checked.

Health Insurance Commission

The Health Insurance Commission was established under the Commonwealth *Health Insurance Commission Act 1974*, and is responsible for the payment of health benefits and other amounts as outlined by the Commonwealth *Health Insurance Act 1973*. A Health Insurance Planning Committee, established to

prepare detailed proposals on the timing and method of implementation of the Commonwealth Government's Medibank programme, submitted a White Paper entitled *The Australian health insurance programme* which was substantially accepted, with some modifications. The target date for the introduction of the programme was 1 July 1974, and provided for the establishment of a Health Insurance Commission as the organisation to operate it. The Commission is guided by a seven member committee, which met for the first time in September 1974.

Australian Health Insurance Programme

The Australian Health Insurance Programme, commonly known as Medibank, began operating on 1 July 1975. It provides financial protection against the costs of medical, optometrical, and hospital care. It supersedes and extends benefits provided under several previous programmes financed by the Commonwealth Government under the National Health Act, including medical and hospital benefits, the pensioner medical service, payments to public hospitals in respect of tuberculosis patients, and pharmaceutical benefits paid to hospitals.

Medibank medical benefits of 85 per cent of the fee specified in the Act are paid in respect of fees charged by medical practitioners, certain dentists, and participating optometrists. Hospital benefits take the form of either an entitlement to free treatment (including medical treatment) in standard wards of public hospitals, or subsidies towards hospital fees charged to private patients. The Act provides for a \$16 per day bed payment made to public and private hospitals on behalf of patients, and for cost sharing arrangements with all States which meet 50 per cent of the agreed running costs of public hospitals. The Victorian Government entered into the Medibank hospital arrangements on 1 August 1975.

Medibank medical benefits are payable in three ways: by cash or cheque payable to a person who has incurred and paid medical expenses; by cheque payable to the provider of the service, in a case in which a person has incurred but not paid medical expenses; or by the direct payment to the provider of a service when the person incurring expenses has assigned his right to Medibank benefit and the provider has accepted the Medibank benefit in full settlement. Patient claims are lodged either by post, at a Medibank cash payment centre, at a registered private health insurance fund which has agreed to act as a Medibank agent, or with a pharmacist who has agreed to receive Medibank claims. There are 74 Medibank cash payment centres throughout Australia, of which 15 are located in Victoria (two in the central business district of Melbourne, and one each in Box Hill, Carnegie, Cheltenham, Croydon, Dandenong, Footscray, Frankston, Moonee Ponds, Preston, Ballarat, Bendigo, Geelong, and Warrnambool). Seven private health insurance funds act as Medibank agents in Victoria, and 1,457 Victorian pharmacies receive Medibank claims.

Medibank claims are received in State processing centres, where they are sorted, batched, assessed, and coded for payment. They are then transmitted to the central computer processing complex in Canberra for processing and payment. The central computer also stores statistical information on all claims received. There are 23 processing centres throughout Australia, of which six are located in Victoria (central business district of Melbourne, Box Hill, Dandenong, Moonee Ponds, Geelong, and Morwell, the latter being operated by an agent fund).

Modifications to health insurance

From 1 October 1976, health insurance arrangements in Australia were altered considerably. One of the basic changes provided for the payment of the health insurance levy to help finance the cost of Medibank. This levy is at the rate of 2.5 per cent of personal taxable income up to a ceiling of \$300 per year (family cover) and \$150 per year (single cover). Pensioners holding pensioner health benefits cards and low income earners are exempted from

paying this levy. So also are those people who decide to buy basic medical and hospital insurance cover from a registered health benefits organisation.

Another basic change allowed private registered health benefit organisations to expand their activities in the medical benefits field.

From 1 October 1976, Australian residents were required to take one of the following four options in regard to health insurance:

- (1) Remain in Medibank by paying a levy of 2.5 per cent on taxable income, up to a ceiling of \$300 per year (family) and \$150 per year (single);
- (2) remain in Medibank by paying the levy, and in addition pay an extra premium for hospital only benefits from Medibank Private Insurance;
- (3) remain in Medibank by paying the levy, and pay an additional premium to a private health insurance fund for hospital cover only; or
- (4) opt out of Medibank altogether and take out approved private medical and hospital insurance with a private health insurance fund.

Commonwealth Serum Laboratories Commission

The activities of this Commission are described on pages 809-10.

National Health and Medical Research Council

The activities of this Council are described on pages 808-9.

Commonwealth Department of Veterans' Affairs

The activities of this Department are described on pages 842-3.

Commonwealth Department of Social Security

The activities of this Department are described on pages 828-41.

Victorian Government

Victorian Department of Health

The Victorian *Health Act* 1943 established the Victorian Department of Health consisting of the Minister of Health, a Permanent Head and Secretary to the Department, a Chief Health Officer, and other officers necessary for the purpose of promoting the health of Victorians.

The Department of Health consists of the General Health, Maternal and Child Welfare, Tuberculosis, Mental Hygiene, and Alcoholics and Drug-Dependent Persons Services Branches. The latter two branches are the responsibility of the Mental Health Authority, while the former three branches are each under the control of a medical specialist and an administrator, all of whom are responsible to the Chief Health Officer.

Within the sphere of the Department of Health are the Hospitals and Charities Commission, the Mental Health Authority, and the Commission of Public Health. Each of these bodies is set up under a different Act of the Victorian Parliament, and each has differing relationships with the Minister and Permanent Head of the Department of Health.

Responsibility for the health of the community is vested in the Minister of Health, whose principal activities are divided among:

- (1) Public health functions (administered by the Department of Health);
- (2) support and surveillance of State subsidised institutions for the care of the physically sick (administered by the Hospitals and Charities Commission); and
- (3) care of the mentally sick and the intellectually retarded (administered by the Mental Health Authority through the Mental Hygiene Branch of the Department of Health).

The Minister of Health is assisted by a central administrative branch containing a secretariat assisted by its various service sections. In addition, the Minister of Health is supported by other statutory bodies, various advisory, regulatory and functional boards, councils, and committees, as well as several voluntary agencies. His power to appoint consultative councils of experts to advise

him on special problems concerning public health has been exercised on occasion. This procedure has been followed in matters relating to road accident mortality, poliomyelitis, quarantinable diseases, maternal and perinatal mortality, and anaesthetic deaths.

Commission of Public Health

Subsequent to the separation in 1851 of the Port Phillip District from New South Wales, and the advent of the gold rushes, new demands for health, hygiene, and sanitation led to the passing of Victoria's first Public Health Act in 1854. The Act set up a Central Board of Health, which the *Health Act* 1919 replaced with a Commission of Public Health. Although the Commission is under the administration of the Chief Health Officer (who is also the Chairman of the Commission), it is directly responsible to the Minister of Health.

The function of the Commission is to promote and carry out research, investigations, and inquiries concerning public health, environmental aspects, and the prevention or treatment of diseases, and it is responsible for publishing reports, information, and advice in relation to these matters.

Currently the Commission is mainly concerned with considering recommendations put before it by the full-time executive staff of the General Health Branch of the Department of Health. It acts as a body of review which can defer or veto Departmental proposals. This enables the seven members, if they so desire, to examine local opinion before reaching decisions, thus providing a community link in decisions which will have a local impact. The open discussion of Commission meetings in the presence of representatives of the media helps to keep the public informed of the Commission's work.

Functional administration is decentralised in accordance with the *Health Act* 1958, by placing the primary preventative health role with municipal councils.

Hospitals and Charities Commission

The *Hospitals and Charities Act* 1948 set up a Hospitals and Charities Commission consisting of three full-time commissioners, a secretary, and administrative staff. The Commission is directly responsible to the Minister of Health.

The Hospitals and Charities Act provides for the registration of "institutions" and "benevolent societies" as defined in the Act. At 30 June 1976, the Commission had on its register 1,918 institutions and societies, which included hospitals, hospitals for the aged, hostels for the aged, community health centres, ambulance services, bush nursing centres, kindergartens, crèches, children's homes, benevolent homes and hostels, various philanthropic organisations, and organisations for the welfare of boys and girls. The main requirements for registration are suitable objectives and constitution, and if not incorporated under any Act of the Victorian Parliament, to appoint personal trustees to be responsible for the accumulated assets, etc., of the organisation.

Registration makes such organisations eligible to share in the Hospitals and Charities Fund through either capital and/or maintenance subsidies. The great proportion of financial assistance is allocated to hospitals and hospitals for the aged. The availability of funds and the purpose for which they are to be used is a contributing factor in the awarding of grants. The Commission maintains close scrutiny over hospital budgets. Each institution is required to submit for Commission approval budgets covering the succeeding year's operations.

The cost of operating the public hospital system has increased substantially over time. The average cost per bed per day was \$16.40 in 1966, compared with \$92.73 in 1976. In the eleven months of 1975-76 in which the Hospitals Cost Sharing Agreement has operated, total maintenance grants by the Commonwealth and Victorian Governments amounted to \$327.4m. Patient fees contributed \$39.7m. The total maintenance payments made by hospitals and institutions under the Medibank agreement amounted to \$381.6m during the eleven months period.

The Commission exercises control of State funds for capital works, where Commission approval is required at all stages of a building project from the original narrative, through the preliminary sketches to documentation, tendering, and supervision of the project. Capital expenditure undertaken was \$11.7m in 1966, compared with \$58.9m in 1976. During 1975-76, the Commission distributed a gross amount of \$26.1m from loan funds for new buildings, additions or remodelling projects, furnishings and equipment for hospitals, institutions, and ambulance services. In 1976-77, \$25m has been allocated to Victoria by the Commonwealth Government through the Hospitals Development Programme.

One of the most important functions of the Commission is to co-ordinate hospital and institutional activities, and it has the power to inquire into the administration of institutions and societies. It is the authority responsible for determining the site and extent of new hospital construction.

The Commission maintains an Equipment Section, whose activities include the assessment and recommendation for approval of all major items of furniture, furnishings, and medical equipment purchases by hospitals and institutions under its control. The cost of equipment approved in the year ended 30 June 1976 rose to a record expenditure of \$7m, with corresponding government grants of slightly more than \$4m. The increasing complexity of equipment available, and the introduction of new techniques in fields such as radiology, nuclear medicine, pathology, and coronary and intensive care have been largely responsible for the markedly increasing cost of equipment requested.

The Commission promotes collective buying of standard equipment, furnishings, and supplies through the Victorian Hospitals' Association, which acts as a central purchasing organisation for Victorian hospitals, being a non-profit company of which the hospitals themselves are the shareholders. Previously, the Commission had offered an inducement of a 15 per cent subsidy upon collective purchases made by hospitals from the Association. However, from 1 July 1976, the subsidy on all collective buying items, except purchases by group laundries and central linen services, was discontinued. The Association operates as an active purchasing organisation handling all types of equipment, drugs, and commodities generally used by hospitals. Total sales by the Victorian Hospitals' Association in 1975-76 amounted to \$17.1m.

The Commission has various responsibilities for nursing in Victoria. It decides, in consultation with the Victorian Nursing Council, whether any particular hospital will be made available for use as a training school in any branch of nursing; determines the establishment of nursing staff for hospitals; encourages prospective nurses to improve their general education before commencing training (through the provision of bursaries); maintains a continuous nurse recruitment programme throughout Victoria; produces publicity material, including films on nursing; offers scholarships for diploma courses in the nursing field conducted by the College of Nursing, Australia, or any college of advanced education; directs a staff of nurses to relieve matrons in country hospitals when they are on leave and assists when urgent shortages of nursing staff occur; and helps generally in nursing matters in hospitals and community health services.

Hospital regional planning, 1962; Hospital architecture, 1966; Charities in Victoria, 1968; Rationalised medical services, 1971

Mental Health Authority

The functions of the Mental Health Authority, defined in the *Mental Health Act 1959* and subsequent legislation, are to formulate, control, and direct general policy and administration with respect to the treatment and prevention of mental illness, intellectual defectiveness, and alcoholism and drug dependence.

When the Authority was established in 1950, there were only two early treatment units (the Receiving Houses at Royal Park and Ballarat), ten long-term mental hospitals, six intellectual deficiency colonies, five day training centres for

the mentally retarded, and four outpatients clinics. The medical establishment of the entire Department of Health then consisted of 67 positions, of which only 38 were occupied. There were only eight social workers, seven psychologists, and five untrained occupational therapists. The nursing staff, the largest single component, consisted of 1,411 members which was 350 under the approved establishment.

During the twenty-six years of its existence the Authority has embarked on the development of several early treatment units, some built in areas without previous psychiatric facilities (Dandenong, Shepparton, Bendigo, and Traralgon), and some established as part of existing mental hospitals (Beechworth, Larundel, Mont Park, Plenty, and Warrnambool). Early treatment centres are now being built at Geelong and Footscray in close co-operation with the respective regional general hospitals. Simultaneously, the overcrowded long-term mental hospitals have been upgraded by reducing the number of beds and building new modern wards. The number of outpatients clinics has increased to forty-four. Child psychiatric services are also being developed and it is planned to provide an adequate child psychiatric team in each region of Victoria. Accordingly, the Authority, in conjunction with the Austin Hospital, is providing a two year training course in child psychiatry, which will lead to the accreditation of doctors by the Australian and New Zealand College of Psychiatrists.

The Authority has developed a community mental health programme, described in the section on psychiatric services (see pages 777-9). In the area of mental retardation a specialised assessment centre has been set up at the St Nicholas Hospital, a new training centre established at Colac, and the number of day training centres has increased from five to sixty-two. A new Alcoholics and Drug Dependent Persons Services Branch has been established.

Altogether, the professional staff of the Mental Hygiene Branch of the Department of Health has reached 245 medical practitioners (of whom 121 are specialists), 43 psychologists, 64 social workers, 63 occupational therapists, 1,135 psychiatric nurses, 489 student nurses, and 40 pharmacists.

Another specific function of the Authority is research and investigation into the causation and treatment of mental illness and postgraduate training of staff. For these purposes, an Institute of Mental Health Research and Postgraduate Training has been established (see page 811), and the teaching functions of this unit are carried out in co-operation with the Department of Psychiatry at the University of Melbourne. The Authority also sponsors a community mental health education programme.

Local government authorities

Local government councils are authorised to appoint such medical officers of health and health inspectors as are necessary, and as directed by the Commission of Public Health. These officers are required to be kept informed about the public health and sanitary circumstances of their municipal district, to make inspections and inquiries for that purpose, and to report to their councils on any health matters which should be considered.

Since the 210 medical officers of health in Victoria are only part-time employees of the various councils, most of the councils only assess proposals put forward for improved health facilities, and are rarely in a position to survey the total health needs of their municipalities. This task becomes the function of the municipal health inspectors, who are generally full-time employees of municipalities. Many large municipalities employ several health inspectors, while some of the less populated municipalities share their services.

GOVERNMENT HEALTH BENEFITS

Hospital benefits arrangements

The Victorian Government has entered into a cost-sharing Hospitals Agreement with the Commonwealth Government. Under this Agreement,

patients in receipt of hospital treatment fall into either the "hospital" or "private patient" categories.

"Hospital patients" (levy payers, eligible pensioners, and low income earners) are entitled to standard ward accommodation (or, where medically necessary, treatment in intermediate or private wards) in recognised (public) hospitals, medical treatment from a doctor appointed by the hospital, and outpatient treatment by the hospital without any direct charges. The Commonwealth Government meets 50 per cent of the net operating costs of recognised hospitals through monthly advances to the Victorian Government.

"Private patients", on the other hand, are accommodated in the intermediate or private wards of a recognised hospital or a private hospital.

These services are financed in three ways. First, an amount of \$16 per day is paid direct to the hospital if the hospitalisation is in a private hospital. Second, hospitalisation in recognised hospitals is also paid for through the above-mentioned advances to the Victorian Government. Third, recognised hospital fees were increased on 1 October 1976 to \$40 per day for intermediate ward accommodation and \$60 per day for private ward accommodation. Registered hospital benefit funds offer benefits which cover these intermediate and private ward charges. Supplementary insurance is available from most of the organisations to assist in offsetting the generally higher accommodation charges in private hospitals.

The following table shows the hospital insurance benefits available at 1 October 1976:

VICTORIA—HOSPITAL INSURANCE BENEFITS, 1 OCTOBER 1976
(\$)

Hospital type	Ward type	Medibank hospital payment	Hospital fund benefit	
			Basic	Supplementary
Recognised	Standard			
	Intermediate		40.00	
	Private		40.00	20.00
Private	Semi-private	16.00	40.00	{ 30.00, 35.00,
	Private	16.00	40.00	{ or 40.00

Medical benefits arrangements

Since 1 October 1976 all persons are covered against medical costs through either Medibank or the registered health benefits organisations (including Medibank Private).

Health insurance levy contributors are entitled to "basic" medical cover from Medibank which includes benefits in accordance with the general principle that the benefit for each service should be equal to 85 per cent of the schedule fee or the schedule fee less \$5, whichever is the greater. This also covers optometrical consultation benefits and benefits for medical services performed by approved dentists and dental surgeons in recognised hospitals.

Registered health benefits organisations are now offering the same "basic" medical cover as that provided by Medibank. By payment of an additional contribution persons may insure with most registered organisations for the 15 per cent "gap" (\$5) between the schedule fee and the respective benefit and/or for ancillary and allied health services such as physiotherapy, spectacles, ambulance, and chiropractic treatment.

Nursing home benefits

From 1 October 1976 the rate of benefit for all patients in participating nursing homes requiring ordinary nursing home care has been \$3.50 per day and the rate of supplementary benefit has been \$3.00 per day for patients in need of, and who received, intensive nursing home care. An additional benefit of

up to \$9.15 per day has also been payable to all persons from either the Commonwealth Government or the registered health benefits organisations.

Arrangements also provide for a statutory patient contribution towards the cost of nursing home accommodation of at least \$5.90 per day (at 4 June 1976), control by the Commonwealth Government over the admission of patients, and the approval of fees charged by participating nursing homes.

As a condition of approval under the National Health Act, participating nursing homes are not permitted to charge fees in excess of those determined by the Commonwealth Department of Health. The control of nursing home fees by the Department is designed to ensure that the fees for such nursing homes are not increased beyond the level justified by rises in operating costs. The fixing of fees does not apply for nursing homes operated by the Victorian Government because the fee charging policies of such nursing homes are considered to be the responsibility of the Victorian Government.

Under the current arrangements, prior approval for the admission of a patient to a participating nursing home must be obtained from the Commonwealth Department of Health. In addition, the National Health Act makes specific provisions under which applications for approval of premises or extension of existing approved premises require Departmental approval.

The introduction of the Nursing Homes Assistance Act on 1 January 1975 provided for a deficit financing scheme for eligible organisations operating religious and charitable type nursing homes. Instead of claiming the previously mentioned nursing home benefits on behalf of their patients, nursing homes participating in this scheme submit budgets for approval, and their approved operating deficits are financed by the Commonwealth Government. Patients in these nursing homes are required to contribute towards the cost of their accommodation; this is set at a level which allows standard rate single pensioners in receipt of supplementary assistance to retain approximately \$5 for their personal needs. Thus the patient contribution at 4 June 1976 was \$41.25 per week. This may be waived or reduced in cases of financial hardship.

The following table shows particulars of nursing home benefits in Victoria for the years 1973-74 to 1975-76:

VICTORIA—NURSING HOME BENEFITS			
Particulars	1973-74	1974-75	1975-76
	number	number	number
Beneficiaries of—			
Ordinary benefits	112,194	114,552	96,520
Supplementary benefits	74,204	80,354	69,897
Additional benefits	90,590	92,619	75,898
Total	276,988	287,525	242,315
	\$'000	\$'000	\$'000
Commonwealth Government benefits paid—			
Under National Health Act—			
Ordinary benefits	11,452	10,724	9,438
Supplementary benefits	6,116	6,515	6,022
Additional benefits	7,955	16,725	17,732
Under Nursing Homes Assistance Act	(a)	2,667	9,827
Total	25,523	36,631	43,019
Private health insurance funds—			
Additional benefits paid	1,859	2,882	3,963
Total benefits paid	27,382	39,513	46,982

(a) This deficit financing scheme commenced on 1 January 1975.

Domiciliary nursing care benefits

A domiciliary nursing care benefit was introduced from 1 March 1973 by the Commonwealth Government to help meet the cost of home nursing and other professional care for aged people who are cared for in their own homes.

A person who provides continuous care for a patient in a private home may be eligible to receive the benefit of \$2 per day, provided the home is the usual residence of both the person and the patient. Since 9 April 1976 the benefit has also been paid to people living in an aged persons complex where the complex has no nursing home or hostel attached. (Alternatively, the complex may contain a hostel provided no nursing staff are employed.) Patients must be at least 65 years of age and must have an official certificate from their doctor stating that because of infirmity, illness, or incapacity they have a continuing need for nursing care by a registered nurse and they must, in fact, be receiving care from a registered nurse on a regular basis involving multiple visits each week. The benefit is not subject to a means test and is not considered as taxable income.

The Commonwealth Department of Health maintains a liaison with interested organisations such as the Royal District Nursing Service. In this way a feedback of information is obtained to help the Department review the benefit.

The following table shows particulars of domiciliary nursing care benefits in Victoria for the years 1973-74 to 1975-76:

VICTORIA—DOMICILIARY NURSING CARE BENEFITS			
Particulars	1973-74	1974-75	1975-76
Number of beneficiaries (a)	2,126	2,249	2,411
Benefits paid (\$'000)	1,537	1,725	1,872

(a) At the end of the financial year.

Pharmaceutical benefits

The National Pharmaceutical Benefits Scheme was introduced in 1950, along with a restricted free list of life saving and disease preventing drugs. In 1951, an additional comprehensive range of medicines was provided free to pensioners. The Scheme, considerably expanded in 1960, introduced a patient contribution fee of 50 cents for prescriptions written for the general public. This contribution was increased to \$1.00 in 1971, \$1.50 in 1975, and \$2.00 in 1976. Under the Subsidised Health Benefits Plan, discontinued from 1 March 1976, beneficiaries paid only half of the patient contribution, with pensioners and their dependants receiving these prescriptions free of charge.

The drugs and medicinal preparations available as pharmaceutical benefits are determined by the Commonwealth Minister of Health on the advice of the Commonwealth Pharmaceutical Benefits Advisory Committee. Pharmaceutical benefits are supplied by approved pharmaceutical chemists on medical practitioners' prescriptions. In regions with no approved chemist, a medical practitioner may be approved as supplier. The provision under the National Health Act to approve hospitals as pharmaceutical suppliers was incorporated into the agreement relating to the provision of hospital services which commenced on 1 August 1975.

The following table shows particulars of pharmaceutical benefits in Victoria for the years 1972-73 to 1974-75:

VICTORIA—PHARMACEUTICAL BENEFITS			
Particulars	1972-73	1973-74	1974-75
Prescriptions—			
Number ('000)	19,967	23,426	25,927
Per head of population	5.6	6.5	7.1
Prescription cost (\$'000)—			
Commonwealth Government contribution	45,100	58,791	68,116
Patients' contribution	13,737	16,665	18,568
Total	58,837	75,456	86,684

Visiting optometrists arrangements

As part of the optometrical consultation benefits arrangements, participating optometrists must undertake to charge "general" patients no more than the schedule fee and accept benefits as full settlement for services rendered to "special" patients.

The Commonwealth Government recognised that optometrists who visited isolated areas would be reluctant to enter into such an undertaking as it would preclude them from recovering the extra costs involved in making these visits.

Consequently, the Commonwealth Government provides special assistance to these optometrists in the form of per capita grants directly related to the number of patients seen in these isolated areas. This assistance is in addition to the optometrical consultation benefits.

Health Programme Grants Scheme

There are a number of areas of health care which are outside the fee-for-service benefits arrangements. These include medical services provided on other than a fee-for-service basis and the provision of ancillary and allied health services.

Financial support is provided for certain of these areas of health care through the Health Programme Grants Scheme. Approval is required for both the organisations providing the health services and the actual health services provided. In general, the organisation has to be of a non-profit making nature.

Previously, personal health services conducted by employers for employees were eligible to be financed under this scheme. However, this facility ceased from 1 October 1976.

Primarily the type of health service which attracts a grant is one where medical care is provided by salaried or sessionally paid doctors who may or may not be supported by allied health professionals. However, a wide range of other services are considered, such as multiphasic diagnostic screening, contract medical services, and optometrical services.

There are various arrangements by which services provided by Health Programme Grants Scheme organisations are financed. Depending on the type of service and whether the patient is covered with Medibank, Medibank Private, or another private health fund, payment will be made by either a health programme grant, a combination of a health programme grant and patient contribution, on a fee-for-service basis, or bulk billing Medibank (standard or private).

The Commonwealth Minister for Health is empowered under the Act to authorise the payment of a health programme grant equal to the cost of providing an approved health service (including reasonable management expenses) or such proportion of the cost as he determines from time to time.

The Commonwealth Government has a responsibility to ensure not only that the type of health services provided and the manner in which they are provided are appropriate for the people using the service, but also that the public funds are expended efficiently and effectively. Accordingly, it is necessary to monitor the conditions and nature of payments.

