



Australian Government

**Australian Institute of
Health and Welfare**

*Better information and statistics
for better health and wellbeing*

ARTHRITIS SERIES
Number 10

Health expenditure for arthritis and musculoskeletal conditions, 2004–05

National Centre for Monitoring Arthritis and Musculoskeletal Conditions

September 2009

Australian Institute of Health and Welfare
Canberra

Cat. no. PHE 115

The Australian Institute of Health and Welfare is Australia's national health and welfare statistics and information agency. The Institute's mission is better information and statistics for better health and wellbeing.

© Australian Institute of Health and Welfare 2009

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced without prior written permission from the Australian Institute of Health and Welfare. Requests and enquiries concerning reproduction and rights should be directed to the Head, Media and Communications Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601.

This publication is part of the Australian Institute of Health and Welfare's Arthritis series. A complete list of the Institute's publications is available from the Institute's website <www.aihw.gov.au>.

ISSN 1833-0991

ISBN 978 1 74024 942 3

Suggested citation

Australian Institute of Health and Welfare 2009. Health expenditure for arthritis and musculoskeletal conditions, 2004–05. Arthritis series no. 10. Cat. no. PHE 115. Canberra: AIHW.

Australian Institute of Health and Welfare

Board Chair

Hon. Peter Collins, AM, QC

Director

Penny Allbon

Any enquiries about or comments on this publication should be directed to:

National Centre for Monitoring Arthritis and Musculoskeletal Conditions

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Phone: (02) 6244 1000

Email: ncmamsc@aihw.gov.au

Published by the Australian Institute of Health and Welfare

Printed by Blue Star Print Group

**Please note that there is the potential for minor revisions of data in this report.
Please check the online version at <www.aihw.gov.au> for any amendments.**

Contents

- Acknowledgments..... v**
- Abbreviations..... vi**
- Summaryvii**
- 1 Introduction.....1**
 - 1.1 What is health expenditure?1
 - 1.2 How much is spent on health?1
 - 1.3 Arthritis and musculoskeletal conditions.....2
 - 1.4 Structure of the report3
- 2 Total expenditure4**
 - 2.1 An NHPA-specific perspective5
 - 2.2 National Hospital Cost Data Collection.....7
- 3 Condition-specific expenditure by health service area.....9**
 - 3.1 Hospital-admitted patient services.....10
 - 3.2 Out-of-hospital medical services.....14
 - 3.3 Pharmaceuticals.....17
 - 3.4 Research.....20
- 4 Expenditure by age and sex.....22**
 - 4.1 All arthritis and musculoskeletal conditions22
 - 4.2 Osteoarthritis25
 - 4.3 Chronic back pain26
 - 4.4 Osteoporosis.....27
 - 4.5 Rheumatoid arthritis.....29
 - 4.6 Slipped disc31
 - 4.7 Other musculoskeletal conditions33
- 5 Changes over time.....34**
 - 5.1 The past.....34
 - 5.2 The future35
- 6 Discussion36**
 - 6.1 Other costs.....36
 - 6.2 Government programs37
- Appendix 1: Methodology and data sources38**
 - Expenditure data38
 - Health care service data and population surveys40
- Appendix 2: Detailed statistical tables.....43**

Expenditure distribution, current prices, 2004–05 and 2000–01	43
Expenditure by age and sex, current prices, 2004–05.....	45
Expenditure per person, current prices, by age and sex, 2004–05.....	53
NHS prevalence estimates	60
Glossary	63
References	65
List of tables	66
List of figures	68
List of boxes.....	70

Acknowledgments

This report was authored by Michael Bullot from the National Centre for Monitoring Arthritis and Musculoskeletal Conditions (NCMAMC) at the Australian Institute of Health and Welfare. The author would like to thank colleagues Dr Kuldeep Bhatia, Ms Tracy Dixon, Ms Anna-Jane Glynn-Robinson, Dr Paul Magnus and Dr Naila Rahman for their valuable contributions to the report. The assistance of the AIHW Information Services and Publishing Unit is also gratefully acknowledged.

Thanks also to Ms Rebecca Bennetts and the AIHW Expenditure and Economics Unit for providing data and comments; Mr George Bodilsen in the AIHW Hospitals Unit for comments; and Associate Professor Helena Britt of the Australian General Practice Statistics and Classification Centre for advice on the interpretation of data from the BEACH survey.

The NCMAMC is grateful to members of the National Arthritis and Musculoskeletal Conditions Data Working Group/Steering Committee for providing helpful comments on drafts of the report.

This report was funded by the Australian Government Department of Health and Ageing.

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
AR-DRG	Australian Refined Diagnosis Related Group
BAOC	Better Arthritis and Osteoporosis Care
bDMARD	biologic disease-modifying anti-rheumatic drug
BEACH	Bettering the Evaluation and Care of Health
DoHA	Department of Health and Ageing
DMARD	disease-modifying anti-rheumatic drug
GDP	gross domestic product
GP	general practitioner
HSD	Highly Specialised Drugs (program)
ICD-10	International Classification of Diseases and health-related problems, 10th revision (used in Australia for mortality data)
ICD-10-AM	International Classification of Diseases and health-related problems, 10th revision, Australian Modification (used in Australia for hospital morbidity data)
ICPC	International Classification of Primary Care
MDC	Major Diagnostic Category
NHCDC	National Hospital Cost Data Collection
NHMD	National Hospital Morbidity Database
NHMRC	National Health and Medical Research Council
NHPA	National Health Priority Area
NHS	National Health Survey
NSAID	non-steroidal anti-inflammatory drug
PBS	Pharmaceutical Benefits Scheme

Summary

Around 6 million Australians experience long-term pain and disability from arthritis and musculoskeletal conditions. Hospital-admitted patient services and prescription pharmaceuticals are at the forefront in managing these conditions and the associated costs account for more than two-thirds of expenditure for these conditions.

This report focuses on health expenditure on arthritis and musculoskeletal conditions in 2004–05 and also compares it with expenditure in 2000–01. The estimates are derived from the Australian Institute of Health and Welfare (AIHW) Disease expenditure database, supported with information from various other data sources held at the AIHW.

In 2004–05, arthritis and musculoskeletal conditions...

- were the fourth largest overall contributor to direct health expenditure in Australia. At \$4.0 billion, they accounted for 7.5% of the total spending attributed to the major disease areas
- accounted for more expenditure on care by GPs and medical specialists (out-of-hospital medical services) than any other disease area, including cardiovascular disease.

Of the expenditure on these conditions...

- osteoarthritis, rheumatoid arthritis, osteoporosis, chronic back pain and slipped disc accounted for more than half (\$2.2 b)
- osteoarthritis alone accounted for nearly one-third, most of it (75%) due to hospital costs, mainly related to knee and hip replacements
- females (\$2.2 b) accounted for more than males (\$1.7 b), reflecting greater prevalence of the conditions overall, in females (excludes research expenditure)
- hospital inpatient care accounted for just over half (51%) and nearly half of that was due to knee and hip replacements
- prescription pharmaceuticals accounted for almost three-quarters (\$215 million) of expenditure for osteoporosis and over half (\$92 m) of rheumatoid arthritis expenditure, illustrating the common use of medication to manage them.

Changes over time

- On average, real (inflation-adjusted) health expenditure on arthritis and musculoskeletal conditions increased by 5.2% annually between 2000–01 and 2004–05.
- Overall expenditure on admitted patient services for osteoarthritis increased 82%, in current prices, from \$493m in 2000–01 to \$898m in 2004–05.
- The amount spent on prescribed pharmaceuticals for managing osteoporosis (\$215m) has nearly tripled, in current prices, since 2000–01 (\$75.5m).

1 Introduction

Arthritis and musculoskeletal conditions affect more than 6 million Australians and are the cause of much long-term pain and disability. The ongoing management of these conditions requires visits to general practitioners (GPs) and allied health professionals, medication, hospital services and many other aspects of care. As these conditions are more common in the older age groups, an increasingly ageing population is likely to further add to the associated large disease burden and the cost of providing health services to manage them. The impact of this burden was recognised by the Australian Health Ministers in 2002 when they made arthritis and musculoskeletal conditions a National Health Priority Area (NHPA).

This report presents direct health expenditure on arthritis and musculoskeletal conditions in 2004–05. Data for this report were obtained from the Australian Institute of Health and Welfare (AIHW) Disease expenditure database (see Appendix 1), providing the latest available expenditure estimates allocated to various disease groups. The database contains information on musculoskeletal conditions under six broad categories, namely osteoarthritis, rheumatoid arthritis, osteoporosis, chronic back pain, slipped disc and other musculoskeletal conditions (which include gout, juvenile arthritis, systemic lupus erythematosus (SLE), other arthropathies and soft tissue disorders and symptoms, among numerous other lesser-known conditions). The expenditure associated with each category is presented for four health service areas – hospital-admitted patient services, out-of-hospital medical services, prescription pharmaceuticals and research. Estimates of expenditure by age and sex are also provided.

1.1 What is health expenditure?

Health expenditure is costs incurred for preventing, diagnosing and treating health problems and conditions. This includes direct expenditure on care by hospitals, GPs and specialists (out-of-hospital medical services), on health goods such as medications, aids and appliances and on other health services (community and public health). Research and administration to support the services are also included. Funding for these services comes from both government and non-government sources (including from private health insurance and individuals).

Other costs associated with health care include travel costs for patients, the social and economic burden on carers and family, and lost wages and productivity – these are known as indirect costs. Indirect costs are not included in the AIHW Disease expenditure database and the process of measuring them remains a subject of debate among economists (Dunlop et al. 2003). For this reason, indirect costs have not been included as part of the health expenditure described in this report.

1.2 How much is spent on health?

In 2004–05, Australia's health expenditure totalled \$81.1 billion (9.0% of GDP), an estimated 65% (\$52.7 billion) of which was able to be allocated by disease group. Arthritis and musculoskeletal conditions constituted the fourth largest component of this allocated expenditure at \$4.0 billion, equating to 7.5% of allocated health expenditure (AIHW 2008b).

Cardiovascular diseases (\$5.9 billion), oral health (\$5.3 billion) and mental disorders (\$4.1 billion) were the three higher categories of expenditure.

1.3 Arthritis and musculoskeletal conditions

The term 'arthritis' encompasses a group of conditions involving inflammation of the joints, causing pain, stiffness, deformity and disability. In this report, 'musculoskeletal conditions' are categorised as joint problems and disorders of the bones, muscles and their attachments to each other, other than arthritis. The five conditions to which expenditure has been allocated are defined in Box 1.1.

Box 1.1: Various arthritis and musculoskeletal conditions	
<i>osteoarthritis</i>	<i>The most common form of arthritis, caused mainly by the accumulated wear of the cartilage in joints. This wear and tear disrupts the normal function of the joint, causing pain and functional limitations. The condition affects mainly the hands, spine, and weight-bearing joints such as the hips, knees and ankles.</i>
<i>rheumatoid arthritis</i>	<i>A chronic, inflammatory, autoimmune disease in which the immune system attacks the tissues lining the joints. The inflamed joints often cause pain, heat and swelling and can lead to functional limitations and severe disability.</i>
<i>osteoporosis</i>	<i>= 'porous bones'. A condition where the bone density thins and weakens, resulting in an increased risk of fracture. Osteoporotic fractures are common among the elderly, with the spine, hip and wrist being common sites.</i>
<i>back pain</i>	<i>Pain coming from the spine, muscles, nerves or other structures in the back. Most back problems are short term, but can become chronic (measured as pain persisting for more than 3 months).</i>
<i>slipped disc</i>	<i>A condition in which, due to a tear in the outer ring of fibrous connective tissue, the intervertebral cartilage disc bulges and protrudes into the spinal canal, pushing on the spinal cord or on the nerve roots. The pressure on the nerve can cause pain, along with numbness and/or weakness in the part of the skin and muscle that the particular nerve root leads to.</i>

Of 6 million Australians estimated to have arthritis or other musculoskeletal conditions in 2004–05, around 1.5 million had osteoarthritis (ABS 2006). Chronic back pain, including pain associated with a slipped disc or other disc disorder, affected over 3 million people, around one-third of whom reported slipped disc as their condition. Osteoporosis was estimated to affect around half a million females and less than 90,000 males, while just under half a million people reported having rheumatoid arthritis in 2004–05 (Table 1.1).

Table 1.1: Prevalence of various arthritis and musculoskeletal conditions, by sex, 2004–05

Condition	Males ('000)	Females ('000)	Persons ('000)
Osteoarthritis	597.4	950.2	1,547.6
Chronic back pain	1,049.3	1,027.0	2,076.3
Osteoporosis	89.4	496.4	585.8
Rheumatoid arthritis	209.8	281.2	491.0
Slipped disc	587.8	471.5	1,059.2

Notes: Based on self-reported information.

Source: AIHW analysis of the 2004–05 National Health Survey.

1.4 Structure of the report

This report presents the latest expenditure information on arthritis and musculoskeletal conditions and provides an update to the 2000–01 bulletin on the topic. Expenditure estimates are supported with information from various sources, including the National Hospital Morbidity Database (NHMD) held at the AIHW, the Bettering the Evaluation and Care of Health (BEACH) survey and the National Health Survey (NHS).

This introductory chapter provides a brief overview of what health expenditure is and where it has been allocated. The second chapter discusses the estimated expenditure attributed to five major musculoskeletal conditions (osteoarthritis, chronic back pain, osteoporosis, rheumatoid arthritis and slipped disc). Information from the National Hospital Cost Data Collection (NHCDC), which collects information from a sample of public and private hospitals, is also presented in Chapter 2 and can be used to estimate the average cost associated with surgical procedures performed in hospital.

Health service area expenditure varies among arthritis and musculoskeletal conditions, depending on the different treatment methods used, and Chapter 3 focuses on the four health service areas to which health expenditure is allocated. While hospital expenditure is allocated on the basis of principal diagnosis, in the case of osteoporosis it may be considered that most hip fractures in persons aged 40 years and over are probably related to an osteoporotic condition (excluding major trauma). We have therefore included in this chapter, estimated hospital costs for osteoporotic hip fractures based on this assumption.

The effects of age and sex are examined in Chapter 4 and provide evidence of the higher costs of arthritis and musculoskeletal conditions in the older age groups. Cost escalations associated with arthritis and musculoskeletal conditions, through surgical innovations – resulting in a greater uptake of hip and knee replacements for osteoarthritis – and the availability of new, sometimes more costly pharmaceuticals for the management of rheumatoid arthritis and osteoporosis, are described.

Inflation-adjusted estimates for 2004–05 are presented in Chapter 5, allowing for reliable comparisons to be made with 2000–01 expenditure estimates. A brief analysis of expenditure changes that have occurred and expenditure projections into the future are described.

The discussion chapter summarises the reported health expenditure information and briefly considers the costs (financial or otherwise) of a disability related to arthritis or another musculoskeletal condition.

2 Total expenditure

Total expenditure on arthritis and musculoskeletal conditions has been allocated to four distinct health service areas – hospital-admitted patient services, out-of-hospital medical services, prescription pharmaceuticals and research. The allocated expenditure is broken down into six broad categories, namely osteoarthritis, rheumatoid arthritis, osteoporosis, chronic back pain, slipped disc and other musculoskeletal conditions. Overall expenditure on the conditions in the four health service areas has increased, in current prices, from \$2.7 billion in 2000–01 to \$4.0 billion in 2004–05. Admitted patient services in hospitals accounted for the biggest contribution to overall expenditure, especially for osteoarthritis, chronic back pain and slipped disc.

Of \$4.0 billion (7.5% of total health expenditure) allocated as health expenditure for arthritis and musculoskeletal conditions in 2004–05, nearly one-third was attributed to osteoarthritis (\$1.2 billion). Smaller amounts were estimated for chronic back pain (\$359 million), osteoporosis (\$304 million), rheumatoid arthritis (\$175 million) and slipped disc (\$156 million). The remainder (\$1.7 billion) was allocated to other musculoskeletal conditions (Table 2.1).

Table 2.1: Direct health expenditure on various arthritis and musculoskeletal conditions, 2004–05

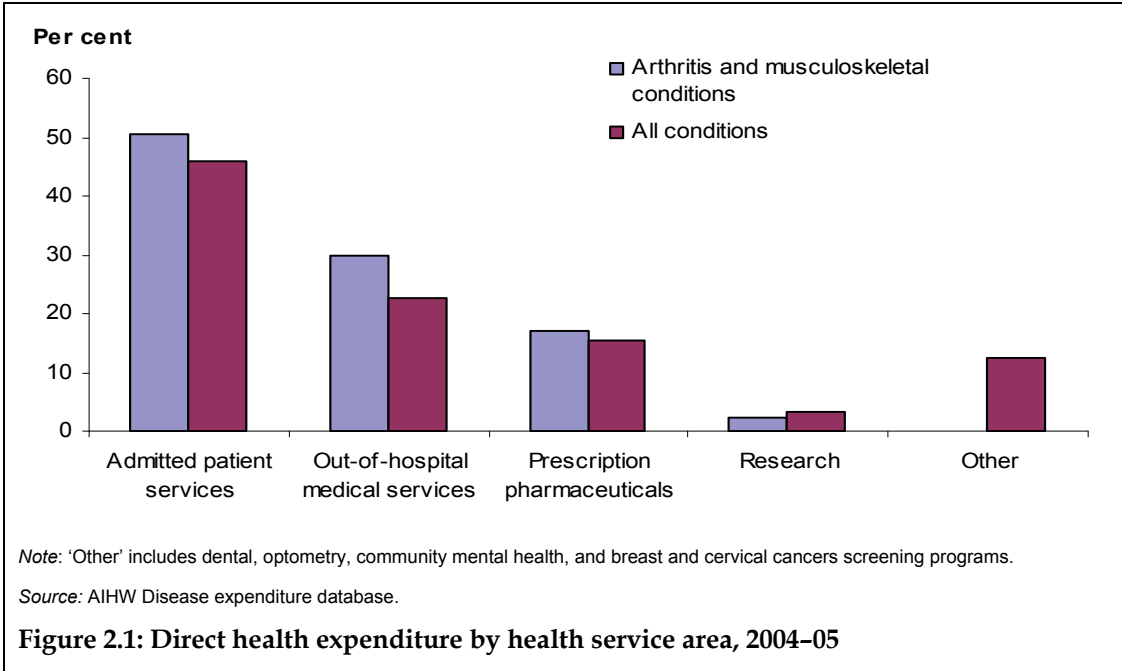
Condition	Allocated expenditure (\$ m)	Per cent of musculoskeletal allocation	Per cent of total allocation
Osteoarthritis	1,220.9	30.9	2.3
Chronic back pain	358.7	9.1	0.7
Osteoporosis	304.3	7.7	0.6
Rheumatoid arthritis	175.1	4.4	0.3
Slipped disc	156.2	3.9	0.3
Other musculoskeletal conditions	1,740.6	44.0	3.3
All arthritis and musculoskeletal conditions	3,955.9	100.0	7.5

Source: AIHW Disease expenditure database.

The long-term treatment, pain, disability and prevalence of these diseases and conditions is reflected in the pattern of health expenditure by health service area. Expenditure attributed to admitted patient services for arthritis and musculoskeletal conditions was marginally higher at 51%, compared to 46% for overall admitted patient services expenditure for all disease groups. Out-of-hospital medical services expenditure (30%) was also slightly higher than the overall proportion of health expenditure (23%) for this health service area. Arthritis and musculoskeletal conditions expenditure was higher overall across many of the health service areas when compared to all conditions (Figure 2.1).

