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Preface

The report arising from the first comprehensive study of health expenditures by disease in Australia, using estimated expenditures by disease in 1993–94 was released in September 1998. The study involved a comprehensive accounting of disease costs across all chapters of the International Classification of Diseases Ninth Revision (ICD-9) (AIHW: Mathers et al. 1998a).

This report updates these numbers to 2000–01. The methodology has been revised in some areas and the analysis made across the disease and injury groups used in the first Australian Burden of Disease study (AIHW: Mathers et al. 1999). The underlying data use the ICD-10 Classification of Diseases and the International Classification of Primary Care Version 2 (ICPC 2).

The report provides an overview of total health system expenditures on disease and injury in Australia during 2000–01, based on the best possible estimates from currently available data sources. To maximise the validity of comparison between diseases, the same methods are used in estimating each disease. It is recognised that for disease-specific analyses it is sometimes necessary to draw data from diverse disease groups in order to estimate the full impact of a disease. In examining diabetes for example, it is often useful to estimate the proportion of heart and renal disease costs that can reasonably be attributed to diabetes. In this report, however, each health dollar is allocated to just one disease, so the total for all diseases adds to the total expenditure in the health system that is allocated by disease.

These numbers provide a useful picture of health expenditure according to the clinically relevant category of disease. However, they should not be the sole determining factor in resource allocation decisions. The existing expenditure on a disease, no matter how large or small, does not in itself give an indication of the loss of health due to that disease, or the priority for intervention or need for additional health services expenditure. Resource allocation decisions require information not only on average costs and outcomes but also on the marginal costs and marginal outcomes associated with the specific interventions under consideration.

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Executive summary

This report provides a systematic analysis of Australian health expenditure allocated by disease in 2000–01. Disease and injury groups are defined according to the first Australian Burden of Disease (BoD) study (AIHW: Mathers et al. 1999).

These disease expenditure estimates allocate around 86% of recurrent health expenditure by disease, or $49.2 billion in total. Expenditure not allocated by disease includes expenditure on community and public health services, health administration, the transport of patients, and health aids and appliances.

Main results

The seven disease groups that account for the greatest health expenditure in Australia are:

- Cardiovascular diseases—$5.4 billion (11.0% of total allocated health expenditure)
- Nervous system disorders —$4.9 billion (9.9%)
- Musculoskeletal diseases—$4.7 billion (9.6%)
- Injuries—$4.1 billion (8.3%)
- Respiratory diseases—$3.5 billion (7.2%)
- Oral health—$3.4 billion (6.9%)
- Mental disorders $3.0 billion (6.1%).

These seven conditions together account for $29 billion, or 59% of allocated health expenditure.

For 2000–01 cardiovascular disease was the most expensive group ($5.4 billion), and also accounted for 38% of deaths.

Nervous system disorders was the second most expensive group ($4.9 billion) and has increased significantly since 1993–94, mostly because of a large increase in expenditure for people with Alzheimer's disease and other dementias in aged care homes.

Expenditure in the National Health Priority Areas

The National Health Priority Areas (NHPAs) are cardiovascular health, cancer control, injury prevention and control, mental health, musculoskeletal conditions, diabetes mellitus, and asthma. Together, they account for $21.4 billion, or 43.5% of allocated health system expenditure.

Four of the seven NHPAs rank within the top seven conditions listed above—cardiovascular disease, musculoskeletal diseases, mental disorders and injury. The fifth, neoplasms, ranks ninth ($2.8 billion, or 5.6% of allocated expenditure); and the

sixth, diabetes, ranks fifteenth ($0.8 billion or 1.7% of allocated expenditure). Asthma is the seventh NHPA. It is contained within the respiratory diseases group and accounts for $0.6 billion, or 1.2% of allocated health expenditure.

Health expenditure by age and sex

Health system expenditures allocated by disease are 26% higher for females than for males—$27.4 billion compared with $21.8 billion. Expenditure per person is $2,821 for females which is 24% higher than the $2,277 for males. When maternal conditions are excluded, expenditure per person for females is 18% higher than for males.

Expenditure per person is higher for females than males for disease groups such as the nervous system, musculoskeletal conditions and oral health. It is higher for males for the cardiovascular, cancer and injury groups.

Health expenditure per person is $2,426 on average per year for males aged 0 to 4 years. It then decreases to $1,146 for boys aged 5 to 14 years and from there increases with age to $10,719 for men aged 75 years and over. For females, the pattern is the same for children, but in adulthood expenditure peaks in the 25–34 years age group, reflecting child-bearing expenditure; it then declines for the age range 35 to 44 years and from there increases steadily with age to $11,346 per year for women aged 75 years or over.

Changes in health expenditure by disease, 1993–94 to 2000–01

Between 1993–94 and 2000–01 the growth in inflation-adjusted expenditure which could be allocated to disease was $13.2 billion—which represents growth of 37%. This was an average annual increase of 4.6%.

Areas which showed above-average growth during the period were oral health (50%), nervous system disorders (45%) and digestive system diseases (38%). The high growth in nervous system disorders expenditure was the result of the large increase in expenditure on care for people with dementia in aged care homes.

Areas which showed below-average growth were respiratory diseases (22%), cardiovascular disease (26%), neoplasms (31%) and mental disorders (32%). The lower growth for mental disorders was due to the fact that these disease expenditure estimates do not include expenditure on community mental health services. Growth was 43% when this was included.

1 Introduction

This publication presents estimates of health expenditure on disease and injury in Australia in 2000–01, classified by disease or injury group, age and sex. The estimates are available by area of expenditure—hospitals, high-level residential aged care, medical services, other professional services, pharmaceuticals and research.

The 2000–01 disease expenditure estimates were based on the 176 disease and injury conditions used in the first Australian burden of disease study (AIHW: Mathers et al. 1999), with the inclusion of some additional sub-categories. This report aggregates these conditions into the 19 broad disease groups used by the burden of disease study. Disease expenditure estimates are also presented for selected conditions in the seven National Health Priority Areas and by age and sex.

These disease expenditure estimates allocate 86% of total recurrent health expenditure in 2000–01, or just under $49.2 billion. The expenditure not allocated by disease is capital expenditures, and expenditure on community health, public health programs, health administration and health aids and appliances.

The disease expenditure database is comprehensive and expenditure estimates by source of funds (i.e. commonwealth, state or private) for each area of expenditure are able to be produced. For some areas of expenditure, state and territory estimates will be available. Utilisation measures such as bed days, separations, number of medical encounters and services and pharmaceutical scripts can also be estimated.

1.1 Use and interpretation of expenditure estimates

Disease-specific expenditure estimates provide a useful perspective on the utilisation and costs of health services in Australia, as well as a reference source for planners and researchers interested in the costs and utilisation patterns for a particular disease group. The estimates presented in this report are derived in a consistent framework, but it is important that their interpretation and limitations be clearly understood. The most important points to note are:

- Existing expenditure on a disease, no matter how large or small, does not in itself give an indication of the loss of health due to that disease or the priority for intervention or need for additional health services expenditure. Resource allocation decisions require information not only on average costs and outcomes but also on the marginal costs and marginal outcomes associated with the specific interventions under consideration.
- Care should be taken when interpreting expenditure associated with disease treatment as an estimate of the savings that would result from prevention of disease. Conversion of the opportunity cost of resources being devoted to disease treatment, or the benefits forgone, into expenditure savings involves a number of additional considerations (see, for example, AIHW: Mathers et al. 1998b).

- Although the expenditure estimates reported here provide a broad picture of use of health system resources classified by disease group, they should be interpreted with caution for specific diseases because, although the methodology yields consistency, good coverage and totals that add up to known expenditures, it is not as sensitive or accurate for any specific disease as a detailed analysis of actual costs incurred by patients with that disease.

Monetary expenditure on health services by itself tells us little about what is happening in the health system or about priorities for funding or interventions. If, however, these expenditures can be linked to output and outcome measures (such as number of hospital admissions and changes in health status) the expenditure information becomes more meaningful, especially if dissected by disease categories.

Disease expenditure estimates cannot provide a comprehensive assessment of the impact of disease on the welfare of society. Nevertheless, they can be useful indicators of the economic burden individual diseases place on a society and can help identify how health resources are currently allocated to different diseases and population subgroups.