Lord Mayor's Fund

The Lord Mayor's Fund was inaugurated by the Lord Mayor of Melbourne in 1923, with the object of rationalising the collection and distribution of voluntary contributions to support the hospitals and charities of Melbourne.

There are two methods of operation: the Hospitals and Charities Sunday Committee and the Lord Mayor's Fund. The former raises its funds from an annual one day appeal to parishioners on the fourth Sunday in October by means of specially printed offertory envelopes supplemented by grants from

church budgets. The Lord Mayor's Fund does not employ collectors nor does it pay commissions, but presents its appeal to the public directly by advertising, personal correspondence, and by voluntary speakers addressing groups.

The following table shows the receipts of the Hospitals and Charities Sunday Appeal and the Lord Mayor's Fund for the years 1971-72 to 1975-76:

VICTORIA—HOSPITALS AND CHARITIES SUNDAY APPEAL
AND LORD MAYOR'S FUND: RECEIPTS
(\$'000)

Year	Hospitals and Charities Sunday Appeal	Lord Mayor's Fund	Total
1971-72	47	528	575
1972-73	43	560	603
1973-74	45	564	609
1974-75	48	696	744
1975-76	49	535	584

MEDICAL TRAINING AND MANPOWER

Training of doctors

Undergraduate training

Medical undergraduate training in Victoria is carried out by the University of Melbourne and Monash University. The Melbourne Medical School began in 1862 and now admits 220 students into the first year of the course, and 250 students into the second year. This enables an entry into second year of students who have a science or dental science degree or part thereof. The Monash Medical School admits 160 students into the first year of the course, and into the second and the third years allows for a lateral entry of suitably qualified students to replace wastage. In both universities the pre-clinical course lasts three years, followed by three years of clinical instruction. After six years there is a qualifying examination which, if passed, confers on the student the degrees of MB, BS. The major hospitals where the University of Melbourne sends its undergraduates are the Royal Melbourne Hospital, St Vincent's Hospital, Austin Hospital, Repatriation General Hospital, Royal Children's Hospital, Royal Women's Hospital, Fairfield Hospital, and hospitals under the control of the Mental Hygiene Authority. Monash University students are trained at the Alfred Hospital, Prince Henry's Hospital, Queen Victoria Memorial Hospital, Geelong Hospital, Fairfield Hospital, and hospitals under the control of the Mental Hygiene Authority.

The Medical Board of Victoria grants provisional registration to new graduates who, after one year's experience as interns, are registered as legally qualified medical practitioners. The aim of both of the university medical schools is to produce a generalist who with further training may become a general practitioner, physician, surgeon, obstetrician, paediatrician, psychiatrist, or other specialist.

Registration procedure

The *Medical Practitioners Act 1970* provides for full registration as a legally qualified medical practitioner in Victoria to be granted to those with a degree or diploma certifying their ability to practise medicine or surgery from a recognised school or university in the Australian States, New Zealand, the United Kingdom, or the Republic of Ireland, providing their qualification is obtained after at least five years of study in one of these countries. Those seeking registration must present the required documents and appear personally before the Medical Registration Board.

Temporary registration may be granted to a practitioner who holds a medical qualification not obtained in one of the above mentioned countries and proposes to be in Victoria for some purpose connected with teaching, research, or post-

graduate study in medicine or surgery, upon application by the governing body of a teaching or research institution. This certificate is for an initial period of not more than two years, and may be renewed for a further two years, but does not give any right to full registration.

Registration of graduates holding qualifications from countries other than the above mentioned may be obtained by complying with one of the following conditions:

- (1) Completing the final three years of an Australian university medical course;
- (2) satisfying the Medical Board of Victoria that they possess medical or surgical knowledge, experience, and skill which are of international standing or would have special value to Victoria; or
- (3) satisfying the Foreign Practitioners' Qualifications Committee that they are fit and proper persons to be registered as legally qualified practitioners.

Postgraduate training

Vocational training of medical graduates towards specialisation is primarily controlled by the Royal Clinical Colleges. Boards of Graduate Studies at the various hospitals previously mentioned, together with the Victorian Medical Postgraduate Foundation, assist in this programme. Each speciality has its own college, that is, the general practitioners have the Royal Australian College of General Practitioners, the physicians the Royal Australasian College of Physicians, the surgeons the Royal Australasian College of Surgeons, and the obstetricians the Royal College of Obstetricians and Gynaecologists. These are the "Royal Clinical Colleges". There are also the Colleges of Pathologists, Radiologists, Psychiatrists, and others.

Each of these colleges is an Australian body which conducts its own examinations for membership and stipulates the criteria required for the training necessary before examination can be undertaken and, in most instances, the post-examination training needed before specialist status can be achieved. In all, this takes between five and six years after the intern year.

The Graduate Board of Studies at each hospital provides vocational training in each speciality, given by the specialist staff free of charge to the trainee. This is apart from the patient care that the trainee is giving to the patients of the hospital which pays him for this service.

The Victorian Medical Postgraduate Committee arranges continuing education and conducts refresher courses for all specialists. These courses are conducted both in the Melbourne metropolitan area and in the country. Particular emphasis is placed on the continuing education of country medical practitioners. The universities have postgraduate degrees which they offer to medical graduates. These in the main are not obtained by course work but generally are achieved by thesis. Clinical academics also take part in training programmes arranged by Boards of Graduate Studies.

Specialist status

When a specialist qualification is granted by a college and the appropriate experience is gained, the recipient is then registered as a specialist either by the Medical Board of Victoria, or with the Commonwealth Department of Social Security. Registration as a specialist was introduced at the Commonwealth level as part of the differential fee rebate scheme. This does not provide at present for specialist recognition of general practice. However, it is the aim of the Royal College of General Practitioners to achieve such recognition.

Having received recognition as a generalist or a specialist, there is at present no provision for a compulsory review of this recognition from time to time. Several schemes are being investigated by all the colleges, since it is recognised that some system of periodical review of the competence of medical practitioners is necessary and desirable.

Supply of doctors

The number of school leavers entering medicine in Victoria is controlled by strict quota systems. The numbers are determined by government policy after consultation with the universities. It is very difficult to arrive at a suitable number since the optimum number of practising doctors per 1,000 persons varies from country to country. It takes more than ten years to produce a medical specialist, so that the entry into medicine must be equated with the projected population in ten years time. In Australia the present ratio is one doctor per 711 persons, and the expected ratio by 1991 is one doctor per 484 persons.

It is more difficult to regulate the number of specialists trained. At present the distribution of graduates in the specialities is influenced by available training positions, college requirements, and government requirements for specialist registration. There is a clear need to regulate the number of graduates who commence training in any speciality so that the areas of need are filled.

Whereas undergraduate teaching programmes are financed by the Commonwealth Government through the Australian Universities Commission, the post-graduate education is self-supporting, with no direct government assistance to colleges.

The following table shows the number of medical practitioners registered in Victoria for the year 1975-76:

VICTORIA—MEDICAL PRACTITIONERS REGISTERED, 1975-76

Type of activity	Metropolitan	Country	Total
Private practice—			
General practitioners only	1,264	461	1,725
Specialists only	973	163	1,136
Both general practitioners and specialists	137	59	196
Total private practice	2,374	683	3,057
Salaried officers—			
Hospitals	1,280	120	1,400
Government departments	325	26	351
Industry and business	32	1	33
Research or teaching	196	2	198
Other activities	18	1	19
Total salaried	1,851	150	2,001
Activity unknown	371	57	428
Total practising	4,596	890	5,486
Not practising in Victoria—			
Retired			236
Overseas			583
Interstate			468
Total renewed registrations			6,773

Hospitals in medical education, 1967; Melbourne Medical Postgraduate Committee, 1967; Medical education: second medical school, 1972

Nursing

The nurse is one of the most important persons in the health care system. The role and scope of the profession is diverse and varied. The original and still uniquely nursing activity is providing physical and psychological care to prevent or alleviate discomfort caused by illness. Despite the accepted practice that the nurse occupies a complementary role to the doctor and must not diagnose or prescribe treatment, it is often inevitable that she does, by virtue of her constant attendance with the hospitalised patient. In remote areas where there are few doctors,

the nurse is continually making on-the-spot diagnoses and prescribing treatment.

In addition to providing direct nursing care, nurses commonly perform numerous other activities, the most important of which are administration and teaching.

By far the largest employers of all classes of nursing personnel are hospitals. About 40 per cent of practising registered general nurses work part-time and on average from three to four days per week. Many hospitals depend to some extent on augmenting their staff with agency nurses. This facility is advantageous when short-term unexpected absences need to be covered.

Outside of hospitals, the growing demand for community nursing includes the following areas: occupational health nursing, professional rooms—general and specialist medical practice, health services—Victorian Department of Health and educational services, district nursing services, maternal and child health centres, Aboriginal health and welfare, mental health, community nursing, community health centres, and other community services (e.g., Red Cross, family planning services).

Nursing practice and education are supervised by the Victorian Nursing Council, the statutory nursing body constituted under the *Nurses Act 1958*. Although the Council consists mainly of nurses from various nursing interests, provision is made also for members from legal, medical, hospital, and general education fields. The Council is particularly concerned with standards of courses, teaching personnel, examination, and training school.

Every person practising nursing for a fee or reward is required to be registered under the Nurses Act, and to hold a current annual practising certificate issued by the Victorian Nursing Council. Registers of qualified nurses and a roll of current certificate holders are maintained by the Council.

At 30 June 1976, there were 36 hospital-based courses, five technical colleges, and nine training schools for basic nurse training, and 97 institutions participating with in-service training of all nursing branches. Tertiary level nursing education is available at the College of Nursing, Australia, in nursing administration, education, community health nursing, hospital nursing, and unit management.

To induce nurses who have been absent from nursing to return to the profession, some hospitals and health agencies offer orientation and refresher courses. In-service nursing courses in various specialist areas such as clinical, intensive care, operating theatre, audio-thoracic, geriatric, oncological, and communicable diseases nursing are conducted to ensure a sufficient supply of skilled staff in these fields.

The increasing involvement of nurses in discussions and decision-making on nursing, as well as other health and education matters, is reflected in their membership of many interdisciplinary bodies such as National Health and Medical Research Council Committees, Victoria Institute of Colleges, Committee on Overseas Professional Qualifications, and hospital boards of management.

The following table shows details of nurses in Victoria for the year 1974-75:

VICTORIA—NURSES, 1974-75

Courses	Approved training institutions (a)	Students in training	Training completed	Registrations approved (at 30 June 1975)	Annual practising certificates (year ended 31 December 1974) (b)
Basic courses—					
General nurse	35	5,016	1,531	(c)2,797	27,600
Psychiatric nurse	10	350	92	134	1,615
Mental deficiency nurse	5	67	10	21	
Mothercraft nurse	6	243	127	205	1,770
Nursing aide	59	1,187	896	1,586	9,250
Total	115	6,863	2,656	4,743	40,235



The library (left) and the sciences building, which accommodates the Schools of Sciences, Social Sciences, Humanities, and Business Studies, at Deakin University.
Deakin University



The Jolly Jumbuck mediamobile. This unit provides children with access to literature and is equipped as a mobile theatre, featuring films, puppet plays, and live programmes.
Library Council of Victoria



An Aboriginal dancer portrays his art at the South Brunswick Primary School.
Commonwealth Department of Aboriginal Affairs



Children experience group day-care at the Knox Day-Care Centre.

Department of Health

The administrative block at the Kew Children's Cottages accommodates 50 members of staff. The building was erected in 1973 at a cost of \$450,000.

Mental Health Authority



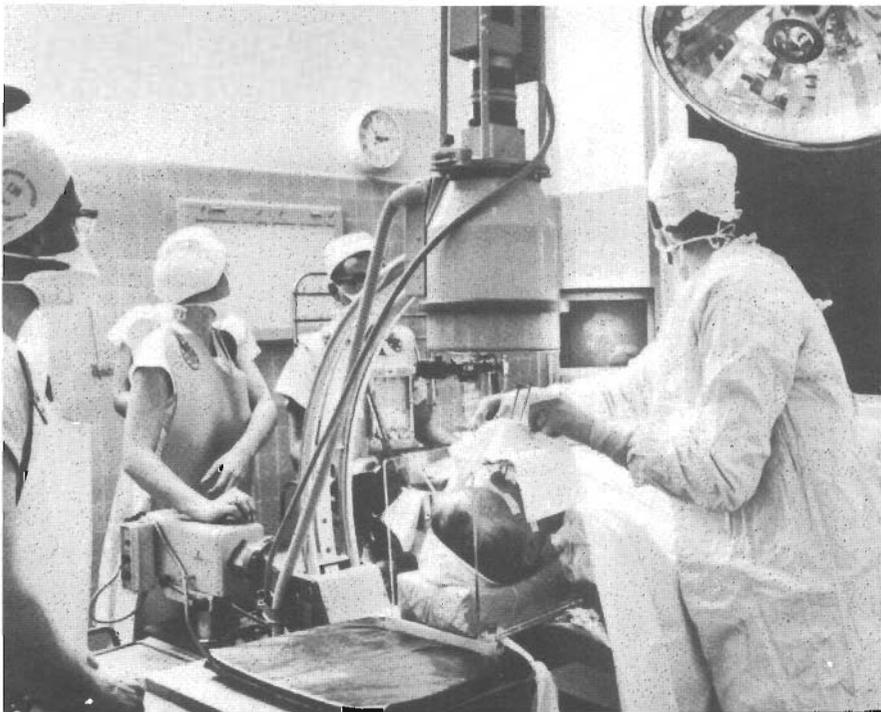


Weaving, one of the many creative activities provided in clubs for senior citizens.

Department of Health

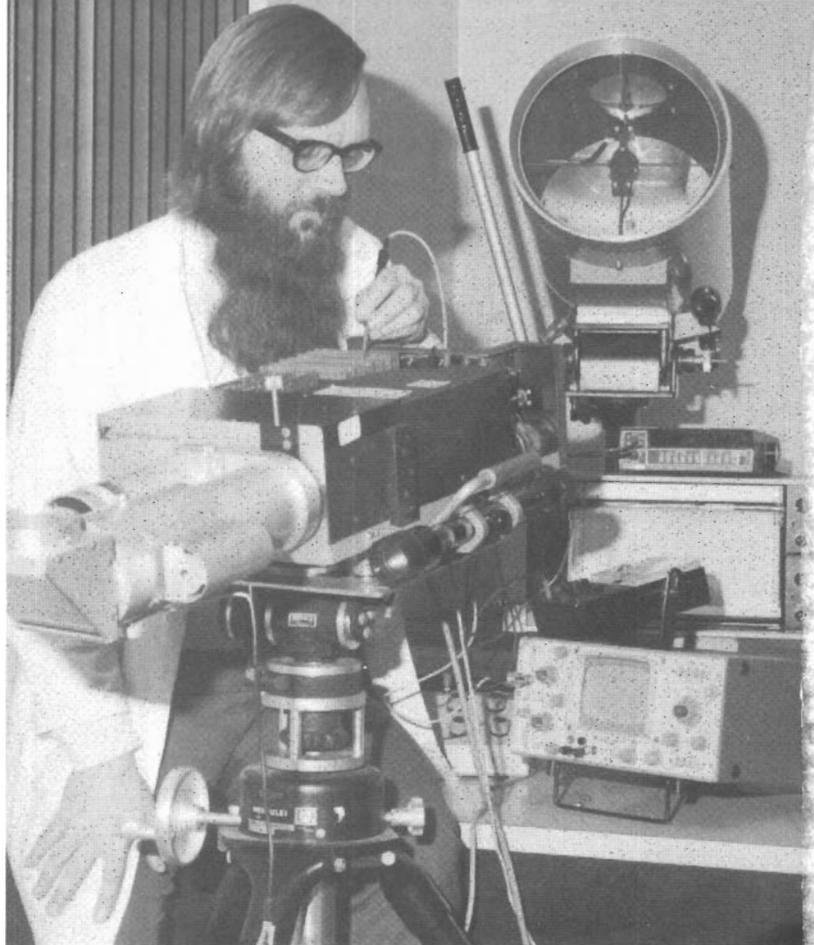
A scene in an operating theatre at the Alfred Hospital, showing the use of an X-ray image intensifier with associated television screen.

Hospitals and Charities Commission



The Barringer Correlation Spectrometer, purchased by the Environment Protection Authority in 1973 for \$30,000, is now being used for remote sensing of nitrogen dioxide and sulphur dioxide in Melbourne's ambient air.

Environment Protection Authority



A mobile ambient air monitoring laboratory in use by the Environment Protection Authority. Two such vehicles were introduced in 1974 and 1975, at a cost of about \$50,000 each.

Environment Protection Authority



VICTORIA—NURSES, 1974-75—continued

Courses	Approved training institutions (a)	Students in training	Training completed	Registrations approved (at 30 June 1975)	Annual practising certificates (year ended 31 December 1974) (b)
Post-basic courses—					
Midwifery	12	591	580	1,017	..
Infant welfare	3	67	63	101	..
Gynaecological	1	15	14	11	..
Eye, ear, nose, and throat	1	14	10	14	..
Infectious diseases	1	9	..	13	..
Radiotherapeutic	1	16	13	..	..
Tuberculous disease	1	..	..	1	..
Total	20	712	680	1,157	..

(a) Some institutions conduct more than one type of training.

(b) An annual practising certificate is issued on the qualifications attained in the Basic Course.

(c) Of these, 2,342 nurses had trained in Australia, and 1,678 nurses in Victoria.

The following table shows the field of employment of employed nurses in Victoria for the year 1976:

VICTORIA—EMPLOYED NURSES, 1976

Field of employment	Full-time	Part-time	Total
Hospital (excluding geriatric)	10,226	5,913	16,139
Geriatric home or hospital	2,245	2,859	5,104
Community and public health	878	292	1,170
Doctor or dental clinic	406	365	771
District nursing	384	235	619
Nursing education	391	73	464
Occupational health	248	67	315
Children's homes	116	40	156
School nurse	65	31	96
School medical	32	9	41
Other nursing	480	696	1,176
Total	15,471	10,580	26,051

Nursing training, 1962; Nursing recruitment, 1964

Paramedical manpower

The following table shows the distribution of paramedical manpower in Victoria:

VICTORIA—PARAMEDICAL MANPOWER

Category	Institute	Duration of training (years)	Number registered at 30 June 1976	Number who completed course in 1975
Dentist	University of Melbourne	5	1,490	44
Optometrist	University of Melbourne	4	239	13
Pharmacist	Victorian College of Pharmacy	3	3,984	88
Physiotherapist	Lincoln Institute	(a) 3½	1,237	23
Occupational therapist	Lincoln Institute	(a) 3½	(b) 265	43
Speech pathologist	Lincoln Institute	(c) 4	130	(d) 20
Medical records administrator	Lincoln Institute	(e) 2	88	12
Orthoptist	Lincoln Institute	(e) 2	87	5

(a) Diploma course given status of degree in 1973.

(b) Estimated full-time practising. No registration is necessary for occupational therapists in Victoria, but they may apply for membership.

(c) Diploma course given status of degree in 1972.

(d) An additional 37 completed the conversion course, i.e., from diploma to degree.

(e) Diploma course.

Paramedical services, 1969

INSTITUTIONAL HEALTH CARE

Public hospitals*Organisation*

Since their inception in 1846, Victorian public hospitals have maintained a distinctive pattern. First, they are managed by autonomous committees elected by contributors, following closely the practice applying in Britain before the introduction of the National Health Service. Second, they have received financial assistance by way of government subsidies. With rising costs, this has steadily increased in amount. Third, medical staffing has followed the former traditional British pattern of honorary service. In recent years this has been necessarily supplemented by salaried doctors employed either in university teaching departments or in diagnostic and technical therapeutic fields.

Since August 1975, honorary medical staff who had been treating public patients free of charge became paid members of the hospital staff on a fee for service, contract, or sessional basis in caring for such patients. This system of paying all medical staff in hospitals that provide treatment for the standard ward patient was brought about by the Hospitals Cost Sharing Agreement between the Commonwealth and Victorian Governments. By this Agreement both governments contracted to share equally on the net operating cost of all public hospitals in Victoria.

At present there are either standard or private patients. If an individual chooses to be a standard patient, he receives hospital care, medical treatment, etc., in a public hospital free of all charges and without a means test, but he does not have the choice of doctor. Alternatively, from 1 October 1976, a person electing to be a private patient is charged a fee of either \$40 per day or \$60 per day and has to pay all medical practitioner fees. Only rarely does the hospital fee cover the actual costs. Private patients may insure against the hospital charges and may, in addition, take a medical benefits cover to help meet the doctor's charges (see page 761).

However, where the care and treatment involves a person for whom compensation or damages are payable, the compensating authority is subject to a charge equal to the average daily bed cost of the hospital.

Outpatient and casualty services are now also provided free of charge, except that a means tested fee is charged in the case of dental services and the provision of spectacles.

Improved medical methods and more effective drugs have shortened the average patient stay in hospital, with an important effect upon the community need for acute hospital beds. In Victoria the present acute hospital bed need is assessed at approximately 4 beds per 1,000 persons as compared with 7.5 beds per 1,000 persons in 1948. The fall is significant, not only in its effect on hospital building costs to provide for an expanding population, but also in terms of cost of patient treatment.

Improved medical and hospital care have shortened bed stay, but have also increased the length of life expectancy, with a corresponding increase in the number of older people in the community. State instrumentalities, in collaboration with the hospitals and religious and charitable organisations, are endeavouring to meet the changing needs.

Specialisation and co-ordination

In earlier times, hospitals could attempt to provide all possible services to their patients but the increasing complexity of diagnostic and therapeutic services as well as rapidly increasing costs have encouraged the development of ration-

alised and co-ordinated services. The Hospitals and Charities Commission has made reference to a number of standing expert committees and consultants to advise on the implementation of such developments, e.g., on cardiac equipment, nuclear medicine, and regional dental services.

Metropolitan hospitals

Certain metropolitan hospitals are designed for special purposes (e.g., maternity, rehabilitation, paediatrics), while others serve as general hospitals in their local communities, and may also function as referral centres for the smaller hospitals and offer services in certain specialised fields of medicine.

Country hospitals

Since 1954, country hospitals have been organised on a regional basis. The smaller hospitals refer patients with more complicated conditions to the base hospitals which have more specialised staff and facilities.

There are eleven regional councils which are designed to co-ordinate activities in a region and comprise hospital, Mental Health Authority, community health centre, and ancillary service representatives. Each council has medical, nursing, and administrative advisory committees which meet regularly.

Services of pathology, pharmacy, radiology, blood banks, physiotherapy, speech therapy, audiology, and occupational therapy are being progressively established on a regional basis. Group laundries have been sited at strategic locations and each hospital has access to the services of a regional engineer.

In 1971, five sectors (each with its own board) were established with each sector combining two or three regions. Two regional co-ordinators are based at the Hospitals and Charities Commission, and with the five sector supervisors maintain continual liaison between the boards, councils, and the Commission. Projects devised and being implemented by the sector boards include nuclear medicine, integrated care of the aged, and similar schemes designed to meet the needs of a particular area.

The following table shows details of public hospitals in Victoria for the year 1975-76:

VICTORIA—PUBLIC HOSPITALS, 1975-76 (a)

Institution	Number of hospitals	Approved hospital beds	Inpatients			Outpatients (including casualties)
			Total cases treated	Daily average	Average stay (days)	
Metropolitan—						
Teaching hospitals—						
Alfred	1	536	18,717	453.5	8.9	181,135
Austin	1	466	11,044	351.2	11.6	167,369
Prince Henry's	1	409	14,058	343.3	8.9	109,653
Queen Victoria Memorial	1	512	18,230	349.7	7.0	177,257
Royal Children's	1	517	19,607	351.9	6.6	223,302
Royal Dental	1	17	7,015	20.4	1.1	221,416
Royal Melbourne	1	592	22,936	550.5	8.8	297,431
Royal Victorian Eye and Ear	1	138	7,340	96.9	4.8	92,098
Royal Women's	1	596	23,013	395.4	6.3	102,826
St Vincent's	1	517	15,269	473.6	11.4	267,284
Total teaching	10	4,300	157,229	3,386.4	7.9	1,839,771
Other special hospitals	6	579	12,952	457.7	12.9	41,329
Other general hospitals	19	2,090	84,798	1,656.5	7.2	665,503
Auxiliary hospitals	2	499	2,543	459.1	66.1	15,118
Total metropolitan	37	7,468	257,522	5,959.7	8.5	2,561,721

VICTORIA—PUBLIC HOSPITALS, 1975-76 (a)—continued

Institution	Number of hospitals	Approved hospital beds	Inpatients			Outpatients (including casualties)
			Total cases treated	Daily average	Average stay (days)	
Country—						
Base hospitals	10	2,498	76,640	1,932.4	9.2	777,717
Hospitals with daily average of less than 25 inpatients	60	1,123	27,437	680.4	9.1	65,595
Hospitals with daily average of 25 or more inpatients	40	3,020	94,071	2,264.6	8.8	449,719
Total country	110	6,641	198,148	4,877.4	9.0	1,293,031
Total Victoria	147	14,109	455,670	10,837.1	8.7	3,854,752

(a) Classified as metropolitan or country according to Hospitals and Charities Commission of Victoria definition.