At the individual conditions level, the admitted patient services expenditure component for slipped disc (77%) and osteoarthritis (74%) was much higher than for all disease groups combined (46%). In comparison, the corresponding expenditure on osteoporosis (12%) and rheumatoid arthritis (20%) was substantially lower. On the other hand, the amounts attributed to prescription pharmaceuticals for the latter two illnesses was substantially

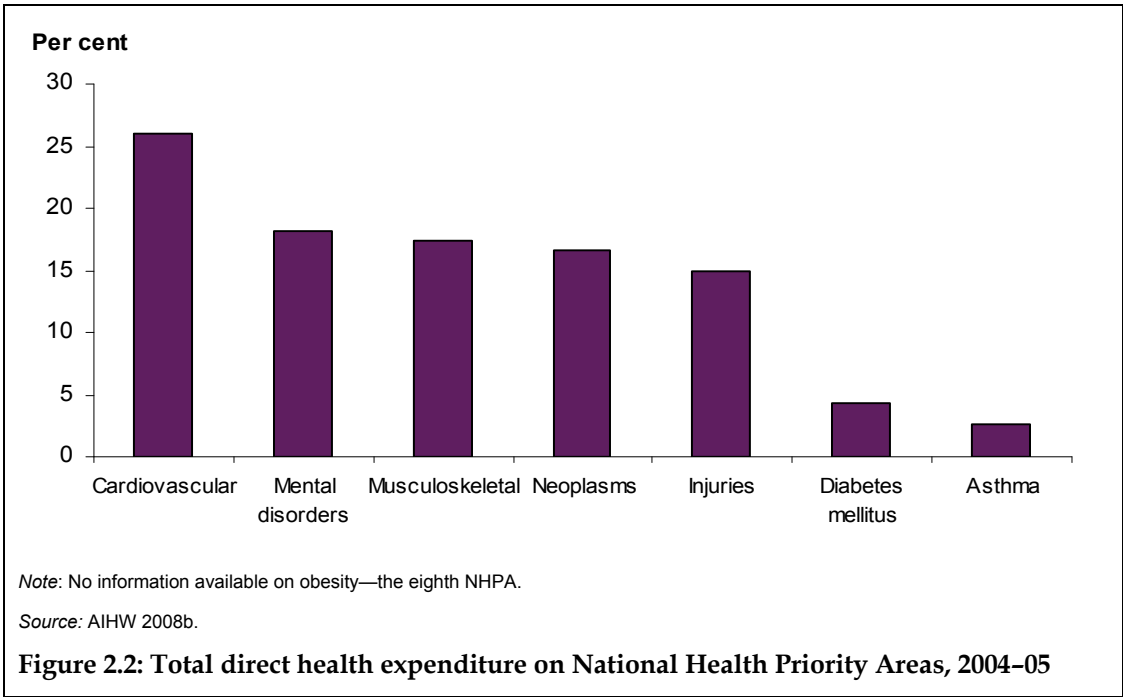
higher (71% and 53% respectively) when compared to all disease groups (15%), whereas the amounts attributed to slipped disc (5%) and osteoarthritis (9%) were lower.



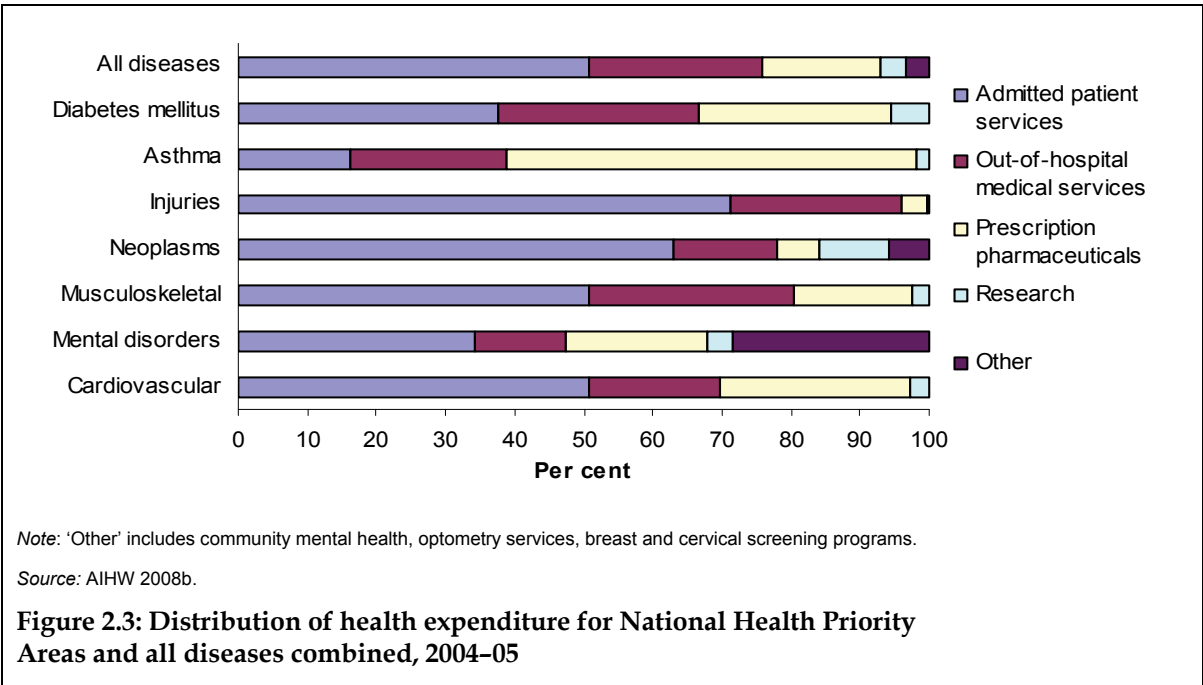
2.1 An NHPA-specific perspective

The National Health Priority Areas (NHPA) initiative is a collaborative effort involving the Commonwealth, state and territory governments. The initiative aims to improve the health and quality of life of Australians by targeting diseases or conditions that impose a high social and financial cost. The initiative endeavours to promote prevention and intervention in health targeted at particular conditions. In view of the burden of disease and our ability to seek improvements, arthritis and musculoskeletal conditions, as a group, is a relatively large source of health expenditure.

In 2004-05, five of the eight priority areas were within the top six conditions for total allocated health expenditure. The sixth, diabetes, ranks fourteenth (\$1.0 billion, or 1.9% of allocated expenditure) and asthma, which is contained within the respiratory diseases group, accounted for \$0.6 billion, or 1.2% of allocated health expenditure. Seven of the NHPA categories accounted for \$22.8 billion, or 43% of the total allocated health system expenditure. Arthritis and musculoskeletal conditions was the third highest, accounting for 17% of total NHPA expenditure (Figure 2.2). No expenditure information was available for the remaining NHPA, obesity.



Expenditure on admitted patient services for arthritis and musculoskeletal conditions was proportionally similar to the admitted patient services expenditure on all diseases combined. The expenditure distribution on out-of-hospital medical services was highest for the musculoskeletal conditions category (30%) compared to other priority areas (Figure 2.3).



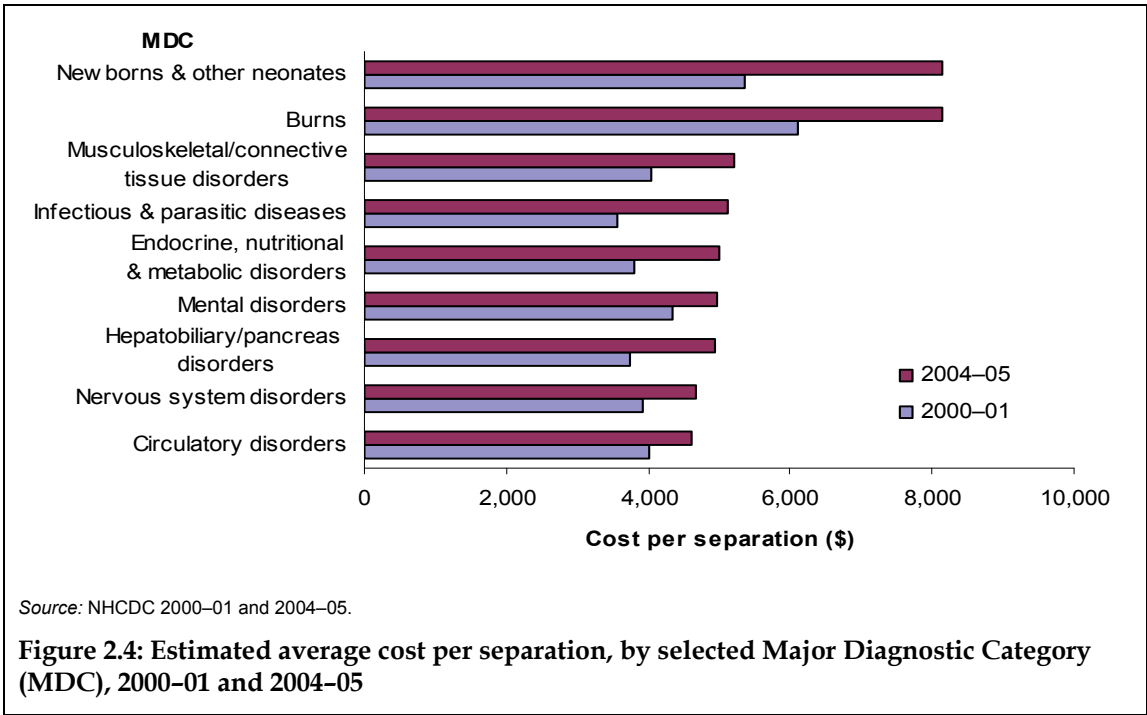
2.2 National Hospital Cost Data Collection

Hospital services expenditure data from the National Hospital Cost Data Collection (NHCDC) provides information on the average cost associated with surgical procedures performed in hospital. This information is used in this report to further highlight the expenditure associated with hospital-admitted patient services.

The NHCDC (see Appendix 1) is an ongoing annual voluntary collection of hospital cost and activity data from a sample of acute care hospitals throughout Australia. It was established in 1996 and is used to produce annual updates of national cost weights for Australian Refined Diagnosis Related Groups (AR-DRGs) and other statistics relevant to health service costing and planning. These data are contained in the cost reports published by the Department of Health and Ageing (DoHA).

The NHCDC uses a Casemix (see Glossary) costing analysis which refers to the mix of cases by their types of episodes treated in a health care facility. The basic principle of Casemix is that hospital costs can be allocated to direct products produced by that hospital. Total hospital expenditure is broken down into product units using a standard NHCDC procedure so that cost-per-product statistics can be analysed. Separate cost weights are usually estimated for the public and private sectors because of the differences in the range of costs recorded in public and private hospitals.

Data from the NHCDC uses the Major Diagnostic Category (MDC) of musculoskeletal /connective tissue disorders and shows a continual increase in the average cost per year for disorders in this category. According to this collection, musculoskeletal/connective tissue disorders was the highest public sector total cost category in 2004–05 at \$1.6 billion and an average cost per separation (discharge from hospital) of \$5,213, representing a 29% increase in the average cost from 2000–01 (Figure 2.4). In 2006–07, it was again the highest public sector total cost category at \$2.0 billion and, with an average cost per separation of \$5,947, an increase in the average cost of 14% from 2004–05. According to the NHCDC, in 2004–05 there were just over 300,000 separations for musculoskeletal/connective tissue diseases and disorders from public hospitals (DoHA 2006). Private sector cost data for 2004–05 was not collected or published.

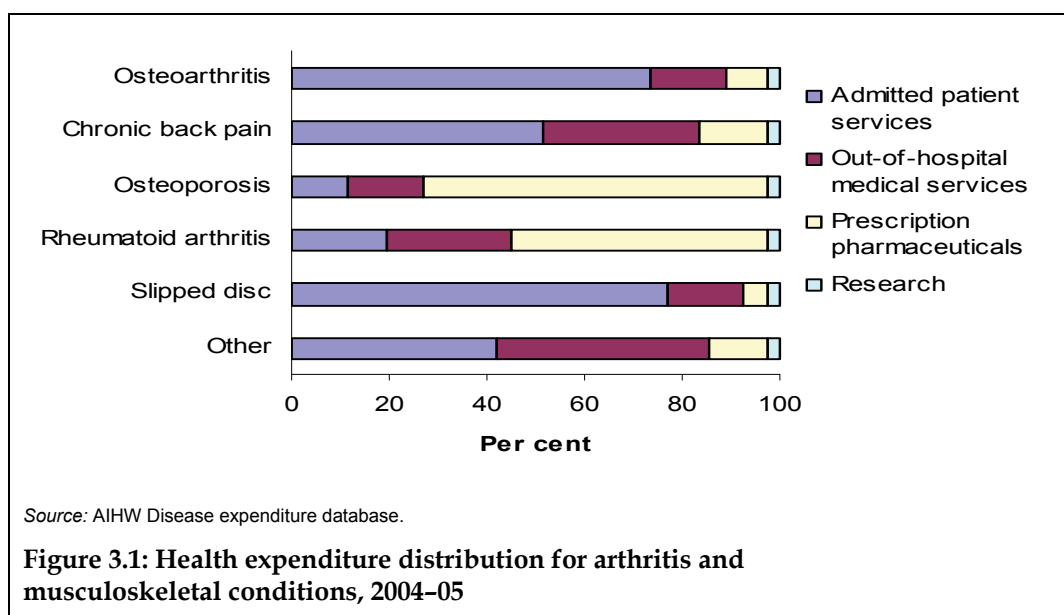


3 Condition-specific expenditure by health service area

This chapter presents condition-specific health service area expenditure for osteoarthritis, chronic back pain, osteoporosis, rheumatoid arthritis and slipped disc.

The management and treatment of the various forms of arthritis and musculoskeletal conditions vary in their application and appropriateness. Management strategies mainly involve controlling pain and improving functionality and quality of life. The treatment and management of osteoarthritis and rheumatoid arthritis is focused on preventing or reducing joint damage and improving mobility, whereas the treatment of osteoporosis is focused more on bone health and avoidance of fractures. In the treatment of rheumatoid arthritis and the symptoms of a slipped disc, minimising inflammation surrounding joints is vital to management.

The proportion of expenditure for each health service area varies between conditions as a result of the differing management strategies employed. Services to patients admitted to hospital constituted around half the total allocated direct health expenditure for arthritis and musculoskeletal conditions, at \$2.0 billion in 2004–05. Expenditure on admitted patient services accounted for the largest proportion of slipped disc, osteoarthritis and chronic back pain expenditure. Osteoporosis accounted for a small proportion of admitted patient services expenditure because as a condition it is not normally managed or treated in hospital, although its consequences, such as hip fractures, often are. Costs associated with hip fracture management are discussed later in this chapter. Slipped disc hospital expenditure is mostly related to the cost of spinal fusions. High prescription drug proportions for osteoporosis and rheumatoid arthritis illustrate the common use of medication to manage these conditions (Figure 3.1). The use of non-prescription medications and visits to allied health practitioners are common in people with arthritis and musculoskeletal conditions. Overall estimates for the conditions are therefore most likely an underestimate of the real costs involved as expenditure in these health service areas was not able to be allocated by disease.



The report focuses mainly on direct health expenditure estimates relating to the prevention, diagnosis and management of arthritis and musculoskeletal conditions. This expenditure could only be allocated to particular health service areas in 2004–05 (Box 3.1).

Box 3.1: The AIHW Disease expenditure database health service areas where expenditure can be allocated by disease group in 2004–05

- *hospital-admitted patient services*
- *out-of-hospital medical services (including general practitioners (GPs), specialists, imaging and pathology and other medical services)*
- *pharmaceuticals (prescription drugs only)*
- *health-related research*
- *other areas including community mental health, optometry services, breast and cervical cancer screening programs (nil expenditure for arthritis and musculoskeletal conditions)*

All expenditure data in this report have been obtained from this database unless stated otherwise.

3.1 Hospital-admitted patient services

Osteoarthritis had the single largest increase in hospital-admitted patient services expenditure from 2000–01 to 2004–05, most likely as a result of an increased uptake of hip and knee replacements and their associated cost, although hospital separations did not increase to the same extent. More than three-quarters of hip and knee replacements were performed on people with the principal diagnosis of osteoarthritis. Expenditure on admitted patient services for chronic back pain and slipped disc increased substantially while the increase in rheumatoid arthritis expenditure in this area was similarly matched by a corresponding increase in hospital separations (Table 3.1).

Table 3.1: Hospital-admitted patient services expenditure and separations, 2000–01 and 2004–05

Condition	Expenditure, in current prices, on admitted patient services			Hospital separations		
	2000–01 (\$ m)	2004–05 (\$ m)	Increase (per cent)	2000–01 (number)	2004–05 (number)	Increase (per cent)
Osteoarthritis	493.5	898.5	82.0	57,444	75,187	30.9
Chronic back pain	127.4	185.5	45.6	45,817	51,224	11.8
Osteoporosis	31.8	35.0	10.1	7,476	8,099	8.3
Rheumatoid arthritis	27.4	34.3	25.2	4,491	5,824	29.7
Slipped disc	87.3	120.2	37.7	21,572	22,854	5.9
Other	518.6	729.7	40.7	200,175	217,675	8.7
All arthritis and musculoskeletal conditions	1,286.1	2,003.2	55.8	336,975	380,863	13.0

Source: AIHW Disease expenditure database; AIHW National Hospital Morbidity Database.

Hospital separations for arthritis and musculoskeletal conditions totalled 380,863 in 2004–05, an increase of 13% from 2000–01 (336,975 separations). This group, as a principal diagnosis,

accounted for 5.4% of all hospital separations in 2004–05. In 2006–07, there were 406,744 separations for the same group of conditions, 5.3% of all separations. Apart from rheumatoid arthritis and slipped disc, changes in the number of hospital separations between 2004–05 and 2006–07 have slowed in comparison to the earlier 4-year period (tables 3.1 and 3.2).

Table 3.2: Hospital separations 2004–05 and 2006–07

Condition	Hospital separations		Increase/change (per cent)
	2004–05	2006–07	
Osteoarthritis	75,187	82,292	9.4
Chronic back pain	51,224	52,894	3.3
Osteoporosis	8,099	8,035	-0.8
Rheumatoid arthritis	5,824	6,920	18.8
Slipped disc	22,854	23,985	4.9
Other	217,675	232,618	6.9
All arthritis and musculoskeletal conditions	380,863	406,744	6.8

Source: AIHW National Hospital Morbidity Database.

Osteoarthritis

Admitted patient services in hospitals for osteoarthritis amounted to \$898 million in 2004–05, representing an 82% increase, in current prices, from 2000–01 (\$493 million). Osteoarthritis constituted, by far, the largest component of admitted patient services expenditure (45%) on arthritis and musculoskeletal conditions, followed by chronic back pain and slipped disc. Nearly three-quarters of health service area expenditure for osteoarthritis was for admitted patient services.

There were more than 75,000 hospital separations with a principal diagnosis of osteoarthritis in 2004–05 and an average length of stay of 5.7 days. More than half of the separations had a total hip and/or knee joint replacement performed, accounting for much of the estimated expenditure associated with inpatient services. The number of separations in 2004–05 had increased by 9% in 2006–07 to over 82,000 for the same principal diagnosis; 54% of these separations had a total hip or knee replacement reported. Over both periods, around 9 out of every 10 total hip and knee replacements were performed on people with the principal diagnosis of osteoarthritis.

