4 CHRONIC DISEASES AND HEALTH SYSTEM RESOURCES

Introduction

The prevention, management and treatment of chronic diseases impose a considerable burden on the health system. There are a number of reasons for this.

- Chronic diseases are widespread in the population (AIHW 2002b).
- Chronic diseases can begin early in the life cycle without symptoms and then cause considerable illness and disability in later years. This indicates the need to manage not only the diseases but also the risk factors, both behavioural and biomedical, that precede them.
- Some people have one or more chronic diseases that remain unresolved throughout their life.
- Although the outcomes of chronic diseases (illness, disability, pain and death) are often thought to affect mainly the elderly, people in other age groups (as noted in Chapter 3) also are affected by these diseases.
- For some individuals, these problems result in the need to manage the diseases and their sequelae for many decades. A 'whole of life' approach to the prevention and management of chronic diseases is therefore required.

This chapter focuses on a 'whole of health system' strategy for managing chronic diseases (NPHP 2001:35–6). Such a strategy combines the 'continuum of prevention and care' for chronic diseases with the 'whole of life' approach, as discussed in the earlier chapters. Under this model, primary, secondary and tertiary prevention are important components along the disease continuum:

- primary — to prevent movement of the 'well' to the 'at risk' population
- secondary — to prevent progression from 'at risk' to 'established' disease state
- tertiary — to prevent and/or delay progression to complications from the disease.

A range of health services operate within this continuum, some across the spectrum and others focusing at specific points. For example, public health services have a key role in the first two stages in promoting healthy behaviours and healthy environments. The primary health care sector (for example, general practitioners (GPs) and dentists) is important at all stages to promote good health and provide early interventions and general treatment.

People with established chronic diseases require a range of health services. Included among these are GPs, dentists, specialist medical and dental services, counselling services, hospital services, allied health care services, pharmacy services, disability support services and aged care services. The types of services required vary according to the type and severity of the disease. For example, elderly people with restricted mobility or mental functions often need aged care services, whereas those suffering from depression may be treated by GPs, counselling services, or community mental health services.

However, data for monitoring the use of these services by people with chronic diseases are not comprehensive. The two main services for which use data can be linked to chronic diseases are general practice and hospital statistics; this information is reported in the next two sections of this chapter. The approach used is to examine the data from the most recent year and then compare that with data from an earlier base year. The third section describes some of the other health services used by people with chronic diseases and the limited information on these services.

Health system expenditure on chronic diseases is a summary measure of the impact of chronic diseases on health services. Estimates of expenditure are available according to the type of service. This information forms the fourth section of this chapter, again with comparisons between the most recent and an earlier year.

General practitioner services

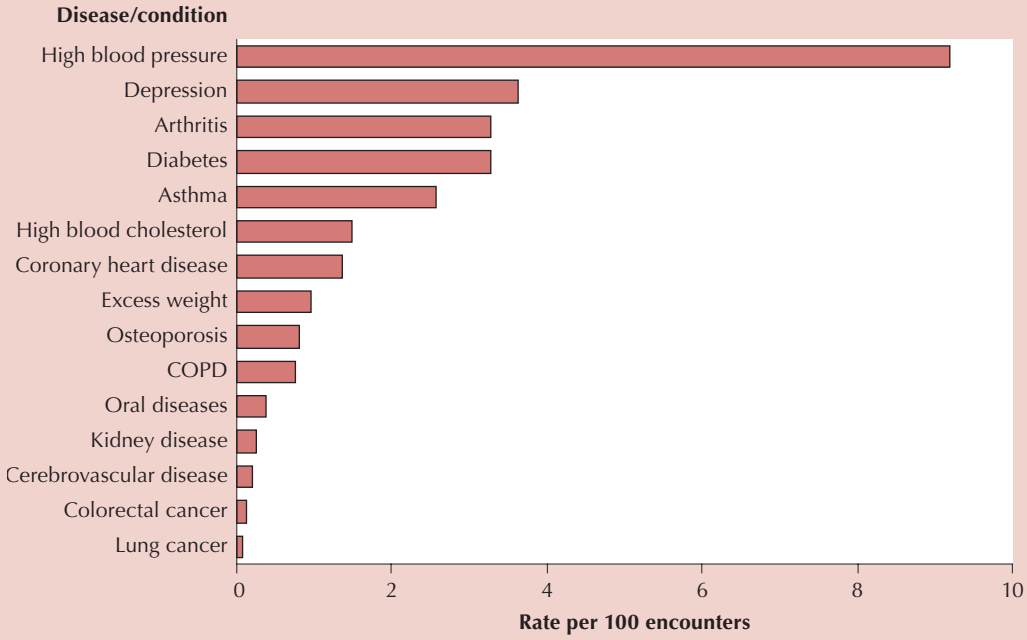
GPs are one part of the health system for preventing and managing chronic diseases, and often the first part of the system to diagnose a chronic disease. GPs manage chronic diseases by providing counselling, prescriptions for pharmaceuticals and referrals to other health services, and by encouraging effective self-management of chronic diseases. They also help with prevention of chronic diseases by monitoring the biomedical risk factors and giving advice on ways to modify the behavioural risk factors.