Fairfield Hospital, 1961; Geelong Hospital, 1962; Royal Melbourne Hospital, 1962; Alfred Hospital, 1963; Prince Henry's Hospital, 1964; Royal Children's Hospital, 1964, 1976; History of hospitals in Victoria, 1964; St Vincent's Hospital, 1965; Dental Hospital, 1965; Austin Hospital, 1966; Queen Victoria Memorial Hospital, 1967; Royal Victorian Eye and Ear Hospital, 1968

Private hospitals and nursing homes

Most private hospitals are privately owned and administered along profitable business lines, although some hospitals may best be described as non-profit organisations with their ownership resting mainly in religious denominations.

Those acute private hospitals which are approved training schools for midwives, general nurses, and nursing aides must meet the Victorian Nursing Council's requirements. While private hospitals accommodate short-term and acutely ill patients, private nursing homes accommodate patients requiring constant nursing care for an indefinite period. Patients may be the frail aged, bed-fast, near bed-fast, or totally dependent children.

Private hospitals and nursing homes must always be staffed according to the private hospital regulations set down by the Hospitals and Charities Commission; for example, the number of qualified nursing and domestic staff to patient ratio must not be allowed to fall below a determined level.

The *Health Act* 1958 requires private hospitals and nursing homes to be registered with the Hospitals and Charities Commission. Registration is granted each year to 31 December with the annual registration fee charged according to the number of beds registered. There is a further proportionate fee when application for transfer of registration to another proprietor is submitted for approval. The registration classification for private hospitals and bush nursing hospitals is any one or combination of medical/surgical/maternity categories, whereas for nursing homes it is either medical or chronic.

Registration is granted to private hospitals or nursing homes when the premises comply with requirements and regulations as set down by the Commission and by the Health Act. Before commencement of any new works, plans and specifications must be submitted for approval by the Commission. All completed works are inspected with follow-up inspections of premises twice yearly, or more often if it is found necessary to investigate complaints. The Commission occasionally requires existing premises to be brought up to standard, and proprietors must comply with such requests.

The following table shows details of private hospitals and nursing homes in Victoria for the years 30 June 1975 and 1976:

VICTORIA—PRIVATE HOSPITALS AND NURSING HOMES (a)

Type of institution	30 June 1975		30 June 1976	
	Institutions	Beds	Institutions	Beds
Approved under <i>National Health Act 1958</i>—				
Acute hospitals—				
Metropolitan	61	3,666	61	3,794
Country	54	1,278	53	1,242
Nursing homes—				
Metropolitan	155	3,790	150	3,770
Country	38	810	40	848
Total	308	9,544	304	9,654
Approved under <i>Nursing Homes Assistance Act 1975</i>—				
Deficit financing nursing homes—				
Metropolitan	28	1,342	33	1,492
Country	2	17	2	17
Total	30	1,359	35	1,509

(a) Classified as metropolitan or country according to Hospitals and Charities Commission of Victoria definition.

Repatriation hospital and clinics

The largest of the Commonwealth Department of Veterans' Affairs institutions in Victoria is the Repatriation General Hospital at Heidelberg. The hospital is a teaching hospital for medical students affiliated with the University of Melbourne and is recognised for post-graduate training in surgery, medicine, anaesthetics, pathology, psychiatry, and radiology. Post-graduate studies are encouraged and clinical meetings and tutorials are held regularly. The hospital is registered by the Victorian Nursing Council as a training school for male and female student nurses and trainee nursing aides. At 30 June 1976 the number of staff employed full-time at the hospital was 1,389, and, during 1975-76, 7,922 patients were treated at the hospital with an average stay of 16.4 days per patient.

The other institutions conducted by the Department in Victoria are the Outpatient Clinic, St Kilda Road, Melbourne; Anzac Hostel, North Road, Brighton; Repatriation Artificial Limb and Appliance Centre, South Melbourne; Macleod Hospital, Mont Park; and Repatriation Hospital, Bundoora.

In administering the *Repatriation Act 1920-1976* and associated legislation, the Department has the responsibility for the medical care of eligible beneficiaries.

An extensive range of treatment is provided for outpatients through some 6,976 (1,776 in Victoria) general practitioners under the Department's Local Medical Officer Scheme, and at the repatriation outpatient clinics, and by specialists in the various branches of medicine who have been appointed to Departmental panels. In addition, the Local Dental Officer Scheme, involving some 3,141 (833 in Victoria) dentists throughout Australia and dental units located at Departmental institutions, provides a full range of dental services for those eligible.

Nursing home care is also provided for patients with service-related disabilities which require long-term care. For certain other beneficiaries, nursing home care is provided for chronic conditions not related to service subject to a patient contribution.

Under arrangements with State Governments, psychiatric patients requiring custodial care are admitted at Departmental expense to separate repatriation psychiatric wards administered by State authorities.

In each State of Australia and at Darwin in the Northern Territory there is a Repatriation Artificial Limb and Appliance Centre, where artificial limbs and surgical aids are provided for those eligible. Artificial limbs are supplied free of charge to all persons in the community who need them.

The Department also provides an extensive rehabilitation service for both inpatients and outpatients including physiotherapy, chiropody, speech therapy, and social worker services.

State geriatric centres

There is a continuing need for long-term nursing care for some of Victoria's aged persons, and at present the State institutions have about 3,700 beds available for this purpose. However, these institutions also provide beds for short-term admission so that patients may undergo a rehabilitative programme. This enables beds to be so used as to provide relief for families who are caring for an aged relative at home. Affiliations with a nearby, acute hospital allows access to diagnostic services and emergency treatment resources.

Historically, providing facilities for aged persons has centred on making long-term accommodation available. This concept has been the basis on which many of the State's institutions have built up long lists of persons waiting for admission. However, changing patterns in geriatric care have made waiting list figures an unrealistic factor in gaining an accurate assessment of needs.

In recent years the role of the State institutions has changed. They now serve as a focal point from which comprehensive domiciliary services have developed and they also assist in co-ordinating the activities of those other organisations which are involved in providing care for the aged.

Many aged persons are able to live safely and contentedly at home, in good health, if they have access to supportive services. The Brunswick Community Care Scheme, administered by Mount Royal, is an example of the type of service which can be provided and may serve as a prototype for similar programmes.

The State institutions are also responsible for the education and training of medical officers, paramedical staff, and nurses employed in the geriatric field—with an increasing number becoming engaged in research programmes.

District nursing services

District nursing services are conducted by four district nursing societies, some community health centres, three hospitals in the Melbourne metropolitan area, and 70 country hospitals.

The district nurses are responsible for the general nursing care of patients in their own homes, thus reducing the number who would otherwise be admitted to hospital for care.

During 1975-76, the 77 approved district nursing services employed 382 full-time and 181 part-time nurses who treated 47,967 patients and made 1,061,750 visits. An additional nine services were approved during 1975-76.

The following table shows details of district nursing services in Victoria for the year 1975-76:

VICTORIA—DISTRICT NURSING SERVICES, 1975-76

Particulars	Metropolitan	Country	Total
Organisations	5	72	77
District nurses (a)	315	158	473
Patients	29,075	18,892	47,967
Visits	601,969	459,781	1,061,750
Average visits per nurse	1,911	2,910	2,245

(a) Equivalent full-time staff numbers.

Royal District Nursing Service

The Royal District Nursing Service, founded in 1885 and named Melbourne District Nursing Society, was later incorporated under the Hospitals and Charities Act as a benevolent organisation; the name was changed to Royal District Nursing Service in 1966. The Society was formed for the purpose of bringing health care to the sick in their own homes, but as a result of social changes and the introduction of more complicated and expensive forms of hospital, medical, and surgical treatment, the services of a district nurse are now available to all persons, regardless of means. The organisation is financed by a Victorian Government grant, a Commonwealth Government subsidy, patients' fees, and donations.

The Service, by providing comprehensive assistance on a daily basis, allows patients to remain at home, thus easing the pressure on hospital beds. Care provided by the Royal District Nursing Service includes the performance of technical nursing skills and active bedside care, health education to the individual, family and/or community, and involvement with community health agencies concerned with the delivery of health care to residents within defined geographic boundaries. A programme of rehabilitation teaching for the disabled is an integral aspect of the work whose goal is the achievement of the maximum level of independence possible for the disabled person, the provision of aids for the disabled, free linen service in cases of need, and some degree of social assistance to families when immediate measures need to be taken for psycho-social or economic reasons.

The Service has established a liaison with sixteen metropolitan and peripheral hospitals and members of the nursing staff have been seconded to some community health centres. Patients and/or families are admitted to the care of the Service from hospitals, general practitioners, and other professional personnel, and may even be admitted as a direct result of the case-finding work undertaken by nursing staff. Case-finding work involves locating people in the community needing nursing care and referring patients to other paramedical staff not employed by the Service. During 1975, a physiotherapist and a social worker were added to the team, thereby extending the contribution made by the Royal District Nursing Service to the needs of individuals and families. All members of staff work closely with local municipal authorities and voluntary agencies.

The headquarters of the Service are located in St Kilda Road, Melbourne; it has nine centres placed in strategic locations throughout the Melbourne metropolitan area to minimise travelling and increase the time given to nursing in the patient's home. The nine centres are situated at Camberwell, Essendon, Footscray, Frankston, Heidelberg, Moorabbin, Caulfield, Bayswater, and Rosebud. New centres are currently being established at Collingwood, Broadmeadows, and Dandenong.

Because of the new outlook adopted by the Commonwealth and Victorian Governments towards caring for people out of hospitals, there is a growing demand on the resources of the Service. The policy in the 1970s is to provide an integrated comprehensive health care programme to keep patients at home.

Considerable emphasis is placed on preparing the nursing staff more adequately for their role in providing comprehensive care for the community, and consequently, the Service has established an education service to fulfil this responsibility. Regular sessions are conducted by both the Service's own and visiting lecturers, and teaching is undertaken with staff in the homes. Each year two post-basic courses in community nursing of sixteen weeks duration are held. The course is open to nurses from any source outside of the Royal District Nursing Service. Nursing in the community requires the qualified nurse to develop new skills, to acquire new areas of knowledge, and to be able to adapt that knowledge and skill to new areas of responsibility. This course aims to develop staff both professionally and individually, so that they are able to provide a more effective nursing service for the community.

The area served in 1976 was approximately 7,700 square kilometres and includes 54 municipalities and shires extending from Werribee to Portsea. During the year ending 30 June 1975, 24,862 patients received care and 49,448 visits were made to patients by a nursing staff of approximately 230 registered nurses.

The following table shows patients visited by the Royal District Nursing Service for the year 1975-76:

VICTORIA—ROYAL DISTRICT NURSING SERVICE:
PATIENTS VISITED, 1975-76

Age group of patients (years)	Males	Females	Total
0-19	982	1,919	2,901
20-39	594	5,468	6,062
40-64	1,971	2,601	4,572
65-79	3,015	4,939	7,954
80 and over	1,462	3,634	5,096
Total	8,024	18,561	26,585

Bush nursing services

The bush nursing services are set up primarily to alleviate human suffering in times of accident and sickness in remote areas throughout Victoria.

Bush nursing centres

In February 1911, the first nurse was located in the remote township of Beech Forest; by December of that year four centres had been established.

Each centre functions as an outpatient service; patients attend the centre, or the nurse provides care for the patients in their own homes, thus alleviating long periods of hospitalisation. Accommodation is provided at the centre for a trained nurse and usually her family. The nurse is responsible for the health and welfare of her community, with medical supervision from a distant town.

A local autonomous committee of management administers each centre, and is elected annually by contributors; the committee members act in an honorary capacity.

The finance for administration and capital works projects is funded directly to each centre by the Victorian Government through the Hospitals and Charities Commission. Commonwealth Government finance is received through the pharmaceutical benefits and home nursing subsidy schemes. To supplement these funds, the responsibility lies with each centre's committee of management to raise local finance by membership subscriptions, charging treatment fees, fund raising, and donations.

During the nine months ending 31 March 1976, 16,709 patients received treatment with 20,439 surgery visits and 13,410 home nursing visits.

Bush nursing hospitals

The first bush nursing hospital in Victoria was founded in 1923 at Cowes on Phillip Island, and by 1976 there were 39 bush nursing hospitals with a total bed capacity of 598 beds.

Eighty per cent of patients are treated for surgical, medical, and obstetric conditions in the hospitals. In the event of complications or more specialised treatment, a nearby base or city hospital provides the expertise required for medical and paramedical services.

As with the centres, each hospital is administered by an annually elected local autonomous committee of management, and in recent years each has appointed a full or part-time paid secretary. Finance is granted through the

Victorian Treasury and the Victorian Department of Health, and administered by the Council of the Bush Nursing Association. Hospitals apply annually to the Council for permission to incur capital expenditure and thereby receive a capital grant on a \$3 to \$1 basis for this expenditure. The 1975-76 capital works grant was \$846,958. During 1976, four member hospitals proceeded with projects using their own finance, and received a capital grant amounting to approximately 25 per cent of the total cost. The annual maintenance grant, totalling \$470,000 in 1975-76, is determined by the Victorian Treasurer. The Council then allocates this grant to hospitals on a needs basis, with smaller hospitals receiving more sympathetic consideration than larger ones, since larger hospitals are in a better position to organise their own finances and priorities.

Bush Nursing Association

The original role of the Bush Nursing Association was to provide through its superintendent, a nursing service which would extend to appointing staff to hospitals and centres. In recent years, the superintendent, a trained nurse, has continued to be responsible for appointing centre sisters and hospital matrons, but most local committees of management arrange for the appointment of staff to hospitals. When the local committees of management experience difficulties in maintaining adequate staff levels, the superintendent recruits staff on their behalf. Together with the honorary consultant architect, the superintendent also provides assistance in the designing of hospital extensions. This changing role has resulted in the appointment of a sessional administrator, experienced in hospital administration, to assist the council and hospitals with matters relating to finance and hospital and business administration generally.

The Bush Nursing Association is a voluntary organisation registered with the Hospitals and Charities Commission. The twenty-three member council includes twelve elected members, usually country people associated with one of the hospitals or centres, thus providing local committees of management with direct representation on the council. The remaining eleven members are nominated by various other bodies or co-opted, and are involved in some aspect of health care.

The nursing staff, employed by the Bush Nursing Association and paid centrally, totalled 168 full-time and 373 part-time nurses at 31 March 1976. The administrative and domestic staff are paid by the local hospital. At 31 March 1976, 15 full-time and 33 part-time administrative staff and 104 full-time and 204 part-time domestic staff were employed.

Further reference, 1976

Psychiatric services

The psychiatric services in Victoria are organised by the Mental Health Authority on a regional basis. The State is divided into twelve regions, and those outside the Melbourne metropolitan area correspond, with some variations, to the regional boundaries adopted by the Commonwealth Department of Environment, Housing, and Community Development. Because of the lack of a comprehensive range of facilities and services within each of the Department's eight metropolitan regions, the Mental Health Authority has combined several of them into five larger regions for operational convenience until it can conform to the Department's boundaries as the services develop.

The Mental Health Authority is working towards a situation where each region can be served by one early treatment centre with attached long-term wards for the chronically ill and psychogeriatric patients, community mental health centres, and other community facilities. Currently the Wimmera, northern Mallee, and outer-eastern Melbourne regions have very limited mental health services. In the Barwon and West Melbourne regions, early treatment centres are

being built in association with the regional general hospitals. Further development in the other regions includes expanding community facilities but reducing bed capacity of existing institutions which are too large at present and should only meet the needs of their regional populations.

Psychiatric services currently existing within Victoria comprise the following seven basic facilities. The last three facilities described are supervised by, or attached to, the nearest community mental health centre.

Community mental health centres

Community mental health centres are staffed by teams of psychiatrists, psychologists, social workers, occupational therapists, and community mental health nurses, with the object of preventing the development of psychiatric disorders which would require the patient to go to hospital. Located in shopping centres or residential areas, the centres provide professional help on a walk-in basis to those who have psychological, social, or family problems, or who find themselves in a crisis situation. At 30 June 1976 there were 19 centres in Victoria, involving 115 professional staff.

The persons attending the centres consist of psychiatric patients who can be treated on an outpatient basis, patients discharged from hospital but requiring assistance in adjusting to community life, and people who do not as yet show any established psychiatric disorder.

The activities of the centres include organisation of self-help groups, education of community leaders, detection of at-risk community groups, participation in community activities, and assistance to educational, social, religious, ethnic, and other community organisations in dealing with mental health problems.

Early treatment centres

Early treatment centres, consisting of hospital beds for acute patients, day hospitals, and outpatient clinics, provide inpatient and outpatient care for those with an established psychiatric disorder and referred by community mental health centres, general hospitals, general practitioners, or private psychiatrists. Victoria has 805 hospital beds for short-term psychiatric patients, with 71 per cent of inpatients admitted on a voluntary basis and 29 per cent under medical recommendation.

In most early treatment centres the distinction between inpatient and day-patient lies in the use of the residential facilities. Day hospitals provide care for patients not requiring hospitalisation but who will benefit from a comprehensive treatment programme which includes individual and group therapy. Outpatient clinics provide continuous specialised care, such as psychopharmacology and psychotherapy, or advise the patient's own doctor regarding the required course of treatment. They are staffed by the Authority's psychiatrists and many clinics are at country general hospitals.

Long-term hospitals

Long-term hospitals for the chronically mentally ill and psychogeriatric patients serve those persons requiring prolonged rehabilitative or inpatient care. As a result of successful advances concerning drug usage in psychiatry, the number of chronic patients has been diminishing. To some extent this is being offset by the increased longevity of the chronic patients, and the ageing of the population implies that there is likely to be a growth in the number of psychogeriatric patients.

To ensure regionalisation and continuity of patient care, early treatment wards have been set up within each of the large psychiatric hospitals throughout Victoria.

Psychiatric services for children

Psychiatric services for children in Victoria consist of one residential unit comprising 37 beds, and specialised outpatient clinics at the Travancore, Observatory, Children's Court, and the Bouverie Clinics, and at the Dandenong Psychiatric Centre. A training programme for child psychiatrists aims at increasing the number of child psychiatrists.

Psychiatric after-care hostels and half-way houses

Psychiatric after-care hostels and half-way houses are provided for ex-hospital patients not requiring further hospitalisation, but who are as yet unable to manage independently. Some patients require accommodation for a transient period, while others will require it for the rest of their lives.

Day hospitals for the chronically mentally ill

Day hospitals for the chronically mentally ill serve ex-hospital patients staying with their families or in hostels, but whose daily activities require some supervision.

Sheltered workshops

Sheltered workshops for the chronically mentally ill provide work in a non-competitive situation. Some patients attend sheltered workshops temporarily until they are able to work in the normal labour market situation. Other patients will never be able to transfer to unsheltered employment.

The following three tables show details of psychiatric services in Victoria :

VICTORIA—PSYCHIATRIC SERVICES, 1975

Establishment type	Number of establishments	Number of psychiatric beds
Resident—		
Psychiatric hospitals	16	5,309
Intellectual deficiency training centres	11	3,393
Alcoholics and drug-dependents rehabilitation centres	4	324
Psychiatric wards in hospitals (a)	17	357
Total	48	9,383
Non-resident—		
Out-patient clinics	37	..

(a) Including general, base, and private hospitals.

VICTORIA—PSYCHIATRIC INSTITUTIONS: MOVEMENT, 1975

Type of patient	Persons treated		Resident at 1 January	Admissions		First admissions		Separations	Resident at 31 December
	Number	Per 10,000		Recommended	Voluntary	To institutions	To out-patient clinics		
Psychotic	10,181	27.6	3,677	1,612	2,741	769	594	4,644	3,399
Non-psychotic	14,735	40.0	993	921	3,055	1,299	6,077	3,946	1,026
Alcoholic	3,482	9.5	847	394	2,374	433	804	2,751	866
Mentally retarded	5,190	14.1	3,425	148	1,426	47	675	1,566	3,442
Total	33,588	91.2	8,942	3,075	9,596	2,548	8,150	12,907	8,733

VICTORIA—PATIENTS UNDER PSYCHIATRIC TREATMENT

Year	Persons treated (a)		Resident at 1 January		First admissions	
	Number	Per 10,000	Number	Per 10,000	To institutions	To out-patient clinics
1971	31,484	89.9	9,086	25.9	3,196	7,667
1972	31,057	87.6	8,886	25.1	3,007	6,945
1973	32,173	89.7	8,938	24.9	3,094	7,677
1974	33,308	91.7	8,836	24.3	2,981	8,015
1975	33,588	91.2	8,942	24.3	2,548	8,150

(a) Number of individuals treated during the year on an in- and/or outpatient basis within the Mental Hygiene Branch.

Alcoholics and Drug-Dependent Persons Services Branch

The Victorian Alcoholics and Drug-Dependent Persons Services are being developed as a co-ordinated response to individual and community problems associated with the use of alcohol and other drugs. Four distinct, specialised centres, co-ordinated from a central office, provide treatment, rehabilitation, research, training, and prevention programmes. By extending and supporting previously available facilities they back-up and help to improve a broad range of services. In addition, the new services can co-ordinate the community's response to the complex problems of alcohol and drug use.

The new services have been designed to incorporate cost-effectiveness controls, need assessment, social cost-benefit analysis, and a continuing evaluation of all efforts in terms of a wide range of goals. These goals range from total or partial abstinence from drug use, through complete social and economic rehabilitation, to patient and staff satisfaction.

The treatment methods available in these services are based on a multi-disciplinary community medicine approach. Psychiatrists, doctors, nurses, social workers, and others as a team provide individual and group therapy. Family and other types of community-oriented therapy and rehabilitation is also emphasised, but appropriate drug therapy (including therapeutic agents, Antabuse, vitamins), behaviour therapy, and other types of treatment based on learning, diet, work therapy, crisis-intervention, and so on, are also used as appropriate. The management programmes provided are flexible and varied to fit the needs of the patient, rather than forcing patients into an inflexible system of operation.

Alcohol and drug use problems are increasing in size and range, and clients come from all social, educational, and occupational backgrounds and thus present a wide range of individual and social problems.

The Alcoholics and Drug-Dependent Persons Services is a Branch of the Victorian Department of Health, and is administered by the Mental Health Authority.

Tuberculosis Branch

The Tuberculosis Branch of the Victorian Department of Health is responsible for providing a free and comprehensive service for the prevention, early detection, and treatment of the disease, and maintaining a public awareness of it.

Growing concern at the incidence of tuberculosis led to the establishment of a Tuberculosis Bureau in 1912 as part of the Department of Public Health. In 1949, the Tuberculosis Division of the General Health Branch became a separate Branch of the Department of Health. Although the broad policy of tuberculosis control has remained unaltered in recent years, the improved situation has permitted some retraction of services. Persons born outside Australia are showing a considerably higher incidence of tuberculosis than those born in Australia, particularly in the first years after arrival. Special attention is being directed to the medical supervision of this group.

Mortality rates continue at a low level and were 1.4 per 100,000 persons in 1975. Tuberculin testing among school children reveals a low infection rate which has been fairly constant recently. In 1975, 1.4 per cent of children at 14 years of age gave natural positive reactions. Morbidity figures are probably the most reliable indicator at present.

Improved social and economic conditions have continued to contribute towards this improved situation, as has the diligent approach to case finding, medical supervision, and contact control. The major credit for improving the situation is most directly related to the availability of modern anti-tuberculosis chemotherapy. The four drugs—Streptomycin, Isoniazid, Rifampicin, and Ethambutol—make it possible to render virtually all persons with active tuberculosis non-infectious. This applies to both new cases and those who have relapsed, and both categories

usually need only a short period of institutional care. Treatment on a domiciliary basis, under direct supervision, is being used when warranted. Experience is showing that relapse of tuberculosis is being markedly reduced among those who have had full courses of drug treatment.

The three completed compulsory chest X-ray surveys throughout Victoria for persons of 21 years of age and over, carried out during the years 1963 to 1973, have demonstrated the effectiveness of the compulsory survey combined with effective roll checking. Compulsory chest X-rays are continuing, but at a slower rate, so that areas with denser population and areas with a known higher incidence of tuberculosis can be given first priority. The minimum age for compulsory X-rays has also been raised from 21 years of age to 35 years of age. This policy will reduce the number of X-rays taken annually and result in longer intervals between X-ray surveys in most areas. The situation is being kept under review so that further modifications in programming may be made if appropriate.

In addition to active tuberculosis, persons who have radiological evidence of significant past tuberculosis infections are also brought under medical surveillance. Because of their higher risks of developing active tuberculosis, this group is asked to continue under review at clinics or by private doctors. Many persons are also brought to medical attention with non-tuberculosis abnormalities.