According to the NHCDC, total hip and knee replacement procedures were estimated to cost on average \$14,000 to \$29,500 each in the public sector in 2004–05 (DoHA 2006). In 2006–07 this estimated cost ranged on average from \$15,500 to \$31,900 in the public sector (DoHA 2008). The prostheses and operating room costs together contributed to a large proportion of this expenditure.

Chronic back pain

Around half of the expenditure for chronic back pain was for admitted patient services, amounting to \$185 million in total. The condition accounted for 9% of all admitted patient services for arthritis and musculoskeletal conditions in 2004–05. There were more than 51,000 hospital separations where the principal diagnosis was chronic back pain, and the average length of stay in hospital was 3.6 days. In 2006–07, there were almost 53,000 hospital separations, an increase of 3.3% from 2004–05.

Nearly 49,000 non-surgical procedures were performed on people who had chronic back pain as their principal diagnosis in 2004–05, a 35% increase since 2000–01. Physiotherapy accounted for almost one-third of these procedures, but in extreme chronic cases, a spinal fusion may have been performed. Over the same period, surgical procedures increased 92% to nearly 7,000, more than a quarter of which were spinal fusions, costing on average an estimated \$16,000 to \$29,500 to perform in the public sector (DoHA 2006). In 2006–07, non-surgical procedures amounted to more than 53,900 and surgical procedures decreased to fewer than 6,900. Spinal fusion costs ranged from \$15,600 to \$32,000 in the public sector in 2006–07 and \$15,000 to \$26,000 in the private sector (DoHA 2008).

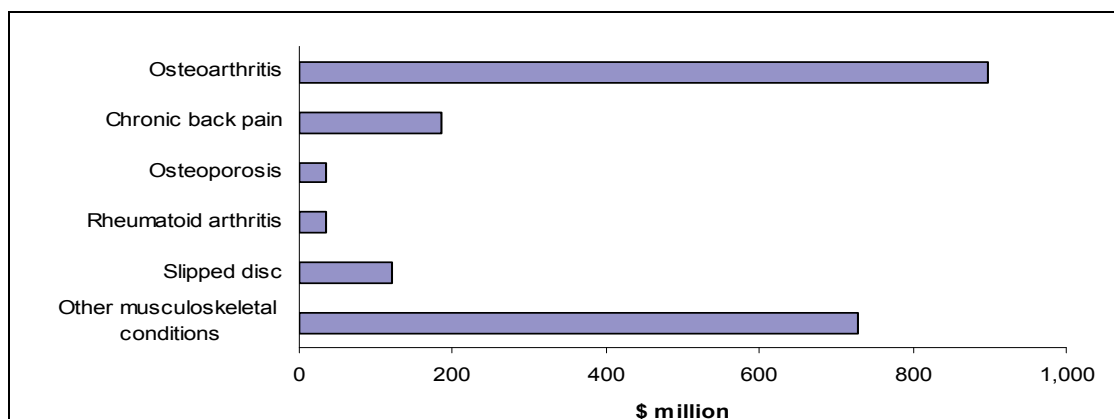
Osteoporosis

Osteoporosis accounted for a small proportion (2.0%) of admitted patient services expenditure for arthritis and musculoskeletal conditions in 2004–05. Osteoporosis is not normally managed or treated in hospital, although in 2004–05 an estimated \$35 million was spent on admitted patient services for the condition. There were in excess of 8,000 separations from hospital where osteoporosis was the principal diagnosis.

For separations where osteoporosis was the principal diagnosis, the number of procedures has increased since 2000–01, from fewer than 11,900 to a little over 14,000 in 2004–05. Of these, more than a quarter were for physiotherapy and occupational therapy services.

Fractures occurring as a result of osteoporosis usually require immediate attention, which is often provided in a hospital setting where the surgical services and biomedical devices are available. However, diagnosis coding practice for hospital records results in many people who are admitted following a fracture having 'fracture' recorded as the principal diagnosis and 'osteoporosis' recorded only as an additional diagnosis (or not at all). Since hospital expenditure from the AIHW Disease expenditure database is allocated on the basis of principal diagnosis, the expenditure reported here for osteoporosis does not include all osteoporotic fractures. Costs associated with hip fracture management are discussed in the next section.

The majority of Australians diagnosed with osteoporosis are over 55 years of age and women are more likely to report the condition than men (AIHW 2008a). Fractures resulting from osteoporosis are also more likely to occur in persons aged 55 years and over. In 2004–05, more than 5,600 (87% females) hospital separations occurred in this age group where the diagnoses of osteoporosis and fracture were both recorded, with an average length of stay in hospital of 12.5 days.



Note: 'Other musculoskeletal conditions' includes gout, juvenile arthritis, systemic lupus erythematosus (SLE), other arthropathies, soft tissue disorders and various musculoskeletal symptoms or complaints among other lesser-known conditions.

Source: AIHW Disease expenditure database.

Figure 3.2: Expenditure on hospital-admitted patient services for arthritis and musculoskeletal conditions, 2004-05

Osteoporosis and hip fractures

The number of hospital separations for minimal trauma hip fractures among persons aged 40 years and over is one of the core indicators for monitoring osteoporosis (AIHW 2006b). Although hospital expenditure is allocated on the basis of principal diagnosis, it is considered that most hip fractures (excluding major trauma) in persons aged 40 years and over are probably related to an osteoporotic condition. It is therefore possible to estimate hospital costs for osteoporotic hip fractures based on this assumption.

Hip fractures are costly to manage, with hospital stays for procedures such as a hip joint replacement costing on average \$14,000 to \$17,700 in 2004-05 (DoHA 2006). Indirect costs associated with patient recovery and rehabilitation, visits for follow-up treatment and assistance with activities of daily living at home during the recovery period can also add up to a considerable amount.

Table 3.3: Estimated cost (\$ million) of hospital treatment for hip fracture, public hospitals, persons aged 40 years and over, 2004-05 and 2006-07

Diagnosis/procedure	2004-05		2006-07	
	Number of hip fracture separations	Total estimated cost for this DRG (\$ m) ^(a)	Number of hip fracture separations	Total estimated cost for this DRG (\$ m) ^(a)
Hip replacement ^(b)	4,255	\$70.0	4,412	\$79.8
Other hip and femur procedures ^(b)	7,372	\$102.7	7,491	\$118.2
Fracture of neck of femur with no procedures ^(b)	3,773	\$12.7	4,082	\$14.5
Total	15,400	\$185.4	15,985	\$212.5

(a) Estimated from the average cost for separations assigned to each Diagnosis Related Group (DRG).

(b) With or without complications.

Note: Data for the top six DRGs (I03B, I03C, I08A, I08B, I78A, and I78B) are presented, accounting for 97% of the total number of hip fractures in both years.

Source: AIHW National Hospital Morbidity Database, DoHA 2006, DoHA 2008.

Rheumatoid arthritis

Expenditure on admitted patient services for rheumatoid arthritis has risen from \$27.4 million (in current prices) in 2000–01 to \$34.3 million in 2004–05, representing a 25% increase. There were more than 5,800 hospital separations in 2004–05 with the principal diagnosis of rheumatoid arthritis, equating to around \$5,900 on average, per separation. Same-day separations accounted for almost half of these. There were in excess of 6,900 separations in 2006–07, a rise of nearly 19% since 2004–05, with 59% discharged the same day. The increase in same-day separations has contributed to a decrease in the average length of stay in hospital, down from 4.0 days in 2004–05 to 3.1 days in 2006–07.

Much of the treatment for the disease occurs in specialist clinics and as outpatient care, although in 2004–05 a total of 15,300 procedures (surgical and non-surgical) were recorded for separations with rheumatoid arthritis as the principal diagnosis. Of these, physiotherapy (10% of all procedures) was the main non-surgical service provided. The most common surgical procedure performed was knee joint replacement (6.4% of surgical procedures). Knee replacements cost on average around \$16,300 in the public sector in 2004–05 (DoHA 2006). Removal of a metatarsal bone in the foot (3.4%) and hip replacement surgery (2.8%) were other common surgical procedures performed on persons with rheumatoid arthritis.

Slipped disc

Slipped disc management accounted for 6.0% of direct health expenditure on admitted patient services for arthritis and musculoskeletal conditions in 2004–05. Over this period, there were nearly 23,000 hospital separations with the principal diagnosis of slipped disc and over 40,000 hospital procedures were reported for these separations.

Treatment of a slipped (herniated) disc usually involves physiotherapy and other non-surgical services. Regular stabilisation and back extension exercises may be used to strengthen the underlying back muscles and provide relief from the pain and disability associated with the condition. In 2004–05, there were more than 35,400 non-surgical hospital procedures performed, 34% being physiotherapy. As this therapy is also provided as an outpatient (non-admitted) service, the figures presented here of allied health interventions underestimate the real cost of the condition.

Surgery is used if there is no improvement in symptoms from taking a conservative exercise-centred approach and is aimed at reducing pressure on the nerves by removal of all or part of the herniated disc. The surgical fusing together of the vertebrae above and below the affected disc is often performed to stabilise that part of the spine. There were just under 3,570 spinal stabilisation procedures carried out in 2004–05 for separations with a diagnosis of slipped disc.

3.2 Out-of-hospital medical services

This category includes medical services provided outside of hospital by GPs and specialists, excluding in-hospital medical expenditure for private patients. Expenditure on diagnostic services performed as part of these medical services, such as medical imaging and pathology tests, is included in this category, but expenditure on medications is not. GPs are generally the first point of contact for people seeking help with arthritis and musculoskeletal

conditions and they have a choice of options to deal with the problem, such as medication, imaging and/or pathology tests and referrals to specialists.

Out-of-hospital medical services expenditure for arthritis and musculoskeletal conditions was higher than for any other NHPA group in 2004–05, at a cost of \$1.2 billion, marginally more than cardiovascular disease (\$1.1 billion). These services accounted for 30% of health expenditure for arthritis and musculoskeletal conditions.

Box 3.2: ICPC codes and the AIHW Disease expenditure database

International Classification of Primary Care (ICPC) codes used for estimating expenditure data for some conditions (for example, osteoarthritis and chronic back pain) vary considerably from those normally used to report data from the Bettering the Evaluation and Care of Health (BEACH) surveys, so the BEACH GP data presented here on the number of encounters and treatments given are not comparable to published results of the BEACH surveys.

Osteoarthritis

In 2004–05, expenditure on out-of-hospital medical services for osteoarthritis was \$189 million, accounting for 15% of total expenditure on the condition. This represents a 51% increase, in current prices, on 2000–01 expenditure in this area. Osteoarthritis accounted for 16% of the total out-of-hospital medical services expenditure for arthritis and musculoskeletal conditions in 2004–05.

Outside of the hospital setting, osteoarthritis management usually commences at the GP clinic. In 2004–05, it was the eighth most frequently managed problem by GPs and accounted for 2.5% of GP–patient encounters.

Pharmaceutical medication was often used as a management strategy in 2004–05, and was prescribed in 75% of GP–patient visits for the condition. Other forms of management used by GPs for osteoarthritis patients in 2004–05 included imaging (13% of encounters), referrals (10%) and pathology tests (2%). The most common referrals over that period were to orthopaedic surgeons (51% of referrals) and physiotherapists (21%).

Chronic back pain

Back pain management tends to be conservative and non-invasive, using medication and allied health services, such as physiotherapy, in and out of hospital. Expenditure on out-of-hospital medical services for chronic back pain was \$114.9 million in 2004–05, contributing to 32% of chronic back pain expenditure.

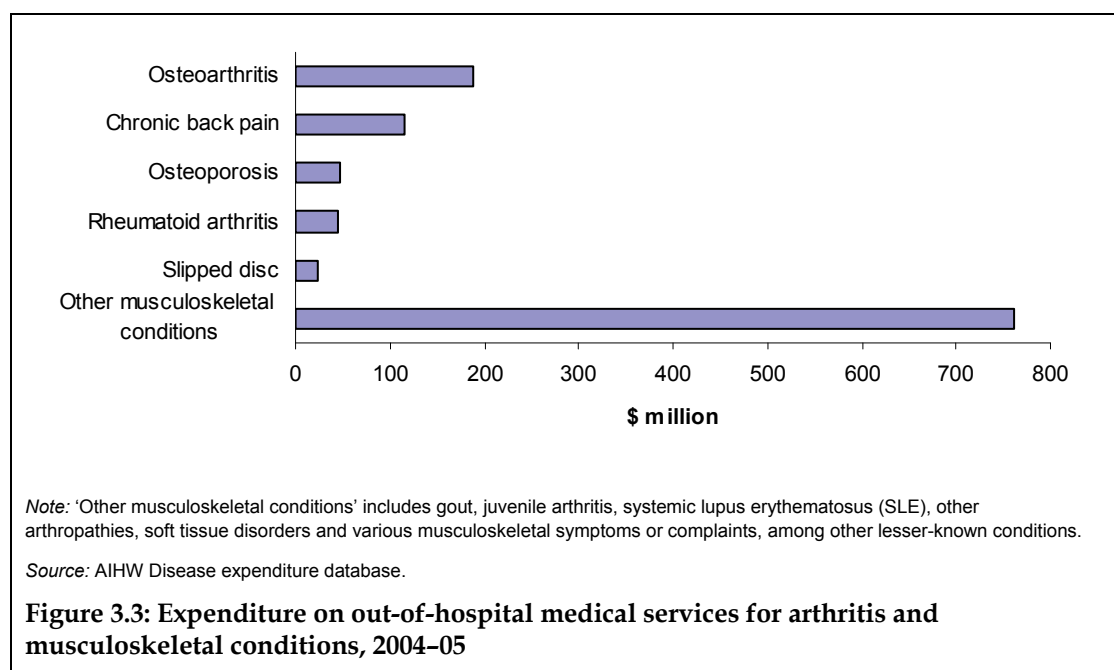
Over the same period, chronic back pain was managed at 1.4% of GP–patient encounters. Medication was the most commonly used management strategy for the condition, with prescriptions provided in two-thirds of all chronic back pain consultations with GPs. Referrals to physiotherapists were common (45% of all chronic back pain referrals), while referrals to orthopaedic surgeons (12%) and neurosurgeons (11%) were also used.

Osteoporosis

People with osteoporosis obtain advice on the treatment and management of their condition, usually from a GP or sometimes an allied health professional, such as a dietician. GPs will usually be involved in the follow-up after a person has experienced an injury or fracture from a mild trauma. Out-of-hospital medical service expenditure for osteoporosis amounted to \$47.3 million and accounted for 16% of total osteoporosis-related direct health expenditure in 2004–05. The condition accounted for 4% of total arthritis and musculoskeletal conditions direct health expenditure on out-of-hospital medical services.

The treatment and management of osteoporosis aims to stop or reduce bone loss for the purpose of preventing fractures. Medications are used for this purpose in combination with lifestyle and nutrition factors.

Osteoporosis was managed at less than 1% of GP–patient encounters in 2004–05 and medications were prescribed in 78% of these encounters. Other forms of management included imaging tests, conducted in 13% of osteoporosis-related encounters, especially densitometry (75% of all imaging tests performed on people with osteoporosis). Referrals were given in 2% of consultations for osteoporosis, with rheumatologists (32% of referrals), physiotherapists (30%) and endocrinologists (18%) being the most common.



Rheumatoid arthritis

Around one-quarter (\$45 million) of direct health expenditure on rheumatoid arthritis in 2004–05 was for out-of-hospital medical services. Similar to the proportion spent on osteoporosis, rheumatoid arthritis accounted for less than 4% of total arthritis and musculoskeletal conditions direct health expenditure on out-of-hospital medical services.

Medication is the main strategy used by GPs and rheumatologists to reduce joint pain, swelling and joint damage, with an average prescription rate of 70% of GP–patient encounters for rheumatoid arthritis in 2004–05. Referrals occurred in 7% of rheumatoid

arthritis encounters; 56% of these were to a rheumatologist and 15% to an orthopaedic surgeon. While 8% of new rheumatoid arthritis problems managed in 2004–05 were referred to a rheumatologist, the corresponding figure in 2007–08 had increased to 24%.

Slipped disc

Expenditure on out-of-hospital medical services for slipped disc was \$24 million in 2004–05, accounting for 15% of slipped disc expenditure, a 52% increase, in current prices, from 2000–01.

GPs are usually the first point of contact for people with a slipped disc, with referrals to allied health professionals being a common form of management. Nearly one-third (29%) of new slipped disc encounters were referred and more than one-third (35%) were sent for imaging tests. The most common referrals made by GPs were to physiotherapists (48% of referrals) and to a lesser degree to neurosurgeons (16%). Medication is also commonly used to manage a slipped disc condition, with prescriptions provided in 60% of consultations for a slipped disc in 2004–05.

3.3 Pharmaceuticals

The management of arthritis and musculoskeletal conditions relies heavily on the use of medication to ease pain and reduce inflammation, especially in the joints. In this report, expenditure on pharmaceuticals only includes prescription drugs as there is no information available on expenditure for over-the-counter medications.

Prescription pharmaceuticals accounted for 17% (\$680m) of the total direct health expenditure on arthritis and musculoskeletal conditions in 2004–05. Osteoporosis and other musculoskeletal conditions accounted for nearly one-third each (32% and 31% respectively) of the expenditure on pharmaceuticals. Osteoarthritis (16%) and rheumatoid arthritis (14%) collectively accounted for just under another third. Although medication is also frequently used in chronic back pain and slipped disc, a large proportion is non-prescription and expenditure on this is not captured here.

Osteoarthritis

Expenditure on prescribed pharmaceuticals for osteoarthritis totalled \$106 million in 2004–05, a 3% increase, in current prices, on the amount spent in 2000–01.

Medication for managing osteoarthritis is aimed at pain control and improving functioning and quality of life. Prescriptions for medication were provided in three out of four encounters for osteoarthritis in 2004–05. Commonly prescribed medications used to treat the condition include paracetamol, other analgesics and non-steroidal anti-inflammatory drugs (NSAIDs).

According to the 2004–05 BEACH survey, GPs most commonly recommended paracetamol (20 per 100 encounters for osteoarthritis), celecoxib (14) and meloxicam (11) for managing osteoarthritis. (Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) and celecoxib is from the COX-2 inhibitor class of drugs, a subclass of NSAIDs used to reduce pain and inflammation.) Celecoxib and meloxicam, while not limited to the treatment of osteoarthritis,

accounted for \$76.6 million and \$42.8 million respectively, of PBS-paid services processed from approved pharmacies in 2004–05 (Medicare Australia 2009).

The removal of rofecoxib (a COX-2 inhibitor drug) from the market in September 2004, due to safety concerns, has had an impact on the prescribing of this class of drugs and reported health expenditure. In response, GP scripts for celecoxib had reduced to 8 per 100 encounters by 2007–08, while GP prescriptions for paracetamol (24) and meloxicam (13) increased. Expenditure figures for celecoxib (\$34.4 m) were substantially lower in 2007–08 and meloxicam expenditure (\$36.8 m) was also down (Medicare Australia 2009).