In Australia, GP service use is monitored by the BEACH (Bettering the Evaluation and Care of Health) survey, which involves an ever-changing random sample of GPs who report on 100 consecutive encounters. In 2003–04, the sample included 98,877 patient encounters. Information was recorded on 144,674 problems managed in these encounters, an average rate of 146.3 problems managed per 100 encounters (AIHW: Britt et al. 2004).

O'Halloran et al. (2004) identified chronic diseases and conditions arising in the 2003–04 BEACH data. Their list is based on conditions that have a duration (or expected duration) of at least 6 months; have a pattern of recurrence or deterioration; have a poor prognosis; and produce consequences that affect the individual's quality of life. Using these criteria, they found 147 conditions that could be classified as chronic or partially chronic. In 2003–04, over one-third (34.7%) of all problems managed were in this group of conditions. At least one of these chronic problems was managed in 39.2% of all encounters, and these chronic problems were managed at an average rate of 50.8 per 100 encounters (AIHW: Britt et al. 2004).

The chronic diseases covered in this report are limited to those having a large impact and which are amenable to prevention, and the list is therefore much narrower than those identified by O'Halloran et al. (2004). Still, the 12 chronic diseases highlighted here, along with three of the biomedical risk factors (high blood pressure, high blood cholesterol, excess weight), accounted for nearly one-fifth (19.2%) of all problems managed by GPs in 2003–04, a rate of 28.3 per 100 encounters (Figure 4.1).

High blood pressure (defined in the BEACH data as diagnosed hypertension) was the most common individual problem managed by GPs, at a rate of 9.2 per 100 encounters.



Source: AIHW BEACH Survey.

Figure 4.1: Chronic diseases and conditions managed in general practice, 2003–04

Other chronic diseases and conditions with high rates of GP management (around 3 per 100 encounters) were depression, arthritis, diabetes and asthma.

Chronic diseases with low rates of GP management included oral diseases, cerebrovascular disease, colorectal cancer, lung cancer and kidney disease. In the case of oral diseases, which are highly prevalent in the population, most of these problems are managed by dentists rather than GPs. For the others, the low rates of GP management reflect only partly their lower prevalence relative to those diseases with high rates of GP management. Their low rates are also because such diseases are less amenable to GP management. For most of them, once they have been identified, it is likely that the patients will receive further treatment in specialists' clinics which are not included in the BEACH survey.

In contrast, those diseases and risk factors that require regular and frequent monitoring tend to have higher rates of GP use. In the case of asthma, incentives are available for GPs to provide written action plans for patients in order to improve the management of this disease specifically in GP settings. Similarly, two of the four key components of the National Integrated Diabetes Program focus on general practice (Veale 2003).

BEACH data have been available since 1998–99. In that year, these 12 chronic diseases and risk factors comprised 17.6% of all problems managed, a rate of 25.6 per 100 encounters. Over the 5-year period from 1998–99 to 2003–04, statistically significant increases in the rates of problems managed were recorded for high blood pressure (8.2 to 9.2 per 100 encounters), arthritis (2.7 to 3.3) and diabetes (2.6 to 3.3), whereas for asthma (3.2 to 2.6) there was a significant decrease.

The BEACH survey also provides information on the ways GPs manage specific chronic diseases. Types of management provided in GP surgeries include prescription of medications, testing, advice and counselling, and referrals for pathology, imaging and other health services.

For patients with coronary heart disease (CHD), an analysis of the 1998–99 data found that GPs prescribed medications at a rate of 129.4 per 100 CHD problems managed (indicating that some patients need a combination of medications to control their disease). GPs also ordered pathology tests at a rate of 22.2 per 100 CHD problems managed, and made referrals to other health professionals and services at a rate of 11.6 per 100 CHD problems managed (AIHW: Senes & Britt 2001).

The same study found the following types of management for Type 2 diabetes (with rates per 100 Type 2 diabetes problems managed): prescription of medications (75.6), nutrition and weight advice (15.0), glucose testing in the GP's surgery (8.7), pathology tests ordered (48.5) and referrals to other health professionals and services (7.6) (AIHW: Senes & Britt 2001).

Arthritis is also commonly managed by GPs (Figure 4.1). However, the type and rate of management varies greatly between the two main forms of arthritis. The rate is quite low for rheumatoid arthritis, because these patients are more likely to be referred to rheumatology clinics. On the other hand, GPs often manage patients with osteoarthritis, usually by prescribing medications or ordering imaging tests (AIHW 2005e).