1.2 Background

The first detailed Australian study of expenditure across disease and injury groups was published in 1998 and referred to the year 1993–94 (AIHW: Mathers et al. 1998b). This study classified disease and injury according to the major chapter groupings of the International Classification of Diseases Ninth Revision (ICD-9).

The 1993–94 disease expenditure estimates were for the treatment costs of disease (and some prevention costs) by area of expenditure (i.e. hospitals, nursing homes, medical services, other professional services, and pharmaceuticals) and by age and sex groups (AIHW: Mathers et al. 1998a).

1.3 Methodology

The expenditure on disease as presented in this report is an example of a satellite national account. Satellite accounts enable the linkage of non-monetary data sources and analysis to the monetary accounting system. In health, such accounts were first proposed by Stone in 1975 (United Nations 1975). The UN System of National Accounts 1993 introduced the concept of satellite accounts as a way of going beyond the rigidities of the National Accounts structure to provide a focus on data which is of relevance to specific policy areas (CEC, IMF, OECD, UN & WB 1993).

To ensure consistency across the disease expenditure project and the associated burden of disease project, the disease groups used in the 2000–01 disease expenditure estimates were based on the 176 diseases that were published in the Australian burden of disease study (AIHW: Mathers et al. 1999). Extra categories were added to provide a more comprehensive list of diseases, and, as in 1993–94, the two categories of 'Symptoms, signs and ill-defined conditions' and 'Other contact with health

services' were included to cover those health service expenditures which cannot be allocated by disease. Inclusion of these two categories allows for the allocation of all the ICD-10 codes.

The 2000–01 estimates were derived using a methodology which is consistent with that used for the 1993–94 estimates, in order to allow better comparisons between the estimates for the two years. The use of the burden of disease study categories, however, means that not all the expenditure estimates as published are directly comparable. In particular for the 2000–01 estimates:

- In the burden of disease categorisation, dementia (Part of ICD-10 chapter V: Mental and behavioural disorders) is included with Alzheimer's disease (Part of ICD-10 chapter VI: Diseases of the nervous system). For these expenditure estimates, therefore, all dementia and Alzheimer's disease expenditure is in the burden of disease chapter K: Nervous system and sense organ disorders.
- Diabetes is presented separately from the endocrine, nutritional & metabolic disorders group.
- Oral health is presented separately from the digestive system disorders group.

When comparisons of 2000–01 and 1993–94 are made later in this report, adjustments have been made to allow where possible for these differences, but comparisons made using *published* 1993–94 results will not be valid.

The full set of ICD-9 codes used in the burden of disease categories is in Annex Table A of *The Burden of Disease and Injury in Australia* (AIHW: Mathers et al. 1999).

Since the 1993–94 study, nursing homes and hostels have been integrated into a single residential aged care system. The 'nursing home' portion of 2000–01 residential aged care services expenditure is estimated on the basis of residents' level of dependency, with expenditure on high-dependency residents (RCS categories 1–4) taken as approximating expenditure on nursing homes.

Disease expenditure estimates for 2000–01 are available by the following areas of expenditure: hospitals, aged care homes, out-of-hospital medical services, pharmaceuticals, other professional services, dental, and research. A detailed analysis was undertaken for admitted hospital patients, aged care homes, out-of-hospital medical services, and pharmaceuticals requiring a prescription (72% of allocated expenditure). For other areas of expenditure, estimates were made by adjusting the 1993–94 estimates for changes in the age and sex structure of the population and then multiplying these by a factor that ensured they add to the known total 2000–01 expenditure for that area.

Areas of health expenditure

Hospital: admitted patients

The proportions of total public acute hospital expenditure which relate to admitted patients are estimated using the admitted patient fractions estimated by each state and territory and published in *Australian Hospital Statistics 2001–02* (AIHW 2003a).

Private hospital expenditure data are derived from the Australian Bureau of Statistics Private Health Establishments Survey.

The hospital morbidity expenditure method estimates acute hospital admitted patient costs by apportioning the total admitted patient expenditure to individual episodes of hospitalisation with an adjustment for the resource intensity of treatment for the specific episode (using the Diagnostic Related Groups, or DRGs) and the length of stay. The length of stay adjustment is made in such a way as to reflect the fact that some costs are proportional to length of stay (e.g. ward costs and meals), whereas others are independent of length of stay (e.g. theatre costs). The subdivision of episode costs into these cost 'buckets' was made using National Hospital Costs Data Collection data.

An adjustment is also made for the actual hospital where the treatment is provided. The standard DRG method for estimating costs uses state DRG weights, and so assumes that the hospital has the same average costliness as the average for the state. The establishment's database contains the actual cost of treating admitted patients at each hospital, so these data are used to scale up or down the estimate that comes from using state DRG weights.

For sub-acute and non-acute patients, where there are no DRG weights, the most recent data on costs comes from the July to December 1996 sub-acute and non-acute patient (SNAP) study (Eagar et al. 1997). Per diem costs were applied and inflated to 2000–01 estimates using the implicit price deflator for final government consumption expenditure on hospital and nursing home care (AIHW 2002).

Estimates of expenditure on medical services for private patients in hospitals are included in admitted patient hospital costs. Expenditure for private medical services in 2000–01 was $1,822 million. This estimate comes from Health Insurance Commission data on the fee charged by private medical practitioners for in-hospital services. Sometimes specialists accept a discounted amount as full payment for the services, so the fee-charged data will be a slight overestimate of actual expenditure for private medical services in hospitals.

Hospital: non-admitted patients

Total expenditure for non-admitted patients comes from *Australian Hospital Statistics 2001–02* (AIHW 2003a). The figure was broken down by disease by adjusting the 1993–94 non-admitted patient disease expenditure pattern for demographic changes. These numbers are therefore, preliminary.

Aged care homes

Since the 1993–94 disease costing study was undertaken, nursing homes and hostels have been integrated into a single residential aged care system. People receiving residential aged care are categorised according to the level of care they receive. Each resident is categorised into one of eight care categories on admission and this categorisation is periodically reviewed. The 'nursing home' portion of residential aged care services expenditure is estimated on the basis of this level of care. Levels 1

to 4 roughly relate to residents with high levels of dependency and are approximately equivalent to the services delivered by nursing homes in the past.

Expenditure for residents categorised to RCS levels 1 to 4 in aged care homes comes from *Health Expenditure Australia 2001–02* (AIHW 2003b). It is allocated to disease based on data from the Australian Bureau of Statistics 2003 Survey of Disability, Ageing and Carers which asks staff in aged care homes which health condition causes the most problems for residents.

Out-of-hospital medical services

Data from the general practitioners survey, Bettering the Evaluation and Care of Health, or BEACH, was used to allocate private medical services provided by both GPs and specialists. The International Classification of Primary Care Version 2 codes used in BEACH were mapped to the disease costing groups to enable medical services expenditure to be allocated by disease. Expenditures for 'Unreferred attendances', 'Imaging' and 'Pathology' were allocated to disease on the basis of GP encounters, while expenditure for 'Other medical services' was allocated to disease on the basis of the referral pattern in BEACH. Expenditure for 'Optometry' was allocated to the disease group 'Disorders of refraction' under chapter K: Nervous system and sense organ disorders. Allocation of GP costs where there are multiple presenting conditions in the GP encounter was done on a pro-rata basis.

In-hospital medical expenditure for private patients is not included under medical services, but is allocated as part of admitted patient expenditure. (*Health Expenditure Australia 2001–02* (AIHW 2003b) includes this in-hospital medical expenditure in the category 'medical services').