Chronic back pain

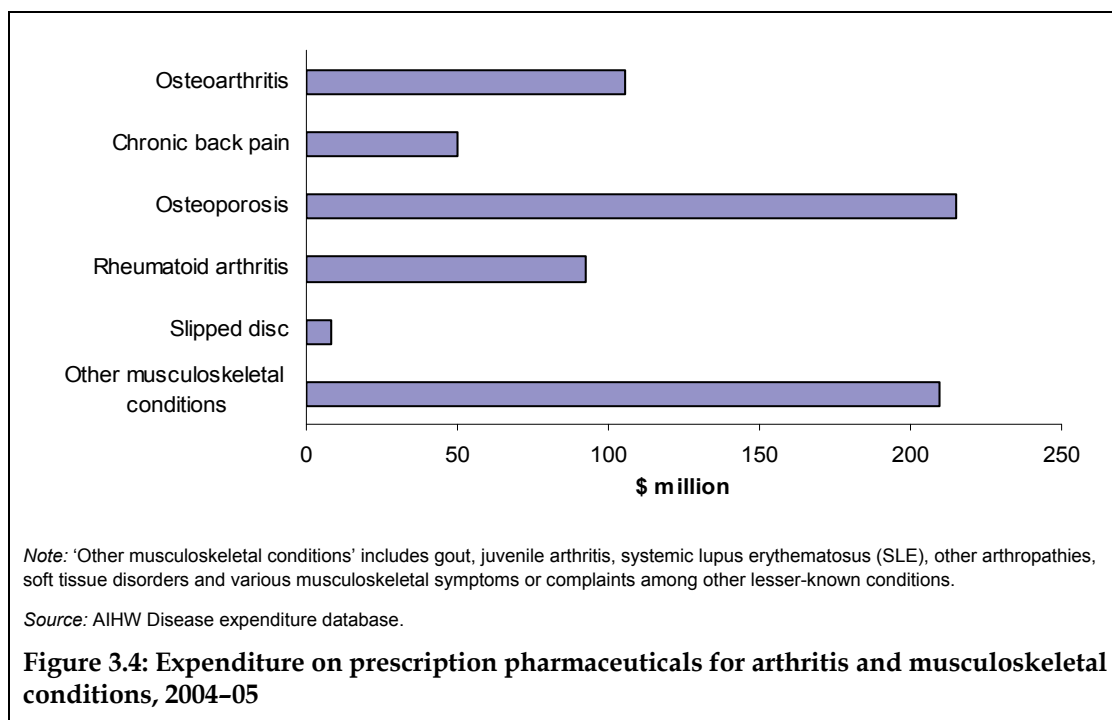
Pharmaceuticals prescribed for managing chronic back pain accounted for 14% (\$50 million) of the condition's direct health expenditure. This represented an 18% increase in expenditure, in current prices, in this area since 2000–01.

Medication is used to control pain and inflammation and reduce muscle spasms associated with chronic back pain and was the most commonly used management strategy, prescribed in two out of every three GP–patient encounters for the condition in 2004–05. Paracetamol preparations, recommended in 28 per 100 encounters for chronic back pain, and tramadol (9 per 100 encounters) were the most common medications prescribed by GPs in the 2004–05 BEACH survey. Both medications are used to provide relief from pain.

Osteoporosis

Expenditure on prescribed pharmaceuticals for managing osteoporosis was the highest (\$215 million) for any single musculoskeletal condition. This expenditure accounted for almost three-quarters (71%) of direct health expenditure on osteoporosis, indicating the high use of pharmaceuticals in the management of the condition. The amount spent on the condition in this area has nearly tripled, in current prices, since 2000–01 (\$75.5 million). NHS estimates indicate around 43% of people used pharmaceutical medications to manage their osteoporosis in 2004–05.

Prescriptions for osteoporosis were provided in around three out of every four GP–patient encounters in 2004–05. The bisphosphonates alendronate (35 per 100 encounters for osteoporosis) and risedronate (13 per 100 encounters), along with calcium carbonate (17 per 100 encounters), were the most commonly prescribed medications for osteoporosis over that period. The use of these in conjunction with vitamin D can reduce the rate of bone loss and the risk of fractures. Alendronate and risedronate accounted for \$105 million and \$32.7 million respectively, of PBS-paid services processed from approved pharmacies in 2004–05 (Medicare Australia 2009).



Rheumatoid arthritis

Prescribed pharmaceuticals expenditure accounted for more than half (53%) of the direct health expenditure for rheumatoid arthritis. Expenditure on prescribed pharmaceuticals for the disease (\$92 million), although less than osteoporosis and osteoarthritis, has increased, in current prices, nearly fourfold from 2000-01 to 2004-05.

In 2004-05, medications were prescribed in 70% of GP-patient encounters, where methotrexate (17 per 100 encounters for rheumatoid arthritis), a disease modifying anti-rheumatic drug (DMARD), was the most commonly prescribed medication by GPs. Other common GP-prescribed pharmaceuticals for the disease in the same period included paracetamol preparations (12 per 100 encounters), NSAIDs and corticosteroids.

The increase in the availability of biologic disease modifying anti-rheumatic drugs (bDMARDs) for treating rheumatoid arthritis is likely to result in increased expenditure in this area in the future. In 2004-05, etanercept (a bDMARD) accounted for \$25.0 million of PBS-paid services processed from approved pharmacies. This had increased to \$54.0 million in 2007-08. Another bDMARD, adalimumab, increased from \$10.3 million in 2004-05 to \$49.0 million of PBS-paid services processed from approved pharmacies in 2007-08 (Medicare Australia 2009).

Several of the bDMARD class of drugs are only available through the Highly Specialised Drugs (HSD) program. To provide these drugs as pharmaceutical benefit items, medical practitioners have to be affiliated with specialist hospital units attached to public and private hospitals, as distribution is restricted to supply through hospitals. The PBS expenditure figures here do not include the costs of HSDs supplied through the public hospital system.

Slipped disc

Expenditure on prescribed pharmaceuticals for slipped disc management accounted for just over 1% (\$8.1m) of total prescribed pharmaceuticals expenditure for arthritis and musculoskeletal conditions.

Treatment for slipped disc normally involves rest, followed by strengthening and stabilising exercises, supported by medication for pain relief. In 2004–05, medications were prescribed in 60% of GP–patient encounters for slipped disc. Paracetamol preparations (32% of prescribed medications for slipped disc) were the most common medications prescribed by GPs for people with slipped disc. Tramadol (14% of prescribed medications) was also commonly prescribed by GPs for the condition.

3.4 Research

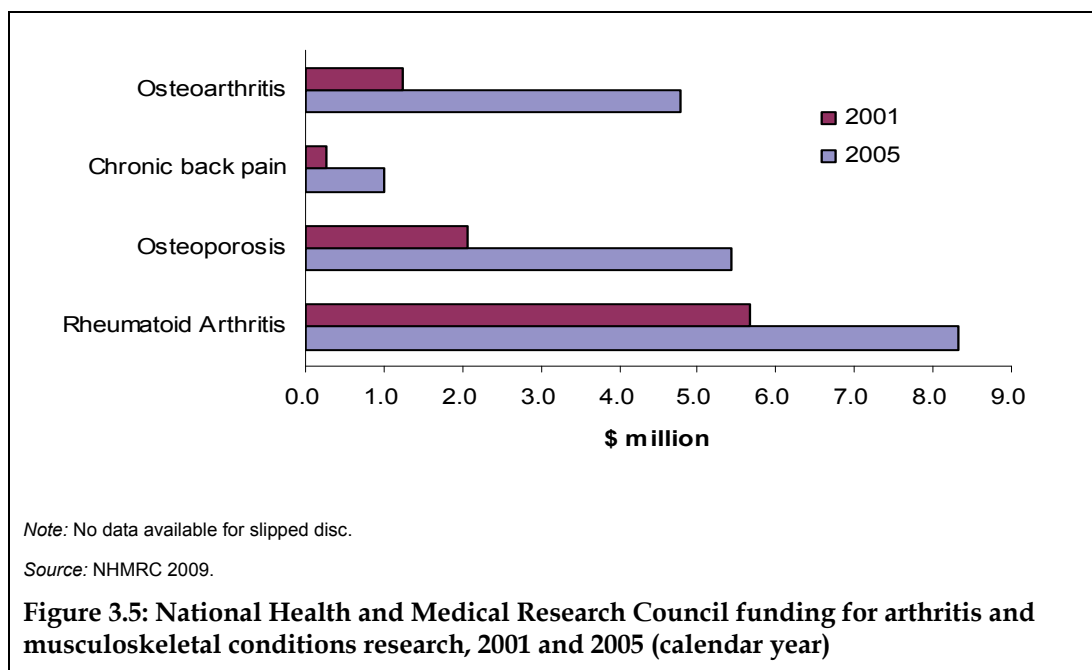
Expenditure on research accounted for the smallest proportion (2.3%) of direct health expenditure on arthritis and musculoskeletal conditions in 2004–05, at \$92 million. The purpose of this research, conducted by universities and other institutions, is to increase the understanding of the causes and effects of arthritis and musculoskeletal conditions. It is hoped such research will assist in the further development and evaluation of new and existing treatment methods for these costly and debilitating conditions.

Information on research expenditure in the AIHW Disease expenditure database is suitable for use at the total disease group category but is not able to be reliably broken down by condition.

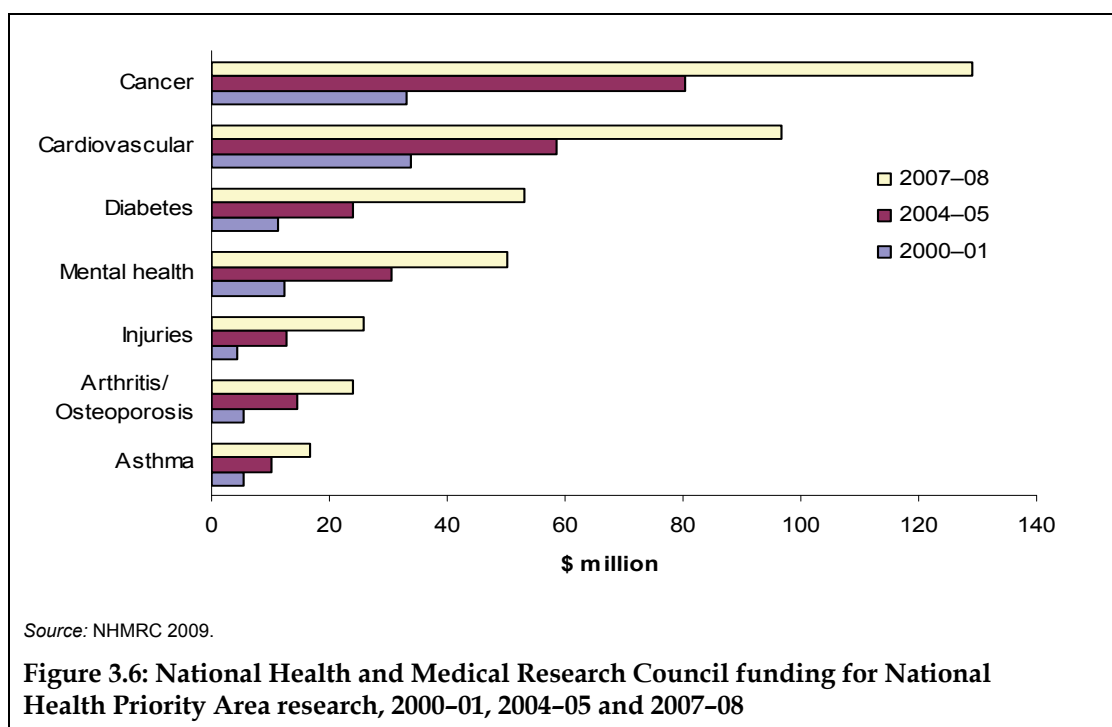
NHMRC research funding

The National Health and Medical Research Council (NHMRC) distributes funding to support health and medical research. It also has a role in developing health advice for the Australian community, health professionals and governments, and in providing advice about the ethical conduct of health and medical research. The data available from the NHMRC on their research statistics portal represent actual cash expenditure on NHMRC grants for the year.

Annual cash expenditure on research grants for arthritis and osteoporosis has more than doubled over the period 2001 to 2005, from \$7.9 million to \$16.8 million, representing a 113% increase. There have been large expenditure increases for research into musculoskeletal conditions, particularly for chronic back pain, osteoarthritis and also osteoporosis, while research grant expenditure on rheumatoid arthritis (47%) has increased modestly. In 2008, NHMRC research funding expenditure for arthritis and osteoporosis totalled \$25.6 million, a 52% increase from 2005. While expenditure on rheumatoid arthritis research is high, the gap in funding between it, osteoporosis and osteoarthritis is closing (Figure 3.5).



Research grant expenditure for arthritis and osteoporosis had the second largest proportional increase (after injuries), although it was one of the lowest in actual NHPA expenditure over the period 2000-01 to 2004-05, from \$5.3 million to \$14.6 million. Mental health and cancer constituted the next highest increases in expenditure over the same period. Diabetes and injuries accounted for the largest proportional increases from 2004-05 to 2007-08 while all other NHPAs had similar proportional increases over the same period (Figure 3.6).

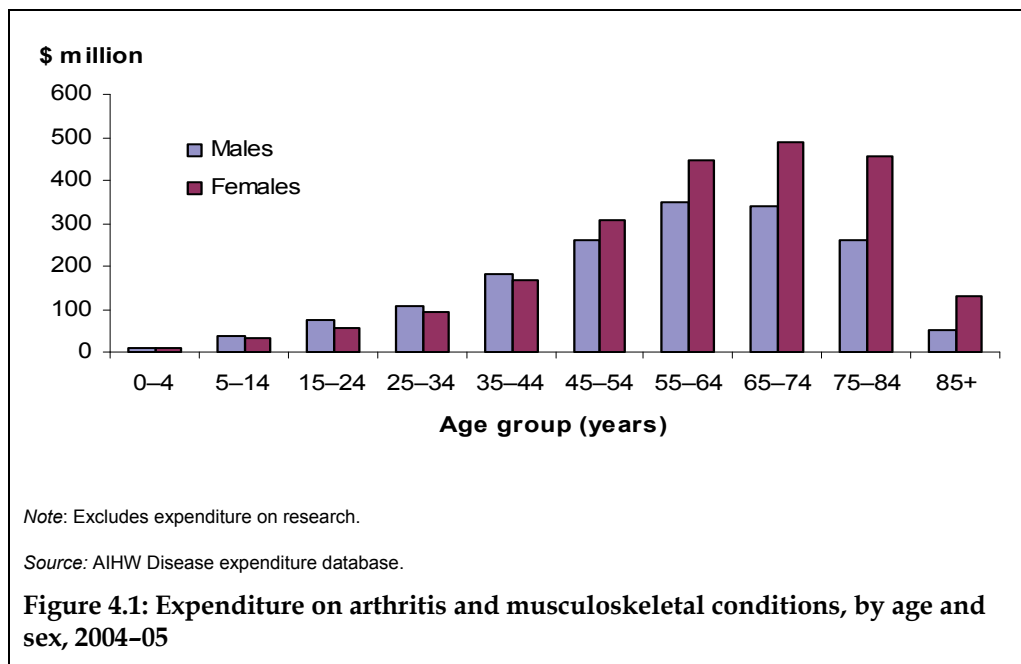


4 Expenditure by age and sex

This chapter presents a breakdown by age and sex of arthritis and musculoskeletal conditions expenditure. All expenditure data presented in this chapter do not include research as it is not an area of expenditure that can be reliably split per person or by age and sex. Estimates of the allocated expenditure per person are provided and represent the cost for each member of the Australian population, not just persons with a musculoskeletal condition. Per person expenditure has been calculated using the latest Australian Bureau of Statistics (ABS) estimates of population numbers at 30 June 2005.

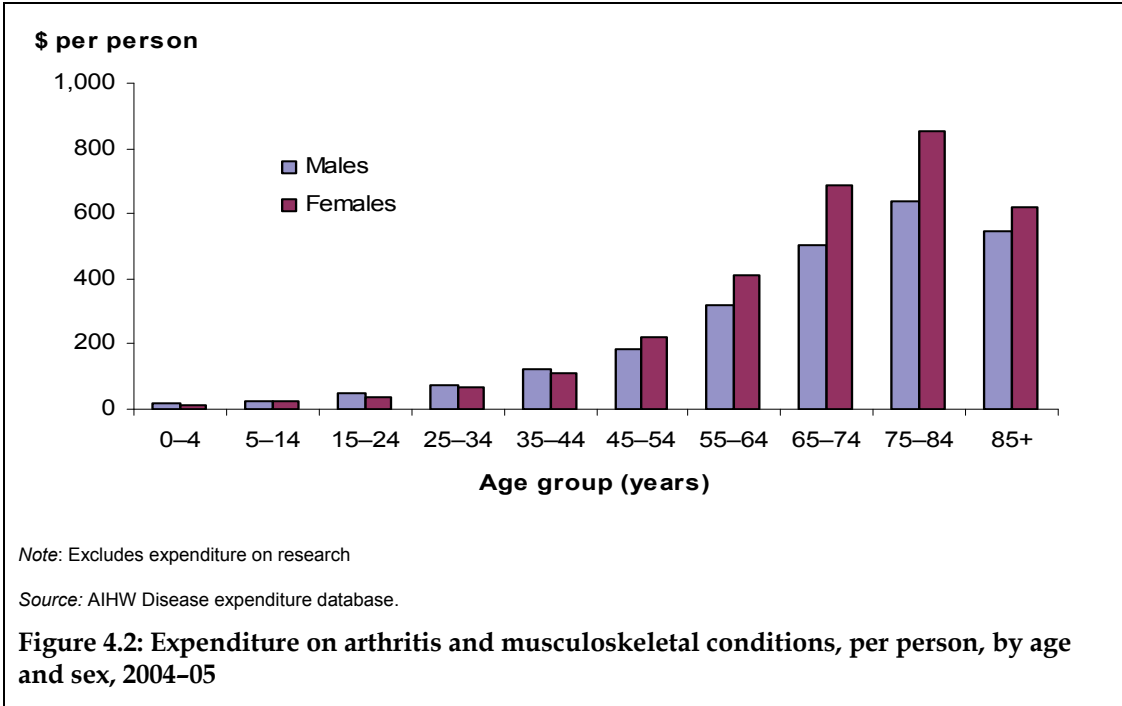
4.1 All arthritis and musculoskeletal conditions

Expenditure on arthritis and musculoskeletal conditions increased with age, most markedly from the age of 35 years. Health expenditure on arthritis and musculoskeletal conditions in 2004–05 was nearly one-third higher for females (\$2.2 billion) than for males (\$1.7 billion), excluding research expenditure, as might be expected given that more females are diagnosed with arthritis and musculoskeletal conditions than males (see Appendix 2). The low expenditure in the 85 years and over age group is a reflection of the smaller population in that age group (Figure 4.1).