Chronic kidney disease is rarely detected in the BEACH data (Figure 4.1), but GPs are an important component of early detection efforts. In 2002–03, of the many consultations for high blood pressure (the most frequently managed problem by GPs), around 13% had a pathology test ordered which could be used to detect kidney damage. Similarly, tests that could be used to detect kidney damage were ordered in around 16% of diabetes encounters. Other high-risk individuals are patients with vascular diseases, including atherosclerosis, peripheral vascular disease, atrial fibrillation or flutter, cerebrovascular disease, coronary heart disease, heart failure and high blood cholesterol or lipid disorders. These diseases accounted for about 4% of problems managed by GPs in 2002–03. Tests that could be used to detect kidney damage were ordered in about 9% of these cases (AIHW 2005b).

Hospital services

Hospitals provide a range of services for people suffering from chronic diseases. For some of these diseases, frequent but short visits to hospitals are required for treatment and monitoring beyond what is available from GPs. For others, an extended stay in hospital may be needed to provide relief from pain, for palliative care, or for a surgical procedure and subsequent recovery.

Three measures are used here to gauge the impact of chronic diseases on hospital services:

- number of hospital admissions (which are counted when the patient 'separates' from the hospital (that is, is discharged, transferred or dies)

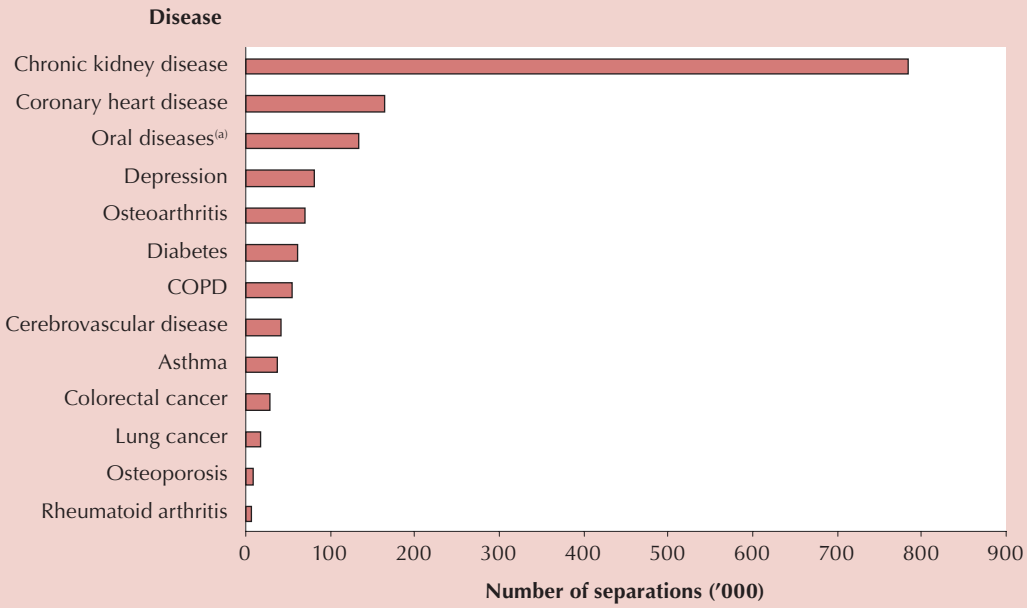
- number of days of stay in hospital (termed 'patient days')
- average length of stay in hospital (calculated by dividing number of patient days by number of separations).

Separations

In 2003–04 there were 6.8 million hospital separations in Australia, with 21.6% of these (1.5 million) listing one of the 12 chronic diseases that are highlighted in this report as the 'principal diagnosis' or 'main procedure'. Chronic kidney disease (CKD), with over 780,000 separations, was by far the largest contributor to this total (Figure 4.2).

A major component (97%) of CKD separations was the procedure 'care involving dialysis', and this was also the single greatest reason for hospital use (11.1% of all separations). Other chronic diseases causing more than 100,000 separations were CHD and oral diseases. Diabetes was the principal diagnosis for over 60,000 separations in 2003–04, but was listed as an additional diagnosis in a further 397,000 separations.

Although CKD is not as prevalent as CHD, it causes more episodes of hospital care because people who reach the end stage of CKD require frequent dialysis treatments, usually three times per week, and most of these treatments are carried out in hospitals or hospital-managed services. At the other extreme, there are relatively few separations coded to osteoporosis, as the principal diagnosis for people with this disease in hospital is usually a fracture.



Source: AIHW National Hospital Morbidity Database.
(a) Includes oral cancers.