Pharmaceuticals

Prescription drugs

The Department of Health and Ageing provided detailed costing data for pharmaceuticals issued under the Pharmaceutical Benefits Scheme and the Department of Veterans' Affairs Repatriation Pharmaceutical Benefits Scheme. It also provided volume data for private prescriptions and under-copayment drugs. These data originally came from a Pharmacy Guild survey and were adjusted by the Department to represent volume figures for all of Australia. Costing figures were applied to these prescription drugs, to obtain a total expenditure figure for each prescription drug. Prescription drugs were coded by the fifth edition of the Anatomical Therapeutic Chemical classification a system developed by the World Health Organization for classifying therapeutic drugs (WHO Collaborating Centre for Drug Statistics Methodology 2002). The codes were mapped to codes for prescription drugs used in the BEACH survey. As a result, data from BEACH were used to allocate expenditure on prescription drugs to each disease group, based on the medical problem in the GP encounter that related to the prescribing of the particular drug. An assumption was made that the pattern of diseases relating to each type of prescription drug is the same when prescribed by a GP and by a

specialist. This assumption was applied because there are no data that permit allocation of specialist-written prescriptions to diseases.

Pharmaceuticals that are dispensed in hospitals are included in the estimates of hospital costs.

Over-the-counter drugs

Health Expenditure Australia 2001–02 (AIHW 2003b) separates expenditure on pharmaceuticals into 'Benefit paid pharmaceuticals' and 'All other pharmaceuticals'. 'All other pharmaceuticals' include over-the-counter drugs but also pharmaceuticals for which a script is required such as private prescriptions and under-copayment drugs. The estimates in this report separate pharmaceuticals for which a script is required from over-the-counter drugs. Therefore, in order to calculate the expenditure on over-the-counter drugs, expenditure on private prescriptions and under-copayment drugs was subtracted from 'All other pharmaceuticals'.

Expenditure on over-the-counter drugs in 2000–01 by disease is based on a revision to the 1993–94 disease costing estimates that allows for demographic change, and increases in the expenditure in this area.

Other professional services

Total expenditure on 'Other professional services' was obtained from *Health Expenditure Australia 2001–02* (AIHW 2003b) and was allocated to disease by adjusting the 1993–94 disease figures for demographic change. 2000–01 disease expenditure estimates for 'Other professional services' are therefore approximations and should be used with caution.

Dental services

Total expenditure on 'Dental services' was obtained from *Health Expenditure Australia 2001–02* (AIHW 2003b) and was allocated to the oral health category. The age and sex estimates for 2000–01 were obtained using the 1993–94 age-sex expenditure distribution against the 2000–01 age-sex population structure, and are therefore approximate.

Research

Total expenditure on 'Research' was obtained from *Health Expenditure Australia 2001–02* (AIHW 2003b) and was allocated to disease using data from the latest Australian Bureau of Statistics research and experimental development surveys. Most of the research data is classified at a fairly high level, but it does give a valid picture of the distribution of research expenditure at the chapter level. Within a chapter, research is allocated in proportion to the distribution of all other expenditure by disease within that chapter.

2 Results

2.1 Total expenditure

Table 2 shows health expenditure in Australia in 2000–01, summarised at the broad disease group level. This expenditure includes expenditure funded by the Commonwealth and State governments, by private health insurance and by individuals and households. These disease expenditure estimates allocate 86% of total recurrent health expenditure in 2000–01, or just under $49.2 billion. Expenditure not allocated by disease is capital expenditure and expenditure on community health services, public health programs, patient transport, health administration, and health aids and appliances (Table 1). Welfare expenditures such as the Home and Community Care program and low-level care in aged care homes are not included.

Table 1: Total health expenditure in Australia, 1993–94 and 2000–01 ($ million)

Expenditure	1993–94[a]	% of total recurrent expenditure	2000–01	% of total recurrent expenditure
Allocated recurrent expenditure	**29,999**	**87.9**	**49,174**	**85.8**
Unallocated recurrent expenditure				
Ambulance	*484*	**1.4**	*994*	**1.7**
Aids and appliances	*770*	**2.3**	*2,108*	**3.7**
Community and public health	*1,558*	**4.6**	*3,095*	**5.4**
Administration	*1,099*	**3.2**	*1,942*	**3.4**
Other non-institutional not elsewhere classified[b]	*109*	**0.3**		
Other institutional not elsewhere classified[c]	*121*	**0.4**		
Total unallocated	**3,956**	**11.6**	**8,122**	**14.2**
Total recurrent expenditure	**34,141**	**100.0**	**57,297**	**100.0**
Capital expenditure/outlays[d]	1,852		2,631	
Capital consumption[d]	523		970	
Total health expenditure	**36,516**		**60,897**	

(a) The results for 1993–94 have been adjusted to align with the 2000–01 classifications for allocated and non-allocated areas of expenditure.

(b) 'Other non-institutional not elsewhere classified' is included in 'Community and public health' for 2000–01.

(c) 'Other institutional not elsewhere classified' is included in 'Allocated recurrent expenditure' for 2000–01.

(d) Capital expenditure and capital consumption for 1993–94 is from AIHW (2002).

The seven disease groups that account for the greatest health expenditure in Australia (Table 3) are:

- Cardiovascular diseases—$5.4 billion (11.0% of total allocated health expenditure)
- Nervous system disorders —$4.9 billion (9.9%)
- Musculoskeletal diseases—$4.7 billion (9.6%)
- Injuries—$4.1 billion (8.3%)
- Respiratory diseases—$3.5 billion (7.2%)
- Oral health—$3.4 billion (6.9%)
- Mental disorders $3.0 billion (6.1%).

These seven conditions together account for $29 billion, or 59% of allocated health expenditure.

In 1993–94 these seven disease groups also accounted for the most health expenditure in Australia, but the proportions of expenditure were somewhat different. The top seven were cardiovascular diseases (12%), musculoskeletal diseases (10%), injuries (8%), respiratory diseases (8%), nervous system disorders (7.5%), mental disorders (6.4%) and oral health (6.2%) (calculated from AIHW: Mathers et al. 1998b).

The fall in the proportion of expenditure on mental disorders from 6.4% in 1993–94 to 6.1% in 2000–01 occurs because community mental health expenditure ($340m in 1993–94 and $842m in 2000–01) is not included in these disease expenditure estimates. This increase represented the change in focus in mental health from hospital care to community care. When adjustment is made for this, mental disorders expenditure increased from 7.5% of allocated health expenditure in 1993–94 to 7.9% in 2000–01.

For 2000–01, cardiovascular disease was the most expensive group ($5,393 million), and also accounted for a high proportion of deaths—38% (Table 3).

Nervous system disorders was the second most expensive group and has increased significantly since 1993–94, mostly because of a large increase in expenditure for people with Alzheimer's disease and other dementias in aged care homes. 49% of expenditures for high-level care in aged care homes was estimated to be due to Alzheimer's and other dementias in 2000–01(Table 2).

Cancer ranks ninth in terms of direct costs, but is the second highest contributor to deaths (37,615 deaths, or 29% of all deaths).

It is interesting to note that musculoskeletal diseases and injuries, which include many long-term chronic disorders with relatively low fatality rates but high levels of disability and reduced functionality, rank highly in the direct cost estimates.

Nervous system disorders, mental disorders, musculoskeletal diseases and injuries rank highly in terms of costs ($16.7 billion, or 34% of allocated health system costs), but cause only 12% of deaths.

As the fifth most expensive disease group, respiratory diseases are the third-largest cause of death for 2000–01, about two-thirds of which are due to pneumonia and chronic obstructive pulmonary disease (COPD).

Ranked sixth is oral health, with 7% of expenditure but, of course, very few deaths.

For all diseases, 45% of direct health system costs allocated by disease are within the hospital sector (which includes admitted patient and non-admitted patient services in public and private hospitals), 17% of costs are for out-of-hospital medical services, 16% for pharmaceuticals, 8% for the high-care component of aged care homes, 6% for dental services and 5% for other health professionals (Table 3).

It should be noted that expenditure in aged care homes is not entirely for health purposes. Much of this expenditure is on food, lodging and other necessities of daily life and occurs regardless of the disease a person has. Thus only a portion of aged care home expenditure should be considered to be a consequence of disease.