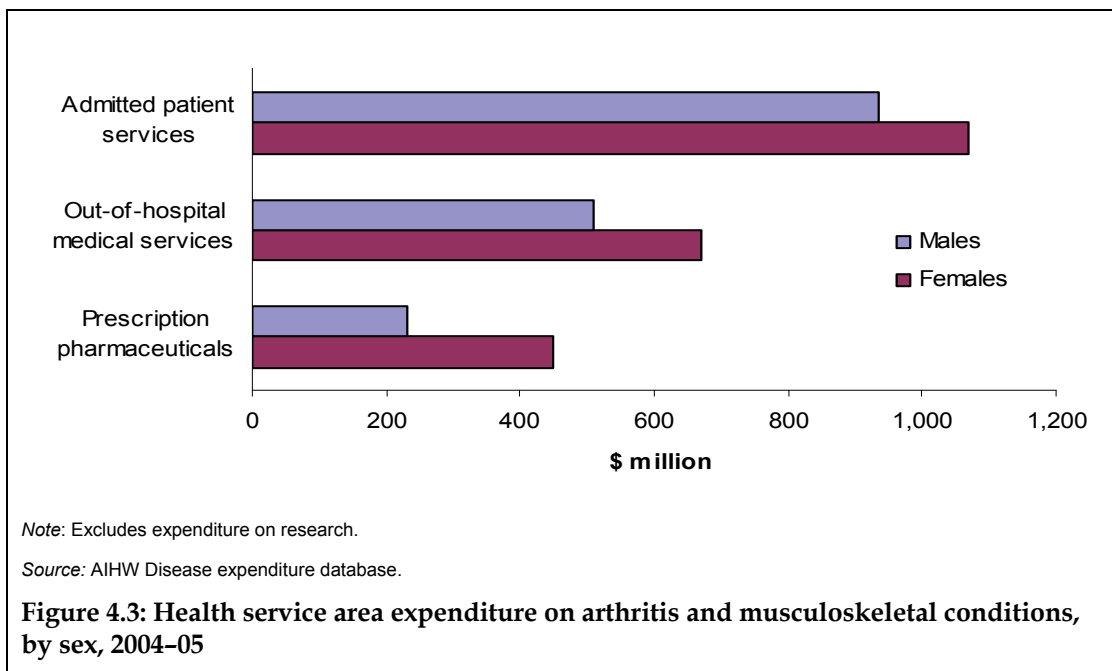
A similar pattern to overall expenditure illustrated above is shown in expenditure per person, although it peaks later. Females in the 65–74 (\$689 per person) and 75–84 years (\$852) age groups had the highest per person expenditure in 2004–05. Overall, expenditure per person was 29% higher per female (\$213) than per male (\$165). This is especially illustrated in the 45–54 years and over age groups, where arthritis and musculoskeletal conditions are most prevalent. Females in the 75–84 years age group accounted for nearly 4 times the

amount per person than in the 45–54 years (\$219) age group and more than double the amount per person than in the 55–64 years (\$409) age group (Figure 4.2).

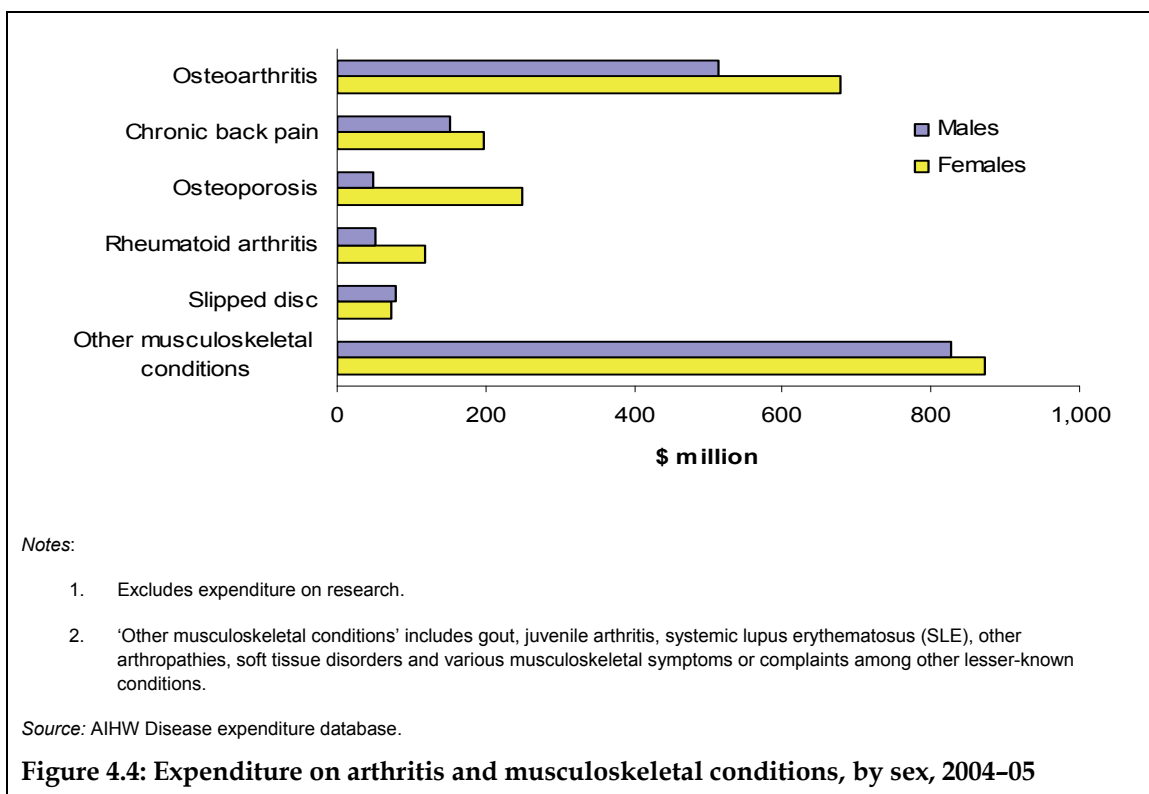


The rate of expenditure for both sexes was proportionally similar to the 2004–05 NHS prevalence proportions, where females were 1.1 times as likely as males to report having arthritis or another musculoskeletal condition. In comparison to females, males in the age groups up to and including 45–54 years accounted for higher admitted patient services expenditure, whereas more was spent on females in this area in the older age groups. This expenditure reflects the number of hospital separations, where more males than females with arthritis and musculoskeletal conditions in each age group up to and including 45–49 years were discharged from hospital in 2004–05.

The greatest difference in expenditure between the sexes is for prescription pharmaceuticals, where nearly twice as much was spent on females (\$449 million) compared to males (\$231 million). Expenditure on out-of-hospital medical services and admitted patient services were 32% and 14% higher respectively, for females compared to males (Figure 4.3).

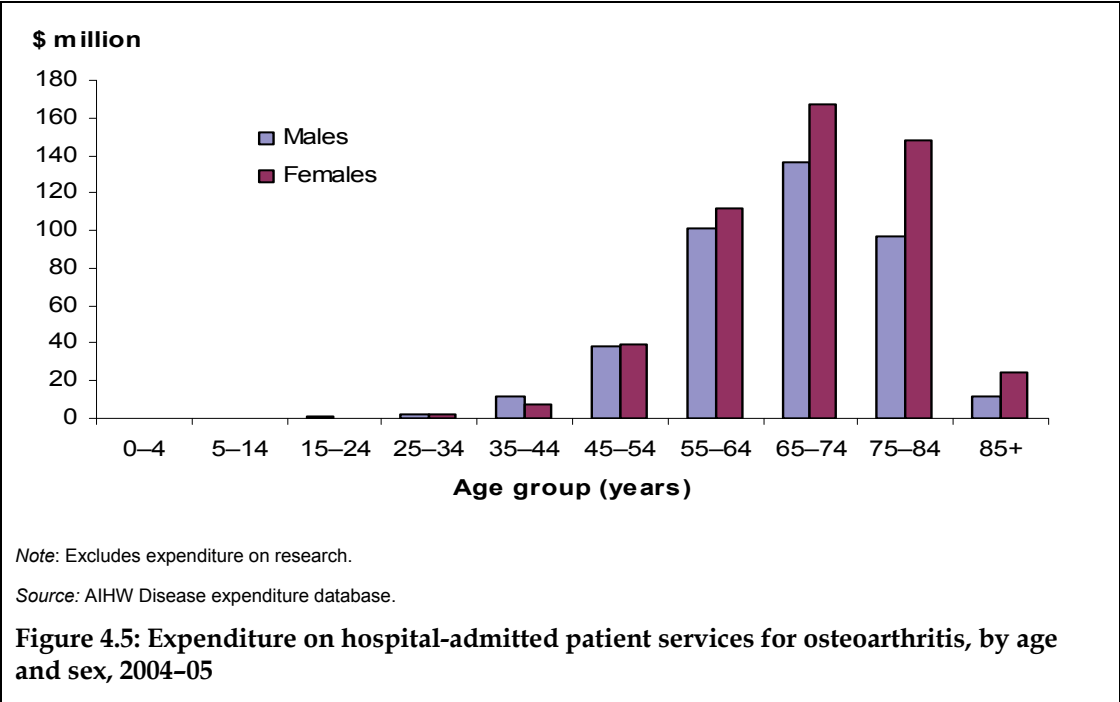


When comparing expenditure distribution between the sexes, total allocated expenditure on females for osteoporosis (\$248 million) was significantly higher, expenditure on all other arthritis and musculoskeletal conditions was higher for females except for slipped disc, where expenditure for males (\$78 million) slightly exceeded that for females (\$74 million) (Figure 4.4).

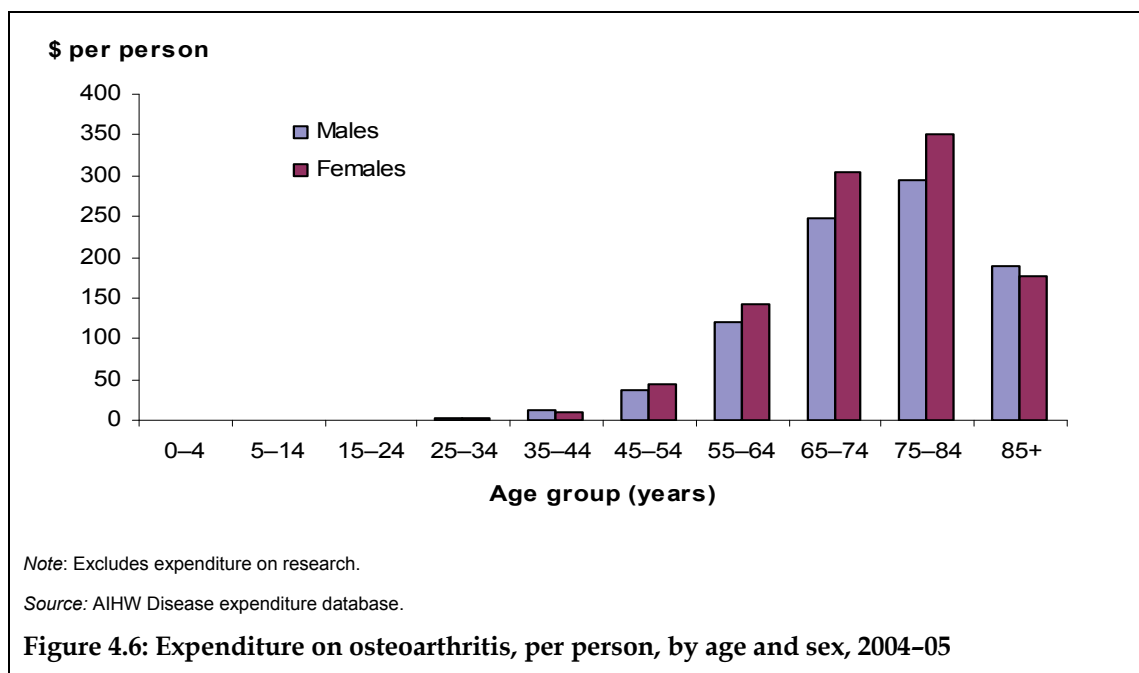


4.2 Osteoarthritis

Of the total expenditure on osteoarthritis in 2004–05, nearly one-third more was spent on females (\$678 million) than on males (\$515 million). Admitted patient services accounted for 75% of total osteoarthritis health expenditure, mainly spent on men and women in the age groups between 55 and 84 years (Figure 4.5). Correspondingly, the same age groups accounted for around three-quarters of hospital separations for both sexes in 2004–05. Females accounted for 57% of hip and knee total joint replacement procedures performed in hospitals.



According to the 2004–05 NHS, more than half of those who reported having osteoarthritis were between the ages of 55–74 years. Expenditure per person shows the same marked increase as total expenditure from the 55–64 years age group upwards, peaking in the 75–84 years age group (\$326 per person). Persons in the 65–74 (\$277 per person) and 75–84 years age groups attracted the highest rates of osteoarthritis expenditure in 2004–05 (Figure 4.6).

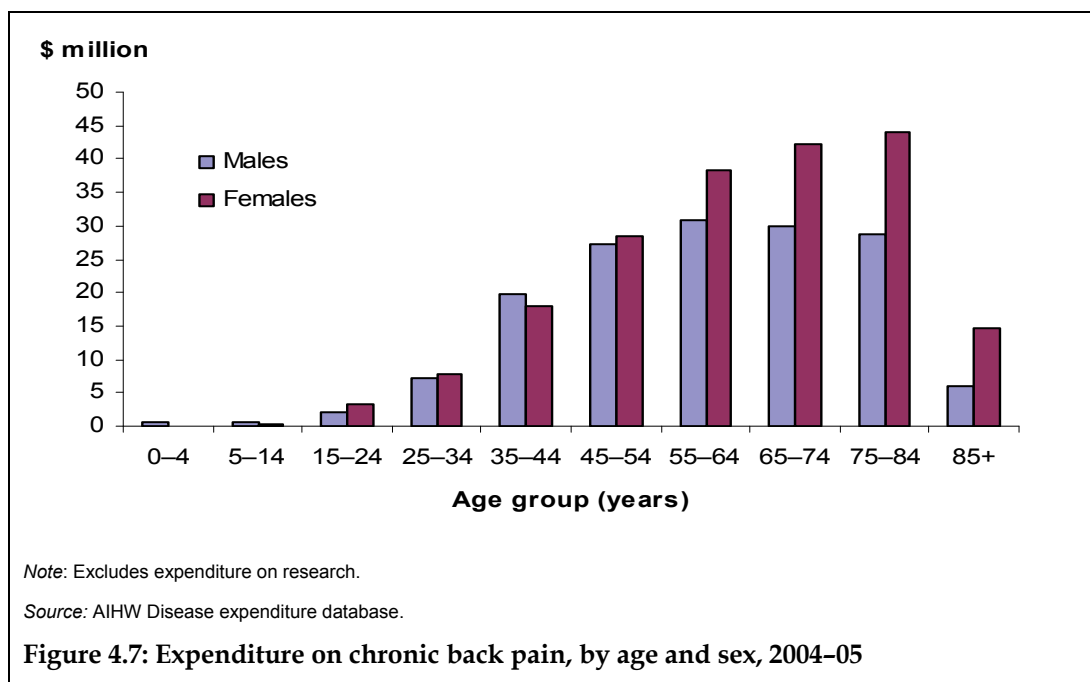


4.3 Chronic back pain

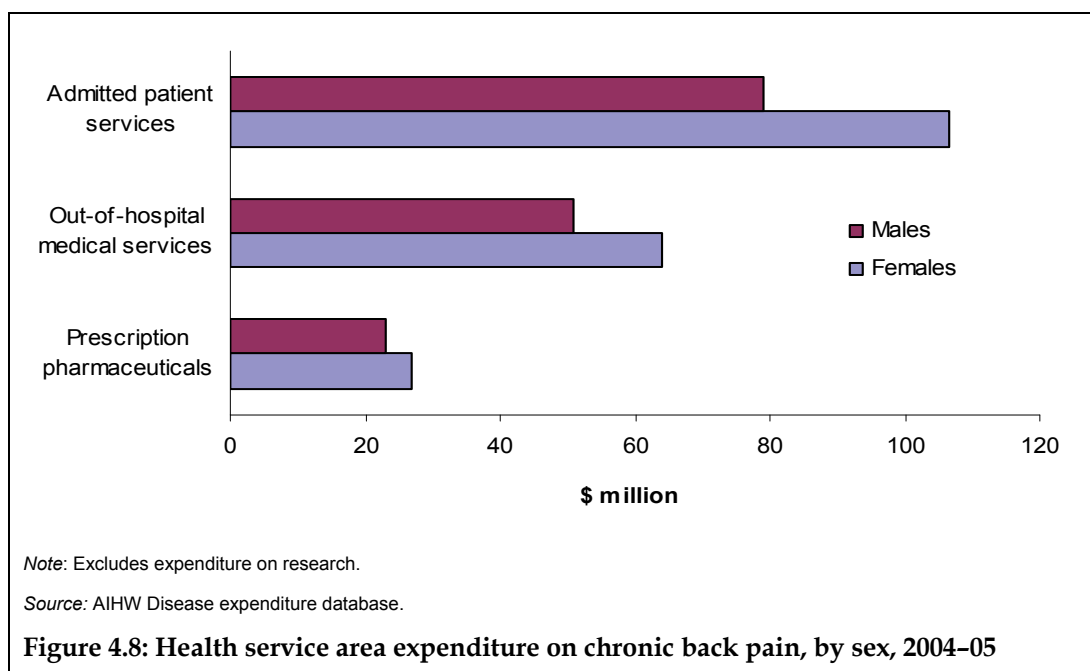
Although equal numbers of males and females experienced back pain according to the 2004-05 NHS, expenditure on chronic back pain was almost one-third higher for females than for males, more than half of which was for admitted patient services. There was a continual increase in total expenditure for females through to 75-84 years, whereas for males costs tapered off after the 55-64 years age group (Figure 4.7).

Middle and older aged persons accounted for the great majority of hospital separations related to chronic back pain in 2004-05. This group, starting at around 45 years of age, were responsible for nearly four out of every five hospital separations. Females accounted for more than half of all spinal fusions (57%) and physiotherapy services (56%) for chronic back pain conducted in hospital in 2004-05.

Encounters with a GP for chronic back pain were evenly spread between males and females although marginally (6%) more women than men saw a GP for the condition. In the under 55 years age groups, more males than females saw a GP for back pain, while the opposite occurred in those aged over 55. Women were also more likely than men to be prescribed medication for chronic back pain management.

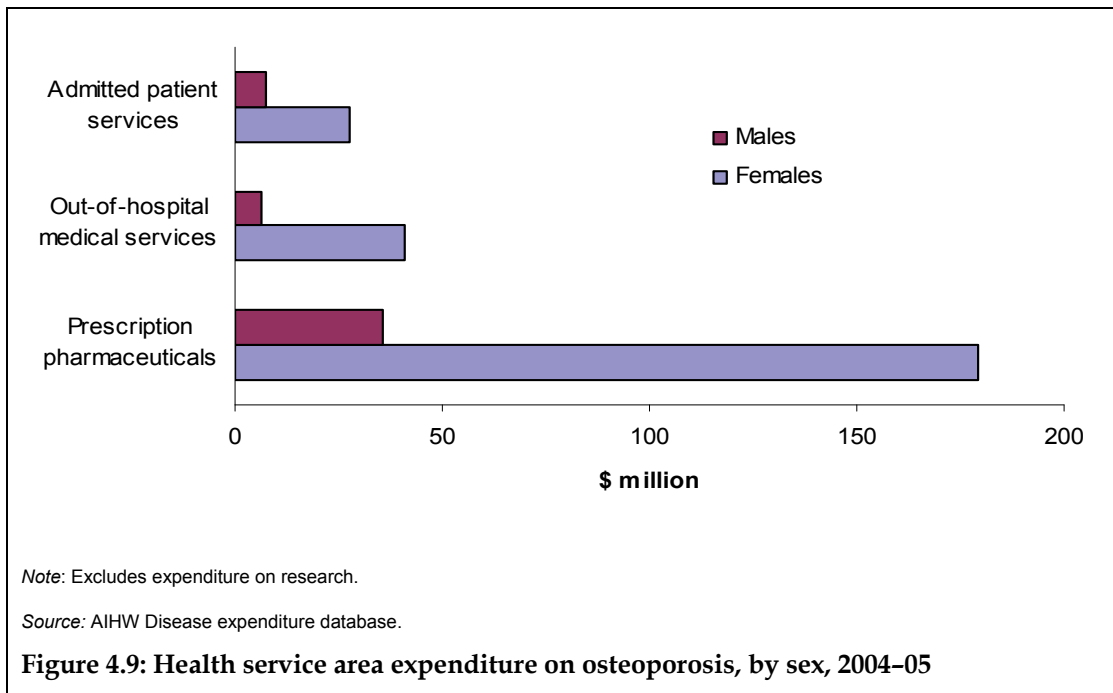


Females accounted for over one-third more expenditure than males for admitted patient services and one-quarter more expenditure than males for out-of-hospital medical services for the treatment of chronic back pain (Figure 4.8).