Figure 4.2: Hospital separations for chronic diseases, 2003–04

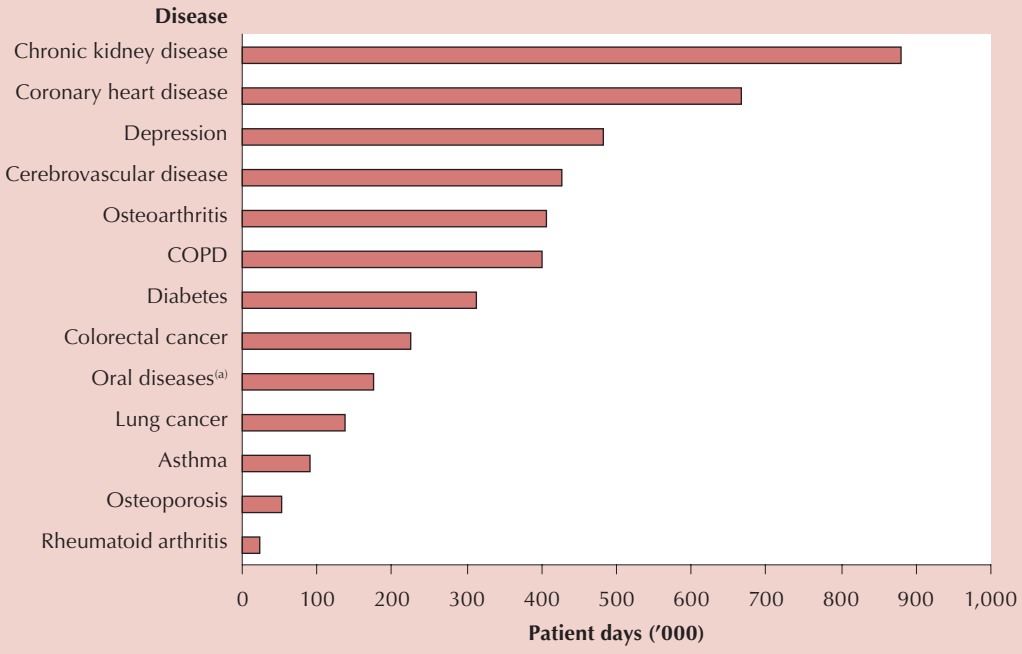
OPERATIONS AND OTHER PROCEDURES

For some chronic diseases, a major reason for patients to use hospital services is for a procedure to treat their condition. Prime examples are procedures to treat coronary heart disease, osteoarthritis and chronic kidney disease. Hospital data for 2003–04 show the following numbers for various procedures:

- over 32,000 coronary angioplasties (the opening of arteries which have narrowed), a major hospital procedure for people with coronary heart disease
- approximately 555,000 major joint replacements (including hip and knee replacements), a frequent hospital procedure for people with osteoarthritis
- around 771,000 hemodialysis procedures (involving the use of a special filter that removes wastes and extra fluids from the blood), the main procedure for people with chronic kidney disease.

Patient days

The number and rate of separations gives some indication of the impact of the various chronic diseases on the hospital system, but the weight of these diseases on the system is more accurately gauged by the amount of time people suffering from them have to spend in hospital. Over 23.5 million patient days of stay in Australian hospitals were recorded in 2003–04, of which 18% (4.2 million) were attributed to the 12 chronic diseases covered here. As with number of separations, CKD led this list with nearly 880,000 patient days, followed by CHD with 665,000 patient days. Other chronic diseases with over 400,000 patient days were depression, cerebrovascular disease, chronic obstructive pulmonary disease (COPD) and osteoarthritis (Figure 4.3).



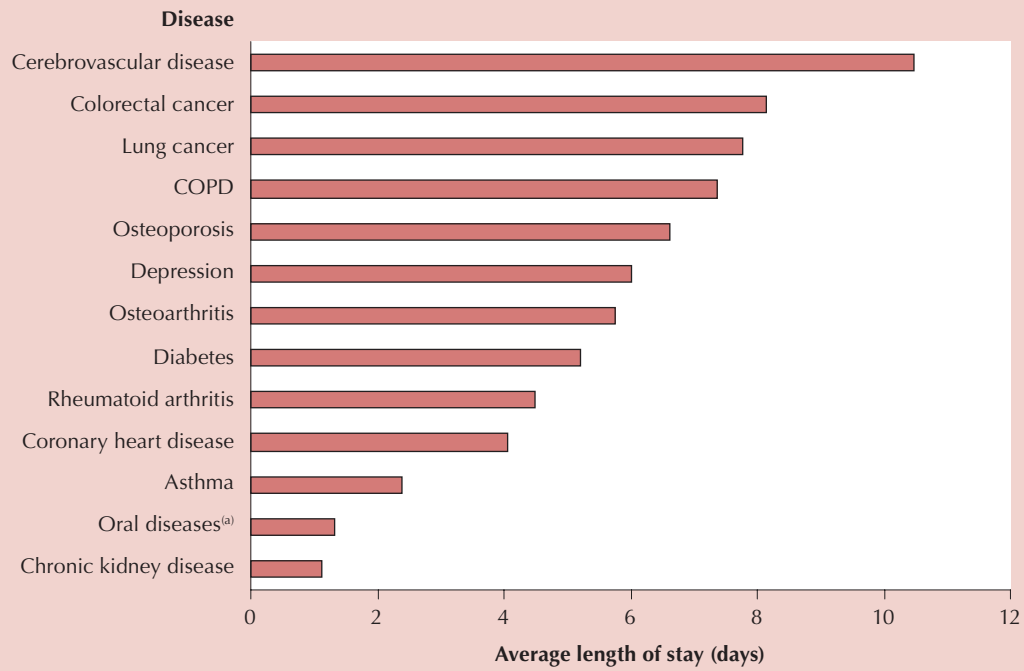
(a) Includes oral cancers.