Table 2: Allocated recurrent expenditure in Australia, by broad disease group, 2000–01 ($ million)

	Hospitals						Pharmaceuticals					
Disease group	Admitted patients[a]	Non-admitted services	Total	Aged care homes[b]	Out-of-hospital medical services	Other professional services[c][f]	Prescription[d]	Over-the-counter[c][e]	Total	Dental	Research	Total expenditure allocated by disease
Infectious & parasitic	340	138	478	8	367	27	192	41	233	0	139	1,251
Respiratory	1,101	336	1,437	88	821	64	592	495	1,087	0	35	3,533
Maternal conditions	1,096	81	1,178	na	110	10	3	7	10	0	11	1,318
Neonatal causes	334	na	334	na	13	0	1	0	1	0	11	359
Neoplasms	1,716	272	1,988	37	273	24	210	16	226	0	215	2,764
Diabetes mellitus	231	58	289	38	187	36	238	13	251	0	35	836
Endocrine, nutritional and metabolic	287	108	396	14	344	64	635	51	686	0	67	1,571
Mental disorders[g]	1,049	147	1,196	366	589	144	550	65	615	0	109	3,018
Nervous system disorders	811	304	1,115	2,168	523	410	363	75	438	0	204	4,858
Alzheimer's and other dementias	174	na	175	1,902	20	9	33	1	33	0	112	2,251
Other nervous system	637	na	939	267	503	401	330	74	404	0	92	2,606
Cardiovascular	2,235	298	2,533	526	716	78	1,134	253	1,386	0	153	5,393
Digestive system	1,382	190	1,571	34	359	204	484	138	622	0	31	2,821
Genitourinary	1,071	246	1,317	14	458	31	189	59	248	0	13	2,081
Skin diseases	307	255	562	13	350	103	134	218	351	0	13	1,392
Musculoskeletal	1,286	542	1,828	482	908	760	480	212	691	0	55	4,725

(*continued*)

Table 2 (continued): Allocated recurrent expenditure in Australia by broad disease group, 2000–01 ($ million)

	Hospitals						Pharmaceuticals					
Disease group	Admitted patients[a]	Non-admitted services	Total	Aged care homes[b]	Out-of-hospital medical services	Other professional services[c][f]	Prescription[d]	Over-the-counter[c][e]	Total	Dental	Research	Total expenditure allocated by disease
Congenital anomalies	158	0	158	6	21	1	2	0	2	0	37	224
Oral health	133	56	189	0	15	26	9	27	36	3,084	27	3,376
Injuries	1,644	1,186	2,830	105	647	284	114	76	190	0	6	4,061
Signs, symptoms, ill-defined conditions and other contact with health system[h]	2,165	468	2,633	0	1,753	174	567	444	1,011	0	21	5,593
Total	**17,347**	**4,683**	**22,030**	**3,899**	**8,454**	**2,440**	**5,896**	**2,189**	**8,085**	**3,084**	**1,182**	**49,174**

(a) Includes a preliminary estimate of private medical services provided in hospital.

(b) Includes expenditure on residents that require and receive a level of care that falls within one of the four highest levels in residential aged care services.

(c) Based on preliminary AIHW estimates.

(d) Includes all pharmaceuticals for which a prescription is needed, including private prescriptions and under-copayment prescriptions.

(e) Includes over-the-counter medicaments such as vitamins and minerals, patent medicines, first aid and wound care products, analgesics, feminine hygiene products, cold sore preparations, and a number of complementary health products that are sold in both pharmacies and other retail outlets.

(f) Includes services delivered outside of hospitals by paramedical professionals such as physiotherapists, chiropractors, occupational therapists, audiologists, speech therapists, hydropaths, podiatrists, therapeutic and clinical massage therapists, clinical psychologists, dietitians and osteopaths.

(g) Does not include expenditure on community mental health services (see p. 10).

(h) 'Signs, symptoms and ill-defined conditions' includes diagnostic and other services for signs, symptoms and ill-defined conditions where the cause of the problem is unknown. 'Other contact with the health system' includes fertility control, reproduction and development; elective plastic surgery; general prevention, screening and health examination; and treatment and aftercare for unspecified disease.

Table 3: Diseases and injury by burden of disease chapter: health system costs by health sector, 2000–01 ($ million) and number of deaths, 2001

Burden of disease chapter	Hospitals[a]	Aged care homes[b]	Out-of-hospital medical services	Dental[d] and other professional services[c] [e]	Total pharmaceuticals[f]	Research	Total expenditure allocated by disease	% of total allocated expenditure	Number of deaths	% of total deaths
Cardiovascular	2,533	526	716	78	1,386	153	5,393	11.0	49,172	38.3
Nervous system	1,115	2,168	523	410	438	204	4,858	9.9	6,260	4.9
Musculoskeletal	1,828	482	908	760	691	55	4,725	9.6	899	0.7
Injuries	2,830	105	647	284	190	6	4,061	8.3	7,483	5.8
Respiratory	1,437	88	821	64	1,087	35	3,533	7.2	10,682	8.3
Oral health	189	0	15	3,110	36	27	3,376	6.9	12	0.0
Mental disorders[g]	1,196	366	589	144	615	109	3,018	6.1	939	0.7
Digestive system	1,571	34	359	204	622	31	2,821	5.7	4,107	3.2
Neoplasms	1,988	37	273	24	226	215	2,764	5.6	37,615	29.3
Genitourinary	1,317	14	458	31	248	13	2,081	4.2	3,168	2.5
Endocrine, nutritional & metabolic	396	14	344	64	686	67	1,571	3.2	1,651	1.3
Skin diseases	562	13	350	103	351	13	1,392	2.8	266	0.2
Maternal conditions	1,178	0	110	10	10	11	1,318	2.7	12	0.0
Infectious & parasitic	478	8	367	27	233	139	1,251	2.5	1,746	1.4

(continued)

Table 3 (continued): Diseases and injury by burden of disease chapter: health system costs by health sector, 2000–01 ($ million), and number of deaths, 2001

Burden of disease chapter	Hospitals[a]	Aged care homes[b]	Out-of-hospital medical services	Dental[d] and other professional services[c][e]	Total pharmaceuticals[f]	Research	Total expenditure allocated by disease	% of total allocated expenditure	Number of deaths	% of total deaths
Diabetes mellitus	289	38	187	36	251	35	836	1.7	3,089	2.4
Neonatal causes	334	0	13	0	1	11	359	0.7	690	0.5
Congenital anomalies	158	6	21	1	2	37	224	0.5	623	0.5
Signs, symptoms, ill-defined conditions and other contact with the health system[h]	2,633	0	1,753	174	1,011	21	5,593	11.4	125	0.1
Total	**22,030**	**3,899**	**8,454**	**5,524**	**8,085**	**1,182**	**49,174**	**100.0**	**128,540**	**100.0**
As percent of total	**44.8**	**7.9**	**17.2**	**11.2**	**16.4**	**2.4**	**100.0**			

(a) Public and private acute hospitals and psychiatric hospitals. Includes a preliminary estimate of private medical services provided in hospital.

(b) Includes expenditure on residents that require and receive a level of care that falls within one of the four highest levels in residential aged care services.

(c) Based on preliminary AIHW estimates.

(d) Expenditure on dental services was $3,084 million and is all included in the 'Oral health' category.

(e) Includes services delivered outside of hospitals by paramedical professionals such as physiotherapists, chiropractors, occupational therapists, audiologists, speech therapists, hydropaths, podiatrists, therapeutic and clinical massage therapists, clinical psychologists, dietitians and osteopaths.

(f) Includes all pharmaceuticals for which a prescription is needed, including private prescriptions and under-copayment prescriptions, and includes over-the-counter medicaments such as vitamins and minerals, patent medicines, first aid and wound care products, analgesics, feminine hygiene products, cold sore preparations, and a number of complementary health products that are sold in both pharmacies and other retail outlets.

(g) Does not include expenditure on community mental health services (see p. 10).

(h) 'Signs, symptoms and ill-defined conditions' includes diagnostic and other services for signs, symptoms and ill-defined conditions where the cause of the problem is unknown. 'Other contact with the health system' includes fertility control, reproduction and development; elective plastic surgery; general prevention, screening and health examination; and treatment and aftercare for unspecified disease.

2.2 Expenditure on National Health Priority Area conditions

The National Health Priority Areas (NHPA) initiative is a collaborative effort involving the Australian Government and state and territory governments. It seeks to focus public attention and health policy on those areas that are considered to contribute significantly to the burden of disease in Australia, and for which there is potential for health gain. The NHPAs agreed by the Australian Health Ministers are cardiovascular health, cancer control, injury prevention and control, mental health, musculoskeletal conditions, diabetes mellitus and asthma. Table 4 shows expenditure on each of these areas in 2000–01. Together, the NHPAs account for $21.4 billion, or 43.5% of allocated health system expenditure.