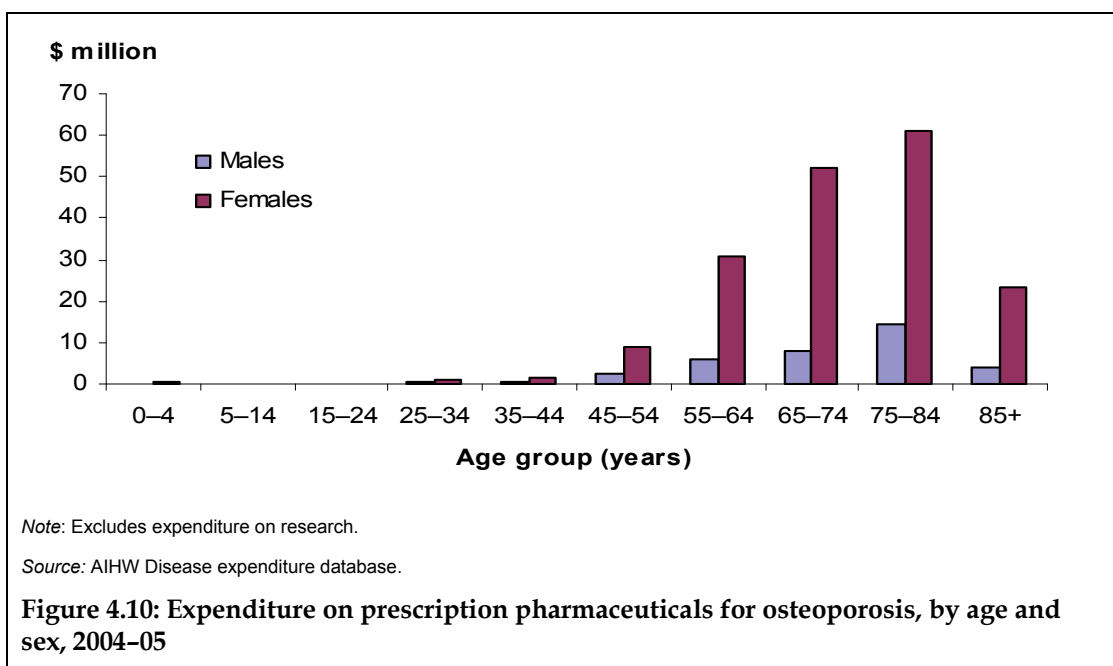


4.4 Osteoporosis

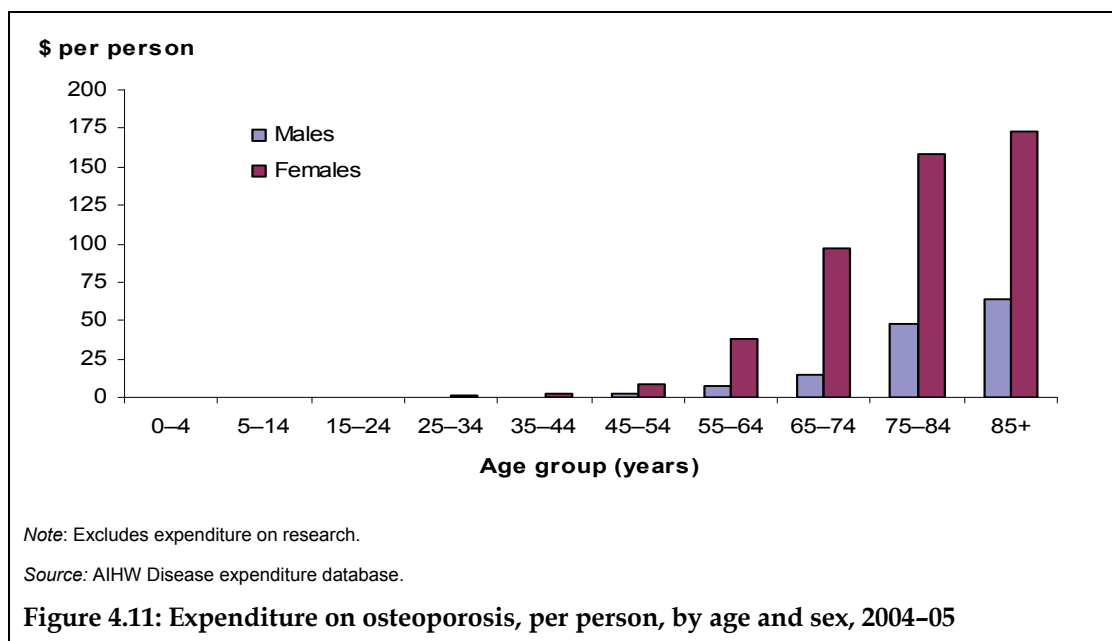
Nearly three-quarters of total expenditure on osteoporosis was for prescription pharmaceuticals, of which females (\$179 million) accounted for more than one and a half times the total spent in the other health service areas for both sexes (Figure 4.9).



Females accounted for 83% of total expenditure on prescription pharmaceuticals (Figure 4.10). The age–sex expenditure distribution closely reflects the pattern of osteoporosis prevalence, while the lesser amount allocated to the 85 years and over age group reflects the smaller population in that age group.



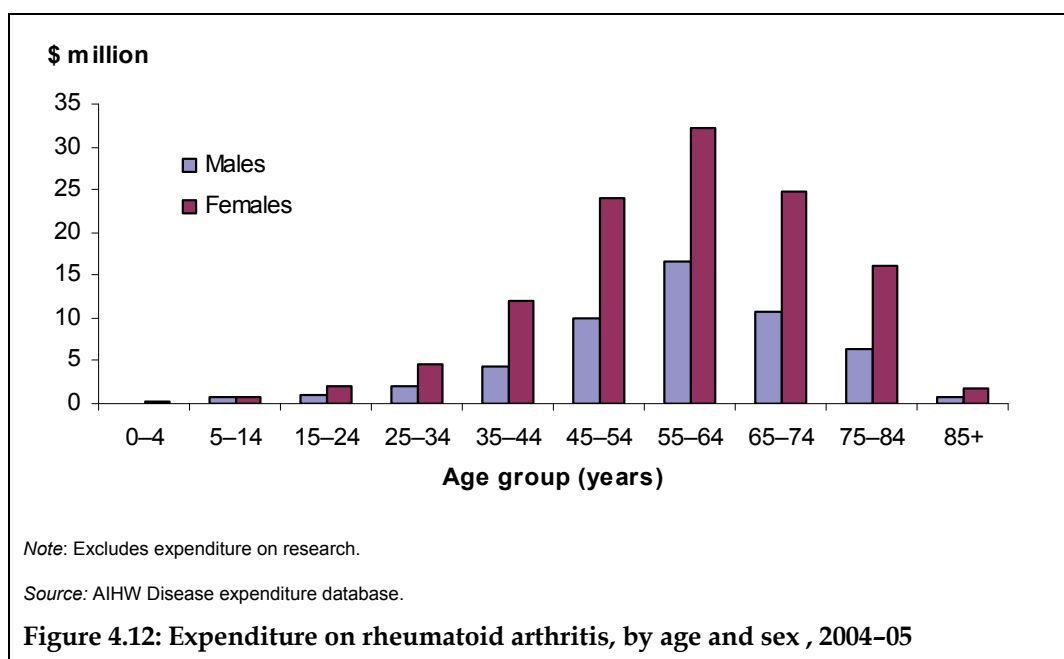
Expenditure on osteoporosis per person increased sharply from 55 years and over. The amount spent per female on this condition in 2004–05 in the 85 years and over age group was 26% higher than the combined expenditure per male in all age groups (Figure 4.11).



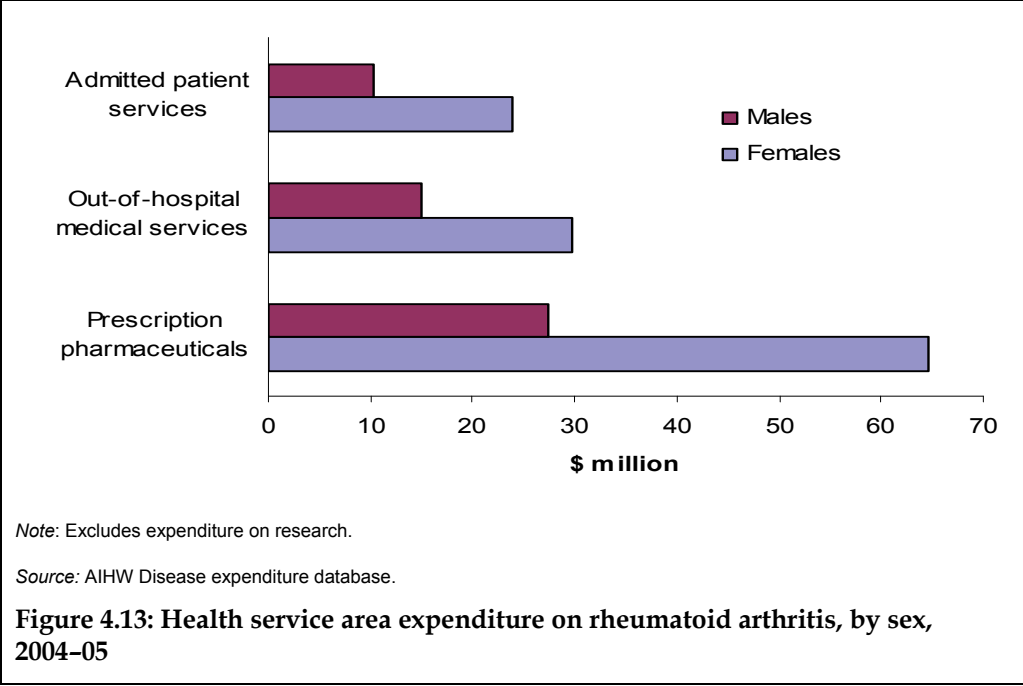
4.5 Rheumatoid arthritis

Expenditure on females with rheumatoid arthritis was at least double that for males in nearly every age group. The peak expenditure for both sexes occurred in the 55-64 years age group (Figure 4.12).

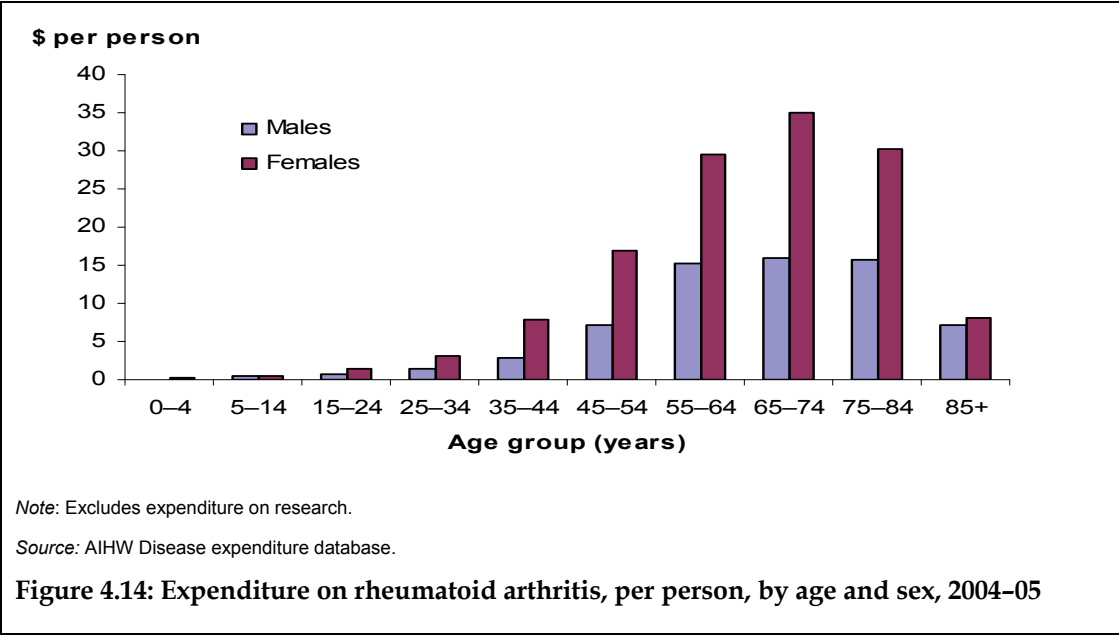
According to self-reported estimates from the 2004-05 NHS, the ratio of males to females with the disease is 1:1.3, reflecting a disparate rate of expenditure between sexes. This may be explained by the fact that women are probably more likely than men to seek treatment for the disease.



Expenditure on prescription pharmaceuticals for females accounted for more than half of the total expenditure on the disease for females and 23% more than the overall direct health expenditure (excluding research) on males with rheumatoid arthritis. Of a little over 5,800 hospital separations with a principal diagnosis of rheumatoid arthritis in 2004–05, nearly three-quarters (4216 separations) were female. This proportional representation was repeated in 2006–07.



Expenditure per person rose sharply from the 35–44 years age group, corresponding with the age groups commonly associated with the onset of the disease (Figure 4.14).



According to the 2004–05 NHS, the onset of rheumatoid arthritis occurs most often from the age group 35–44 up to 55–64 years and females tend to develop the disease earlier than males (Table 4.1).

Table 4.1: Age when first diagnosed, 2004–05 (per cent of people with rheumatoid arthritis)

Age group	Males	Females
0–14	**1.3	*3.2
15–24	*6.1	8.4
25–34	*8.9	14.1
35–44	22.4	22.8
45–54	21.8	22.3
55–64	24.3	20.1
65–74	11.4	*7.0
75 +	*3.4	*2.2

* Subject to high standard errors and should be used with caution.

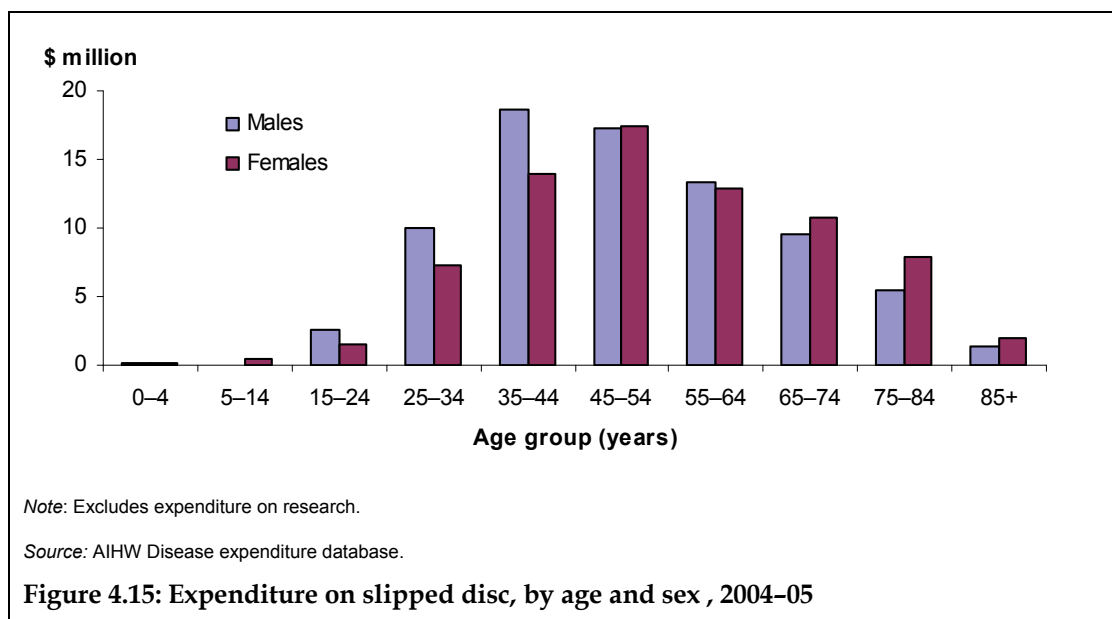
** Subject to sampling variability too high for practical purposes (that is, relative standard error greater than 50%).

Source: AIHW analysis of ABS 2004–05 National Health Survey.

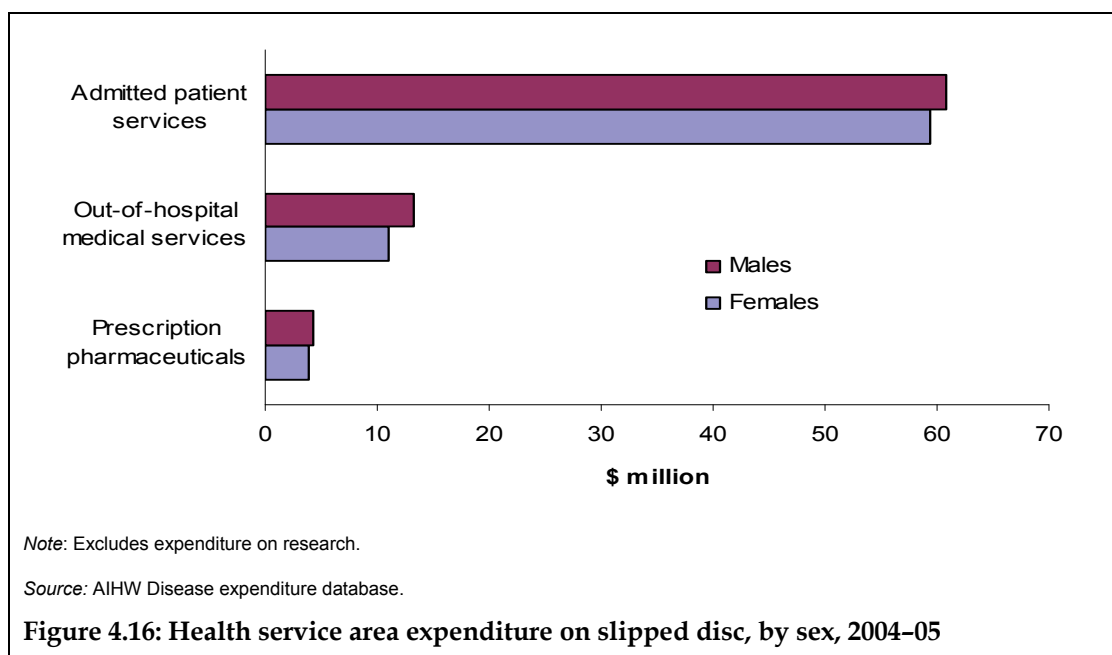
4.6 Slipped disc

Expenditure on slipped disc conditions reveals a slightly different trend to the other major musculoskeletal conditions with expenditure peaking in males in the younger age groups. Males and females in the 35–44 and 45–54 years age groups accounted for 44% of total slipped disc expenditure in 2004–05 (Figure 4.15). According to NHS estimates, in 2004–05 the prevalence of the condition increased sharply from the 35–44 years age group. Nearly two-thirds (65%) of those with the condition were in the 35–44 through to 55–64 years age groups.