Source: AIHW National Hospital Morbidity Database.

Figure 4.3: Number of patient days for chronic diseases, 2003–04

Average length of stay

In contrast to the separations and patient days data, the average length of stay (ALOS) in hospital for CKD in 2003–04 was the shortest, at 1.1 days, of the 12 chronic diseases covered here (Figure 4.4). This is because most of the separations for CKD were 'care involving dialysis', which is usually a 'same day procedure' and thus recorded as a single patient day. Similarly, ALOS for oral diseases, which ranked third in terms of number of separations, was relatively short (1.3 days), as most of these are for same-day dental procedures. At the other end of the scale, cerebrovascular disease, colorectal cancer, lung cancer and COPD each had an average length of stay of more than 7 days.



(a) Includes oral cancers.

Source: AIHW National Hospital Morbidity Database.

Figure 4.4: Average length of stay in hospital for chronic diseases, 2003–04

Trends in hospital services

Over the past 5 years — the period for which comparable codes for these diseases exist, with the exception of diabetes — the age-standardised separation rates for CKD have increased by over 55%, for oral diseases by more than 30%, and for depression by more than 25% (Table 4.1). Osteoporosis separations have also increased, but from a low base. Separation rates for CHD, cerebrovascular disease (mainly stroke) and asthma have declined over this period. The rates for diabetes cannot be compared, because significant changes have been made in this period to the coding standards (AIHW: Phillips 2003).

With the exception of lung cancer, the ALOS for all these diseases declined over the 5 years from 1998–99 to 2003–04 (Table 4.1). For depression and osteoporosis, the declines in ALOS were over 20%, and for rheumatoid arthritis it was over 30%. The two diseases with the highest ALOS, cerebrovascular disease and colorectal cancer, had declines of around 5% and 9% respectively.

Table 4.1: Change in hospital separation rates, patient days and average length of stay for chronic diseases, 1998–99 to 2003–04 (per cent)

Disease	Per cent change in		
	Age-standardised separation rate	Patient days	Average length of stay
Chronic kidney disease	55.6	46.9	–6.1
Coronary heart disease	–8.8	–9.7	–13.0
Oral diseases[a]	30.2	19.5	–12.4
Depression	25.6	4.6	–23.4
Osteoarthritis	16.9	11.6	–15.2
COPD	1.5	7.6	–7.0
Cerebrovascular disease	–12.1	–3.5	–4.7
Asthma	–32.0	–38.5	–12.7
Colorectal cancer	11.7	15.7	–8.9
Lung cancer	–5.7	9.2	2.5
Osteoporosis	62.0	46.9	–22.1
Rheumatoid arthritis	–6.0	–30.6	–34.4

(a) Includes oral cancers.

Note: Changes not available for diabetes, because of variations in the coding standards.

Source: AIHW National Hospital Morbidity Database.

Other health services for people with chronic diseases

Although GP encounters and hospital admissions are the two most universal types of health services used by people with chronic diseases, there are a number of other services which are also important in the effort to manage these diseases. However, the available information on these services is patchy and it is often difficult to ascribe such service uses to a particular disease. Some examples where it is possible to analyse the available data for a particular disease are cited below.

Mental health services

Several data sources are available to gauge the use of mental health services other than services offered by GPs and hospital admitted patient care. Although these data do not identify which types of mental health problems are included in non-hospital and non-GP services, it can be inferred that depression is one of them. Also, as with all data on services, the data are for services rendered, not for individuals, with some individuals requiring multiple service episodes.

The National Hospital Morbidity Database contains information on non-admitted occasions of service (also termed outpatient services) for public acute and psychiatric hospitals. In 2003–04, public acute hospitals recorded nearly 1.8 million 'individual occasions of service' for mental health provided outside hospitals, and 33,605 'group sessions'. Public psychiatric hospitals recorded over 168,000 individual outpatient or emergency sessions, 3,068 individual outreach sessions, and 6,236 group sessions (AIHW 2005e).

Changes over the past decade have seen a shift of mental health services to community settings. In 2001–02, over 4.2 million service contacts between clients and staff were reported by community mental health care services to the AIHW National Community

Mental Health Establishments Database. A principal diagnosis was reported in about two-thirds of these contacts, and of that number nearly 25% (690,000) were for mood (affective) disorders, including depression (AIHW 2004a).