The following two tables show details concerning tuberculosis in Victoria for the years 1971 to 1975:

VICTORIA—TUBERCULOSIS BUREAUX

Activities	1971	1972	1973	1974	1975
New cases referred (a)	11,122	10,106	9,624	9,334	8,543
Active cases—					
New	416	371	369	321	291
Reactivated	23	42	38	31	29
Chronic	19	15	10	8	7
Re-attendances	56,077	50,532	46,190	42,480	37,783
Home visits by nurses	24,755	22,216	21,324	19,179	17,917
X-ray examinations (films taken) (b)	59,170	55,248	49,369	44,423	43,367
Tuberculin tests	9,683	8,514	7,544	6,970	6,853
B.C.G. vaccinations	2,742	2,192	1,953	1,766	1,628
Chest X-ray surveys (X-rays taken)	694,459	652,752	598,721	354,256	401,397
School tuberculin surveys (Mantoux tests)	93,933	96,249	87,495	92,265	92,645

(a) Referred for investigation, from all sources, for the first time in that year.

(b) Large and micro films; excluding mass X-ray surveys with mobile units.

VICTORIA—TUBERCULOSIS SANATORIA

Year	Number of beds	Admissions	Discharges	Deaths
1971	384	846	867	52
1972	340	661	596	27
1973	340	604	586	29
1974	301	564	538	23
1975	301	466	449	19

NON-INSTITUTIONAL HEALTH SERVICES

Youth services

Maternal and child health services

The Maternal and Child Health Division of the Victorian Department of Health is responsible for administering services for the promotion of the health of mothers and young children. These services include health supervision of infants from the first weeks of life, throughout the pre-school years, and guidance of mothers during pregnancy and the post-natal period through the early child rearing years.

This service is given by infant welfare sisters who are triple certificated nurses at infant welfare centres which are now sometimes called maternal and child

health centres because the service given is to mothers and children, not just infants. There are infant welfare centres in every municipality so that the service, which is free of charge, is readily available to all young parents.

When a baby is born, the Notice of Birth is forwarded to the municipality in which the mother resides, and the infant welfare sister sends a card to the mother inviting her to attend the centre. A home visit is made by the sister as soon as possible after the mother returns home from hospital. The mother is encouraged to bring her child regularly for supervision of its growth and development and for advice on immunisation. She is encouraged to discuss its behaviour and ask for any advice she may need about matters of management of the child.

The infant welfare centre keeps a record of the child's growth and development throughout the first five years of life, the child's height, weight, and head circumference being entered on percentile charts which are available for subsequent reference during the child's life history. The child's immunisation details are also recorded.

Development of the sensory and motor systems are studied by the sister, and progress is noted. Screening tests for hearing and vision are carried out in infancy and, if any defects are found, referral is made for medical diagnosis and treatment.

Over the last fifty years, since the Victorian Government assumed its responsibility for the infant welfare service, it has been well patronised; some 90 per cent of the babies born in Victoria have been taken to infant welfare centres for health supervision.

Although a health education and advisory service is offered to prospective mothers at all infant welfare centres, it is not as fully utilised as it might be. Doctors are encouraged to refer their patients early in their pregnancy to their local infant welfare centre so that they can become acquainted with the sister well before the birth of the baby, and can receive guidance on preparing for the care of a new baby in their own home.

At some centres, the sisters hold pre-natal discussion groups and arrange films or talks on childbirth, breast feeding, and other mothercraft procedures.

At selected infant welfare centres, medically supervised pre-natal clinics are conducted where mothers who have booked for their confinement at public maternity hospitals may attend for pre-natal supervision. At a number of these clinics, pre-natal exercise classes are conducted by physiotherapists.

In 1970, the Victorian Government recognised that family planning was an integral part of maternal and child health care, and agreed to provide clinics in infant welfare centres as the demand arose. At these clinics, doctors and nurses trained in family planning methods are available for consultation with young people on sexuality, the responsibilities of parenthood and methods of contraception, and with parents who may be seeking advice on either conception or contraception or the spacing of pregnancies. The demand for this service is growing as fast as the supply of trained personnel becomes available.

Another area of maternal and child health promotion that has been provided by the infant welfare sisters is teaching of mothercraft or parentcraft to senior students in schools. A series of ten lessons with demonstrations is given in the schools, whose head teachers have accepted this course; it is not compulsory. In a few cases, boys as well as girls have been included in the course, which includes nutrition of the infant and young child, prevention of infection, and home safety, as well as elementary child care and development.

The importance of play in the development of young children has long been recognised, and to help mothers understand the significance of play in the development of their children, the establishment of toddler play groups in infant welfare centres is encouraged.

The importance of early detection of defects or developmental delays is well recognised and, in order to prevent these leading to disability or handicaps as the child grows older, a programme of education and care has to be designed to meet the child's needs and to help support the parents in their role. This requires the provision of more than just the normal infant welfare and pre-school educational services and, to meet these needs, the Consultative Council on Pre-School Child Development in 1973 recommended the establishment of early childhood development complexes. These include the services of additional professionals such as psychologists, speech therapists, psychotherapists, occupational therapists, social workers, and medical specialists. It is planned that eventually every region in Victoria will be served by such a complex. By December 1976, seven such complexes had been established.

The following table shows details of maternal and child health services in Victoria for the years 1973 to 1975:

VICTORIA—MATERNAL AND CHILD HEALTH SERVICES

Particulars	1973	1974	1975
Family planning services—			
Number of clinics	17	23	33
New enrolments	1,272	1,886	2,991
Number of patients attending	n.a.	n.a.	4,795
Attendances of patients	4,571	6,586	9,607
Pre-natal services—			
Number of clinics	29	29	29
Number of mothers attending	3,526	2,884	1,911
Attendances of mothers	14,161	12,309	8,356
Infant welfare services—			
Number of infant welfare centres (all types)	745	751	763
Infant welfare sisters employed	421	429	443
Number of children attending	214,988	210,269	206,075
Attendances of children	1,505,761	1,342,809	1,399,310
Home visits to children	141,133	149,584	153,575
Number of expectant mothers attending	8,672	9,655	9,477
Attendances of expectant mothers	17,407	18,062	18,192
Post-natal visits to mothers in hospital	19,698	24,781	25,824
Immunisation—			
Triple antigen primary course	n.a.	62,157	61,246
Poliomyelitis primary course	n.a.	58,491	57,987
Measles	n.a.	32,957	33,801
Smallpox	n.a.	14,739	13,077

Pre-school child development

Responsibility for the provision of services to aid the development and growth of the pre-school age child and to give support to his parents has rested with the Victorian Department of Health since 1942 when a pre-school section was set up within the Maternal, Infant, and Pre-school Division of the Department of Health. Educational staff were appointed, subsidies granted, and community groups encouraged to work towards the establishment of services appropriate to the age level of the children for whom they wished to cater.

In 1973, the report of the Consultative Council on Pre-school Child Development recommended that services for the pre-school age child should continue to be developed and administered by the Department of Health, but that a new Division be set up. This recommendation was approved by the Victorian Cabinet, and in February 1976 the Division of Pre-school Child Development was constituted. This Division bears the responsibility for educational and care services for the child prior to attendance at primary school. It is concerned with both subsidised and registered services for the child of the working mother who requires full day care, and the child of the non-working mother who attends a sessional kindergarten.

One of the aims of the new Division is to integrate services where possible and to fully utilise buildings to provide a variety of services required by a particular community. A policy of regionalisation of services is being implemented and the staff of the Division, who are persons with a kindergarten diploma and in most cases postgraduate qualifications, while appointed centrally are seconded to work in a region. These regions vary in size according to the population and needs of the region. In one country region, for example, 23 shires are encompassed, while in the Melbourne metropolitan area, the region could consist of only one large municipality. The pre-school advisers work closely with community groups and the staff of shire or city councils. They are thus able to become aware of the needs of the region and to help plan appropriate services. They are also available as resource persons to community groups and are involved in multi-disciplinary teams developed to provide health promotion and assessment services through the early childhood development complexes.

Both capital and recurrent grants are available to councils and legally constituted co-operative groups, to enable the establishment of different services. Conditions of subsidy governing buildings, staffing, equipment, and enrolment must be satisfied before finance is granted. Parent participation has always been encouraged and parents are involved in the establishment and administration of the centres.

The type of service established varies according to the needs of the region and the age of the children. The first subsidised service is the toddler group for mothers and children aged between 18 months and 3 years. Conducted by a trained kindergarten teacher and an infant welfare sister in the waiting room of an infant welfare centre, this service offers the mothers the opportunity to learn more about the growth and development of young children, while their children are playing with materials suited to their age group. In December 1975, there were nineteen toddler groups, catering for 801 children, operating in Victoria.

Kindergartens present opportunities for group play, education, and parent discussions. This service is provided for children from 3 years of age onwards, who attend three or four sessions each week. To give as many children as possible the benefits of attending these centres, different groups of not more than 25 children each are taken in the mornings and afternoons. The kindergartens are staffed, and programmes compiled, by a teacher with approved qualifications, with the help of an untrained assistant. In December 1975, there were 924 subsidised kindergartens, catering for 48,743 children, operating in Victoria.

The day care centre provides care and education for the child of the working mother. These centres vary from the large centre catering for up to 60 children, to the small neighbourhood centre in a house catering for 20 to 25 children. In the latter type of centre, parents employed on a part-time basis work at the centre in return for service. In December 1975, there were 25 day nurseries, catering for a capacity of 1,199 children, operating in Victoria.

Pre-school and childhood services programme

During 1975-76, agreement was reached between the Commonwealth and Victorian Governments on payment for pre-school kindergartens from January 1976, on the basis of the Commonwealth Government paying 75 per cent and the Victorian Government 25 per cent of the salaries of approved pre-school staff. The Commonwealth Government capital level of support for new pre-school kindergartens was \$55,000 per centre, while the Victorian Government contributed \$15,000 (soon to be increased to \$30,000).

The basis of this agreement was that after January 1976 pre-school kindergartens, where appropriate, would integrate their services to include other forms of childhood services such as day care, after school programmes, play groups, parent counselling groups, and other similar groups.

The Commonwealth Government also paid the approved capital and operating costs together with 75 per cent of the salaries of approved staff for a number of childhood service projects, which were administered by the Victorian Department of Health, including eleven holiday and after-school programmes, ten day care projects, and 27 neighbourhood house projects.

Negotiations are continuing between the Commonwealth and Victorian Governments to determine a suitable basis for funding childhood services. The Victorian Government proposals for the provision of services for children depend on agreement being reached to pay jointly for all these services, as in the case of pre-school kindergartens.

Early childhood development programme

Under the Community Health Program, which has arisen from the recommendations of the Consultative Council on Pre-school Child Development, early childhood development centres are being set up throughout Victoria. There are already three in the Melbourne metropolitan area and four in country regions of Victoria.

As the Program will develop differently in each region according to its particular needs, full-time research officers are employed to work in each of these regions. There are three research officers working as part of the early childhood development programme at Knox, two in the Barwon Region, and one in each of the Central Highlands Region, Central Gippsland Region, South Western Region, and Broadmeadows early childhood development programmes. The research officers have been appointed to assess and evaluate the adequacy of the services provided under the early childhood development programme to meet the needs of the community, and are compiling a series of resource maps for each of the regions.

The research director at Knox was appointed so that the effects of programmes on young children could be evaluated.

Pre-school audiology services

The Victorian Department of Health is establishing services for the early detection and management of children whose hearing is impaired. The two main objectives of this audiology service are to identify infants at risk for repeated middle ear infections, and to identify at as early an age as possible infants with a nerve deafness, thus enabling the infants to be fitted with a hearing aid.

The Department has commenced training all 500 infant welfare sisters throughout Victoria to administer a standardised Infant Screening Test of Hearing at 7 to 9 months of age. In-service training is ongoing and is to be supervised by regional audiologists within the setting of the infant welfare centres. To assist all those concerned in the programme to maintain objective standards, 200 sound level indicators have been imported and are loaned to sisters to monitor ambient noise and test sound levels. The high frequency rattles distributed to the sisters and employed in the test are also imported.

To achieve a rational and co-ordinated approach to regional needs within Victoria, joint planning between the Department and the Hospitals and Charities Commission has established regional audiology centres located in early childhood development centres or base hospitals. The Department's policy is to encourage the growth of regional facilities for counselling parents of pre-school children with impaired hearing, and to assimilate these children into their local community. Regional centres have now been established at Ballarat, Geelong, Traralgon, and Shepparton. Audiology components are also established in the early childhood development centres at Knox, Diamond Valley, Broadmeadows, and Warrnambool.

The Department expects that, when fully implemented, the audiology programme will significantly lower the age of identifying infants with a permanent hearing loss.

School Medical Service

The School Medical Service, founded in 1909 as a branch of the Victorian Education Department, was transferred to the Victorian Department of Health in 1944. During 1976, the Pre-school Medical Services Section was transferred to the School Medical Service from the Maternal, Infant, and Pre-school Division, and the position of Assistant Chief Health Officer (Maternal and Child Health) was created to co-ordinate maternal and child health services during the current expansion and diversification of activities. The Service also supervises 32 special schools catering for handicapped children of various types. The first ten day training centres for the more severely handicapped children, transferred to the Education Department during 1976, became special developmental schools for which medical supervision has been provided.

School health services are designed to promote healthy child development from infancy to the completion of secondary education. To achieve this objective, further development is necessary in infant welfare services, play and child minding facilities, and the provision of support and health education for parents, nurses, play leaders, and teachers.

During the year before entering primary school, all available children undergo overall developmental assessment by school medical officers and, where appropriate, by other professions. In 1975, Department of Health doctors examined children attending 639 subsidised pre-school centres, municipal council child welfare medical officers examined those attending 30 other centres, and private doctors examined those at another 20 centres. No medical examination was made at 330 pre-school centres. Department of Health doctors examined 30,486 children, which represented 96.55 per cent of enrolments at these centres. For most children it was their first medical appraisal, with only 3.45 per cent presenting for the second time. Department of Health doctors also examined children attending sixteen day nurseries. The other eight nurseries were covered by municipal council doctors.

Children not seen at pre-school centres are examined on entering primary schools. Supervision of health and development by school nurses continues throughout school life.

School medical officers provide support and consultative facilities for parents and staff of infant welfare services, pre-schools, play centres, and day nurseries. They monitor and assess the health and development of the pre-school child; assess potential and actual handicaps of school children of all ages, and advise on management, including referral to other agencies; undertake health education where appropriate with parents, teachers, nurses, and other child care workers; act as consultants to school nurses and other professional officers in primary and secondary schools; and co-ordinate medical activities in schools with community medical, hospital, and other health services. School medical officers are also involved in the health assessment of teachers and in their medical examinations for superannuation purposes; provide medical assessment of children with hearing loss, partial sight, learning and behavioural disorders, intellectual or physical handicaps requiring special management or placement in special schools; and contribute to survey and research projects in association with the Education Department and other agencies. School medical officers are undertaking further education in developmental paediatrics and are encouraged to develop their consultative and educational activities.

The number of school nursing officers has been increased in accordance with their expanding roles and responsibilities. More time is being allocated to developing the proficiency of nursing staff, enabling them to supervise and assess normal development, detect and refer significant variations from the norm, and support the child and family in the wider community setting. In areas of comparative

socio-economic deprivation, nurse to child ratios are increased with certain groups of metropolitan schools receiving a full-time nursing service.

Medical and nursing staff are being joined in professional teams by physiotherapists, psychologists, occupational and speech therapists, pre-school advisers, sociologists, audiologists, and other specialists.

School medical, nursing, administrative staff, and records have been deployed progressively in metropolitan and country areas to incorporate local resources, to give continuity of service, and to facilitate integration with other disciplines working in the areas of health, education, and welfare. Medical, nursing, and administrative components are provided for early childhood development complexes according to local needs and available facilities. In some areas, local doctors and nurses are employed on a contract basis, while in other areas, community centres supply services to schools, subject to co-ordination and supervision by school medical staff.

The following table shows details of school medical examinations conducted in Victoria during the year 1975:

VICTORIA—SCHOOL MEDICAL EXAMINATIONS, 1975

Particulars	Number of examinations
Children examined at schools—	
Vision screening	179,490
Audiometry screening	77,936
Medical examinations upon school entry	58,827
Reviews and referrals (a)	51,527
Total children seen	250,126
Referred for further action	16,999
Parent contacts	48,558
Children examined at headquarters clinic (by referral)—	
Speech and hearing	922
Metropolitan and country speech therapy clinics	1,280
Visual handicap	124
Learning difficulties	121
Education Department teaching staff examined	11,046
School Medical Service staff—	
Medical officers (b)	40
Nursing officers (b)	58
Administrative staff	24

(a) For reasons other than vision screening, audiometry screening, or medical examinations upon school entry.

(b) Full-time and part-time officers.

School Dental Service

In co-operation with the Victorian Education Department, the School Dental Service began functioning in 1921 with the opening of a dental clinic in South Melbourne. State school children visited the clinic for treatment and returned each year for a dental check-up. As children in country districts also needed dental care, the Service was extended to country areas by obtaining portable equipment which could be carried in dental vans. Priority was given to areas of scattered population remote from dental facilities.

Under the *Ministry of Health Act 1945*, the School Dental Service was transferred to the Victorian Department of Health. In 1951, when the Service became a separate division of the Maternal and Child Hygiene Branch, moves were made to revive and expand the considerable reduction in operations experienced during the Second World War, because of a loss of staff to the defence forces. The obsolete pre-war dental vans were replaced and new mobile units added. Country itineraries were resumed and the areas visited extended, with an emphasis being placed on the remoter country districts.

In the Melbourne metropolitan area, the South Melbourne dental centre was moved to larger premises, and additional centres were opened at North Fitzroy in

1953 and at Footscray in 1959. Currently, each of these centres has a district allotted to it and children are brought by contract bus from their schools under the control of an escort teacher provided by the Education Department. Non-government schools in all districts are also included in the scheme. Dental officers visit and treat children in institutions, special schools for the physically handicapped, and day training centres for the mentally handicapped. For the Dental School Service, staff increased from 9 in number in 1921 to 89 in 1976.

In 1973, the Victorian Government agreed to join with the Commonwealth Government in the School Dental Service scheme. Initially, treatment will be concentrated on the 5 years of age to 11 years of age group, with complete coverage anticipated by 1983. When fully developed, the scheme will offer free dental care to all children under 15 years of age, and will be staffed by school dental therapists. Working under the general direction and supervision of dentists, therapists will provide dental health education, regular review, and minor reparative work.

Construction of the first dental therapy school in Melbourne began early in 1974. The first intake of 60 students commenced the two year course in February 1976. After graduation, school dental therapists will work in dental clinics to be established in school grounds where practical. Other schools will be visited by mobile dental clinics. An extensive building programme in metropolitan and country areas has been developed to accommodate dental therapists as they complete their course at the dental therapy school.

Child maltreatment

The maltreatment of children, a phenomenon present in ancient as well as modern societies, is currently a subject of serious concern in many places.

The current interest in child maltreatment stems from the immediate post-Second World War period, when radiologists began to draw attention to the presence of unexplained fractures together with subdural haematoma in young children. Following the radiologists came the paediatricians, who used the technical knowledge of the radiologists together with their own expertise to demonstrate that child maltreatment was neither uncommon nor sporadic, and subsequently the term "battered child syndrome" was formulated to describe children who have received serious physical abuse.

In Victoria, attention was drawn to this phenomenon and, on 18 September 1972, the Victorian Government made funds available for research, and a steering committee was formed. The research project linked the Department of Health, Mental Health Authority, Social Welfare Department, Children's Protection Society, and the Royal Children's Hospital. A research sub-committee was appointed by the steering committee and a voluntary reporting scheme introduced to assess the incidence of child maltreatment in Victoria, and to obtain information about the nature of child maltreatment including the medical, sociological, and psycho-pathological features. This was to be achieved by the establishment of a voluntary reporting system and the establishment of a pilot assessment centre at the Royal Children's Hospital.

In September 1973, information on the reporting system was posted to approximately 10,000 potential reporting agents, and the system commenced on 1 October 1973. Members of particular occupational groups likely to observe cases of maltreatment were encouraged to report suspected cases. Co-operation was sought from medical practitioners, social workers, welfare officers, pre-school teachers, teachers, infant welfare sisters, district nurses, bush nurses, and members of the Victoria Police. During the two years ending 30 September 1975, reports concerning 292 children were received, with 66 meeting the definition of a case of maltreatment being used for the purpose of the reporting system.

A pilot assessment centre was set up at the Royal Children's Hospital for the purpose of evaluating methods of assessment. This centre was staffed by a

psychiatrist, social worker, and secretary, and is funded from the research grant. The Mental Health Research Institute provided a senior research psychologist to assist with the pilot project and also played a major role in the design of the project and the analysis of data.

In conjunction with the incidence survey based on the voluntary reporting system and the pilot project at the Royal Children's Hospital other research has been undertaken. This included a retrospective study of some Royal Children's Hospital records.

Parallel to the research, a two day seminar on child maltreatment was held in February 1975, which sought to involve many inter-disciplinary groups in an educational process aimed at exchanging and ultimately disseminating information. As a result of the seminar, a workshop was set up in June 1975 to develop programmes for prevention, management, and treatment. The final report of the workshop was prepared following the combined meeting of the workshop parties in June 1976.

Childhood accident research

To examine Victoria's requirements for the prevention of children's accidents, a research unit was established in January 1976 within the Victorian Department of Health. The research is to be undertaken as a three year pilot study, with the aim of determining at the end of twelve months the areas requiring most attention.

The initial methodology is to survey a sample of young children admitted to hospital and to evaluate the factors which have led to the accident. The major objective of the survey will be to determine the "vulnerability" factors and their contribution to the accident. If common factors can be extracted, then the guidelines for prevention of a given accident can be more precisely determined in establishing a State-wide prevention programme. The value of the measure will be tested by following up the children after their discharge from hospital and instituting preventive means to see if the total number of subsequent accidents decreases.

The research aims to gather accurate statistical information concerning accidents severe enough to cause death or admission to hospital. Other accidents will highlight potentially dangerous situations and could be important in accident prevention programmes. However, not all accidents will be investigated as such a course would prove to be too costly.

The research unit plans to identify, co-ordinate, and evaluate all preventative work being conducted from the point of view of education, improved design, and legislation. At present there are numerous unrelated organisations ranging from government departments to voluntary organisations who are interested, and play a part in, accident prevention. Exchange of information between these bodies should be encouraged, and possibly help to establish more clearly the role which each organisation should play. An early task of the unit is to ascertain the role safety education should play in schools and in the training of professional persons such as doctors, architects, engineers, and all persons concerned with the housing, building, and construction industry.

Family services

Family planning services

Family planning services in Victoria are provided by general practitioners, the Victorian Department of Health, and voluntary organisations. The Department of Health currently sponsors 37 municipal family planning clinics in infant welfare centres, five of which were established during 1975-76.

The Commonwealth Department of Health first assisted in the provision of family planning services during 1972-73, when annual grants on a national basis were made to the Family Planning Association of Australia and the National

Catholic Welfare Committee. With the introduction of Medibank in 1975, a community health programme grant has provided financial assistance to the following bodies:

- (1) The Family Planning Association in Victoria, one of the principal training and health education bodies in the field of family planning. The Association provides a free medical service, nurse training courses, and community educator courses. Doctors and student doctors are invited to participate in clinic observation and supervision, to gain further experience in family planning.
- (2) Family Planning and Interpreter Services Project. Interpreters are provided for clinics in areas with a significant migrant concentration where medical practitioners and trained nurses work on a sessional basis.
- (3) Social Biology Resource Centre at the University of Melbourne. The Victorian Government participates in paying for the centre which conducts courses in health education and inter-disciplinary teamwork for community health workers.

A family planning programme, designed to train young doctors and retrain general practitioners, has been prepared by the Medical Education Committee, Victorian Faculty of the Royal Australian College of General Practitioners in conjunction with the Family Medicine Programme (see page 755). An educational, training, and clinical service programme has been provided by special clinics in public hospitals and the Catholic Family Planning Association.

The Victorian Department of Health has convened a Family Planning Co-ordinating Committee consisting of representatives from all organisations interested in family planning in Victoria. The Committee's purpose is to examine the various roles of the represented organisations, to attempt to co-ordinate the various avenues of funding, and to enable the development of an integrated programme throughout Victoria.

Dental health

During 1974, a new Division of Dental Health Services was established within the Victorian Department of Health. With the increasing community awareness of preventative rather than reparative dentistry, the standard of dental health has become a matter for public concern. Experts emphasise three elements basic to preventative dentistry. These are fluoridation (now Victorian Government policy), personal attention to hygiene, and regular dental attendance for review, plaque removal, application of topical fluoride, and repairs.

The Dental Standards Laboratory, originally the Bureau of Dental Standards, became part of the Commonwealth Department of Health in 1947 and is located in Melbourne. It continues 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. Equipment includes a field emission scanning electron microscope installed in 1974, which has proved extremely useful in the examination of dental materials.