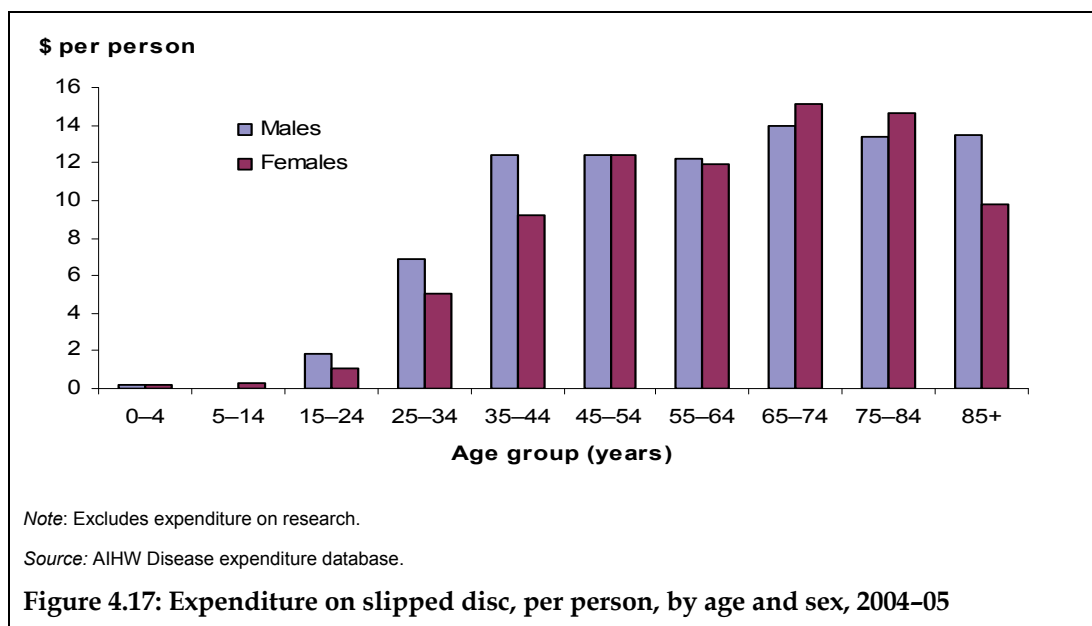
Persons in the 35–44 and 45–54 years age groups accounted for 45% of the total number of hospital separations for the condition in 2004–05 and males accounted for 55% of hospital separations in these age groups. It is possible that the higher rate of hospital visits in these age groups may be a reflection of injuries sustained in the workplace.



Admitted patient expenditure for a slipped disc accounted for nearly 4 times the amount allocated to the other health service areas for the condition in 2004-05 (Figure 4.16). Over this period there were more than 3,500 spinal stabilisation procedures carried out for a principal diagnosis of slipped disc, costing between \$16,300 and \$29,500 to perform in a public hospital and consuming much of the allocated expenditure for admitted patient services.

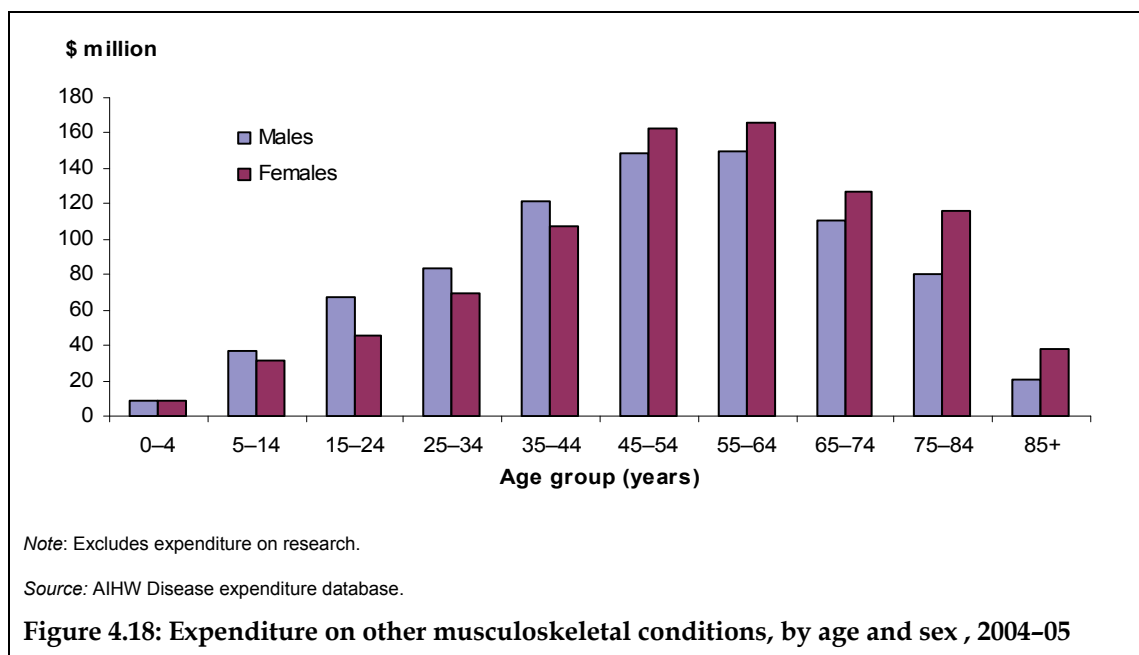


Per person expenditure varied little for males (\$12 to \$14 per person) in the 35-44 years age group and older. Per person expenditure for females showed slightly more variation, from \$9 to \$15 per person (Figure 4.17). Overall, marginally more was spent per male (\$7.73) than per female (\$7.24) in 2004-05. Males accounted for just over half of the spinal fusion procedures (54%) and physiotherapy services (53%) performed in hospital in 2004-05.



4.7 Other musculoskeletal conditions

The category of other musculoskeletal conditions includes gout, juvenile arthritis, systemic lupus erythematosus, other arthropathies, soft tissue disorders and various musculoskeletal symptoms or complaints amongst other lesser-known conditions. Expenditure on these conditions totalled \$1.7 million, evenly spread between males and females. The highest expenditure occurred in the 45-54 and 55-64 years age groups for both sexes, with females in these age groups and older accounting for higher rates of expenditure, compared to males. The opposite occurred between the sexes in the younger age groups.



5 Changes over time

5.1 The past

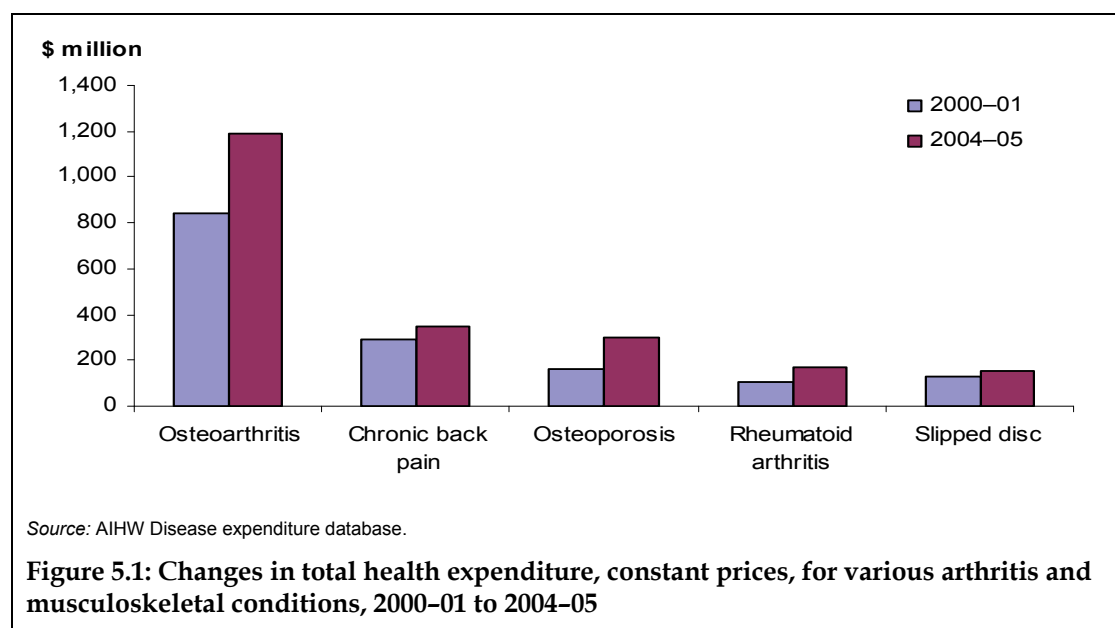
After adjusting for inflation, expenditure (excluding research expenditure) on arthritis and musculoskeletal conditions has increased 26% overall from 2000–01 to 2004–05, representing an annual increase of around 5.2%. Actual expenditure in 2004–05 increased by \$789 million from 2000–01, using 2004–05 prices. The largest increase in arthritis and musculoskeletal conditions expenditure was for admitted patient services, which rose by 33% between 2000–01 and 2004–05. Prescription pharmaceuticals expenditure increased by one-quarter and out-of-hospital medical services increased 15% over this period.

Table 5.1: Changes in expenditure, constant prices, 2000–01 to 2004–05

Condition	Admitted patient services	Out-of-hospital medical services	Prescription pharmaceuticals	Total
Increase (per cent)				
Musculoskeletal	33.3	15.0	24.5	25.6
Total health system	19.6	20.5	18.2	19.6

Source: AIHW 2009a.

Expenditure on osteoporosis, after adjusting for inflation, increased 86% overall between 2000–01 and 2004–05, representing an increase of \$138 million. Rheumatoid arthritis (68%) expenditure represented the second highest proportional increase from \$102 million, in constant prices, in 2000–01 to \$171 million in 2004–05. Expenditure on osteoarthritis increased by \$351 million or 42%, representing the largest increase in actual dollars over this period (Figure 5.1).



5.2 The future

As outlined in a recent report released by the AIHW, expenditure on health and residential aged care for musculoskeletal conditions is projected to increase by \$9.8 billion (223%) between 2002–03 and 2032–33 (AIHW: Goss 2008). This projected increase is determined from the input of a number of factors, most notably ageing (contributing \$3.5 billion of the increase), an increase in the volume of treatment per case (\$3.3 billion) and a general increase in the population (\$2.1 billion). Musculoskeletal conditions are projected to account for the seventh highest percentage increase over the three decades. Diabetes (436%) is projected to have the highest percentage increase in expenditure over the period, with expected increases in obesity rates being a major contributor.

Table 5.2: Projected health and residential aged care expenditure^(a), 2002–03 to 2032–33

Condition	Expenditure (billions of 2006–07 dollars)				Increase 2002–03 to 2032–33	Increase 2002–03 to 2032–33
	2002–03	2012–13	2022–23	2032–33	(\$ billion)	(per cent)
Musculoskeletal	4.4	6.3	9.6	14.2	9.8	223
All	85.1	115.5	167.7	246.1	161.0	189

(a) Includes expenditure on the high-care portion of residential aged care.

Source: AIHW Goss et al. 2008.

6 Discussion

Arthritis and musculoskeletal conditions affect nearly one-third of the Australian population. While they are not a major cause of death, these conditions are responsible for a substantial component of direct health expenditure through their reliance on the health system and component health services. The pain and disability associated with each illness, along with the need for long-term treatment, contribute to varying levels of expenditure.

While mortality costs due to arthritis are low compared to many other diseases, morbidity costs are high. In 2004–05, expenditure on arthritis and musculoskeletal conditions was around \$4 billion, accounting for 7.5% of the total allocated health expenditure.

Osteoarthritis accounted for 31% of this expenditure, with chronic back pain and slipped disc responsible for a further 9% and 8% respectively. Rheumatoid arthritis and osteoporosis accounted for around 4% each.

The high costs associated with osteoarthritis stem primarily from expensive hip and knee replacements. In rheumatoid arthritis, while prescription drugs already absorb much of the expenditure on the disease, the recent availability of new biologic pharmaceuticals is expected to have a substantial impact on future pharmaceutical expenditure for rheumatoid arthritis. The introduction and increasing use of new and improved medications for treating osteoporosis is already impacting on the expenditure associated with the condition and is likely to add further to expenditure on osteoporosis in the future. Less invasive treatment of chronic back pain and slipped disc allow the costs of managing these conditions to remain relatively low, although there may be significant out-of-pocket expenditure incurred by people with these conditions. Medication and physiotherapy services are common management options used for these conditions outside of hospital but, as it is not possible to accurately measure this, the real costs associated with musculoskeletal conditions cannot be fully represented. An increasingly ageing and heavier population coupled with inadequate physical activity is expected to continue to drive up expenditure for arthritis and musculoskeletal conditions.

6.1 Other costs

Further contributing to costs associated with arthritis and musculoskeletal conditions is the loss of production to the economy as a result of the related disease morbidity and losses stemming from reduced work capacity and performance. Costs associated with lost production due to carers having to take time off to care for a person with arthritis or another musculoskeletal condition add to this total. Indirect costs such as these are not included in the AIHW Disease expenditure database, but they are likely to constitute a high financial burden for persons with these conditions and their families.

People with arthritis or other musculoskeletal conditions often need assistance with daily living activities. Assistance can be provided by family, friends, volunteers, paid care workers or service providers. The frequency and duration of assistance needed depends on the severity of pain, and the type and extent of functional limitations or disability.

Government attempts to curb expenditure, by reducing hospital bed days and moving post-operative rehabilitation into the home, results in increasing the need and cost of informal care (care received outside the health-service setting). Also, around half of those

with a disability associated with arthritis (51%) and/or osteoporosis (56%) have made use of assistive equipment to help them live independently and around one in six made modifications to their homes for the same purpose. Providing assistance to persons with a disability associated with arthritis or osteoporosis are an estimated 51,000 carers (usually a spouse/partner or child) who are helping them manage their daily activities (AIHW: Rahman & Bhatia 2007). By not accounting for the cost of informal care, the estimates of the full cost of arthritis and musculoskeletal conditions are likely to be underestimates.

Arthritis is implicated in labour force losses resulting in reduced participation in employment and absenteeism (days off work). Of selected chronic diseases, arthritis was the highest contributor (42%) to total loss in full-time employment and second highest (24%) to losses due to absenteeism in 2004–05. Persons in the 55–64 years age group accounted for half of the total loss in full-time employment, whereas those in the 35–44 years (11%) and 45–54 years (9%) age groups were responsible for most of the losses due to days off work (AIHW 2009a).

6.2 Government programs

In the 2006–07 Budget, the Australian Government allocated \$14.8 million to the Better Arthritis and Osteoporosis Care (BAOC) initiative over the period 2006–07 to 2009–10. The BAOCC is an extension of the Better Arthritis Care initiative (funded from 2002–03 to 2005–06) and is a national ongoing initiative involving awareness-raising activities to improve the prevention, care and management of arthritis and musculoskeletal conditions. The initiative is aimed at four conditions, namely osteoarthritis, rheumatoid arthritis, juvenile idiopathic arthritis and osteoporosis.

For persons with a disability and their carers, there is a range of pensions and payments available, such as Disability Support Pension, Sickness Allowance, Carer Payment, Carer Allowance and Mobility Allowance. These programs are operated by Centrelink and provide financial assistance. Information on payment rates is available on the Centrelink website at <www.centrelink.gov.au>.

Carers often find that they need advice, support or assistance with caring and its impact on their own life. The National Respite for Carers Program provides information, counselling and support for carers, and assistance to help carers take a break from caring. The national network of Commonwealth Respite and Carelink Centres provides a single point of contact for information about community care, disability and other support services available locally.

Appendix 1: Methodology and data sources

The primary source of data used in this report is the AIHW Disease expenditure database. Since the previous expenditure publication, high-level residential aged care expenditure, which was included in health expenditure, is now reported as welfare services expenditure combined with low-level residential aged care, and is not included in this report.

Expenditure data

In addition to the AIHW expenditure database other data sources were used to provide additional details regarding expenditure allocated to arthritis and musculoskeletal conditions.

The AIHW Disease expenditure database

The AIHW Disease expenditure database is a satellite national account. Satellite accounts enable the linkage of non-monetary data sources and analysis to the monetary accounting system. The expenditure estimates reported here provide a broad picture of the use of health system resources classified by disease group. The method for estimating disease expenditure, however, is a 'top-down' approach where total expenditure across the health system is estimated and then allocated to the relevant conditions. Although this method 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 'bottom-up' analysis of actual costs incurred by patients with that disease.

Readers also need to bear in mind that cost-of-illness studies such as this only provide estimates of the impact of a disease on health system expenditures. The estimates of the cost of treating and/or preventing a disease cannot be used to indicate the loss of health due to that disease. Nor can they be used to determine the priority for intervention or additional health expenditure – resource allocation decisions such as this require information not only on average costs and outcomes but also on the marginal costs and outcomes associated with the specific interventions under consideration.

Care should be taken not to interpret expenditure associated with disease treatment as simply an estimate of the savings that would result from prevention of disease. Conversion of the opportunity cost – or the benefits forgone – of resources being devoted to disease treatment into expenditure savings, involves a number of additional considerations (see, for example, AIHW: Mathers et al. 1998).

The Disease expenditure database contains the health expenditure costs for the 176 diseases that were published in the Australian burden of disease studies (AIHW: Begg et al. 2007; AIHW: Mathers et al. 1999). The costs for 2004–05 were able to be allocated by disease group for the following areas of expenditure – hospital-admitted patient services; out-of-hospital medical services; dental services; other health practitioner services, comprising optometry services only; prescription pharmaceuticals; community mental health services; public health cancer screening services; and health research. The areas of expenditure that apply to arthritis and other musculoskeletal conditions and hence are included in this report are:

hospital-admitted patient services; out-of-hospital medical services; prescription pharmaceuticals; and health research. Funding for these health service areas comes from both government and non-government sources (including private health insurance and individuals).

Although expenditure estimates are reliable at the disease chapter level (that is, all musculoskeletal conditions combined), the method is less sensitive and accurate for the individual conditions, so these estimates should be interpreted with caution. Health complications, such as fractures, associated with certain musculoskeletal conditions would not necessarily be included in the musculoskeletal component unless explicitly allocated, as the conditions are defined by the principal diagnosis.

This report uses similar methods and data sources to the AIHW *Health expenditure for arthritis and musculoskeletal conditions, 2000–01* bulletin, although non-admitted patient services, other health practitioner services, non-prescription medications and residential aged care services have not been allocated by disease in this current analysis. In 2000–01, estimates for these areas were derived by adjusting 1993–94 expenditure in line with demographic changes. To provide more reliable estimates for 2004–05, these areas have been excluded from disease-allocated expenditure.

Other costs unable to be allocated by disease for 2004–05 are:

- hospital non-admitted patient services
- community health, other than community mental health services
- public health, other than public health cancer screening services
- health administration
- other health practitioner services, other than optometry
- non-prescription medications
- patient transport services
- health aids and appliances.

Further details of the methodology used to compile the estimates for hospital-admitted patient services, out-of-hospital medical services, prescription pharmaceuticals and health research in this report are available in the publication, *Health system expenditure on disease and injury in Australia, 2004–05* (AIHW 2009b).

National Hospital Cost Data Collection

The National Hospital Cost Data Collection is an ongoing annual voluntary collection of hospital cost and activity data from a sample of acute care hospitals throughout Australia. It was established in 1996 and is used to produce annual updates of national cost weights for Australian Refined Diagnosis Related Groups (AR-DRGs) and other statistics relevant to health service costing and planning. These data are contained in the Cost Reports published by the Department of Health and Ageing (DoHA). The AR-DRG is a patient classification scheme that provides a way of relating the number of patients treated in hospital to the resources required by hospitals.