Four of the seven NHPAs rank within the top seven conditions listed in Section 2.1—cardiovascular disease, musculoskeletal diseases, mental disorders and injury. The fifth, neoplasms, ranks ninth ($2.76 billion, or 5.6% of allocated expenditure); and the sixth, diabetes, ranks fifteenth ($0.8 billion or 1.7% of allocated expenditure). Diabetes also is a cause of other diseases such as cardiovascular and renal diseases, so total health expenditure attributable to diabetes is greater than $0.8 billion. Asthma is the seventh NHPA. It is contained within the respiratory diseases group and accounts for $0.6 billion, or 1.2% of allocated health expenditure (Figure 1).

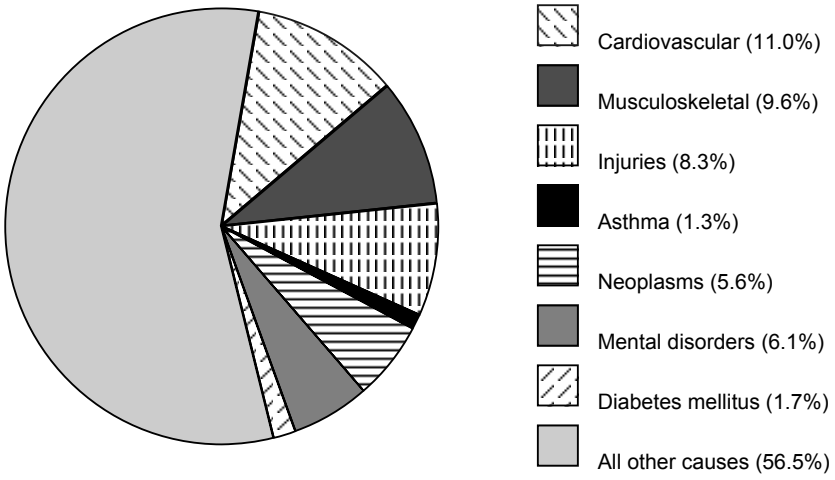

Figure 1: Health system costs for NHPAs, Australia 2000–01

Table 4: Allocated recurrent health expenditure on National Health Priority Areas, 2000–01 ($ million)

	Hospital						Pharmaceuticals				
Disease group	Admitted patients [a]	Non-admitted services	Total	Aged care homes [b]	Out-of-hospital medical services	Other professional services [c][f]	Prescription [d]	Over-the-counter [c][e]	Total	Research	Total expenditure allocated by disease
All cardiovascular diseases	**2,235**	**298**	**2,533**	**526**	**716**	**78**	**1,134**	**253**	**1,386**	**153**	**5,393**
Ischaemic heart disease	1,083	37	1,120	25	106	11	166	17	183	44	1,488
Stroke	362	30	392	442	28	10	24	6	30	20	922
Other conditions	789	232	1,021	59	583	57	944	230	1,173	90	2,984
All musculoskeletal conditions	**1,286**	**542**	**1,828**	**482**	**908**	**760**	**480**	**212**	**691**	**55**	**4,725**
Arthritis	571	104	674	325	167	81	134	63	197	17	1,461
Other conditions	716	438	1,153	157	741	680	345	149	494	38	3,264
Injuries	**1,644**	**1,186**	**2,830**	**105**	**647**	**284**	**114**	**76**	**190**	**6**	**4,061**
Neoplasms	**1,716**	**272**	**1,988**	**37**	**273**	**24**	**210**	**16**	**226**	**215**	**2,764**
All mental disorders [g]	**1,049**	**147**	**1,196**	**366**	**589**	**144**	**550**	**65**	**615**	**109**	**3,018**
Depression	236	24	260	89	330	22	292	10	302	38	1,042
Other conditions	812	123	935	277	259	122	258	55	312	71	1,976
Diabetes mellitus	**231**	**58**	**289**	**38**	**187**	**36**	**238**	**13**	**251**	**35**	**836**
Asthma	**107**	**72**	**179**	**16**	**103**	**21**	**216**	**74**	**290**	**6**	**615**
All NHPA	**8,268**	**2,574**	**10,842**	**1,570**	**3,423**	**1,347**	**2,942**	**708**	**3,650**	**580**	**21,412**

(a) Includes a preliminary estimate of private medical services provided in hospital.

(b) Includes expenditure on residents that require and receive a level of care that falls within one of the four highest levels in residential aged care services.

(c) Based on preliminary AIHW estimates.

(d) Includes all pharmaceuticals for which a prescription is needed, including private prescriptions and under-copayment prescriptions.

(e) Includes over-the-counter medicaments such as vitamins and minerals, patent medicines, first aid and wound care products, analgesics, feminine hygiene products, cold sore preparations, and a number of complementary health products that are sold in both pharmacies and other retail outlets.

(f) Includes services delivered outside of hospitals by paramedical professionals such as physiotherapists, chiropractors, occupational therapists, audiologists, speech therapists, hydropaths, podiatrists, therapeutic and clinical massage therapists, clinical psychologists, dietitians and osteopaths.

(g) Does not include expenditure on community mental health services (see p. 10).

Table 5: NHPA expenditure as a proportion of allocated health expenditure, 2000–01

	Disease expenditure ($ million)	Each NHPA as per cent of total	Per cent of total NHPA cost
Cardiovascular	5,393	11.0	25.2
Musculoskeletal	4,725	9.6	22.1
Injuries	4,061	8.3	19.0
Asthma	615	1.2	2.9
Neoplasms	2,764	5.6	12.9
Mental disorders [(a)]	3,018	6.1	14.1
Diabetes mellitus	836	1.7	3.9
Total by NHPAs	**21,412**	**43.5**	**100.0**
All other causes	**27,762**	**56.5**	

(a) Does not include expenditure on community mental health services (see p. 10).

Table 6 shows the cost components for each NHPA. Most health system expenditure for the seven NHPAs was in the hospital and aged care home sector (58% of all NHPA expenditure). Expenditure on NHPAs for the medical and other health professional sector (22.3%), which includes consultations with GPs and specialists, pathology and diagnostic imaging services, and other health professionals was about the same as that for all diseases (22.2%) (Table 6). The pharmaceutical cost for NHPAs amounted to 17.0% of NHPA expenditure, a proportion slightly higher than that of total pharmaceutical expenditure for the entire health system (16.4%).

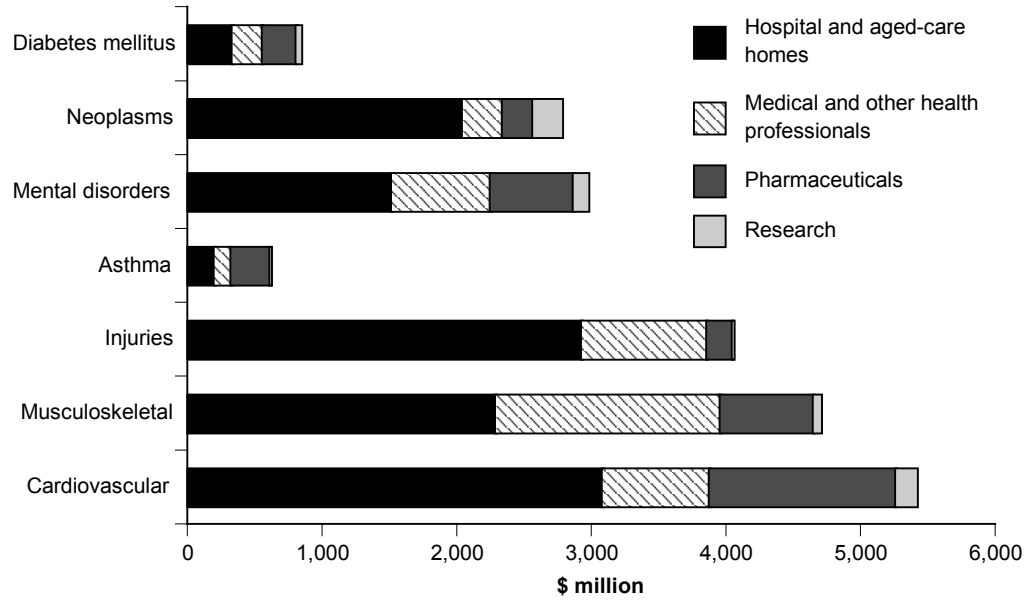

Figure 2: Total cost of disease, by health sector for NHPA, Australia, 2000–01

Table 6: Diseases and injuries in NHPAs: allocated health system costs, by health sector, Australia, 2000–01 ($ million)