National audiological services

The National Acoustic Laboratories were established under the *Acoustic Laboratories Act* 1948, and incorporated into the Commonwealth Department of Health. The principal functions of the Laboratories' Victorian Branch are to provide free audiological services, evaluate hearing disorders, provide and maintain hearing aids, batteries, and post-bearing and rehabilitative care as required, for all persons under 21 years of age, ex-servicemen referred by the Commonwealth Department of Veterans' Affairs, and pensioners. The Victorian Branch assists the Central Laboratory in Sydney with scientific investigations into hearing and problems associated with noise as it affects individuals.

Audiological services provided on behalf of other Commonwealth Government departments include Commonwealth Government compensation assessments

and related therapies. Advice on hearing conservation and reduction of noise is available to the defence forces, Commonwealth Government departments, and instrumentalities.

The Laboratories' services are decentralised into city, suburban, and country visiting centres. The hearing centres are located in Melbourne, St Kilda Road, Moonee Ponds, and Dandenong. Visiting facilities are available at Geelong, Ballarat, Bendigo, and Mildura, while visits are also made to Shepparton, Warrnambool, Wangaratta, Beechworth, and Morwell. Schools and centres for deaf children are visited by the Laboratories' audiologists and technicians who keep in touch with other professional and support services for the hearing handicapped in the community.

A wide range of modifications are available for the different hearing aid types selected by the Laboratories' audiologists for their clients. Post-auricular hearing aids are now the most commonly fitted, supplemented by in-the-ear, body, and other aids. Binaural hearing aids are provided for all children, unless otherwise indicated.

The following table shows details of the activities of the National Acoustic Laboratories in Victoria during the year 1974-75:

VICTORIA—NATIONAL ACOUSTIC LABORATORIES, 1974-75

Clients	New cases examined	Calaid hearing aids fitted	Calaid hearing aids on loan
Persons under 21 years of age	3,830	628	5,551
Pensioners	3,753	3,115	12,969
Veterans' affairs	1,446	689	6,800
Defence forces	165	5	57
Civil aviation	205	..	..
Commonwealth Government departments	82	5	58
Other	34	..	..
Total	9,515	4,442	25,435

Occupational health

The prevention of industrial disease is the primary function of the Industrial Hygiene Division of the Victorian Department of Health. With this aim, services are provided for investigating work environments to determine whether or not they are in a healthy state. Testing air in the work environment is an important routine function of the Division, since many industrial diseases arise from inhalation of harmful substances, such as lead, mercury, solvent vapour, asbestos dust, silica dust, and others. Tests for harmful levels of noise, X-rays, and gamma rays as well as excessive heat stress are carried out.

The Division has provided an expert diagnostic service for the commonly occurring industrial diseases primarily for doctors in hospitals and private practice, but also for individuals who cannot be encouraged to obtain a doctor's referral. In most cases, the patient attends the Division as an outpatient where he is examined by a medical officer and samples taken for testing. Where attendance is impossible, because of hospitalisation or for other reasons, arrangements are made for the patient's specimens to be sent for analysis.

For respiratory disease resulting from dust, a medical officer is available to examine a patient and his radiograph. The officer is usually in a position to test or assess the dust exposure of the patient at his workplace, and thereby give an expert opinion on whether or not the respiratory disease was occupational in origin. Tests are also conducted for the diagnosis of lead poisoning, mercury poisoning, and arsenical poisoning.

Services for the aged*Community health and welfare services for the aged**Health services*

There are various facilities in Victoria for the provision of accommodation, care, and services for older people.

Nursing home and rehabilitation beds available in State, voluntary, and private hospitals total approximately 11,000, while hostels accommodate approximately 5,000 persons. Many new geriatric and long-term care wards have been added to geriatric, base and district hospitals since 1973. More than 300 beds were made available as a result of major additions to Mount Royal, Greenvale Geriatric Centre, Grace McKellar House, and Caulfield Hospital. The Henry Pride Centre, Kew, was opened in 1976 with 76 beds. Nursing home units of 40 to 50 beds have been added to Mooroopna, Wangaratta, and Warrnambool Base Hospitals. Projects are in hand for more than 1,000 additional nursing home beds, mainly in small units attached to country hospitals. Organisations planning some 2,700 beds are awaiting capital grants to commence building under the Commonwealth *Aged Persons Hostels Act 1972*.

Planning for the Melbourne metropolitan area is directed towards the establishment of geriatric complexes at Sunshine, Bundoora, and in the eastern suburbs. These centres should provide a wide range of accommodation and services. In country areas, there are plans to develop geriatric facilities and services encompassing various regions.

Since the provision of beds alone could not adequately serve disabled or elderly people, community health centres, improved domiciliary services, and more day hospitals are being established. Seventy-seven day hospitals for elderly and handicapped people are in operation, under construction, or in the planning stage. Day hospital attendances approximated 220,000 during 1975-76, while district nursing services made approximately 1,062,000 visits, the majority of which were to persons over 60 years of age.

"Meals-on-wheels" services at 30 June 1976 were supplied by 90 hospitals in co-operation with a number of other organisations. Elderly people in the Melbourne metropolitan area receive dental care at the dental clinic in the Royal Dental Hospital of Melbourne. Treatment is also provided at clinics established in twelve major country centres and in geriatric centres.

Because of the urgent need in Victoria to recruit and train doctors in geriatric medicine, a two year course was established in February 1975 and conducted at the Mount Royal Special Hospital for the Aged. Eight doctors have completed the first year, and ten more have commenced the first year of the second course. A Chair in Geriatrics and Gerontology was established at the University of Melbourne in conjunction with Mount Royal, and the first professor took up the appointment in July 1976.

Welfare services

To assist the aged in pursuing independent lives in their own surroundings for as long as possible constitutes the aim of the Home Help Service, senior citizens clubs, and municipal welfare officers engaged in the welfare of the aged. Administrative responsibility for these community welfare services lies within the province of the General Welfare Branch of the Department of Health, and the relevant subsidies refer either totally or partially to the well-being of aged persons over 60 years of age.

The Home Help Service, subsidised through the Department of Health, is made available to municipal councils which establish, maintain, or financially assist this service in order to preserve the health of the elderly and their autonomy. This service is available to elderly persons on the basis of their medical need and allotted according to the priority of each case. Duties of a home help are

to maintain the household's routine, assist with heavier household chores which may be beyond the capabilities of the elderly, do the shopping, or prepare a meal. Assessment of charges is made according to the person's ability to pay. Regular visits are made by assistant advisers to discuss any problems which might arise, and organisers of the service are encouraged to seek the Department of Health's advice in order to ensure that the conditions of the subsidy are met.

The purpose of elderly citizens' clubs is to provide facilities for fostering social companionship for the elderly and to supply the surroundings for them to make new friends and to take a renewed interest in life. Municipal councils are paid a subsidy through the Department of Health to establish and maintain these clubs, which provide activities such as carpet bowls, billiards, crafts, and entertainment. Services such as hot meals and chiropody assist in maintaining the health and comfort of the elderly, while "meals-on-wheels" are confined to those housebound elderly persons who are unable to attend a club because of infirmity. Routine visits are made by the assistant advisers to municipal councils to discuss existing clubs, the implementation of new services, or the formation of new clubs. Regular discussions are conducted with club members in an effort to broaden the scope of club activities and instil in members a sense of responsibility.

A municipal welfare officer, subsidised by the Department of Health, is employed by a municipal council to ensure the development, co-ordination, and continuing provision of the most appropriate welfare services to meet the needs of the elderly, to supervise existing services, foster co-operation between welfare activities for the aged, promote purposeful activity within elderly citizens' clubs, and create an awareness among the elderly that there is a source of help available to them.

The following table shows the amount of accommodation available for the aged in Victoria during the year 1974-75:

VICTORIA—ACCOMMODATION AVAILABLE FOR THE AGED, 1974-75

Institution	Housing units		Hostel beds	Nursing home beds	Approved hospital beds (a)	Total
	Single (beds)	Double (beds)				
Hospitals for the aged	88	98	729	3,251	391	4,557
Church organisations	951	623	2,317	1,117	128	5,136
Voluntary organisations	848	479	1,084	401	..	2,812
Geriatric units	..	..	60	247	433	740
Hostels for the aged	..	..	28	80	..	108
Sub-total	1,887	1,200	4,218	5,096	952	13,353
People of pensionable age in private hospitals and nursing homes						5,568
Total						18,921

(a) Allocated for geriatric rehabilitation purposes.

Care of the aged, 1965; Care of the elderly, 1969

Community services

Community Health Program

Hospitals and Charities Commission

The two major objectives of the Community Health Program are the provision of improved community health services to people living in areas lacking adequate health services, and the promotion of aspects of health care, prevention, maintenance, and rehabilitation services previously neglected.

To fulfil these objectives it is necessary to have high quality services which are accessible and equitably distributed. There is also particular emphasis on attitude changes, preventative health care, a multi-disciplinary team approach to patient care, improvement in professional standards and the use of scarce manpower, and community participation in decision-making processes affecting community health care. The Program hopes to foster health promotion, and thus reduce levels of dependence on the more expensive institutional care. It has been largely initiated and funded by the Commonwealth Government's Hospitals and Health Services Commission, as well as the Victorian Department of Health, Mental Health Authority, and the Hospitals and Charities Commission. Since the Program began in 1974, the Hospitals and Charities Commission has approved and funded 87 projects.

Community health centres vary in size and scope. They range from a community nurse and social worker operating from rented or temporary premises, through units providing a range of health and/or welfare services, to centres providing primary medical care and having a full allied professional health team working in self-contained premises with administrative and clerical assistance. New buildings have been constructed where needed, but in many places it has been possible to buy or rent available premises such as shops, houses, or church halls, with structural alterations being carried out as necessary.

Most centres are under the control of autonomous, community-based committees of management. Before registration of a centre, a public meeting must be held to elect the committee. Accountability to the community and its contributors is maintained through a statutory annual general meeting.

The day hospitals, in association with established hospitals, provide outpatient rehabilitative and supportive services to both the old and the young disabled. Several bush nursing centres have been funded under the programme to provide support staff and needed items of capital equipment (see page 776). The special projects consist mainly of specialist workers in aspects of community health, attached to existing agencies. In particular, three medical record librarians have been made available to centres to assist in the installation of health centre records. A new records system has been produced especially for the needs of the community health centres, and can be processed by the Hospitals Computer Services. There is also a Health Services Research Group to assist the Hospitals and Charities Commission and the centres to evaluate aspects of the Program.

New submissions from communities and groups seeking various project types are continually being received and assessed.

The following table shows details of the Community Health Program for the year ended 30 June 1976:

VICTORIA—COMMUNITY HEALTH, PROGRAM :
HOSPITALS AND CHARITIES COMMISSION, 30 JUNE 1976

Item	Melbourne and suburbs	Geelong area	Other country	Total
Community health centres	22	3	20	45
Day hospitals/rehabilitation centres	11	2	1	14
Community health nurses at country hospitals	..	..	5	5
Special projects	9	2	..	11
Additional funds for bush nursing centres	..	1	11	12
Total	42	8	37	87

Mental Health Authority

The Mental Health Authority is at present administering fourteen community mental health projects. Three of these projects are servicing country areas and

the staff, consisting mainly of community psychiatric nurses, are primarily concerned with initial contact, domiciliary work, and the follow-up of discharged patients. They also liaise with general practitioners, social workers, and district nurses so that people at risk are not denied assistance.

The other eleven projects consist of community mental health clinics situated in various parts of the Melbourne metropolitan area. The function of these clinics is to provide a variety of psychiatric services including outpatient facilities, day hospital activities, and home visits. They also provide psychiatric consultancy services for health care workers in other fields of activity.

Community care centres, 1974

Aboriginal health care

The Special Health Services Section of the Victorian Department of Health was established to cater for the health needs of the Aboriginal community in Victoria. During its two years of operation the Section has developed some knowledge of the needs of the Aboriginal community and increased its staff to 25.

The nurses work in teams with two or three community health aides, covering seven districts in Victoria. The nurse team visits approximately 24 to 36 families each week. The number depends on the density of families living in the various areas; the term "family" often refers more correctly to addresses where as many as four families may live, with each family comprising up to six members. The number of persons visited each week approaches 180.

The duties of the team are to establish and maintain contact with Aboriginal families throughout the area, to assess their health needs and the ways in which these can be met by medical and para-medical services, to promote health education where appropriate, and to encourage the use of health services. Many agencies have referred Aboriginal people to the Section for help, and the Section has been able to co-ordinate services to the Aboriginal community from these many referring agencies.

Of the many cases seen, the majority involve family breakdown caused by poor mental health, alcoholism and drug dependence, malnutrition, poor hygiene, accidents, and chronic physical disorders (e.g., heart, chest, and liver complaints, diabetes, venereal disease, and parasitic infestation). These ailments may result in the mismanagement of children, resulting in neglected ear, nose, throat, and chest conditions, obesity, and poor dental health. Other cases require education and guidance in pre-natal and post-natal care, family planning and sex education, routine cervical smears, dental hygiene, baby care and breast feeding, immunisation, nutrition theory and practice, safety in the home, and first aid.

Fourteen Aboriginal community health aides were first employed in 1976. During the three months in which they were employed, they helped the health programmes because of their ability to communicate both with their own communities and with service personnel. At the same time, these aides are undergoing an in-service training programme which will enable them to provide counselling support and health education to Aboriginals in their area.

Health care of the physically and intellectually handicapped

Various government and community resources exist to provide care and assistance to those suffering from varying physical and mental disabilities in Victoria.

Physically disabled

The physically handicapped receive specialist treatment within the public hospital system, both at inpatient and outpatient levels. Many attend private practitioners for medical care and physiotherapy service.

Rehabilitation is an important expanding health care area, and programmes designed to meet individual needs are offered at public hospitals, including the

Royal Talbot General Rehabilitation, Caulfield, Hampton, St Vincent's, and Prince Henry's Hospitals. Occupational therapy, physiotherapy, speech therapy, and social work personnel provide the para-medical services in these hospitals to enable full assessment and planning of the individual's rehabilitation programme.

Further rehabilitation services are offered by the Kingston Centre and the Mt Eliza Geriatric Centre; by the Commonwealth Department of Veterans' Affairs through the Rehabilitation Unit in Heidelberg and by the Commonwealth Department of Social Security through rehabilitation centres at Glen Waverley, Toorak, Ballarat, and Geelong, and by the Mental Health Authority through the Willsmere Hospital Rehabilitation Unit. The Austin Hospital spinal injuries unit provides a State-wide service for those who suffer from paraplegia or quadriplegia as a result of an accident or injury.

Many hospitals provide nursing home and domiciliary support services. The Victorian Department of Health provides a domiciliary medical and physiotherapy service to poliomyelitis and multiple sclerosis patients throughout the State. The development of the community health centre and day centre network will enable more physically handicapped to obtain medical care at a regional/local level.

Several independent voluntary organisations also provide medical and para-medical services (usually in association with specialists from public hospitals) in addition to their educative or other training functions. These include the Spastic Children's Society of Victoria, Yooralla Hospital School for Crippled Children, Royal Victorian Institute for the Blind, Multiple Sclerosis Society, and Victorian Society for Crippled Children and Adults. Most have medical panels and/or honorary medical consultants advising the particular organisation.

Intellectually handicapped

The care and training of the intellectually handicapped, apart from educational services for the mildly retarded, is the responsibility of the Mental Health Authority.

The Authority has a centralised diagnostic and assessment service at St Nicholas Hospital, where the headquarters of the Mental Deficiency Services are also situated. Currently, there are 3,656 beds in residential training centres for the retarded. In the Melbourne metropolitan area these are located at Kew Cottages, St Nicholas, Janefield, Kingsbury, and Sunbury, and in the country at Beechworth and Ararat, Bendigo, Stawell, Warrnambool, and Colac. The full utilisation of stage one of the Colac Training Centre will provide a further 204 beds, and the opening of a fourth ward at the Kingsbury Centre a further 30 beds.

Under the auspices of the Authority, 62 day training centres, four private residential training centres, and two autistic children's centres have been developed throughout Victoria during the last 25 years and subsidised from government funds. In addition, the Authority purchased a small 30 bed hospital for severely retarded children, which is leased at nominal rent to a local day training centre and managed by the centre's own committee.

Since the passage of the *Education (Handicapped Children) Act 1973*, the Education Department has accepted responsibility in principle for educating children irrespective of the type and degree of handicap. At the beginning of 1976, nine educational components of day training centres chose to be taken over by the Department, while others were expected to follow. The Department is also placing teachers and teachers' aides in the Authority's residential institutions to complement the roles of the clinical staff.

To ensure a continuous supply of teachers for day training centres, the Authority has been conducting two year courses since 1955 leading to a Certificate of Competency for teachers of the intellectually handicapped. This course was taken over in 1976 by the State College of Victoria, Burwood.

The Authority has adopted a policy of regionalising its facilities for the retarded and providing local accommodation as close as possible to a domestic setting. It envisages a range of professional and support services to provide for the total needs of the retarded and their families, based on the policy of normalisation. This involves making available to the mentally retarded circumstances which are as close as possible to the normal patterns of society.

Ambulance services

Road ambulance service

Over the years ambulance services have been rationalised on a regional basis. In 1976, there were sixteen regions, each with a headquarters station and a total of 122 stations, the majority of which are staffed by full-time ambulance officers. Autonomous regional committees elected by contributors are responsible for the provision of service to their regions.

The main benefits of this development are the provision of a 24 hour service by trained ambulance officers throughout Victoria, including areas of sparse population; co-ordination with the hospital and medical services of the State; co-ordination of movement of patients in each region; control of staff; in-service training of staff; and adequate backing up of service when men or vehicles are otherwise engaged or out of action.

The Victorian Government has supported the regionalisation development by providing substantial funds for capital and maintenance purposes, including maintenance funds to make possible free transport of pensioners, and a full-time ambulance officers training school established at Mayfield Centre, Malvern.

For some time there has been a need for a standard general purpose ambulance, designed for Australian road and climatic conditions, and able to perform with efficiency and convenience to patients the basic tasks required of an ambulance. The Hospitals and Charities Commission appointed an honorary advisory Ambulance Design Committee consisting of automotive engineers, doctors, and ambulance administrators to prepare designs for a standard vehicle. The resulting ambulance provides for the comfort, convenience, and safety of both patient and crew.

The Commission has also assisted in improving radio communication, and the ambulance service's two-way radio systems have been converted to frequency modulation.

Air ambulance service

During 1975-76, the Air Ambulance Service, managed by Ambulance Service-Melbourne, flew 3,255 hours transporting 2,692 patients, mainly from country hospitals to the teaching hospitals in Melbourne and return. The air service provides a more comfortable means of transport than long road journeys and reduces the time that a patient is not under direct medical care.

Neonatal transport service

A committee of two doctors, nurses specialising in neonatal care, and ambulance management has formulated a plan which enables doctors at peripheral hospitals to obtain specialist advice about the immediate care of neonates. If it is decided that a specialist neonatal medical nursing team is required, the ambulance service will transport this team and its equipment to the peripheral hospital. If it is then further decided that the neonate could be best cared for at the central hospital, the ambulance will convey the team, the baby, and the equipment to that hospital. The service has been introduced in Melbourne on a trial basis.

Summary

The following table shows details of ambulance services in Victoria for the years 1973-74 to 1975-76:

Particulars	1973-74	1974-75	1975-76
Ambulances	346	368	400
Other vehicles	56	76	80
Ambulance officers	795	730	803
Patients carried	341,822	366,579	421,743

Red Cross Blood Transfusion Service

The Victorian Division of the Australian Red Cross Society Blood Transfusion Service was founded in 1929 when it was suggested to the divisional executive that they should set up a panel of blood donors willing to attend hospitals as required to give blood donations. Subsequently, blood storage was introduced in 1938 and the discovery of the Rh factor and other blood group systems was applied to problems of blood transfusion and obstetrics during the 1940s. During the Second World War the logistics of blood procurement were developed for the defence forces: this involved the introduction of blood fractions, and in later years the use of plastic equipment instead of glass for blood collection, and the establishment of regional and district blood banks.

Currently, the administrative headquarters, the laboratories, and the main blood collecting centre of the Service are situated at 114 Flinders Street, Melbourne. In addition, two mobile blood collecting units visit various suburban locations and blood is collected at the Royal Women's Hospital, Royal Melbourne Hospital, and St Vincent's Hospital. In country centres, a system of regional and district blood banks has been set up to collect blood for local use.

In 1976, 109,569 blood donors were enrolled at the central blood bank and, during 1975-76, approximately 170,000 donations were collected throughout Victoria.

In modern transfusion practice, the emphasis is on the use, where possible, of blood components rather than whole blood, with the object of obtaining the maximum benefit from each donation. At the central blood bank, the biochemistry laboratory carries out the first stages in the separation of the components and prepares packed red blood cells, blood platelets, fresh frozen plasma, and cryoprecipitate (for the treatment of haemophilia). Plasma is also sent in considerable quantities to the Commonwealth Serum Laboratories for processing into other components including fibrinogen, coagulation factors, albumen, stable plasma protein solution, and various immunoglobulins. The distribution of these products is the responsibility of the blood transfusion services in the various States.

Modern discoveries in fractionation and blood grouping, together with the need for hepatitis testing by sensitive techniques, necessitate the development of sophisticated technology and have added considerably to the complexity of the work of a modern blood transfusion service.

Further reference, 1971**PHARMACEUTICAL SERVICES****Pharmacy Board of Victoria**

The Pharmacy Board of Victoria is constituted under the *Pharmacists Act* 1974. It is a quasi-judicial body answerable to the Minister of Health and responsible for the registration of pharmacists and the control of the practice of pharmacy.

The Board consists of five elected and five nominated pharmacists and has the function of acting in the public interest by protecting the public from unqualified

pharmaceutical practice and ensuring that adequate standards of pharmaceutical services are provided. It meets and has its administrative offices on the premises of the Victorian College of Pharmacy.

Under the Pharmacists Act, the Board is empowered to control the registration of pharmacists, to be responsible for the control and direction of all examinations leading to registration, to determine educational requirements for persons wishing to enter pharmacy courses, to determine the course of study and subjects for examination, to supervise the practical training of pharmacy students and graduates, to conduct inquiries into cases of alleged misconduct, to approve premises of pharmacies and pharmacy departments, and to administer regulations for all these purposes.

The first legislation establishing a Pharmacy Board in Victoria was assented to on 27 December 1876, and the first meeting of the Board was held on 14 February 1877.

Pharmacy practice

At 30 June 1976, there were more than 1,500 retail pharmacies, 50 friendly society dispensaries, and 40 pharmacy departments in hospitals, mental institutions, and other premises approved to operate in Victoria. These pharmacies and pharmacy departments are the major employers of the 3,900 registered pharmacists in the State. Pharmacists are also engaged in the pharmaceutical manufacturing and wholesaling industries, in education and research, government and private administration, and the defence forces.

Under the Pharmacists Act it is mandatory for pharmacists to be registered to practise, and only a registered pharmacist may own or have a proprietary or pecuniary interest in a retail pharmacy. The majority of such pharmacies are owned and operated by sole proprietors, but partnership arrangements are not uncommon. Approximately 2,600 pharmacists depend for their livelihood on retail pharmacy practice, while another 200 are employed in hospital and institutional practice.

The pharmacy work force comprises about two thirds males and one third females. The average age of registered pharmacists is 40 years of age, the average female age being slightly lower, and the average male age slightly higher than this. The working lifespan of pharmacists is about forty years, but a relatively high proportion of registered female pharmacists are recorded as occupied on home duties.

In professional practice the pharmacist's major function is to supply specified drugs and medicines to the public on a doctor's prescription. With the exception of prescribers, the pharmacist is the only person authorised by law to sell such scheduled drugs and medicines. He is also the only person legally permitted to supply certain non-prescription medicines to the public.

Other professional roles for which pharmacists are trained include advising on the use of drugs, monitoring dosage, strength and incompatibilities, checking and advising on drug interactions, and advising on the treatment of minor ailments. Pharmacists in hospital practice are trained to supply information on medicines for treatment of illness, advise on reactions to and interactions between medications, recommend optimum drug usage for patients, and provide other specialised services.

Pharmacies and pharmacy departments are supplied by a number of wholesalers as well as directly by some pharmaceutical manufacturers. Under Victorian law, proprietary medicines for sale in the State must be registered through the Department of Health. Strict control over the wholesaling of drugs is exercised under the *Poisons Act* 1962 by officers of the Department, and high standards of practice and security are applied by drug manufacturers.

Pharmacy education

The Victorian College of Pharmacy is the only school of drug technology in Victoria. It has been owned and operated by the Pharmaceutical Society of Victoria since 1882, and receives support from the Victoria Institute of Colleges which awards degrees in pharmacy and supervises academic standards.

The College teaches in three main areas: the structure of drugs (chemistry), the action of drugs (pharmacology), and the preparation, presentation, and delivery of drugs to the appropriate site in the patient's body (pharmaceutics). Teaching is also offered in the law relating to the supply and control of drugs within the community. All subjects in the course are taught within the College.