Services by psychiatrists in private practice can be gauged by Medicare data, which show that in 2002–03 there were over 2 million funded services, with about 90% of these being patient attendances in consulting rooms and the remainder in hospitals and group settings (AIHW 2004a).

Dental services

The use of dental services is measured through the National Dental Telephone Interview Survey, the most recent being in 2002. The survey found that in the preceding 12 months nearly 82% of Australian children aged 5–14 years made a dental visit. Using the most recent visit as the reference, the majority of visits were for a check-up, but about one-quarter (21% overall) were for pain or other problems, such as fillings and orthodontic care. Among adults (15 years and over) with at least one natural tooth, over half (58%) had made a dental visit in the previous 12 months, with about half of the most recent visits (28% overall) being for pain or other problems (AIHW 2004a).

Asthma

Some of the chronic diseases considered here may have acute episodes requiring care in hospital emergency departments (EDs). The Australian Centre for Asthma Monitoring (ACAM) has analysed the data on emergency presentations for asthma in New South Wales and Victoria during the period 1999–2004. This study found 'marked month-to-month fluctuations in rates of visits to EDs for asthma, most notably in children under the age of 15 years. The peak visit rate in children was in late summer, whereas for adults it was late autumn and winter' (ACAM 2005:86).

Diabetes

Diabetes is a good example of a chronic disease that requires ongoing management by GPs and other health services. Diabetes complications may affect a number of the body's organs, necessitating treatment by specialists in areas such as endocrinology, cardiology, nephrology and ophthalmology. In addition, GPs also refer patients with diabetes to dietitians, podiatrists and diabetes clinics. There are about 80 of these clinics in Australia, often referred to as diabetes ambulatory care centres, and they provide services such as diabetes education, nutrition advice and complications assessment (AIHW 2002a).

People with diabetes are also major users of pathology services, usually on referral from their GP. The more common pathology tests include glucose tolerance test (to assess absorption of glucose), glycosylated haemoglobin (HbA1c) and fructosamine (to monitor glucose control), microalbuminuria (to assess the amount of the protein in the urine) and blood lipids (cholesterol and triglycerides) tests. The 1998–99 BEACH survey of general practice activity found that GPs ordered pathology tests for Type 1 and Type 2 diabetes patients (37.3 and 48.5 tests per 100 diabetes problems respectively — Table 5.2) at a much higher rate than the average of 17.0 per 100 for all problems managed by GPs (AIHW 2002a).

Table 4.2: Pathology tests (rates per 100 diabetes problems managed) ordered by GPs, 1998–99

	Diabetes patients	
Pathology test	Type 1	Type 2
Glucose control (HbA1c)	11.9	13.5
Glucose tolerance	7.2	12.7
Electrolytes/urea/creatinine	4.2	3.8
Blood lipids (cholesterol, triglycerides)	3.8	6.6
All tests	37.3	48.5

Source: AIHW 2002a.

Another service for people with diabetes is the National Diabetes Services Scheme, which subsidises the supply of insulin syringes, special injection system needles and diagnostic reagents (blood and urine testing strips) to registered persons with diabetes. Over 700,000 persons with diabetes were registered with the scheme as at 30 June 2005 (Diabetes Australia 2005).

Health system expenditure on chronic diseases

Although the data to accurately measure the use of the health system by individuals with particular diseases are lacking, it is possible to estimate expenditure on the various services provided by the health system. This estimate is based on the satellite national accounts, in which non-monetary data sources are linked to the monetary accounting system (AIHW 2004d). The methodology produces estimates for the various services in the system and allows the expenditure to be allocated to specific diseases. The expenditure estimates for the chronic diseases covered in this report are used here as a summary measure of the overall impact of those diseases on the health system.

The term 'health expenditure' refers to the funding by government and non-government sources (including health insurance funds and individuals) for the costs incurred to prevent, diagnose, treat and manage disease. The AIHW has estimated that in 2000–01 a total of $50.1 billion can be allocated as recurrent expenditure on various diseases and conditions. This estimate accounts for 87.5% of the total recurrent health expenditure in 2000–01 (AIHW 2004d).

The National Chronic Disease Strategy (NHPAC 2005) reports that 70% of allocated health expenditure in 2000–01 was accounted for by the top disease groupings, including cardiovascular disease, nervous system disorders, musculoskeletal conditions, injuries, respiratory diseases, mental disorders, oral health, neoplasms and diabetes. The majority of these diseases are long-term conditions. Injuries are not generally considered to be long-term conditions and if these were removed from this list then these diseases would account for almost 60% of all allocated health expenditure in this year. In 2000–01 the chronic diseases covered in this report accounted for $10.9 billion, or 22% of the total allocated expenditure.