NHPA	Hospital and aged care homes[a]	Medical and other health professionals[b]	Pharmaceuticals	Research[c]	All sectors
Cardiovascular	3,059	794	1,386	153	5,393
Musculoskeletal	2,310	1,669	691	55	4,725
Injuries	2,935	931	190	6	4,061
Asthma[c]	196	123	290	6	615
Mental disorders[d]	1,561	733	615	109	3,018
Neoplasms	2,025	297	226	215	2,764
Diabetes mellitus	327	223	251	35	836
Total for NHPAs	**12,412**	**4,770**	**3,650**	**580**	**21,412**
% of NHPAs sector total by total cost of NHPAs	58.0	22.3	17.0	2.7	100.0
Total for all diseases	**22,030**	**10,894**	**8,085**	**8,165**	**49,174**
% of NHPAs of all diseases, by sector	56.3	43.8	45.1	7.1	43.5
% of all diseases by total health system cost, by sector	44.8	22.2	16.4	16.6	100.0

(a) Public and private acute hospitals, psychiatric hospitals and aged care homes.

(b) Includes out-of-hospital medical services, dental and other health professional services.

(c) Part of Respiratory disease category.

(d) Does not include expenditure on community mental health services (see p. 10).

Different illnesses require different treatment modes (Figure 3). For cardiovascular diseases, injuries, neoplasms and mental disorders, expenditure in hospitals and aged care homes account for a relatively high proportion of total expenditure, reflecting these conditions' demand for labour-intensive health services. Pharmaceutical costs for asthma, diabetes, cardiovascular conditions and mental disorders constitute a significant part of the total cost of treating these diseases. Such expenditures reflect not only the chronic nature of these diseases but also the nature of their treatment. Musculoskeletal diseases, injuries and diabetes top the list of demand for medical and other health professional services.

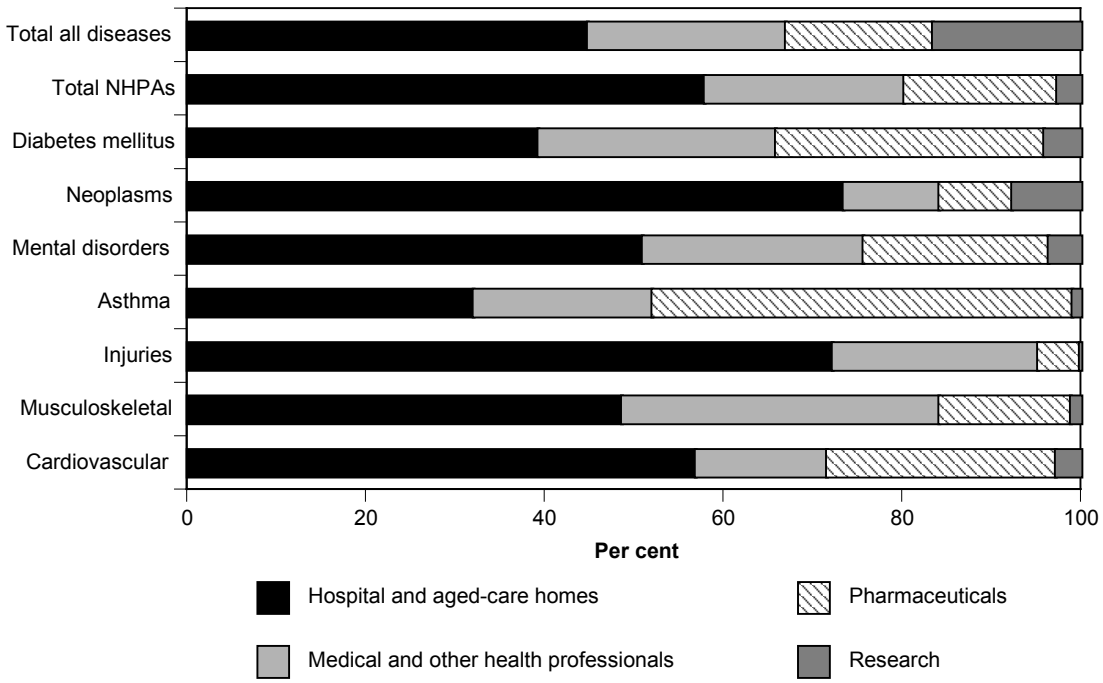

Figure 3: Distribution of costs by health sector, NHPA and all diseases, Australia 2000–01

2.3 Expenditure by age and sex

Health system expenditures allocated by disease are 26% higher for females than for males—$27.4 billion compared with $21.8 billion. Expenditure per person is $2,821 for females which is 24% higher than the $2,277 for males (Table 7). When maternal conditions are excluded, expenditure per person for females is 18% higher than for males.

Expenditure per person is higher for females than males for disease groups such as the nervous system, musculoskeletal diseases and oral health. It is higher for males for the cardiovascular, cancer and injury groups.

Health expenditure per person is $2,426 on average per year for males aged 0 to 4 years. It then decreases to $1,146 for boys aged 5 to 14 years and from there increases with age to $10,719 for men aged 75 years and over. For females, the pattern is the same for children, but in adulthood expenditure peaks in the 25–34 years age group, reflecting child-bearing expenditure; it then declines for the age range 35 to 44 years and from there increases steadily with age to $11,346 per year for women aged 75 years or over.

Table 7: Allocated health expenditure per person by age, sex and burden of disease chapter, Australia, 2000–01

Burden of disease chapter and sex	Age (years)									Total
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	
Cardiovascular										
Male	128	33	43	48	94	228	552	1,090	1,969	285
Female	316	12	20	50	88	193	363	718	1,735	274
Neoplasms										
Male	39	13	18	54	42	126	269	602	951	147
Female	22	17	27	46	89	183	245	381	492	135
Musculoskeletal										
Male	61	50	102	155	185	230	345	500	855	213
Female	71	35	94	132	181	269	395	598	1,373	277
Nervous system										
Male	178	70	48	68	76	115	167	439	1,747	189
Female	127	57	66	72	80	121	166	493	2,862	309
Oral health[(b)]										
Male	50	319	197	63	72	67	142	188	109	138
Female	39	588	293	109	136	125	181	217	114	214
Injuries										
Male	181	160	339	235	173	165	211	298	694	238
Female	111	132	137	119	126	143	165	300	812	191
Maternal conditions										
Female	9	1	236	541	152	2	0	0	15	137
Other causes[(a)]										
Male	1,790	502	611	677	721	867	1,272	2,074	4,394	1,067
Female	1,552	452	847	1,015	983	1,124	1,484	2,136	3,945	1,282
Total										
Male	**2,426**	**1,146**	**1,357**	**1,300**	**1,363**	**1,798**	**2,958**	**5,191**	**10,719**	**2,277**
Female	**2,248**	**1,294**	**1,721**	**2,083**	**1,835**	**2,160**	**2,998**	**4,842**	**11,346**	**2,821**
Female (excl. maternal)	**2,238**	**1,293**	**1,485**	**1,542**	**1,683**	**2,158**	**2,998**	**4,842**	**11,332**	**2,684**

Notes

(a) 'Other causes' includes infectious & parasitic, respiratory, neonatal causes, diabetes mellitus, endocrine, nutritional & metabolic, mental disorders, digestive system, genitourinary, skin diseases, congenital anomalies, and signs, symptoms, ill-defined conditions and other contact with health system.

(b) Age–sex splits of expenditure are preliminary estimates.