There are approximately 360 students enrolled in the course and about 90 graduate each year. After graduation, practical training is obtained under supervision in approved pharmacies and related areas, and a final examination must be taken before registration to practise is granted.

The College has developed a significant research faculty, and maintains strong links with the profession, industry, and other schools around the world. With assistance from the College, the Pharmaceutical Society conducts series of continuing education lectures and symposia from year to year.

Therapeutic substances legislation

The Commonwealth Department of Health administers the *Therapeutic Goods Act* 1966 and Regulations, and in conjunction with the Commonwealth Department of Business and Consumer Affairs administers the requirements of the Customs (Prohibited Imports) Regulations.

Samples of pharmaceuticals and medical supplies are collected by officers of the Commonwealth Department of Health, from various sources throughout Victoria, and tested at the National Biological Standards Laboratory in Canberra. Where a therapeutic substance fails to conform to standards, and where it has been distributed, there is a recall procedure laid down involving notification, supervision, and follow-up.

The national committees functioning in this area are the Australian Drug Evaluation Committee, Adverse Drug Reactions Advisory Committee, and the National Therapeutic Goods Committee.

Adverse drug reactions

For reports of suspected adverse drug reactions, the Drug Evaluation Committee issues business reply post envelopes and publishes cumulative lists of suspected drug reactions in pharmacological groups and reaction categories. The *Adverse Drug Reactions Bulletin* began as a monthly publication in November 1974, and was incorporated in the *Australian Prescriber* in October 1975.

The following table shows details of adverse drug reaction notifications in Victoria for the years 1974 and 1975:

VICTORIA—ADVERSE DRUG REACTION NOTIFICATIONS		
Source	1974	1975
Hospital	128	211
General practitioner	67	252
Specialist	75	121
Pharmacist	11	13
Other	..	18
Total	281	615

Poisons control

The *Poisons Act* 1962 is the principal Act of the Victorian Parliament controlling the manufacture, sale, and possession of dangerous drugs and poisons, and

is designed to protect the public and occupationally exposed persons against the dangers of toxic substances used for domestic, industrial, agricultural, and medical purposes. Poisons Division officers are responsible to the Chief Health Officer for most matters relating to this Act.

The *Pharmacy Act 1876* established the Pharmacy Board of Victoria, which originally exercised control over poisons. The Board administered the *Sale and Use of Poisons Act 1876*, since most poisons which came into the hands of the general public were pharmaceutical. However, during the ensuing eighty years more domestic, horticultural, and industrial poisons appeared in use and their manufacture in large quantities produced a need for a different administration from that available to the Board. Consequently, in 1962, the Victorian Government transferred the function of poisons control to the Chief Health Officer of the Department of Health.

The Chief Health Officer is advised on matters relating to the possession, sale, and use of poisons by officers of the Poisons Division, the General Health Branch, and a specially established Poisons Advisory Committee consisting of representatives of the professions of medicine, pharmacology, pharmacy, veterinary science, and persons in key positions in the Department of Agriculture and the Department of Health, together with nominees of various commercial interests.

Decisions made by the Chief Health Officer relating to the Poisons Act and Regulations are implemented by officers of the Division. The Division's staff currently consists of the senior poisons control officer, one scientific officer, six poisons control inspectors, one health inspector, the secretary of the Poisons Advisory Committee, and three other administrative officers.

Poisons used in Victoria are subjected to continuous scrutiny by the Division. In fact, most hours of work are absorbed in field inspections and the administration of a complex system of licences and permits required by law, for which prescribed fees are payable. The range includes industrial poisons, household poisons sold retail, and poisons used in agriculture, scientific research, education, and medicine. Regulations require all such poisons to be suitably packaged and labelled, and only available to persons competent to handle them safely.

Medicines which can be poisonous if misformulated or misused are subject to special attention. Generally, they are not available to the public except on medical prescription, or in certain cases on the advice of a pharmacist in business. Drugs of addiction require even tighter controls, and sometimes registered medical practitioners are required to apply to the Chief Health Officer before commencing or continuing a patient's treatment.

At present, occupational and accidental poisonings are relatively unimportant causes of mortality in Victoria. The fact that this position has improved in recent decades, despite an ever increasing array of dangerous poisons, is the best evidence available of the continuing importance of poisons control to community health in the State.

Control of poisons and deleterious substances, 1965; Inter-departmental Committee on Pesticides, 1965; Poisons Information Centre, 1969; Drug and poison control, 1970

ENVIRONMENTAL HEALTH SERVICES

Pollution control

The Environment Protection Authority is a three member body having the ultimate responsibility for the protection of the environment throughout Victoria. The Authority was created by an Act of the Victorian Parliament in 1970 and commenced operating in July 1971.

The Authority's major influence on the environment is through its waste licensing system. Licensing must be in accordance with State Environment Protection Policy, or if such a Policy has not been declared for the segment in question, the permitted or licenced discharge shall not cause a condition of

pollution. Where the issue of a licence may be detrimental to public health, the Commission of Public Health may direct that a licence shall not be issued. Comment on licence application may be solicited by the Authority from other interested parties, at its discretion. The licensing process is outlined in considerable detail in the Act and includes provision for transfer, revocation, suspension, or amendment of a licence or any of its conditions at any time. (See also pages 49-50.)

Public health engineering, 1969; Environment protection, 1972

Air pollution control

Air licence conditions cannot exceed the concentration limits set down in the Clean Air Regulations (Legal Constraint) and Environment Protection Policy is being established for all segments of the environment in Victoria. A draft Policy is initiated by the agency administering the Act in the area being considered; the draft becomes State Policy through a process of public review and adoption into regulation. Such Policies are made known to all concerned and clearly express the quality for a particular segment of the State's environment.

Paramount in the considerations in arriving at air pollution Policies are the necessary air quality standards for the maintenance of conditions which are not prejudicial to public health. The modern definition of health suggests that aesthetics which may also influence health shall be taken into consideration. In establishing air Policies, it is necessary to establish the datum levels which currently exist in the atmosphere, and considerable progress has been made in this regard for the Melbourne airshed. Guides to national air quality standards are currently being considered by the National Health and Medical Research Council, and the Environment Protection Authority is participating in this work.

Any person aggrieved by the issue of a licence may appeal to the Authority sitting as a third party tribunal. The final appeal on licensing matters where they are brought by either second or third parties is to the Environment Protection Appeals Board—the exception being that matters of law may be referred to the Supreme Court. The Environment Protection Appeals Board is a three member independent body having no connection with either the Authority or its advisory seventeen member council.

Matters which are not readily amendable to the licensing procedures can be covered by regulation. The Act provides regulation-making powers for prescribing air quality and emission standards; standards or policy regarding fuels, equipment, facilities, vehicles, or ships causing or contributing to air pollution; and air pollution episodes and the control of open burning, e.g., Environment Protection (Prohibited Fuels) Regulations were introduced in 1975 to contain the emission of lead into the environment. The latter give effect to a recommendation of the National Health and Medical Research Council.

Environmental noise pollution

Environmental noise pollution may be considered under a number of categories which include noise from motor vehicles, industry, residential premises, construction and demolition sites, aircraft, railways, motor boats, advertising, sporting and recreational activities, and road repair and maintenance activities.

Under the provisions of the *Environment Protection Act 1970* and subsequent amendments, the Environment Protection Authority is responsible for all activities relating to the emission of noise and for preventing or controlling noise. The Authority has assumed the central co-ordinating and policy-making role, while other agencies such as the Victoria Police and local municipal councils continue to assist in the Victorian noise control programme. General advice on noise pollution, such as the noise aspects of traffic routing and road design, is provided to other government agencies, private organisations, and members of the public. The Authority has identified noise from motor vehicles, industry,

and residential premises as priority areas for concern, and noise control programmes have been initiated.

Motor vehicle noise

The primary objective here is the reduction of the noise emission level of vehicles at the source. The Authority was involved in formulating design rules to be met by manufacturers, and prepared regulations requiring vehicle owners and users to ensure that noise emissions did not increase substantially above those made by the vehicle when it was new.

Noise from industry

Standards are being developed which will enable the specification of acceptable levels for noise emissions from industrial, trade, and business premises to be established, since these affect various land-uses in the community. The levels and assessment criteria will be based on experience gained from noise surveys being undertaken and the draft Noise Control Policy for the City of Richmond, published by the Authority in 1973. The standards will include acceptable levels which vary according to the time of day and type of area in which the noise is received and include an evaluation of the various noise characteristics involved. These standards will be implemented by the Authority.

Domestic noise

The control of noises transmitted between residences is carried out locally by the Victoria Police, municipal councils, or aggrieved residents, acting under an amendment to the Environment Protection Act. This amendment applies general restrictions on the operation of all equipment used on residential premises, with time restrictions on selected items. Provision is also made for the introduction of design rules for certain intrinsically noisy domestic appliances.

Water supply and pollution

Water supplies

The Department of Health is responsible for the general surveillance of reticulated water supplies throughout Victoria to safeguard the health of consumers. The Health Act does not specifically empower the Commission of Public Health to require improvement of a water supply, but rather enables closure if a medical practitioner certifies that a supply is so polluted that the water is unwholesome or unfit for human consumption.

In practice, the bacteriological quality of water supplies is kept under observation through liaison with water testing laboratories. On receipt of reports indicating significant contamination, catchment surveys are undertaken and possible sources of pollution traced. If the contamination is a result of agricultural sources there usually follows a recommendation to install an effective chlorination system to ensure the safety of the supply.

Chlorination of a clear water supply is a relatively straightforward procedure, provided attention is given to the design of the system in order that a suitable chlorine contact period is available to allow completion of the disinfection process before consumption. However, chlorination of a small water supply having turbid water is a complex process and Departmental officers provide close supervision to ensure that the adjustment of chlorine dosage rates is commensurate with variations in the water quality.

During 1975, major fluoridation plants, designed and installed following promulgation of the Health (Fluoridation) Act in 1974, were commissioned for service. Up to 60 per cent reduction in dental caries has been reported in areas where fluoride has been added to drinking water. The fluoridation of the Melbourne and the Mornington Peninsula water supply systems during 1976 ensured that the greater proportion of young children in Victoria receive this

benefit in the future. Existing plants at Bacchus Marsh, Boort, Melton, Tongala, and Yallourn have been modified to conform to the standard required by legislation, which provides for the protection of operating personnel as well as consumers.

To ensure a high degree of control, plants are required to be operated by fully trained licensed personnel under the close guidance of a local technical supervisor, and subject to overall supervision by Departmental officers. As the Act provides for the reimbursement of all capital costs for fluoridation schemes that satisfy the Commission, it has been possible to introduce a high standard of plant, incorporating full recording and analytical equipment, thus ensuring efficiency and safety in the Victorian fluoridation programme.

The Commission has adopted World Health Organisation recommendations with regard to the optimum fluoride concentrations, and accordingly, permitted concentrations are varied slightly to compensate for variations in personal water consumption because of changing climatic conditions in different areas of Victoria.

Water pollution

The Commission of Public Health has responsibilities in the area of water pollution through the *Health Act* 1958 or through its veto powers under the *Environment Protection Act* 1970. Its accepted standard for potable water is that set by the World Health Organisation. Many reticulated supplies in Victoria cannot reach this standard, yet provide no health risk. A working document showing toxic levels is being considered as a second standard, after recommendation by the National Health and Medical Research Council. In the case of more acute water supply pollution, an immediate investigation is carried out by district staff, with the aid of the Microbiological Diagnostic Unit and the health laboratories.

Results of all bacteriological water testing are reported to the Commission, from which profiles of the supply systems are made. Where necessary, advice on problem rectification is given to supply authorities and the State Rivers and Water Supply Commission.

Re-use of waste water is encouraged and is gaining importance as a means of saving diminishing resources. The strict conditions previously imposed are now becoming more in keeping with modern knowledge. Further economic uses, other than irrigating pastures with treated sewerage effluent, have been approved. These include watering golf courses and similar recreation areas, as well as grape vines. Sewage effluent re-use, including that of grazing cattle, is under review.

As food grown in polluted waters may pose health problems, mainly as a result of the presence of enteric pathogenic organisms, mercury, lead, arsenic, and cadmium, the Commission is conducting research into the effects of these elements in fish and in the humans who eat the fish.

Sewerage

Approximately 85 per cent of Victorians are served by water-borne sewerage systems, all of which are designed as self-contained systems to exclude storm water from sewers. Under trade waste agreements, most sewerage authorities accept trade wastes into the sewerage system, and fifteen such authorities discharge into sea water.

The Commission of Public Health has advisory powers concerning treatment of sewage effluents, and strictly controls the removal and future use of any materials from these works. The quality of treatment varies from no treatment other than comminution and coarse-screening, to tertiary treatment including chlorination. A number of authorities employ the conventional sewage treatment systems of preliminary screening, primary sedimentation and digestion, secondary biological filtration and sedimentation, and tertiary filtration and chlorination.

There are no longer any sand filter units because of the excessive operating time required.

The pond system of treatment has been employed in approximately 70 per cent of schemes installed in country areas since 1960. The activated sludge process is proving to be a popular system as it utilises temporary, package-type plants. These are being installed in outlying areas until permanent sewers of larger schemes are available.

Waste and garbage disposal

The constraints placed on solid and other waste management involve aspects of public health, land-use, aesthetics, air and water pollution, political, legal, and economic considerations. Management of garbage, night soil, industrial sludge and other waste includes storage, collection, and disposal on an individual, corporate, and municipal basis. In Victoria this has always been subject to strict control by the Commission of Public Health under the Health Act, with the actual operations being carried out by municipal councils. The disposal of dangerous substances and private refuse tips also comes under the control of the Health Act. Almost all garbage disposal in Victoria uses the sanitary landfill method, whereby wastes other than liquid fit for discharge into sewers or water courses are disposed of in or on land.

Environmental health problems are controlled by proper land waste management, in order to prevent the:

- (1) Poisoning of soil, making it directly or indirectly harmful to man, animals, or vegetation;
- (2) pollution of groundwater, making it unfit for its present or anticipated use;
- (3) spoiling of land through water logging or destruction of vegetation, thus detrimentally affecting its future use as a waste assimilation site;
- (4) aesthetic damage to the land and its surroundings; and
- (5) discharge of wastes and affected rain-water run-off onto adjacent land and streams.

Practically all activities relating to waste and garbage disposal became licensable on 1 March 1973, under a further provision of the *Environment Protection Act* 1970. This amendment provides protection against nuisances, and control of conditions dangerous to health or offensive in nature.

Radiation

High radiation dosage can produce severe or fatal effects, and possibly cause detrimental genetic effects on future generations. The basic concept of radiation protection is to keep all doses as low as practicable. Control of the hazards from ionising radiation (widely used in the medical, industrial, and research fields), is achieved in the Irradiating Apparatus and Radioactive Substances Regulations by:

- (1) The incorporated licensing system, whereby intending users of radiation devices must seek the approval of the Commission of Public Health; and
- (2) the requirement that users adopt certain safety procedures. These include the posting of appropriate warning labels and notices, the provision of adequately shielded storage containers and installations, and transportation of radioactive materials and disposal of radioactive waste in accordance with procedures and conditions approved by the Commission.

The Australian Radiation Laboratory of the Commonwealth Department of Health gives scientific expertise and advice to the Commission of Public Health in the control of the use of ionising radiations, radioactive materials, microwaves, and lasers. The national laboratory, established in 1929, has responsibilities for public health and safety with respect to the increasing uses of the above fields. The laboratory's functions, with respect to ionising radiations, radioactive materials, microwaves, and lasers, are to:

- (1) Conduct research into and development on national standards of radiation doses, as well as provide scientific advisory services on the public health hazards to Australians, surveillance of the dosage levels from different sources to which workers and members of the public are exposed, and scientific services on the physical aspects of their use in medical diagnosis or treatment;
- (2) establish radiation protection standards for occupational and public health;
- (3) regulate and enforce compliance with radiation safety regulations; and
- (4) procure and distribute radiopharmaceuticals, radiobiologicals, and radiochemicals for medical diagnosis and treatment issued at no charge for all classes of patient. From 1 July 1976, the free issue of radioisotope kits for *in vitro* medical diagnosis has been discontinued, and their entry regulated through the Customs (Prohibited Imports) Regulations.

During 1976-77, the construction of consolidated new premises for the Australian Radiation Laboratory is to commence at the Watsonia Army Camp site at Yallambie, Victoria.

Imported and infectious disease

Imported disease

Imported disease is becoming more frequent as modern air transport converts the world into one ecological unit.

Quarantine in Australia was a State function until 1 July 1909, when power to make laws for quarantine was transferred to the Commonwealth Government. Victoria had quarantine powers in 1841 under the Public Health Act, and the sanitary station established at Portsea in 1853 is still maintained for the treatment of quarantenable diseases. Under the *Australian Quarantine Act* 1908, quarantenable disease has three main divisions—human, animal, and plant—and includes smallpox, plague, cholera, yellow fever, typhus fever, leprosy, or any other disease declared by proclamation. Foot and mouth disease was proclaimed in 1952, and Lassa fever and Marburg Virus diseases were proclaimed in June 1975.

Australian quarantine is now the responsibility of the Commonwealth Department of Health. Apart from preventing the introduction and spread of the diseases, arrangements are made for further effective isolation of other infectious disease cases occurring on air and sea vessels from overseas. In Victoria, the proclaimed sea ports are Melbourne, Geelong, Portland, and Western Port, and the proclaimed airport is Tullamarine.

In 1975-76, 522 ships with 22,381 crew and 71,640 passengers, and 617 aircraft with 8,589 crew and 96,528 passengers, were subjected to quarantine surveillance in Victoria.

Smallpox is the disease of major concern to the General Quarantine Section. As a result of the success of the World Health Organisation's eradication campaign, the threat of arrivals from overseas within the disease's incubation period is now decreasing.

Vaccination certificates for cholera are no longer required for entry into Australia. Experience has shown that cholera is not prevented by vaccination and is not further transmitted in a country where standards of personal hygiene and sanitation are satisfactory.

Yellow fever international certificates (valid for ten years) are required for travellers from yellow fever endemic areas, namely, parts of Africa, South America, and Central America. Unvaccinated persons are detained for six days—the incubation period of yellow fever.

To prevent the introduction of exotic insects into Australia, all overseas aircraft, including those from Papua-New Guinea and New Zealand, require spraying prior and subsequent to the disembarkation of crew and passengers.

Foodstuffs or garbage from overseas aircraft are not allowed to enter Australia, but are removed at the various ports and incinerated under quarantine supervision.

Infectious disease

The history of communicable disease in Victoria bears a close relation to that experienced in all developed countries. At the beginning of the twentieth century, infections accounted for much morbidity, and mortality, but the current situation is different as a result of social change and medical science.

Gastro-intestinal illness is maintained at a low level largely because of sanitary practice, personal hygiene, and a multi-level health education programme.

The main emphasis of Victorian health authorities in controlling vectorborne illness is by attacking the mosquito vector *Culex annulirostris*, a carrier of Australian Encephalitis. The early warning of this disease is being investigated with a view to improving the reliability of meteorological and other indicators.

Victoria has a soundly established municipal-based immunisation programme constituting a simple and valuable means of protecting the individual and the community against certain infectious diseases, namely, poliomyelitis, diphtheria, whooping cough, measles, rubella, and tetanus. Schedules are reviewed regularly to incorporate modern developments.

The prevalence of tuberculosis has been reduced as a result of successful chemotherapy, and treatment is now directed to reducing the risk of future relapse. Screening for early cases by tuberculin testing and mass X-ray surveys is a continuing commitment of the Tuberculosis Branch of the Victorian Department of Health (see pages 780-1).

Communicable diseases, 1964; Epidemics, 1967

Food standards and hygiene

Standards

Standards for the composition and labelling of food are laid down in the Food and Drug Standards Regulations, made on the recommendation of the Commonwealth Food Standards Committee. This Committee is an expert body appointed under the Health Act with Departmental, academic, and industrial representation and the Chief Health Officer as chairman. Since the Committee's inauguration in 1906, regular meetings have been held and the Regulations now contain specifications for all the major items of the diet, together with requirements for many special products. The standards are continually subject to extension and amendment, with the aim of ensuring the safety, nutritive value, genuineness, and quality of foods sold to the public.

The National Health and Medical Research Council established a scheme for the unification of food standards throughout Australia. These standards are developed by the Commonwealth Food Standards Committee and, after approval by the National Health and Medical Research Council, forwarded to the States. Victoria, an international pioneer in the establishment of food standards, is participating in the scheme and amendments to State standards are well advanced. An important aspect of the Committee's activities has been the approval of food additives. Before consideration is given to any proposal for a new additive, complete documentation on all relevant aspects, including technological need, effectiveness, and safety must be supplied by the applicant.

Hygiene

The hygienic state of food supply is controlled by the Food Cleanliness, Food Premises, Eating House, and Food Vending Machine Regulations. Consideration is being given to amalgamating the first two regulations into a single Food Establishment Regulation, and to introducing specific Food Transport Regulations.

The Food Cleanliness Regulations 1975 embrace the protection of food from contamination and the maintenance of safe handling conditions. During the

eighteen months of their extensive revision, consultation was held with municipal authorities, industry groups, and experts both in Australia and overseas.

Implementation of this legislation is a local government responsibility, and in addition to registration and surveillance of food premises, municipal inspectors are required to take at least three samples per 1,000 of the population in their district each year. Analysis of these samples is at present shared between the health laboratory and several private consulting companies. Approximately 10,000 samples are examined annually for compliance with the Regulations, and many offenders subsequently prosecuted. In addition to its municipal work, the health laboratory undertakes many special food hygienic investigations, including those related to consumer complaints. Of particular importance during recent years has been the testing of pesticide residues in commodities.

Industrial hygiene, 1964; Food standards and pure food control, 1964

MEDICAL RESEARCH

Commonwealth

National Health and Medical Research Council

The National Health and Medical Research Council, established in 1937, is required by its constitution to advise the Commonwealth Government and the States on matters of public health legislation and administration and on any other matters relating to health, medical and dental care, and medical research. It is also required to advise the Commonwealth Government and the States on the merits of reputed cures or methods of treatment that are, from time to time, brought forward for recognition.

The chairman of the Council is the Director-General of the Commonwealth Department of Health. There are twelve members representing medical and dental professional organisations, colleges and universities, ten appointees representing various Commonwealth and State Government departments, and two lay persons.

The Council operates through a four tier system of some 50 committees which inquire into and advise the Commonwealth and State Governments, universities and other educational institutions, various medical organisations, and industry, thus exercising a considerable effect on national policy in the fields of health and the medical sciences. Currently, more than 400 persons serve on National Health and Medical Research Council committees, many of whom are from Victoria. Members normally serve for a term of three years and are appointed on the basis of their suitability to committees or sub-committees as individuals and not as representatives of particular groups or organisations.

The secretariat of the Council is staffed by officers of the Commonwealth Department of Health and the Council's administrative expenses are provided through the budget of the Commonwealth Department of Health.

Regular publications include the bi-annual reports of the Council sessions, and the annual report of work done under the *Medical Research Endowment Act* 1937. The Council also publishes a number of special medical and scientific reports, two of the more significant of which are the National Health and Medical Research Council's *Maternal mortality surveys* and the reference book *Chemotherapy with antibiotics and allied drugs*.

National Health and Medical Research Council awards and grants, recommended annually, form the major proportion of the total funds specifically spent on medical research in Australia, and include:

- (1) *National Health and Medical Research Council travelling fellowships*. These are essentially individual awards which pay stipends, travel, family allowances, and fares to enable graduates to study overseas for periods of up to two years in the fields of medical research, the clinical sciences, and occupational health.
- (2) *National Health and Medical Research Council scholarships*. These are awarded to university departments and individuals engaged in research and

training in medical or dental specialities. The majority of scholars have completed basic professional studies, but need additional training to gain research skills. In recent years, the medical schools of the University of Melbourne and Monash University have had a number of students studying under these scholarships.

(3) *National Health and Medical Research Council research fellowships in special areas.* This is a recent development to encourage areas of research considered by the Council to be in need of preferential support, notably in the fields of cardiovascular, psychiatric, arthritic, and renal disease. The latter two are located in Melbourne.

(4) *Block grants to research institutes.* Financial support for two Victorian research institutes, namely, the Walter and Eliza Hall Institute of Medical Research and the Howard Florey Institute of Experimental Physiology and Medicine, both of international standing, has been placed on a stable basis. National Health and Medical Research Council support for these institutes is contingent on the Council exercising a measure of control over the institutes' activities, including the appointment of senior staff. In 1976, grants to these institutes totalled approximately \$1.6m.

(5) *Other grants.* Grants have been made to the regular national public health surveys, undertaken in association with the Victorian health authorities. In addition, the National Health and Medical Research Council is financing a multi-disciplinary clinical trial concerning acupuncture at the Monash University medical school, Alfred Hospital, Prahran.