Oral health expenditures were the highest of the 12 chronic diseases outlined here, at $3.4 billion, or 6.7% of the total allocated expenditure. Coronary heart disease (CHD)

accounted for 2.9% of the total, osteoarthritis 2.4% and depression 2.0% (Table 4.3). Note that expenditures reported here differ from those outlined in the National Chronic Disease Strategy (NCDS) because of differences in the grouping of diseases. For example, the NCDS reports that cardiovascular disease has the greatest expenditure of the chronic diseases (10.9%). However, this report separates diseases into single conditions (for example, CHD and cerebrovascular disease), and reports only on 12 single chronic diseases.

Table 4.3: Health system expenditure on chronic diseases, 2000–01

Disease	Expenditure ($ million)	Per cent of total expenditure
Oral health	3,372	6.7
Coronary heart disease	1,465	2.9
Osteoarthritis	1,183	2.4
Depression	1,003	2.0
Cerebrovascular disease	894	1.8
Diabetes	812	1.6
Asthma	692	1.4
Kidney disease	484	1.0
Chronic obstructive pulmonary disease	432	0.9
Colorectal cancer	235	0.5
Osteoporosis	221	0.4
Lung cancer	136	0.3
Total	**10,929**	**21.8**
All allocated health expenditure	**50,146**	**100.0**

Note: Kidney disease includes both acute and chronic kidney diseases covering the following categories: glomerular diseases, renal tubulo-interstitial diseases, renal failure, hypertensive renal disease, and part of hypertensive heart and renal disease.
Source: AIHW Disease Expenditure Database.

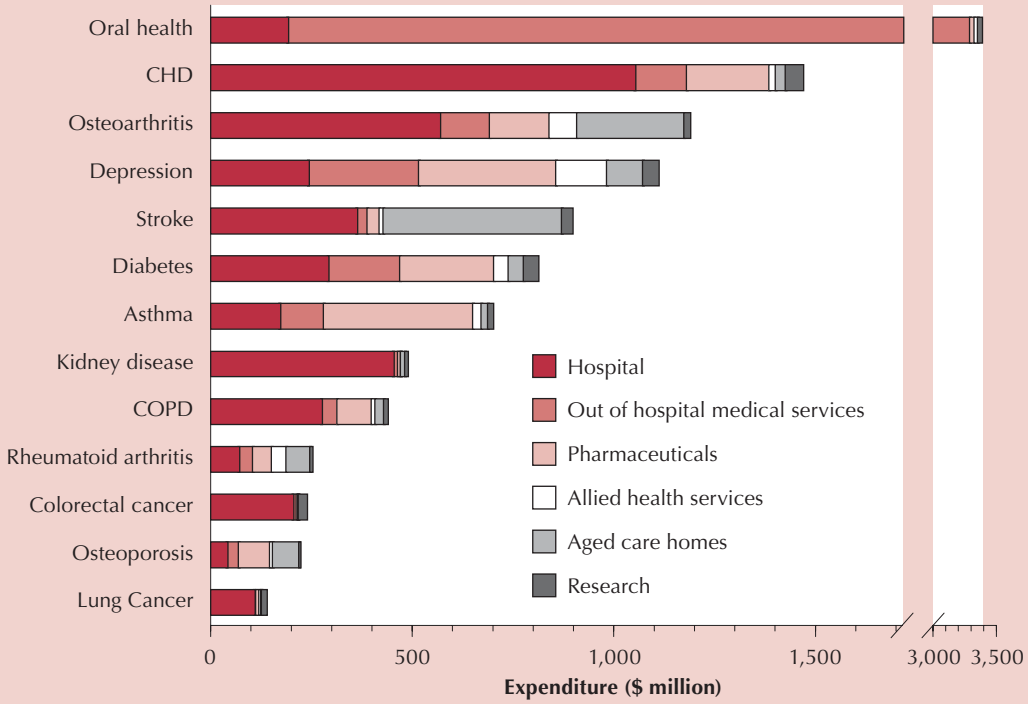
Health system expenditure can be divided into the following areas: hospital services, out-of-hospital services (mainly GP and dental services), pharmaceuticals, allied health services (including community care), aged care homes and research. In 2000–01, out-of-hospital services for these 12 chronic diseases accounted for $4.1 billion (8.1% of all allocated health expenditure), hospital services were $4.0 billion (8.0 %) and pharmaceuticals were $1.6 billion (3.2%) (Table 4.4).

Table 4.4: Health system expenditure on selected chronic diseases, by major area of expenditure, 2000–01

Area	Expenditure ($ million)	Percent of total expenditure
Hospital	4,004	8.0
Out of hospital medical services:		
Dental services	3,084	6.2
Other	994	2.0
Pharmaceuticals	1,592	3.2
Aged care homes	1,033	2.1
Allied health services	244	0.5
Research	227	0.5
Total	**11,175**	**22.3**
All allocated health expenditure	**50,146**	**100.0**

Note: Columns may not add to totals due to rounding.
Source: AIHW Disease Expenditure Database.

Most of the expenditure on oral health was for out-of-hospital services, mainly dental services (Figure 4.5). Other chronic diseases for which out-of-hospital services were a significant proportion of their total expenditure were depression, asthma and Type 2 diabetes. For these diseases, GP services were the main component of out-of-hospital services.