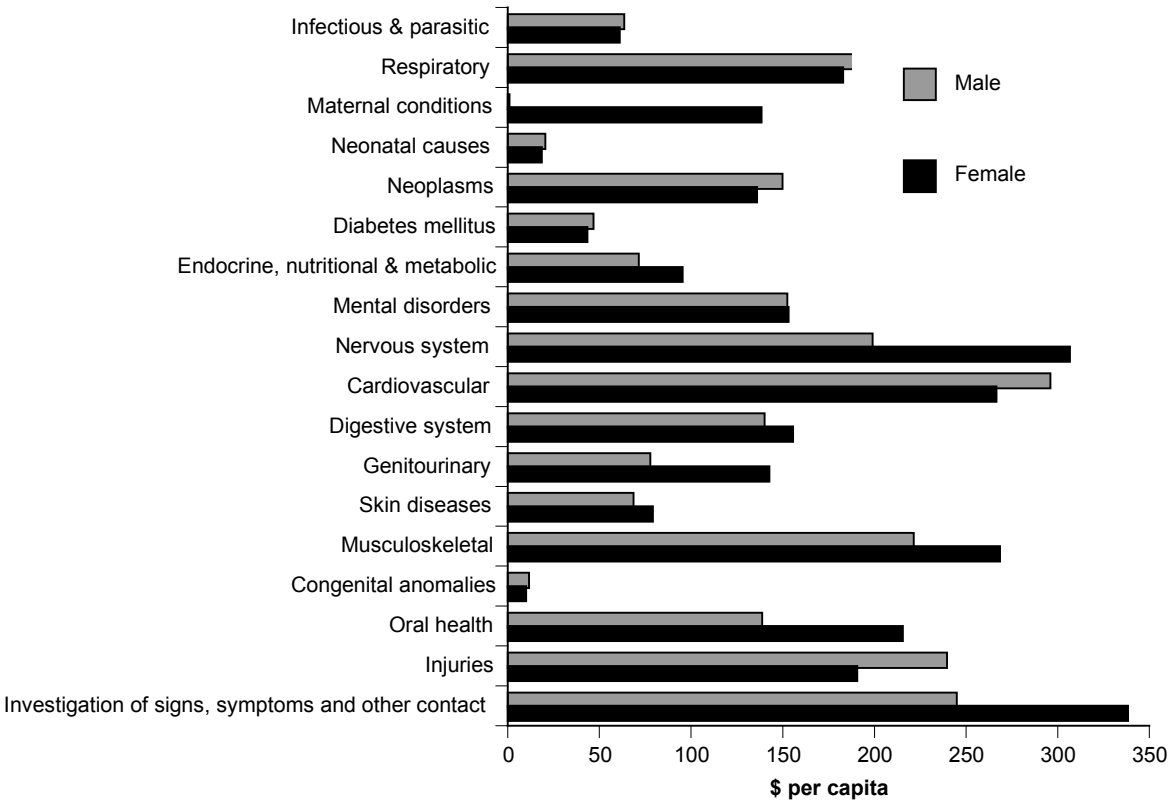

Figure 4: Allocated per capita health expenditure by disease and injury group and sex, Australia, 2000–01 ($)

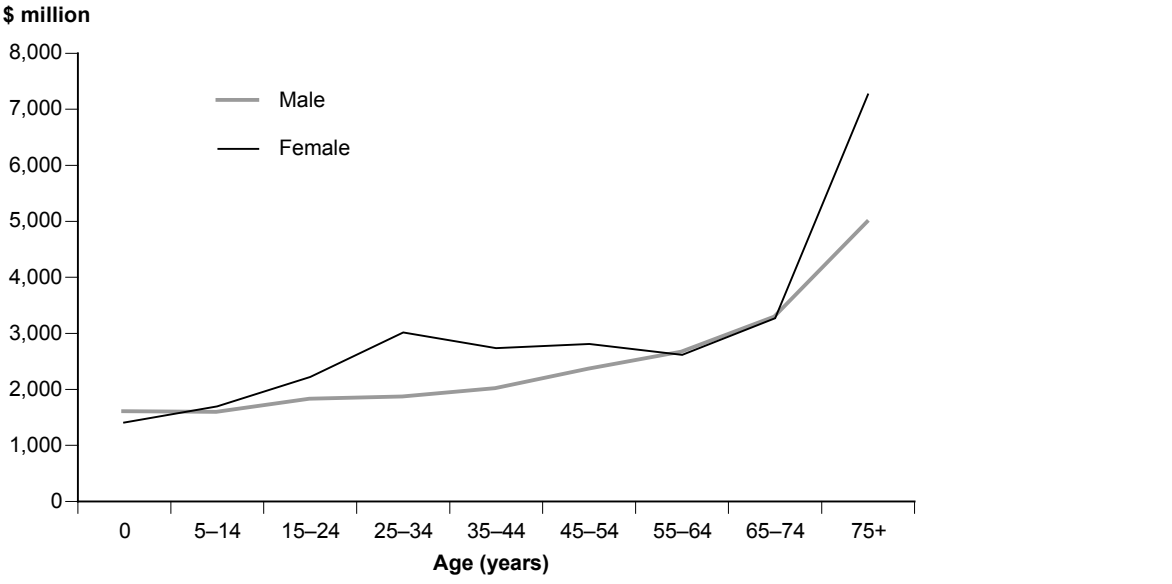

Figure 5: Allocated health expenditure by age and sex, Australia, 2000–01 ($ million)

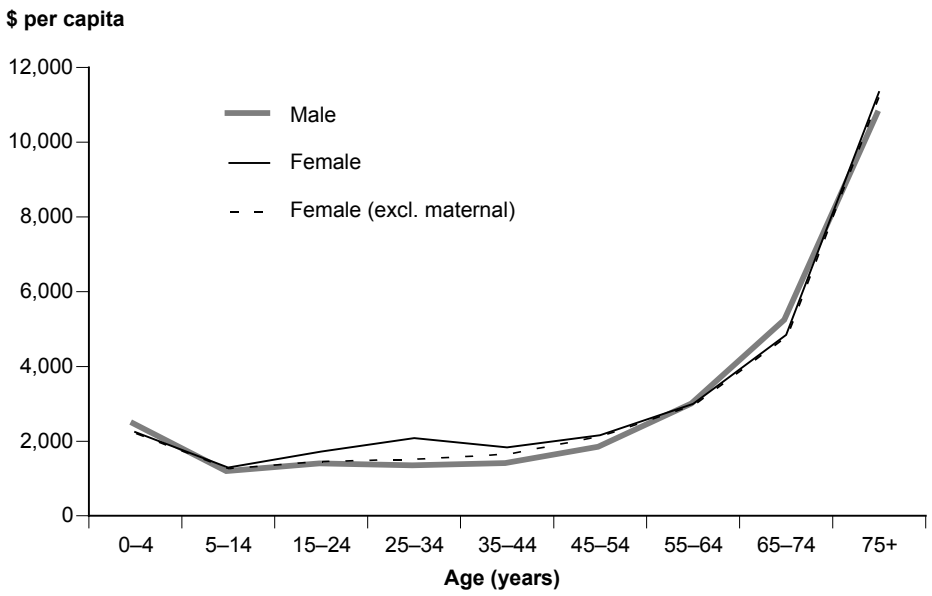

Figure 6: Allocated health expenditure per person by age and sex, Australia, 2000–01 ($ million)

2.4 Changes from 1993–94 to 2000–01

Total recurrent expenditure on health goods and services in Australia in 2000–01 was estimated at $57.3 billion (8.6% of GDP), of which $49.2 billion could be allocated by disease. For 1993–94 total recurrent health costs were $34.1 billion (7.7% of GDP), of which $31.4 billion was allocated by disease. For 1993–94, expenditure on administration, public health and non-institutional services not elsewhere classified were allocated by disease; these categories were not allocated in 2000–01. Thus, to enable better comparisons, the data that follow for 1993–94 do not allocate administrative, public health expenditure and other non-institutional expenditure not elsewhere classified.