The following two tables show details of grants awarded by the National Health and Medical Research Council in Australia and Victoria:

AUSTRALIA—NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL: GRANTS AWARDED (a)
(\$)

State	1974	1975	1976
New South Wales	1,512,709	1,137,162	1,319,942
Victoria	2,423,329	2,426,100	2,788,093
Queensland	441,653	352,592	392,512
South Australia	337,507	297,429	342,384
Western Australia	242,569	185,241	209,533
Tasmania	95,685	54,341	29,082
Australian Capital Territory	4,500	32,603	17,170
Special grants	64,000	330,487	144,900
Total	5,121,952	4,815,955	5,243,616

(a) From the Medical Research Endowment Fund.

VICTORIA—NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL: GRANTS AWARDED, 1976
(\$)

Recipients	Amount
Universities	940,137
Hospitals	311,782
Research institutes	1,332,560
Research scholarships	203,614
Total	2,788,093

Commonwealth Serum Laboratories Commission

The Commonwealth Serum Laboratories were established in 1916 as a central Australian institute to produce the nation's requirements of vaccines and anti-toxins, previously imported from Britain. Located at Parkville, Melbourne, on

an 11 hectare site granted to it in 1918 by the Commonwealth Government, the Laboratories are Australia's leading centre for the production and supply of biological products for human and veterinary use.

Originally under the control of the Quarantine Service, the Laboratories became a division of the Commonwealth Department of Health in 1921, and remained under its control until the *Commonwealth Serum Laboratories Act* 1961 established the Commonwealth Serum Laboratories Commission. From an original staff numbering 30, the organisation now employs more than 1,000 persons, more than 100 of whom are professionally qualified.

The Laboratories' standards of research and product quality have earned international recognition. They have become the official World Health Organisation reference centres in the Pacific region for influenza and brucellosis, and participate in world-wide monitoring of these diseases. A notable research project of national and international significance successfully undertaken by the Laboratories' scientists, was the world's first development of a method of producing a sub-unit influenza vaccine without harmful side effects, which could be made available to everybody. Many important overseas discoveries in medicine, biology, and biochemistry have been adopted by the Laboratories, which have been producing Australia's supplies of insulin since 1922, penicillin since 1943, and poliomyelitis vaccine since 1956.

The Laboratories pioneered the processing of human blood products in 1925, and became the World Health Organisation blood group reference centre for Australia. Methods developed in the 1920s for treating blood donations from patients recovered from certain diseases were adapted during the Second World War to produce blood products on a large scale for the defence forces. For decades, blood donated to the Red Cross and not used immediately as whole blood in transfusions, has been processed to recover and separate the individual blood fractions for use in medicine to control such diseases as infectious hepatitis, measles, rubella, tetanus, haemophilia, and other blood deficiencies. The outdated blood also yields large supplies of plasma.

In veterinary science, the Laboratories have been continually involved in research into animal and poultry diseases, and have developed vaccines and toxoids for active immunisation against clostridial infections, brucellosis, bovine mastitis, erysipelas, strangles, canine distemper, hepatitis, and many other diseases. The model farm maintained on a 618 hectare field station at Woodend, near Kyneton, runs many hyper-immunised Pecheron-type draught horses to produce a basic serum required in snake antivenenes.

The accelerated growth and demand in human and veterinary medical fields has made necessary a re-building and re-equipping programme for the Laboratories at Parkville, which has an anticipated completion date of the mid-1980s.

Further references, 1971, 1975

Victorian Government

Victorian Department of Health

Research activities within the Victorian Department of Health are conducted in the four main areas of road accident research, maltreatment of children (see pages 788-9), early childhood development programme (see page 785), and child accident research (see page 789).

The Consultative Council on Road Accident Mortality uses a full-time research staff of medical, sociological, and engineering personnel, together with administrative and secretarial support staff. The function of the Road Accident Research Unit is to design and test a study of road accidents, within the terms of reference of the Council, in an attempt to determine the most appropriate form of accident after-care and preventative programmes as well as the relationships of design, alcohol, drugs, physical, and psychological factors to road deaths.

The first stage of the study examined a random sample of all injury crashes and 50 per cent of all fatal crashes in the area serviced by the Victorian Civil Ambulance Service, for a period of one year. The second stage sets up a control study of injury crashes by attending, at the same times, the site of all the injury crashes that the unit attended in the first year. The third stage will consist of looking at each accident investigated as a separate case study and subsequently as a part of a general data collection for further analysis.

Institute of Mental Health Research and Post-graduate Training

The Mental Health Research Institute was established in 1956, and renamed in 1970 the Institute of Mental Health Research and Post-graduate Training. The Institute's director, who is also the Chief Clinical Officer of the Mental Health Authority, is responsible for carrying out research in mental illness and intellectual defectiveness, training medical officers in the Branch, and co-ordinating psychiatric treatment.

The Institute has a research wing under the director of research, and a training wing under the director of post-graduate studies, who is also the clinical head of the Parkville Psychiatric Unit which constitutes the Institute's immediate clinical base. In addition, the Institute includes the Neuro-Psychiatric Centre at Mont Park, the Melville Clinic, the Central Library, and the Charles Brothers Museum. Epidemiological research carried out in the field of social psychiatry was recognised during the Pre-Congress Workshop on Psychiatric Epidemiology held at the Institute in October 1973 in conjunction with the World Mental Health Congress of the World Federation for Mental Health.

The Institute's computerised cumulative patients register, in operation since 1 July 1961, allows collation and linkage of all illness episodes in a particular patient, thus proving useful in the long-term evaluation of psychiatric care. A five year follow-up of all schizophrenic patients admitted for hospitalisation for the first time between 1961 and 1967 was carried out. It showed that the mean total length of hospital stay for all patients dropped from fifteen months for those admitted in 1961, to six months for those admitted in 1967. A corollary study examined changes in psychiatric hospitalisation patterns during the last fifty years.

Following the Heyfield and Prahran surveys, another community health and social survey was completed in the north-western region of Melbourne, covering physical and psychological disorders and relating these to health service utilisation.

Drug use by Melbourne youth was also surveyed. The 4,000 person sample comprised students in fifth form, and first and third tertiary years, and drug users under 30 years of age. The results of a similar survey of Ballarat youth showed no significant difference, but indicated that alcohol was the main drug problem in both communities.

The Institute is participating in various investigations, such as the study sponsored by the Australian Commission of Inquiry into Poverty to determine the effect of psychiatric hospitalisation of either parent on the health of their children; an ongoing study of child maltreatment to determine the social and psychological factors involved; the continuing evaluation and monitoring of an experimental community mental health centre; comparative studies of attempted suicides in a metropolitan and rural city; and investigation of psychiatric disorders in immigrants with special emphasis on Second World War refugees and those living in ethnic communities. Clinical studies in progress include a series of comparative studies of psychotropic drugs and an investigation into psychosexual disorders, namely, the psychological, biological, and clinical psychiatric aspects.

The main neuro-physiological research projects carried out at the Neuro-Psychiatric Centre include investigations of cerebro-spinal fluid dynamics with special studies regarding normal pressure hydrocephalus; new methods of neuro-psychiatric problem assessment from a clinical viewpoint; and various particular

studies using electroencephalographs, including problems relating to transvestites and transsexuals.

Further reference, 1972

Bio-medical research institutes

Introduction

Bio-medical research is designed to advance the knowledge of human living organisms, with a view to understanding the nature and cause of human disease and thereby to open the way for its prevention and cure. In Victoria, this type of research is carried out in various research institutes, teaching hospitals, and university departments.

Walter and Eliza Hall Institute of Medical Research

The Walter and Eliza Hall Institute of Medical Research, established in 1916, constitutes the Medical Biology Department of the University of Melbourne, and is located in a building adjoining the Royal Melbourne Hospital.

In the 1920s, the Institute worked on parasitic illness, especially the hydatid disease, and subsequently investigated snake venom and bacterial toxins. The study between 1935 and 1957 of virus-induced disease and development of effective vaccines, with particular emphasis on the influenza virus, its surface structure, mode of infectivity, and propensity to genetic change led to international recognition of the Institute.

Since 1967, detailed study of the immune system and cancer has formed the central research interest of the Institute. The scope of immunology research has developed rapidly to the extent that immunological techniques are being exploited in the diagnosis of cancer, in the application of organ transplantation to clinical medicine, and in the treatment of an increasing immunity.

Currently, the Institute's six units, consisting of 51 scientists, apply a diverse range of techniques and scientific disciplines to studying the immune system and cancer. They are investigating the events which govern the activation of the immune system, through basic research at the level of individual specialised white blood cells, the lymphocytes. Studying the means by which an interaction between separate classes of lymphocytes occurs, led to the discovery that lymphocytes capable of recognising and destroying cancer cells exist in animal bearing tumors, and currently the possibility that these cells may be exploited in the treatment of cancer in man is being evaluated. Another active area of the Institute's research is in gaining insight into the causes of multiple sclerosis.

Other interests of the Institute include postgraduate education, inpatient and outpatient care for a small body of patients with auto-immune diseases by the Clinical Research Unit ward in the Royal Melbourne Hospital, and analyses of all changes in patients with leukemia and allied conditions by the Cancer Research Unit ward.

Further references, 1972, 1975

Howard Florey Institute of Experimental Physiology and Medicine

The Institute came into existence in April 1971. It is associated with the University of Melbourne but controlled by its own board and director, and is entirely concerned with basic research.

The Institute's policy is to develop research projects with a team of workers, comprising both scientific and technical staff with a variety of analytic and surgical skills. Hence, groups of a dozen or more scientists and assistants work closely together in several areas, i.e., high blood pressure, salt balance, and fertility control. A few projects are undertaken by individual scientists working essentially on their own.

High blood pressure, which affects one in six adults in the Australian community, is under intensive investigation in the Institute through two animal models

that have been devised for study. The first model measures the effects on blood pressure of slow constriction of the blood supply to the kidney. Results indicate that the known factors, i.e., an increase in renin levels and cardiac output, are not consistent and thus other mechanisms are being sought, with promising results. The second model is based upon the administration of a hormone from the pituitary which stimulates the adrenal gland. The significant elevation of blood pressure occurring within two to three days cannot be explained by known adrenal hormone effects, and the identification of new hormones is being pursued. Another factor indirectly influencing blood pressure is aldosterone, the major hormone from the adrenal gland regulating the salt balance of the body.

Systems and behavioural patterns regulating salt appetite, a fundamental instinctive drive, are just as crucial for survival of the individual and the species as are the mechanisms for regulation of salt loss. Various factors are being investigated through a multi-disciplinary approach taking into account both innate and acquired behavioural factors, together with their hormonal modulation.

Recently, the importance of adrenal hormones to the developing foetus has been demonstrated through a programme directed at an improved understanding of the functioning of the foetal adrenal gland, crucial to immediate post-natal survival. Study has shown that a relative deficiency of cortisol leads to severe respiratory distress, a common cause of neonatal death.

The Institute has undertaken various studies of peptides, since many hormones and biologically important substances are peptide in nature. Projects include the synthesis of hormones affecting the bone, hormones for use in the high blood pressure programme, analysis of the structure of human prolactin (a hormone involved in up to one third of human breast cancers), study of hormones important in reproduction, and the development of a contraceptive vaccine. The latter project has the support of the World Health Organisation.

The World Health Organisation also supports the programme directed at achieving an improved understanding of the causes of male infertility and advancing its treatment. Both basic and clinical studies have in some cases led to the diagnosis of a treatable cause of infertility, but in about two thirds of cases the basic cause of infertility cannot be established. Another aspect of the programme is the study of seasonal breeding animals which have marked cyclic changes in fertility. In a relatively new development, an intensive effort has been made to characterise a new hormone involved in the regulation of spermatogenesis.

Baker Medical Research Institute

The Baker Medical Research Institute, established in 1926, and situated in the grounds of the Alfred Hospital, Melbourne, originally conducted a wide range of research in many of the newly developing areas of medicine, including cardiovascular medicine, cardiac surgery, diabetes and other metabolic disorders, blood coagulation, gastro-enterology, and cancer research. In all areas there was considerable emphasis on close association between basic and clinical research, and the Institute helped in establishing many of the Alfred Hospital's diagnostic departments, for example, the Ewen Downie Metabolic Unit and the Cardiac Diagnostic Service.

At the beginning of 1975 it was decided that instead of being active in several markedly different fields of medical science, the entire effort of the Baker Institute and of the hospital's Clinical Research Unit would be in the area of cardiovascular medicine. This development satisfies an important national need and is the first comprehensive cardiovascular research institute at present operating in Australia.

The three major research units currently working in the Institute are the Circulatory Control and Hypertension Research Units, the Cardiovascular Metabolism and Nutrition Research Unit, and the Developmental Biology Research Unit. The work of these three research groups is internationally regarded, and

the groups employ several scientists from overseas. At June 1976, the total scientific staff numbered 23 with a support staff of 25.

The Institute's work is directed towards discovering the fundamental causes of hypertension and the control of blood pressure, coronary artery disease, and the special hazards and disorders of the newborn.

Basic research topics under study include investigation of how the different brain centres control the circulation through the autonomic nervous system and various hormones, how long-term stresses can influence blood pressure control; the metabolism of cholesterol, fat, and lipoprotein; and the relative importance of genetic and nutritional factors in determining abnormalities occurring in patients. A considerable amount of pharmacological work is also being undertaken.

In addition, the Institute is establishing a population screening programme to determine special at-risk candidates for coronary heart disease, namely, those with disordered cholesterol and fat metabolism.

Further references, 1970, 1976

Cancer Institute

The Cancer Institute was established under the *Cancer Institute Act 1949* for the purpose of research and investigation into the cause, prevention, diagnosis, and treatment of cancer; providing inpatient and outpatient hospital treatment for cancer cases; and providing undergraduate training and post-graduate training in various medical and scientific disciplines relating to cancer. Most of the work is carried out at the Peter MacCallum Clinic's headquarters in Melbourne, but consulting and some treatment services are provided under the aegis of the Clinic in other metropolitan and country hospitals.

The building programme developed by the Institute's planning committee has progressed to the extent that the first half of the new extension to the Clinic is due for commissioning in 1977. This new section will provide 170 beds, and with the completion of the multi-storey block in 1979, there will be nearly 300 beds and eight linear accelerators (high voltage X-ray treatment equipment). Projections indicate that progressive increases of a further 300 beds and four accelerators will be required during the early 1980s to meet Victoria's needs for radiotherapy requirements and associated surgical and chemotherapy needs. Thus, consideration is being given to developing the area behind the Royal Mint.

The following table shows particulars of the Cancer Institute for the years 1971-72 to 1975-76:

VICTORIA—CANCER INSTITUTE

Particulars	1971-72	1972-73	1973-74	1974-75	1975-76
Inpatients—					
Beds available (incl. hostel)	116	116	116	116	116
Admissions (incl. hostel)	3,136	3,317	3,771	3,564	4,071
Daily average (incl. hostel)	79.3	84.0	81.0	79.0	87.0
Outpatients—					
Patients treated	10,046	10,059	10,141	10,619	10,773
Attendances (a)	33,135	34,805	36,704	45,526	43,808
Radiotherapy treatment—					
New patients	n.a.	4,397	4,457	6,797	7,656
Attendances	n.a.	54,099	58,197	59,163	59,853
Treatments (b)	n.a.	107,887	112,039	115,830	120,412
Staff—					
Medical	67	83	85	97	99
Nursing	126	164	166	178	183
Scientific and technical	176	186	196	203	229
Other	393	396	440	438	442

(a) Attending for consultation, review, diagnostic investigation, drug therapy, or radiotherapy treatment, at city and country clinics.

(b) Includes those treated at the Alfred and Austin Hospitals, and country centres.

Further reference, 1975

Anti-Cancer Council

The Anti-Cancer Council, a body corporate governed by the *Cancer Act 1958*, has the role of caring for the general aspects of cancer control in terms of education, prevention, research, and welfare, while leaving the control and treatment of cancer patients to the Cancer Institute and general hospitals. In order to carry out its role, the Council is empowered to raise money by means of grants, subscriptions, gifts, bequests, or by other means.

Following the Council's successful appeal for funds in 1958, it began a major research programme, especially as medical research generally had been at a low level in the universities because of post-Second World War overcrowding and lack of funds. To establish a group of trained research workers, the Council initially funded research which could be broadly considered to be relating to cancer. As more workers were trained, research was focused on more specific forms of cancer and, by the early 1960s, some tenure research fellows had been appointed.

Between 1965 and 1970 government expenditure on the Council increased, and consequently pressure on voluntary funds decreased. Although a number of diverse projects have been supported in various university departments, the major emphasis of funds for Victorian cancer research has been towards leukaemia and experimental carcinogenesis. The largest commitment has been to the Cancer Research Unit at the Walter and Eliza Hall Institute of Medical Research.

The following table shows details of expenditure by the Anti-Cancer Council during the years 1971-72 to 1975-76:

VICTORIA—ANTI-CANCER COUNCIL: EXPENDITURE
(\$)

Particulars	1971-72	1972-73	1973-74	1974-75	1975-76
Research	205,976	237,561	255,859	329,790	408,223
Education (a)	63,388	71,907	65,754	82,223	115,662
National warning campaign against smoking	..	..	56,309	54,209	62,660
Patient aid	39,875	35,490	58,957	93,723	110,786
Central Cancer Registry	25,209	33,865	34,153	50,910	71,990
Other	126,094	96,991	110,774	142,900	232,830
Total expenditure	460,542	475,814	581,806	753,755	1,002,151

(a) Professional and public education.

The following table shows cancer registrations with the Anti-Cancer Council, Central Cancer Registry, by age group, during 1971:

VICTORIA—CANCER REGISTRATIONS (a), 1971

I.C.D. number (b)	Site of primary growth (malignant neoplasms)	Age groups									
		0-39		40-59		60-69		70 and over		All ages	
		M	F	M	F	M	F	M	F	M	F
140-149	Buccal cavity and pharynx	7	3	49	14	39	15	20	21	115	53
150-159	Digestive organs and peritoneum	13	12	116	78	112	84	158	177	399	351
160-163	Respiratory system	3	6	173	34	190	17	143	27	509	84
170	Bone	6	7	2	1	..	2	3	..	11	10
171	Connective tissue	9	4	3	2	3	5	2	5	17	16
172,173	Skin	44	23	345	224	317	226	372	385	1,078	858
174	Breast	..	21	3	163	2	122	..	134	5	440
180-184	Female genital organs	n.a.	94	n.a.	203	n.a.	115	n.a.	111	n.a.	523
185-187	Male genital organs	15	n.a.	18	n.a.	49	n.a.	103	n.a.	185	n.a.
188,189	Urinary organs	5	9	25	11	52	22	55	36	137	78
190-199	Other and unspecified sites	41	48	58	45	53	29	33	49	185	171
200-209	Lymphatic and Haematopoietic tissues	68	51	56	48	45	33	46	48	215	180
	Total	211	278	848	823	862	670	935	993	2,856	2,764

(a) With the Anti-Cancer Council, Central Cancer Registry.

(b) International Classification of Diseases.

M: Male; F: Female.

Further reference, 1976

National Heart Foundation of Australia

The National Heart Foundation of Australia is an independent voluntary organisation formed in 1961 attempting to reduce deaths and disabilities from cardiovascular diseases in Australia. The Foundation is not subsidised on any regular basis by government grants, but has occasionally received donations from State Governments, with support from the Commonwealth Government for some specific projects. Approximately \$1.3m is spent annually in Australia (of which \$657,000 is expended in Victoria) in three main spheres of activity—research, rehabilitation, and education.

Research is conducted in all major hospitals, many university departments, and research institutes, all of which apply and are awarded grants for specific projects. The grants cover salaries, running expenses, materials, and occasionally specialised equipment. The main research emphasis is on coronary heart disease, with the long-term aim of prevention, and thus concentrates on the discovery of various cardiovascular disease causes, earlier and more accurate diagnosis, and improved treatment. The object of the current major study—hypertension in the Australian community—is to ascertain the extent of the hypertension problem, and to document the value of treatment in moderate hypertension. More than 100,000 Australians have been screened; between 4,000 and 5,000 of these have agreed to enter a long-term trial of five years during which time they will be regularly medically examined and all relevant details recorded.

Rehabilitation units are set up in all capital cities and some country areas to cater for those persons who have suffered a heart attack and have problems in returning to employment or coping with every day living. Patients are referred by their own doctors, and after thorough medical examination by cardiologists, psychiatrists, and physiotherapists, are given any necessary rehabilitation and found suitable employment.

A continuing education programme is carried out at both professional and community levels. It is essential to ensure that hospitals and doctors in practice are aware of changing methods of diagnosis and treatment, including surgery, and of any developments arising from Australian and overseas research. The community is also being provided with increased knowledge of cardiovascular diseases, emphasising the known risk factors in coronary heart disease. Specialised booklets are available to assist an earlier, more complete recovery and return to normal life. All services provided by the National Heart Foundation are free of charge.

Further references, 1964, 1976

Hospitals*Royal Children's Hospital Research Foundation*

In 1960, all research within the Royal Children's Hospital was amalgamated into a Research Foundation and projects in various aspects of disease continued. However, with the appointment of the first director in 1972, it was realised that the Foundation would have to restrict its interests and establish depth in research.

In 1976, the Foundation comprised a group of scientists working on growth and nutrition, a group studying genetics and intermediate metabolism, and a smaller group researching immunology and cancer. In addition, there are three clinical units within the Royal Children's Hospital which spend some of their time in research. Their activities, while outside the Foundation, are controlled by a scientific board which awards funds for significant projects, and are co-ordinated by a professional member of the Foundation.

The work of the Growth and Nutrition Unit in recent years has been devoted to foetal growth in the rhesus monkey from mid-gestation until birth, and during the first four months of post-natal life. The study of restricted protein and calorie intake in pregnant monkeys has been of interest as has the demonstration of

minimal changes in the growth of the foetal brain. Documentation of normal and abnormal brain growth has been of central importance.

Current work also relates to human malnutrition and over-nutrition. The growth standards of Aboriginal children are significantly below those of Caucasian children, and efforts are being made to assess their growth, to study their hormonal status, to assess levels of trace metals in small quantities of blood plasma, and to accelerate their development by the use of hormones known to be deficient in protein calorie malnutrition. By contrast, obese patients are being studied to assess their hormonal status by analyses of their sex hormone excretion. Some female patients show an abnormal muscle growth pattern, reminiscent of the male. In addition, work is in progress concerning the role of insulin as a growth hormone, and on peptides responsible for cell multiplication.

The Genetics Research Unit is involved in the development and application of methods of detecting genetic metabolic diseases in babies and young children. Medical members of the Unit also provide counselling on a wide range of genetic diseases and organise intra-uterine diagnostic tests. Diagnosis of metabolic disease rests upon clinical suspicion plus testing blood and urine. The diseases detected are studied by further tests on the patients and by manipulation of cells cultivated in the laboratory.

Certain metabolic diseases have been singled out for very detailed study. Phenylketonuria (PKU), studied since 1968, has recently been discovered by the Unit to have new variant forms. The diet, previously proven so effective in preventing mental retardation in most children with PKU, must be replaced by a different treatment in these exceptional patients. Another topic under detailed investigation is the handling of copper within body cells and tissues. As metabolism is very complex, these studies involve collaboration with other chemists in universities and scientific institutions in Melbourne, Wollongong, and Sydney.

The work of the Cancer and Immunology Unit centres around the detection of changes in cell membrane structures that have become malignant. The abnormal proteins (antibodies) formed during the change aids cancer diagnosis, and the induction of antibody antigen reactions appears to increase body resistance to cancer. Stimulation of the antibody antigen reaction, carried out by the use of vaccines such as B.C.G., is important also to the successful use of chemotherapy in leukemia.

Further references, 1970, 1976

Royal Melbourne Hospital

Associated with the Royal Melbourne Hospital is the Walter and Eliza Hall Institute of Medical Research and the University of Melbourne's Departments of Medicine, Psychiatry, Radiology, and Surgery. Over the last twenty years the Hospital has increasingly invested in specialised services to develop research directly bearing on patient care. For example, the Cardiac Department has pioneered the development of coronary care units in Australia. Research carried out by the Walter and Eliza Hall Institute of Medical Research is described on page 812.

The Clinical Research Unit of the Institute, long interested in auto-immune disease, has recently begun to contribute in the area of medical computing. Many of the Institute's interests, especially those concerned with immunology, overlap with the transplantation programme developed by the Department of Surgery at the University of Melbourne. Work within this Department is continuing on transplant immunology as well as on cancer. Recently, a research programme into anaesthesia and anaesthetic agents was developed.

The Department of Medicine at the University of Melbourne has a wide range of interests including epidemiological and pharmacological studies of high blood pressure and biochemical studies of bone disease, asthma, obesity, and

diabetes mellitus. Arthritis is being studied at both the biochemical and morphological levels and by viral investigations. One outcome of the research programme into kidney disease has been a new hospital building to house a Department of Nephrology.