Source: AIHW Disease Expenditure Database.

Figure 4.5: Health system expenditure on chronic diseases, 2000–01

Hospital services were a major component of the expenditure on CHD, osteoarthritis, kidney disease, COPD, colorectal cancer and lung cancer. Pharmaceuticals were an important area of expenditure for CHD, depression and asthma, whereas aged care homes were significant for osteoarthritis, cerebrovascular disease (mainly stroke) and osteoporosis.

Estimates of health system expenditure are also available for 1993–94, including estimates for 9 of the 12 chronic diseases covered here. These estimates on a per capita basis can be compared with those for 2000–01 after adjusting for inflation in health prices of 20% (Table 4.5).

Total health system expenditure allocated to all diseases (after adjusting for inflation) in 1993–94 was $36.0 billion, or $2,018 per person, whereas in 2000–01 it was $2,534 per person, an increase of about 25% over the 7-year period. Among the chronic diseases for which comparable expenditure data are available for the two reference years, per capita expenditure on osteoarthritis grew by over 50% and expenditure for depression, colorectal cancer and oral health each grew by about 40%. In contrast, per capita expenditure on CHD was static.

Table 4.5: Change in per capita expenditure on chronic diseases, 1993–94 to 2000–01

Chronic disease	Per capita expenditure ($)		
	1993–94	2000–01	% change
Oral health	124.7	173.8	39
Coronary heart disease	73.7	75.5	2
Osteoarthritis	40.2	60.9	52
Depression	36.5	51.7	41
Cerebrovascular disease	40.6	46.1	13
Diabetes	n.a.	41.7	n.a.
Asthma	29.5	35.6	21
Kidney disease	n.a.	24.9	n.a.
Chronic obstructive pulmonary disease	19.3	22.3	15
Rheumatoid arthritis	11.3	12.7	12
Colorectal cancer	8.7	12.1	39
Osteoporosis	n.a.	11.4	n.a.
Lung Cancer	5.9	7.0	19

Note: 1993–94 data for diabetes, kidney disease and osteoporosis are not comparable to 2000–01 data because of coding changes and thus are not included here.
Source: AIHW disease expenditure database.

There are a number of factors involved in these changes, and they vary greatly for each specific disease. Population ageing over the period and associated changes in overall prevalence of each disease are important factors. Changes in treatments and pharmaceuticals also need to be considered. In some cases, increasing costs in one area of expenditure for a particular disease may be negated by decreasing costs in another area. For example, although expenditure on cardiovascular diseases (CVD), including heart disease and stroke, grew over this period at rates similar to those for the whole health system, CVD expenditure for aged care homes declined by 25% compared with an increase of 23% for the whole health system. Most of the decline in CVD expenditure on aged care homes was due to a reduction in the number of strokes over the period (AIHW 2004e).

Highlights: Chronic diseases and health system resources

- *In 2003–04, the 12 chronic diseases outlined in this report, along with 3 of the biomedical risk factors (high blood pressure, high blood cholesterol, excess weight) accounted for nearly one-fifth of all problems managed by GPs.*
- *High blood pressure was the most common individual problem managed by GPs (9.2 per 100 encounters).*
- *Over the 5-year period 1998–99 to 2003–04, significant increases in problems managed by GPs were recorded for high blood pressure, arthritis and diabetes, whereas for asthma there was a significant decrease.*
- *In 2003–04, 21.6% (1.5 million) of all hospital separations listed one of the 12 chronic diseases outlined in this report as the principal diagnosis or main procedure.*
- *In 2003–04, chronic kidney disease was the single largest contributor to hospital separations (over 780,000 separations), because of the need for frequent dialysis procedures.*
- *Other chronic diseases causing over 100,000 separations in 2003–04 were coronary heart disease and oral disease.*
- *Chronic kidney disease was also responsible for the most patient days in hospital in 2003–04 (880,000) followed by coronary heart disease (665,000). Other chronic diseases with over 400,000 patient days were depression, cerebrovascular disease, chronic obstructive pulmonary disease and osteoarthritis.*
- *Over one-fifth ($11 billion) of all health system expenditure in 2001 was taken up by the 12 chronic diseases highlighted in this report. Of this, over one-third was for out-of hospital medical services (mainly dental and GP services), one-third was for hospital services, and most of the remainder was for pharmaceuticals and aged care homes.*
- *6.7% of all health system expenditure was for oral health, 2.9% was for coronary heart disease, 2.4% was for osteoarthritis and 2.0% was for depression.*
- *Depression, asthma and Type 2 diabetes were chronic diseases for which out-of-hospital services made up a significant proportion of expenditure, the majority of these being GP services. In contrast, hospital services were a major component of expenditure for coronary heart disease, osteoarthritis, kidney disease, chronic obstructive pulmonary disease, colorectal cancer and lung cancer.*