The estimate of health expenditure allocated to diseases for 1993–94 that is comparable with 2000–01 is almost $30 billion (Table 1). After adjustment for health price inflation of 20%, the allocated health system cost for 1993–94 in 2000–01 prices was $36.0 billon. Therefore, between 1993–94 and 2000–01 the growth in inflation-adjusted expenditure was from $36.0 to $49.2 billion --- $13.2 billion, or 37%. This represents an average annual increase of 4.6%. The Australian population grew by 10% during the period, an average annual increase of 1.4%.

Because expenditure has been adjusted for overall health price inflation between 1993–94 and 2000–01, it is possible to compare the specific disease expenditures for these two years and to examine the differences in growth for the different disease groups (Table 8).

Between 1993–94 and 2000–01 there was a 66% increase in inflation-adjusted expenditure allocated to the category 'Signs, symptoms, ill defined conditions and

other contact with the health system'. This partly reflects changes in methods between 1993–94 and 2000–01, though it also reflects a relative increase in diagnostic expenditure. The growth in inflation-adjusted expenditure in all areas excluding this category was 33%.

Areas that showed above-average growth from 1993–94 to 2000–01 were nervous system disorders (44%), digestive system diseases (38%) and oral health (52%). Areas which showed below-average growth were respiratory diseases (22%) mental disorders (32%), cardiovascular disease (26%) and neoplasms (31%).

The growth of only 32% for mental disorders is affected by the fact that community health expenditure was not able to be allocated by disease, so the considerable increase in community mental health expenditure since 1993–94 is not included in these numbers. If this is included, the growth is 43%.

The lower birth rate led to below-average growth for maternal conditions, neonatal causes and congenital anomalies.

Expenditure on pharmaceuticals (67% growth) and dental services (50%) grew significantly faster in inflation adjusted terms than expenditure in other sectors. Hospital expenditure grew by 31% and expenditure on aged care homes grew by 23% in inflation-adjusted terms. Not all diseases showed this pattern of high growth for pharmaceuticals and lower growth in hospitals and aged care homes. The nervous system category showed a 89% increase in aged care homes expenditure compared with a 46% increase in pharmaceutical expenditure. This is the result of the large increase in expenditure on care for people with dementia in aged care homes. For the injuries category, pharmaceuticals increased only 24% and hospitals increased a much higher amount (42%). In contrast, for cardiovascular diseases the increase for hospitals was 27% compared with an increase for pharmaceuticals of 62%. (Note that cholesterol-lowering drugs are classified as part of the 'Endocrine' category not 'Cardiovascular'. If these were included with cardiovascular diseases, the pharmaceutical expenditures for cardiovascular disease would show an even greater increase.)

Although the numbers in Table 8 have been adjusted to make 1993–94 as comparable as possible with 2000–01, there are differences in the classification systems and the methods used in the two years, so the comparisons must be recognised as approximate only.

Table 8: Change in inflation-adjusted[(a)] health system expenditure, 1993–94 to 2000–01

Burden of disease chapter	Hospital	Aged care homes	Pharmaceuticals	Dental services	Other[(a)]	Total	$ million (2000–01 prices)
			(per cent)				
Infectious & parasitic	62	n.a.	n.a.	n.a.	n.a.	28	**274**
Respiratory	44	n.a.	16	n.a.	11	22	**636**
Maternal conditions	4	n.a.	n.a.	n.a.	104	9	**110**
Neonatal causes and congenital anomalies	22	n.a.	n.a.	n.a.	169	28	**126**
Neoplasms	25	n.a.	n.a.	n.a.	23	31	**651**
Diabetes mellitus	151	60	87	n.a.	135	118	**453**
Endocrine, nutritional & metabolic	37	–64	158	n.a.	33	65	**620**
Mental disorders	10	16	160	n.a.	29	32	**729**
Nervous system	7	89	46	n.a.	30	44	**1,490**
Cardiovascular	27	–25	62	n.a.	31	26	**1,118**
Digestive system	31	–18	106	n.a.	19	38	**776**
Musculoskeletal	26	–7	108	n.a.	50	37	**1,276**
Oral health	128	n.a.	n.a.	50	n.a.	52	**1,151**
Injuries	42	–22	24	n.a.	33	36	**1,072**
Signs, symptoms, ill-defined conditions and other contact with the health system[(c)]	64	n.a.	99	n.a.	n.a.	66	**2,214**
Total	31	23	67	50	34	37	**13,161**
$ million (2000–01 prices)	**5,149**	**721**	**3,233**	**1,021**	**3,035**	**13,161**	

(a) 1993–94 expenditures have been converted to 2000–01 prices using the total health price deflator (AIHW 2003:67).

(b) Includes out-of-hospital medical, other health professionals and research.

(c) 'Signs, symptoms and ill-defined conditions' includes diagnostic and other services for signs, symptoms and ill-defined conditions where the cause of the problem is unknown. 'Other contact with the health system' includes fertility control, reproduction and development; elective plastic surgery; general prevention, screening and health examination; and treatment and aftercare for unspecified disease.

n.a. Not applicable. Growth rate not displayed as methodology changed between the two years, numbers too small to be meaningful or zero in both years.

3 Conclusion

This is the second comprehensive national report on health expenditure by disease group. Its aim is to provide an overview as well as a systematic, comprehensive analysis of the total health system costs of disease and injury in Australia during 2000–01, based on the best possible estimates of health system resources directed at the prevention and treatment of diseases and injuries.

Cardiovascular diseases represent the most expensive group ($5.4 billion), and also account for a high proportion of deaths—38% (Table 3).

Expenditure for nervous system disorders has shown a very large increase since 1993–94—mainly because of the increase in expenditure on Alzheimer's disease and other dementias, which is strongly affected by the growth and ageing of the population.

The seven National Health Priority Areas (NHPAs) account for $21.4 billion, or 43.5% of allocated health system expenditure.

Expenditure per person is $2,821 for females, which is 24% higher than the $2,277 for males.

Health expenditure per person is $2,426 on average per year for males aged 0 to 4 years. It then decreases to $1,146 for boys aged 5 to 14 years and from there increases steadily with age to $10,719 for men aged 75 years and over. For females, the pattern is the same for children but in adulthood expenditure peaks in the 25–34 years age group, reflecting child-bearing and health expenditure related to the genitourinary system; it then declines for the age range 35 to 44 years and from there increases with age to $11,346 for women aged 75 years or over.

The following points should be borne in mind when considering these results:

- This study is a sequel to the 1993–94 study, so methods used and the source of data used for the estimations have in most cases remained the same to enable comparison over time.
- The costs are direct costs only; indirect costs, caregiver costs and other intangible costs are not included.
- It has been possible to allocate only 86% of recurrent health expenditures by disease. The costs estimated for each disease group are therefore conservative.

Furthermore, cost-of-illness studies such as this only provide estimates of the impact of a disease on health system expenditures. Because they describe only the monetary burden of treating and/or preventing a disease, they cannot provide a measure of the extent to which this burden can be alleviated or the resulting cost savings that would be achieved; nor can they suggest how much should be spent on prevention and treatment.

Expenditure for each disease category that is included in this publication gives a picture of expenditure that is more clinically relevant than expenditure split only by administrative category: the administrative category view of expenditure is subject

to the vagaries of the way the health system happens to be organised at a particular point in time.

It is important to understand that expenditure is an input measure only, and inputs are but one part of the health system. The output and outcomes that derive from this expenditure and from other inputs are also of relevance. The output data for each disease category—e.g. the number of separations and bed-days, medical services and pharmaceutical scripts used—will be published at a later date.

In addition, information on disability and death that arise through disease and injury will be published as part of the Australian burden of disease project. The burden of disease was first estimated for Australia for 1996—see AIHW: Mathers et al.(1999). These estimates are now being updated through joint work by the University of Queensland and the Australian Institute of Health and Welfare, and will be released progressively during the next 18 months.

Expenditure data, output data and burden of disease data together can be used to provide a broad picture of the workings of the health system. For example, expenditure on cancer treatment and prevention over time can be compared with the changes in the number of hospital separations, medical services used and pharmaceuticals dispensed for cancer, and with the improvements in health status.

This report will be of interest to anyone involved in resource allocation, including health policy makers at commonwealth, state and local government levels, health planners and administrators, community and hospital practitioners and academic researchers, as well as the general public.

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