The Department of Psychiatry at the University of Melbourne has a long-standing interest in the causes, effects, and management of depressive states and is a focal point of research on the effect of drugs upon the mind. The Department investigates aspects of medical psychology, both pure and applied, and their application to patient care and abnormal social behaviour.

In the Department of Radiology at the University of Melbourne, the diagnosis of analgesic nephropathy by X-ray has been studied and the Department has a special interest in the causes and methods of investigation of skeletal pain. The recent acquisition by this Department of a computerised axial tomography scanner has stimulated considerable interest in the early diagnosis of brain disease.

St Vincent's Hospital

The major impetus to research came to St Vincent's Hospital with the establishment of the St Vincent's School of Medical Research in 1952, and the University of Melbourne's Departments of Medicine and Surgery in 1957 and 1966, respectively.

Recognised advances have been made in basic research on protein structure, vaso-active compounds, insulin and glucagon interactions, platelet functions, and the surgery of small vessel nerves and bones.

Much of the clinical research effort directly affects patients and most is performed by workers with other teaching, clinical, and administrative responsibilities. Studies are progressing in the fields of cancer, transplantation, blood clotting, health needs and utilisation, and alcoholism and its effects. The cytogenetic techniques developed are important in the diagnosis of relapse in leukaemic patients, and isotope studies are helping to predict the benefit of therapy for patients with low white cell counts. Research workers study a variety of drugs in disease states, including anti-leukaemic agents, sedatives, and antibiotics, and observe protocols with strict patient supervision and safety in mind. The drug monitoring survey plays an important role in the recognition of drug side-effects and in staff education.

Several units are preparing assessments of techniques aimed at establishing a more accurate disease diagnosis. The Cardiac Unit, an internationally recognised pioneer in the development of echo-cardiography, which is safer and cheaper than cardiac catheterisation and angiography, is assessing the role of this technique in heart disease diagnosis. In patients with chest pain, the assessment of the roles of exercise testing is being performed by the Cardiac Unit, and the oesophageal function tests by the Gastroenterology Unit. Projects are under way in the Microbiology Department involving more rapid identification of bacteria, and in the Haematology Department concerning *in vitro* marrow culture techniques to investigate drugs depressing bone marrow.

Many co-operative studies are carried out in the hospital. The work of the Microsurgery Unit on plastic and reconstructive surgery has involved contributions by forty surgeons from some twenty countries, in addition to workers from within the hospitals, and from the University of Melbourne and Monash University. The School of Medical Research has co-operative projects with the Department of Surgery concerning hormone receptors in breast cancer cells, and with the Department of Medicine involving the structure of proteins released during blood coagulation. The Endocrinology Unit is performing co-operative research with one Sydney and four Melbourne hospital groups into the clinical application of new techniques in the functioning of the thyroid and other glands.

St Vincent's School of Medical Research, 1965; Medical research at the Royal Women's Hospital, 1965; Epidemiological Research Unit, Fairfield Hospital, 1969

Universities

Introduction

To indicate the range of medical research taking place in the universities, the various projects carried out by departments and teaching hospitals are listed in the following section.

As it is frequently necessary, for the sake of accuracy, to use technical language to describe the research, a less technical description indicating the general line of investigation is added where appropriate to make the meaning clearer to non-medical readers.

University of Melbourne—Faculty of Medicine

Research performed within the Faculty is listed alphabetically by departments.

Anatomy

1. Nervous system :
 - (i) Fibre localisation on the human optic chiasma.
 - (ii) Functions of the pineal gland in the human reproductive process.
2. Nerve supply of structures concerned with backache.
3. Studies of the rates of growth in height and weight of children.
4. Assessment of abnormalities found in placental tissues, and investigation of the movement of embryonic cells.
5. Electron and light microscopy to study the cells and cell chemistry of selected tissues.

Biochemistry

1. Studies of the mechanism of a dangerous rise in body temperature which develops in some people under anaesthesia.
2. A study of glucose, fat, and amino acid metabolism in various species.
3. Accounting for biochemical processes in man.
4. Synthesis and secretion of protein and nucleic acids in normal and regenerating liver.
5. Regulation of intracellular concentrations of constituents of the nuclei and of their metabolism in cancer cells.
6. Study of metabolic pathways of carbohydrates and proteins using various bacteria as models.
7. The development of antibody formation in staphylococcal toxin.
8. Study of the structure of leghaemoglobins (plant proteins).
9. Chemistry of nuclear proteins.
10. Studies of the biological and physical properties of lectins (substances which bind specific carbohydrate groups) and of their production by certain bacteria and viruses.
11. Synthesis and metabolism of nuclear proteins in red cells of birds.
12. Structure and function of proteins surrounding nerve fibres.
13. Studies on the proteins of the human lens.
14. Construction of molecular models.
15. Nitrogen metabolism in marine algae, and the study of phytoplankton growth in Port Phillip and Hobsons Bays, and of the metabolism of chloroplasts (vesicles containing chlorophyll) of marine algae.
16. Investigation of the properties of cytochrome *c* (an important enzyme in oxidation reactions in the body).
17. Studies of selective uptake by tumour tissue of pigment compounds.
18. The essential fatty acids.

Medicine (Austin and Repatriation General Hospitals)

1. Research into the causes and treatment of high blood pressure.
2. Clinical aspects of liver disease and on bile acid metabolism.

3. Development and evaluation of home dialysis training programmes.
4. Studies of the metabolic disturbances in kidney failure, and of the changes produced in the metabolism of distribution of drugs.
5. Studies of kidney function by micropuncture techniques.
6. Correlation between behaviour and levels of amines (certain chemical substances) in the brain.
7. Studies in the nature of the adrenalin receptor in heart muscle.
8. Studies on the mechanisms of action of antihypertensive drugs.
9. Evaluation of psychophysiological correlates of various indices of mood.
10. Studies in mother and child interaction during breast feeding.
11. Development of a sleep laboratory.
12. Transplantation immunology, lymphocyte surface antigens, and the genetics of susceptibility to bacterial infection.
13. Study of the relationship of antibodies to DNA in systemic lupus erythematosus (an autoimmune disease).
14. Studies on plasma and tissue responses of cyclic A.M.P. (an intracellular messenger) to glucagon (a hormone which raises blood sugar) administration.
15. Chemotherapy of leukaemia.
16. Mechanisms of fibrinolysis, blood clotting, and platelet function.

Medicine (Royal Melbourne Hospital)

1. Studies to examine the treatment of mild hypertension on the quality of life of the recipients.
2. Studies of blood pressure in whole communities leading to re-evaluation of methods of measurement.
3. Study of the properties of cells cultured from the lining of human joints.
4. The pathology of joint tissues in rheumatoid disease.
5. Measurements of the strength of the neck of femur.
6. Studies on the composition of human bone.
7. Study of mechanisms contributing to the late failure of transplanted kidneys.
8. The incidence of cancer in the recipients of renal transplants.
9. Chronic infections of the kidneys and urinary tract.
10. Studies of immune complex nephritis and hypertension using rabbit ear chambers.
11. Study of psychological and social implications of stroke.
12. Glucose insulin and obesity.
13. Mechanisms involved in asthma.
14. The effect of diet in obese (NZO) mice.

Medicine (St Vincent's Hospital)

1. Ultrastructure of megakaryocytes (parent cells of platelets) and its relation to platelet production.
2. Variations in the type of circulating platelets and in their function in diseases such as diabetes.
3. Sustained culture of red and white cell lines from normal and abnormal bone marrow.
4. Hypertransfusion in severe bone marrow depression.
5. The effect of removal of the spleen on the regulation of granulocytes (white cell types).
6. Chromosome studies in human leukaemia.
7. Hepatic transport mechanisms.
8. Vitamin B absorption: normal kinetics and the effect of alcohol.
9. A prospective evaluation of histological criteria for the diagnosis of inflammation produced in the oesophagus by displacement of acid from the stomach.
10. Proinsulin in disease states.

11. Immunological assay of glucagon (a hormone of the pancreas) which raises blood sugar.
12. Blood levels of drugs.
13. Use of ultrasound in diagnosing abnormalities of heart valves.
14. Exercise testing in the evaluation of patients with chest pain.
15. The study of drinking drivers.
16. A study of the health needs of a defined community.

Medical microbiology (Austin Hospital)

1. Assay of blood levels of anti-cancer drugs.
2. A rapid method for assaying gentamicin (an antibiotic) in serum.
3. Research into a reliable measure of 'T' cell activity (an immunological cell) in intracellular infections.
4. Studies on the application of Hepatitis B antibody to the diagnosis and epidemiology of the disease.
5. Studies on urinary tract infection in patients with spinal injury.

Microbiology

1. Transferable resistance to antibodies among strains of Enterobacteriaceae (bowel organisms).
2. Regulation of amino acid biosynthesis in *E. coli*.
3. Theoretical immunology and human biology.
4. Cell mediated resistance to bacterial infections.
5. The immune response of allografted rats and the mechanism of enhancement.
6. Study of the responsiveness of lymphocytes (types of white blood cells) to antigens (foreign proteins) and the mechanism by which they destroy the cells bearing these antigens.
7. Sterilisation, disinfection, and infection control.
8. Metabolism of eucalyptus and pine oils by micro-organisms.
9. Spoilage of stored, pelleted paper pulp by micro-organisms.
10. Marine bacteria in Port Phillip Bay.
11. Survey of the faecal bacteria at inner Melbourne bathing beaches and Hobsons Bay.
12. Studies of the bacteriophage-like particles (particles which destroy bacteria) and of spore formation by various bacteria.
13. Diagnostic microbiology and epidemiology.
14. Studies on the metabolic properties and antibiotic sensitivity of anaerobic organisms (which grow in the absence of oxygen).
15. Mechanisms of recovery from viral infections.
16. Studies of viruses in infants with recurrent wheezing and with acute enteritis.
17. Characterisation of arboviruses (viruses carried by insects).
18. Studies on the molecular biology and immunology of *Chlamydia trachomatis* agents (organisms which cause trachoma and other diseases).

Obstetrics and gynaecology (Royal Women's Hospital)

1. Statistics of stillbirths, neonatal deaths, and foetal malformations in Victoria.
2. Investigating methods to detect foetal malformations during early pregnancy.
3. Research into the Rh problem.
4. Studies on the immediate effects of foetal distress during labour on the levels of oestrogens and progesterone in the maternal blood.
5. Accumulation of a bank of plasma to obtain values for plasma oestrogens and progesterone.
6. A prospective study of the intellectual and physical performance of infants with low birth weight, or from mothers with various diseases.
7. Evaluation of a modified treatment of cancer of the cervix.
8. Studies on infertility and the induction of ovulation.

9. A study of oestrogen and ovulation profiles in Asian versus Caucasian groups in relation to their incidence of breast cancer.
10. A study of hormone profiles of patients with uterine cancer or with endometriosis (a disorder of the cells lining the uterus).
11. Studies on the most relevant plasma oestrogen during pregnancy.
12. Rapid method for measuring ovarian and pituitary hormones in blood and urine.

Obstetrics and gynaecology (Mercy and Austin Hospitals)

1. Evaluation of the significance of low blood glucose levels in pregnancy, and of the effects of glucose given to mothers with persistently low oestriol excretion.
2. Placental weight and growth in the early years of life.
3. Foetoplacental function in smoking mothers.
4. Significance of weight loss in late pregnancy.
5. Natural methods of family planning.
6. A study of the special gynaecological problems encountered in paraplegics.
7. Evaluation of uterine lavage in early diagnosis of uterine malignancy and detection of infection in the presence of intrauterine devices.
8. A long-term study of infants of very low birth weight or born to mothers with low oestriol excretion.
9. Improvements in techniques of feeding very small infants.
10. Urinary tract infection in newborn infants.
11. New method of measuring cellular activity of placental tissue.

Ophthalmology

1. Trial of catalin (a synthetic agent) in cataract.
2. Diabetic eye disease in pregnancy.
3. Experimental corneal grafting.
4. Evaluation of the effect of urokinase (an enzyme which dissolves clots) on blood clots in the eye.
5. The structural changes in the eye following prostaglandin E₁ (a cellular hormone).
6. Microsurgical approach to surgery for glaucoma.
7. Studies using the scanning electron microscope of iris and of retinal tissue.
8. Instrument design and development.

Otolaryngology

1. Development of an artificial inner ear, including the surgical anatomy of the inner ear; the development of a miniature receiving and stimulating device; the properties of the electronic connections and their tolerance by tissues; and the detailed analysis of the perception of speech.
2. Tactile vocoder (a sensory substitution device for the severely deaf).
3. Correlations between some intelligence tests and the sensitivity of hearing in children.
4. Electronmicroscopic changes in acoustic trauma.
5. An epidemiological study of deafness in industry.
6. Detailed study of laryngeal anatomy.

Paediatrics

1. A study of the normal development of fat tissues.
2. Development of antibodies to insulin in insulin-dependent diabetic children.
3. Renin and calcium metabolism in renal disease.
4. Investigation into a neurological disease associated with acute asthma.
5. Relationship of electrical impulses from the retina to visual stimuli.
6. A long-term study of infants weighing less than 1,500 grams at birth.

7. Neonatal jaundice in relation to Greek parentage.
8. Growth and development of premature and underweight infants.
9. Aspects of neonatal liver disease.

Pathology

1. Mechanism of movement of proteins through the walls of blood vessels.
2. Blood vessels in areas of chronic inflammation.
3. Mechanism of swelling induced by certain chemicals (pyrrole derivatives of pyrrolizidine alkaloids).
4. Comparative study of peripheral nerve disease.
5. Study of toxic amino acids, some of which occur in pastures.
6. Studies in human and experimental liver disease.
7. Regulation of nucleoprotein synthesis and of cell division in rat liver during the stimulation and inhibition of cancer by chemicals.
8. Primary tumour in the heart of inbred rats.
9. Effects of hormones on experimental cancers of the breast in rats.
10. Studies of the structure of the kidney in health and disease using various techniques including microdissection.

Pathology (Austin Hospital)

1. Experimental studies of obstruction of lung blood vessels by amniotic fluids.
2. Effects of cigarette smoke on liver and lung of the rat.
3. Preliminary studies on hybridisation of mouse cancer cells with human white cells.
4. Measurement of prothrombin and other coagulation factors.
5. Studies on clotting caused by immune complexes.
6. Subtyping of muscle fibres.
7. Assessment of abnormalities in bone in patients with renal disease.

Pharmacology

1. Investigation of the transmission of messages across nerve cells by adrenalin and effects of drugs on this.
2. Studies on distribution and actions of nicotine.
3. Nervous control of the calibre of blood vessels.
4. Studies on drugs of dependence.
5. Intensive monitoring of drug use in a hospital.
6. Pharmacology of peptides (small proteins) which act on blood vessels.

Physiology

1. Fat metabolism by normal and abnormal arterial wall.
2. The metabolism of dietary cholesterol.
3. The sensory processes laboratory.
4. Studies on the control by the brain of the integration of movement.
5. A computerised mathematical technique (differential variance analysis) for studying the spinal cord.
6. Physiology of the renin-angiotensin system (a hormone system concerned with the regulation of blood pressure).
7. Investigations into a satisfactory pre-clinical model for studying control of uterine blood flow during pregnancy.
8. Studies of regional mechanisms which dilate blood vessels.
9. Comparisons of direct and indirect methods of measuring maximum oxygen consumption in leading athletes.
10. Modification of ECG to demonstrate details of transmission of the cardiac impulse.
11. Studies in the rat of ventricular fibrillation (ineffective contraction of the ventricle of the heart).

12. Investigations of the growth of blood cells in the laboratory.
13. Hormonal aspects of pregnancy.
14. Development of an assay for luteinising hormone-releasing hormone (LH-RH) (a hormone produced by the brain).

Psychiatry

1. The effects of drugs on depression and anxiety.
2. Studies of patients suffering from Parkinson's disease.
3. Effects of smoking.
4. Test for measuring 'cerebral function'.
5. Methods of treatment of patients with sexual disorders.
6. Investigations in areas of philosophical psychology having particular relevance to practice and theory in psychiatry.
7. A study to establish a manner of rating repressive traits in an individual.
8. Psychological measurement in the irritable bowel syndrome.
9. Studies of the relationship between anxiety and pregnancy and post-partum depression.
10. Comparison of the number and severity of life events before hospital admission of patients with cardiac infarction.
11. A physiological model of mother-child interaction.
12. Studies of pain, including control by hypnotherapy and relaxation techniques, and pain in routine dental practice.
13. Huntington's chorea. Genetic mental deterioration and abnormal movements.
14. Studies on schizophrenia and depression.
15. Examination of self-mutilating behaviour.
16. A technique for the treatment of exhibitionism.
17. An investigation into sexual attitudes of male and female university students.
18. A study of delay in presenting for treatment for breast cancer.

Radiology

1. Study of radiological appearances of the kidney in various diseases.
2. A survey of outpatients with sciatica studied by myelography (injection of radio-opaque dye into the spinal canal).
3. Diagnosis of lung cancer by bronchial brushing.
4. A technique for removing stones remaining in the common bile duct following surgery.
5. Investigations into the use of radio-opaque dye injected into arteries to diagnose the cause of bleeding into the bowel.

Surgery (Austin and Repatriation General Hospitals)

1. Research into fundamental problems of liver and gastric function.
2. The cellular response to hormones and their influence on gastric secretion.
3. Investigations into the clinical problems relating to the use of the colonoscope.
4. Studies on clinical problems in arterial disease.
5. Studies of wound infection.

Surgery (St Vincent's Hospital)

1. Studies on problems relating to diagnosis and management of early and late breast carcinoma.
2. Studies on diagnosis and prevention of clotting in veins.
3. Investigations on the detection and characterisation of circulating cancer cells.
4. Studies on the prolongation of rat renal allograft survival.
5. Microsurgery.
6. Studies into the detailed blood supply of bone, particularly relating to the subchondral regions in arthritic joints.
7. Evaluation of different types of heart-lung machines and of lung problems in patients after their use.

8. Conservative surgery of the larynx.

Surgery (Royal Melbourne Hospital)

1. Studies of problems associated with liver and kidney transplants.
2. Immuno-suppressive drugs and cancer—skin tumours in immuno-suppressed patients.
3. Differences in tissue antibodies between mother and child.
4. Cellular immunity in bronchial carcinoma.
5. Clinical studies of peripheral vascular disease.
6. Factors affecting the intensity and duration of action of muscle relaxants.
7. Oxygen analysis during anaesthesia.
8. Investigation of the metabolic disturbance seen after injury.

Monash University—Faculty of Medicine

Research performed with the Faculty is listed alphabetically by departments.

Anatomy

1. Anatomy of the testis of the seasonally-breeding bush rat, *Rattus fuscipes*.
2. The effects of hormones and chemicals on the growth of both normal and malignant cells of the intestine.
3. Development of the structure and function of cells lining the stomach.
4. Scanning electron microscopy of tumours in the rat induced by chemicals.
5. Structure and distribution of the vessels in the walls of blood vessels.
6. Growth and ultrastructure of connective tissue fibres.
7. Analysis of structural and functional components of the cartilage of joints.
8. Selective suppression of follicle-stimulating hormone (pituitary hormone concerned with reproduction) by testicular extracts.
9. Nerve fibre relationships in the median eminence (part of the brain).
10. Study of the types of cells grown in culture of isolated normal and diseased renal glomeruli (kidney filters).
11. Biochemical and ultrastructural studies on elastic tendons.
12. The structure and biochemistry of high density cultures of cartilage cells.
13. Effects of mechanical and pharmacological lesions on the hypothalamus (part of the brain).
14. Retinal structure in *Noromys Alexis* (a marsupial desert rat).

Biochemistry

1. Control mechanisms in mammalian metabolism with special reference to diabetes mellitus.
2. Chemistry and physical chemistry of connective tissues.
3. Mechanisms of control of alterations in shape during development.
4. Growth and development of mitochondria (intracellular particles) and their relationship to the mechanisms of action of antibiotics.
5. Information transfer in nervous tissues.
6. Molecular pharmacology.

Medicine

1. Clinical and experimental hypertension.
2. Studies on hormones of the posterior pituitary gland.
3. Study of the receptors on cells of adrenalin and related substances.
4. Assay of gastrin and secretin (gastric and intestinal hormones) in health and disease.
5. Duodenal ulcer disease: natural history and efficacy of treatment.
6. Metabolism of bile acids.
7. Control mechanisms of the oesophagus and lower oesophageal sphincter (muscular ring at lower end of gullet which excludes gastric contents).

8. Synthesis of DNA in cells treated with drugs which affect growth of cells.
9. Assay of cytosine arabinoside, an antiviral agent.
10. Cardiac metabolism and its relationship to ischaemic heart disease.
11. Development of techniques of computer managed instruction.

Microbiology

1. Study of the structure, morphology, and chemical nature of a spiral bacterium (*Leptospira*) and the immune response to infection.
2. The metabolism and biological significance of some pigments of staphylococcus.
3. Genetic control of enzyme synthesis and regulatory mechanisms.
4. Biosynthetic pathways in amino acid metabolism by *Pseudomonas*.
5. Gas chromatography by bacterial metabolic products.
6. Infection by Mycoplasma of cells grown in the laboratory.
7. Rapid biochemical changes in bacterial cultures and their precise measurement.
8. Hepatitis.

Obstetrics and gynaecology

1. Measurement of foetal movements in utero throughout pregnancy.
2. Studies on the work of the heart and circulatory changes in normal and hypertensive pregnancy.
3. The role of prostaglandins (hormonal substances) in function of the human corpus luteum (part of the ovary).
4. Repair of human and animal oviducts by microsurgery.
5. Laboratory fertilisation of human eggs and the development of embryos in tissue culture.
6. Studies on the maturation of mammalian eggs using the light and electron microscopes.
7. Psychological and hormonal effects of sex steroids on sexual behaviour.
8. Development of a method for assessing female sexual response.
9. Screening for psycho-social disturbance among gynaecology patients.
10. Development of self-rating scales to aid gynaecological diagnosis.
11. A study of lay persons' opinions about contraception.
12. Investigations of the maternal image of the foetus.
13. Perceived differences in pain of induced and spontaneous labour.

Paediatrics

1. Studies of the control of red blood cells in the newborn.
2. Red cell enzyme defects and neonatal jaundice.
3. Studies of teaching techniques in clinical paediatrics.
4. Intravenous feeding of infants of very low birth weight.
5. Studies of respiratory control mechanisms in the newborn.
6. The cellular constituents of human breast milk.
7. Pathology of renal malformations.

Pathology and immunology

1. Clinical and experimental tumour immunology. In particular, anti-tumour immunoreactivity is being studied in bowel, breast and skin cancers, and leukaemia.
2. Immunopathology of renal, skin, respiratory, and gastrointestinal diseases in these organs.
3. Immunochemistry of cell membranes, particularly lymphocytes and tumour cells.
4. Development of improved methods in immunodiagnosis and immunofluorescence.

Pharmacology

1. The actions of drugs within the central nervous system.
2. Pharmacology of the autonomic nervous system.
3. The effects of drugs on the microcirculation.
4. The modes of action of antihypertensive agents.
5. Pharmacology of the intestinal and reproductive tracts.

Physiology

1. Physiology of sense organs and sensory pathways.
2. Physiology and pharmacology of central nervous synapses (connections between nerve cells).
3. Control of movement by the central nervous system.
4. Physiology and pharmacology of autonomic nervous system.
5. Physiology and pharmacology of smooth muscle.
6. Studies of the central nervous system and of the function of nerve and tissue using electron microscopy.
7. Biophysics of excitation and contraction of muscle.
8. Comparative adrenal function.
9. Endocrine factors in reproduction.
10. Renal function in marsupials.
11. Physiology of the microcirculation.
12. Transport across the walls of small blood vessels.

Psychological medicine

The main areas of research in this area include the influence of the mother-infant relationship on the development of the infant, particularly when the infant displays shortly after birth evidence of distress behaviour which the mother is unable to cope with: medical students' perception of the medical student; and acupuncture and the relief of pain.

Social and preventive medicine

1. Alcohol and road safety—social characteristics and drinking habits of persons involved in road crashes.
2. Epidemiology :
 - (i) A clinical trial of the effectiveness of acupuncture.
 - (ii) A study of the characteristics and needs of arthritis victims in the outer eastern region of Melbourne.
 - (iii) A study of death rates by local government area in Victoria.
3. Health behaviour—contraceptive methods used by migrants.
4. Health manpower—a study of the distribution of general practitioners and of the characteristics of general practice in Victoria.

Surgery

1. Diseases of the large bowel, particularly cancer and ulcerative colitis.
2. Vascular disease.
3. The effects of alcohol on accidents and injuries.
4. Burns.

Further reference, 1966

BIBLIOGRAPHY
Central Office

- 16.1 Hospital and nursing home statistics
- 17.2 Child care
- 17.3 Illnesses, chronic, injuries and impairments
- 17.10 Persons covered by hospital and medical expenditure assistance schemes
- 17.16 Illnesses, chronic, injuries and impairments (preliminary)