The 2004–05 sample comprised 226 public hospitals and represented 87% of the total acute separations within the year. As it is a voluntary collection, the sample may not be entirely representative of the full range of Australian hospitals. An estimation process is used to create representative national costing and activity figures from the sample data (DoHA

2006). Cost estimates from the NHCDC presented in this report have not been adjusted for inflation.

Medicare Australia

Medicare statistics include data from both the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS). They are based on the items and groups in the Pharmaceutical Benefits Schedule and are classified according to the Anatomical Therapeutic Chemical (ATC) classification. Listed drugs may be used for more than one disease or condition, but in the Medicare data they are only listed under one system category. Therefore, many drugs used for musculoskeletal conditions may have been listed in a different ATC group and not applied to the musculoskeletal system category, resulting in lower expenditure levels. The statistics cover only those items contained in the Pharmaceutical Benefits Schedule. Items supplied to general patients, costing less than the co-payment, do not receive a PBS benefit and are therefore not included. Figures are reported relating to the value (benefit) or volume (services) of PBS and RPBS services that have been processed by Medicare Australia. They refer only to paid services processed from claims presented by approved pharmacies.

Health care service data and population surveys

Several data sources provide information on the use of health care services and provide some perspective in regard to the management of arthritis and musculoskeletal conditions in Australia. These sources are described briefly below.

National Hospital Morbidity Database

The National Hospital Morbidity Database (NHMD), maintained at the AIHW, contains demographic, diagnostic, procedural and duration of stay information on episodes of care for patients admitted to hospital (AIHW 2006a). The data items are supplied to the AIHW by the state and territory health authorities.

In this report, condition-specific data related to the principal diagnosis and procedures for hospital separations are reported. The purpose of this National Minimum Data Set is to collect information about care provided to admitted patients in Australian hospitals. The collection is not intended to describe the current disease status of inpatients; conditions recorded are those that are significant in terms of the treatment and care provided. These data can be used to provide an indication of morbidity levels in the population, as long as it is noted that admission rates are affected by differing admission practices, multiple admissions for chronic diseases and differing access to services.

Box A1.1: Hospital-admitted patients

Statistics on admitted patients are compiled when an **admitted patient** (a patient who undergoes a hospital's formal admission process) completes an episode of admitted patient care and 'separates' from the hospital. **Separation** is the term used to refer to the episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation).

For each separation, patients are assigned a **principal diagnosis**, which is the diagnosis established at the completion of the episode to be chiefly responsible for occasioning the patient's episode of admitted patient care. If applicable, **procedures** are also reported. A procedure is a clinical intervention that is surgical in nature, carries a procedural risk, carries an anaesthetic risk, requires specialised training and/or requires special facilities or equipment available only in the acute care setting. These can be surgical or non-surgical, and therapeutic, diagnostic or of a patient-support nature (for example, anaesthesia).

Patient days are the total number of days for patients who were admitted for an episode of care and who separated within a specified reference period. A patient who is admitted and separated on the same day is allocated 1 patient day (AIHW 2006a). Although hospital separation data are a valuable source of information about hospital care, they have limitations as indicators of ill health. Sick people who are not admitted to hospital are not counted and those who are admitted more than once are counted on each occasion.

Bettering the Evaluation and Care of Health (BEACH) Survey

General practitioners (GPs) are usually the first point of call for medical services in Australia. Information on GP-patient encounters is collected through the Bettering the Evaluation and Care of Health (BEACH) Survey, an ongoing national data collection looking at the clinical activities of GPs (AIHW: Britt et al. 2005). The Australian General Practice Statistics and Classification Centre (an AIHW collaborating unit within the Family Medicine Research Centre, University of Sydney) conducts the survey.

BEACH began in April 1998 and involves an ever-changing random sample of approximately 1,000 GPs per year, each providing data on 100 consecutive patient encounters. The information available includes problems managed; medications provided, recommended or prescribed; referrals; tests and investigations performed or ordered; and patients' reasons for professional encounters. These data are encoded using the International Classification of Primary Care – 2nd edition (ICPC-2) (Classification Committee of the World Organization of Family Doctors 1997) and its extended vocabulary, ICPC-2 PLUS (Britt 1997).

For this report, data on GP encounters for osteoarthritis, rheumatoid arthritis, osteoporosis, chronic back pain and slipped disc were identified using the ICPC-2 and ICPC-2 PLUS codes that were defined for the creation of the AIHW Disease expenditure database (Table A1.1). Note that the codes used for some conditions (for example, osteoarthritis and chronic back pain) vary considerably from those normally used to report data from the BEACH surveys, and so the GP data presented here on the number of encounters and treatments given are not comparable to published results of the BEACH surveys. Data for chronic back pain in particular are likely to be a considerable underestimate of the number of GP consultations for this condition.

Table A1.1: ICD-10, ICPC-2 and ICPC-2 PLUS codes used in this bulletin for extraction of data for arthritis and musculoskeletal conditions

Condition	ICD 10-AM code	ICPC-2 code	ICPC-2 PLUS code
Osteoarthritis	M15–M19		L89001, L90001, L91001, L91003, L91008, L92007
Rheumatoid arthritis	M05–M06, M08.0, M12, M45	L88	(all)
Osteoporosis	M80–M82		L95001, L95003
Chronic back pain	M47, M48 (excluding M48.4 and M48.5), M53.8–M53.9, M54.3–M54.5, M54.9		L02010, L03003, L03006, L03012, L83008, L83011, L84001, L84004, L84009, L84010, L84011, L84012, L84017, L86005, L86009, L86011, L86036, L86044
Slipped disc	M50–M51, M46.4, M54.1, M96.1		L83002, L83018, L86007, L86010, L86039, L86043
Other musculoskeletal conditions	Balance of Chapter 13		A99013, K99024, L01, L02001–L02004, L02006, L02008, L02009, L02011, L02012, L03001, L03002, L03004, L03005, L03007, L03009, L03011, L03013–L03015, L08–L20, L70003, L70005–L70020, L83001, L83003–L83007, L83009, L83010, L83012, L83016, L83017, L83021, L83022, L83027, L83028, L84003, L84018, L84022–L84027, L85, L86001–L86004, L86013, L86014, L86016–L86018, L86021–L86025, L86027, L86029–L86032, L86034, L86035, L86037, L86038, L86040–L86042, L86045–L86047, L87, L89004, L90004, L91007, L91009–L91015, L92001–L92006, L92008–L92017, L93, L94, L95002, L98, L99002, L99012, L99013, L99016, L99020–L99077, L99081–L99083, L99086–L99088, L99090, L99094, L99096, N99014, T92, T99048, T99063, T99071

National Health Survey

The National Health Survey (NHS), conducted 3-yearly by the Australian Bureau of Statistics (ABS), is designed to collect information on the health status of Australians, their use of health services and facilities, and health-related aspects of their lifestyle, through self-reports. The 2004–05 NHS covered approximately 25,900 persons between August 2004 and June 2005 (ABS 2006).

The NHS collects information about arthritis, back pain, osteoporosis and other diseases of the musculoskeletal system and connective tissues. Information was collected regarding age at diagnosis, medications used and other actions taken for arthritis or osteoporosis. The responses provided by participants may not necessarily be based on a clinical diagnosis.

There are differences in the composition of conditions encompassed under the terms ‘back pain’ and ‘slipped disc’ between the NHS and the AIHW Disease expenditure database. It is therefore not possible to directly match these health conditions between the two data sets. It should also be noted that the NHS is a community-based survey. Since arthritis and musculoskeletal conditions are much more prevalent in older age groups, the absence of information on persons in institutions (such as residential care facilities) tends to underestimate the extent of the problem.

In this report, data from the 2004–05 NHS have been used to provide information on the prevalence of arthritis and musculoskeletal conditions in the Australian population.

Appendix 2: Detailed statistical tables

Expenditure distribution, current prices, 2004–05 and 2000–01

Table A2.1: Distribution of arthritis and musculoskeletal expenditure by health service area, 2004–05

Health service area	Osteoarthritis	Chronic back pain	Osteoporosis	Rheumatoid arthritis	Slipped disc	Other	All arthritis and musculoskeletal conditions
(\$ million)							
Admitted patient services	898.5	185.5	35.0	34.3	120.2	729.7	2,003.2
Out-of-hospital medical services	188.6	114.9	47.3	44.6	24.2	761.1	1,180.8
Prescription pharmaceuticals	105.5	50.0	215.0	92.1	8.1	209.5	680.3
Research	28.3	8.3	7.0	4.1	3.6	40.3	91.6
Total expenditure	1,220.9	358.7	304.3	175.1	156.2	1,740.6	3,955.9

Source: AIHW Disease expenditure database.

Table A2.2: Distribution of arthritis and musculoskeletal expenditure by health service area, 2000–01

Health service area	Osteoarthritis	Chronic back pain	Osteoporosis	Rheumatoid arthritis	Slipped disc	Other	All arthritis and musculoskeletal conditions
(\$ million)							
Admitted patient services	493.5	127.4	31.8	27.4	87.3	518.6	1,286.1
Out-of-hospital medical services	124.6	79.4	29.4	35.8	15.9	593.5	878.7
Prescription pharmaceuticals	102.7	42.2	75.5	23.9	6.6	217.0	467.9
Research	14.1	6.8	2.6	2.9	3.6	25.2	55.2
Total expenditure	734.9	255.8	139.3	90.0	113.4	1,354.3	2,687.9

Source: AIHW Disease expenditure database.

Table A2.3: Change in arthritis and musculoskeletal expenditure by health service area, 2000–01 to 2004–05

Health service area	Osteoarthritis	Chronic back pain	Osteoporosis	Rheumatoid arthritis	Slipped disc	Other	All arthritis and musculoskeletal conditions
(Per cent)							
Admitted patient services	82.1	45.6	10.1	25.2	37.7	40.7	55.8
Out-of-hospital medical services	51.4	44.8	60.8	24.7	52.1	28.2	34.4
Prescription pharmaceuticals	2.8	18.4	184.8	285.5	23.3	–3.5	45.4
Research	100.5	22.2	171.1	39.9	0.5	60.0	66.0
Total expenditure	66.1	40.2	118.5	94.6	37.7	28.5	47.2

Source: AIHW Disease expenditure database.

Notes for the following expenditure tables by age and sex

Notes

- (a) Excludes research.
- (b) Public and private acute hospitals and psychiatric hospitals. Includes medical services provided to private admitted patients in hospital.
- (c) Includes all pharmaceuticals for which a prescription is needed, including benefit-paid prescriptions, private prescriptions and under co-payment prescriptions.

Components may not add to totals due to rounding.

In this table a value of \$0.00 million does not mean zero. All numbers have been rounded to 2 decimal places, so \$0.00 million means less than \$10,000.

Expenditure by age and sex, current prices, 2004–05

Table A2.4: Health care expenditure^(a) on all musculoskeletal conditions by age and sex, 2004–05

Age	Sex	Admitted patient services ^(b)	Out-of-hospital medical services	Prescription pharmaceuticals ^(c)	Total allocated expenditure on all musculoskeletal conditions
\$ million					
0–4	All persons	10.30	6.58	2.55	19.43
	Male	5.86	2.99	1.28	10.13
	Female	4.44	3.59	1.27	9.30
5–14	All persons	39.93	29.32	3.24	72.48
	Male	19.99	16.88	1.68	38.55
	Female	19.94	12.44	1.55	33.94
15–24	All persons	67.31	51.31	9.95	128.57
	Male	41.38	28.72	4.32	74.41
	Female	25.93	22.59	5.64	54.16
25–34	All persons	91.54	86.03	23.74	201.31
	Male	56.66	39.59	10.99	107.24
	Female	34.88	46.44	12.75	94.07
35–44	All persons	147.82	153.33	51.40	352.55
	Male	85.40	74.11	24.14	183.64
	Female	62.43	79.23	27.26	168.91
45–54	All persons	242.60	229.64	95.23	567.47
	Male	123.39	97.02	38.00	258.41
	Female	119.21	132.62	57.23	309.06
55–64	All persons	400.91	247.42	146.18	794.51
	Male	192.97	103.47	53.17	349.62
	Female	207.94	143.94	93.01	444.89
65–74	All persons	478.76	194.03	156.08	828.87
	Male	214.99	76.94	47.13	339.06
	Female	263.78	117.09	108.96	489.82
75–84	All persons	420.91	150.02	146.12	717.05
	Male	162.59	57.98	40.17	260.75
	Female	258.32	92.04	105.95	456.30
85+	All persons	103.10	33.10	45.79	181.99
	Male	31.30	11.57	10.57	53.44
	Female	71.80	21.53	35.22	128.55
Total	All persons	2,003.19	1,180.76	680.28	3,864.23
	Male	934.51	509.27	231.45	1,675.24
	Female	1,068.68	671.49	448.83	2,188.99

Source: AIHW Disease expenditure database.

Table A2.5: Health care expenditure^(a) on osteoarthritis by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on osteoarthritis
\$ million					
0–4	All persons	0.00	0.16	0.24	0.41
	Male	0.00	0.01	0.17	0.18
	Female	0.00	0.16	0.07	0.23
5–14	All persons	0.04	0.22	0.11	0.37
	Male	0.03	0.02	0.03	0.08
	Female	0.02	0.20	0.08	0.29
15–24	All persons	1.10	0.39	0.32	1.80
	Male	0.68	0.23	0.12	1.03
	Female	0.42	0.16	0.20	0.78
25–34	All persons	4.20	2.92	0.92	8.04
	Male	2.54	1.45	0.41	4.40
	Female	1.67	1.47	0.52	3.65
35–44	All persons	19.26	10.40	3.76	33.41
	Male	11.45	5.60	1.78	18.83
	Female	7.81	4.79	1.98	14.58
45–54	All persons	77.27	26.09	11.37	114.74
	Male	37.84	9.51	4.19	51.54
	Female	39.43	16.58	7.18	63.19
55–64	All persons	212.62	49.13	24.67	286.42
	Male	100.92	21.01	9.70	131.63
	Female	111.70	28.11	14.98	154.79
65–74	All persons	302.92	50.97	30.66	384.55
	Male	135.90	20.52	11.78	168.21
	Female	167.01	30.45	18.88	216.35
75–84	All persons	244.61	38.27	25.09	307.97
	Male	96.48	16.10	7.95	120.53
	Female	148.13	22.17	17.14	187.45
85+	All persons	36.47	10.05	8.38	54.90
	Male	12.14	3.46	2.71	18.31
	Female	24.34	6.59	5.67	36.59
Total	All persons	898.48	188.60	105.53	1,192.61
	Male	397.98	77.92	38.83	514.73
	Female	500.51	110.68	66.70	677.89

Source: AIHW Disease expenditure database.

Table A2.6: Health care expenditure^(a) on chronic back pain by age and sex, 2004–05

Age	Sex	Admitted patient services ^(b)	Out-of-hospital medical services	Prescription pharmaceuticals ^(c)	Total allocated expenditure on chronic back pain
\$ million					
0–4	All persons	0.39	0.13	0.09	0.61
	Male	0.38	0.12	0.07	0.57
	Female	0.01	0.01	0.02	0.05
5–14	All persons	0.53	0.35	0.13	1.01
	Male	0.23	0.28	0.05	0.56
	Female	0.30	0.07	0.08	0.45
15–24	All persons	1.79	2.82	0.86	5.47
	Male	0.76	0.89	0.47	2.12
	Female	1.03	1.93	0.39	3.35
25–34	All persons	6.70	5.71	2.39	14.79
	Male	3.26	2.53	1.31	7.10
	Female	3.44	3.18	1.08	7.69
35–44	All persons	14.99	17.00	5.70	37.69
	Male	7.91	8.58	3.16	19.65
	Female	7.08	8.42	2.54	18.04
45–54	All persons	24.30	22.29	8.93	55.52
	Male	11.31	11.43	4.38	27.12
	Female	12.98	10.86	4.56	28.40
55–64	All persons	31.89	26.63	10.71	69.23
	Male	14.16	11.74	5.01	30.91
	Female	17.73	14.88	5.71	38.32
65–74	All persons	39.90	22.27	10.19	72.37
	Male	17.52	8.40	4.17	30.09
	Female	22.39	13.88	6.02	42.28
75–84	All persons	48.41	15.35	9.08	72.83
	Male	18.85	6.12	3.80	28.77
	Female	29.56	9.23	5.28	44.07
85+	All persons	16.56	2.40	1.88	20.85
	Male	4.67	0.88	0.55	6.10
	Female	11.89	1.53	1.33	14.75
Total	All persons	185.46	114.94	49.96	350.36
	Male	79.05	50.97	22.96	152.98
	Female	106.41	63.98	27.00	197.39

Source: AIHW Disease expenditure database.

Table A2.7: Health care expenditure^(a) on osteoporosis by age and sex, 2004–05

Age	Sex	Admitted patient services ^(b)	Out-of-hospital medical services	Prescription pharmaceuticals ^(c)	Total allocated expenditure on osteoporosis
\$ million					
0–4	All persons	0.08	0.00	0.45	0.53
	Male	0.04	0.00	0.15	0.19
	Female	0.04	0.00	0.30	0.34
5–14	All persons	0.40	0.02	0.08	0.50
	Male	0.22	0.00	0.02	0.24
	Female	0.17	0.02	0.06	0.25
15–24	All persons	0.18	0.19	0.18	0.54
	Male	0.09	0.00	0.04	0.13
	Female	0.09	0.18	0.14	0.41
25–34	All persons	0.12	0.29	1.44	1.85
	Male	0.02	0.09	0.50	0.62
	Female	0.10	0.19	0.94	1.24
35–44	All persons	0.36	1.18	2.09	3.63
	Male	0.14	0.06	0.63	0.82
	Female	0.23	1.12	1.46	2.81
45–54	All persons	0.85	4.46	11.32	16.63
	Male	0.38	0.90	2.40	3.68
	Female	0.48	3.55	8.92	12.95
55–64	All persons	1.93	9.91	36.61	48.45
	Male	0.58	1.36	5.82	7.76
	Female	1.35	8.55	30.79	40.69
65–74	All persons	4.81	14.11	59.99	78.92
	Male	1.23	1.12	7.82	10.17
	Female	3.58	12.99	52.17	68.75
75–84	All persons	14.85	13.62	75.53	103.99
	Male	2.80	2.32	14.28	19.40
	Female	12.05	11.30	61.25	84.59
85+	All persons	11.43	3.50	27.32	42.26
	Male	1.69	0.49	4.08	6.26
	Female	9.74	3.02	23.25	36.00
Total	All persons	35.02	47.27	215.01	297.30
	Male	7.19	6.34	35.74	49.26
	Female	27.83	40.93	179.28	248.03

Source: AIHW Disease expenditure database.

Table A2.8: Health care expenditure^(a) on rheumatoid arthritis by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on rheumatoid arthritis
\$ million					
0–4	All persons	0.14	0.03	0.06	0.23
	Male	0.05	0.00	0.00	0.06
	Female	0.09	0.03	0.06	0.17
5–14	All persons	0.56	0.44	0.44	1.44
	Male	0.25	0.27	0.22	0.73
	Female	0.32	0.17	0.22	0.71
15–24	All persons	0.62	0.99	1.56	3.18
	Male	0.24	0.38	0.43	1.05
	Female	0.39	0.61	1.13	2.13
25–34	All persons	1.38	2.00	3.24	6.62
	Male	0.64	0.76	0.67	2.07
	Female	0.74	1.24	2.57	4.55
35–44	All persons	2.72	4.54	9.23	16.49
	Male	0.94	1.31	2.16	4.41
	Female	1.78	3.23	7.07	12.08
45–54	All persons	5.15	9.28	19.38	33.81
	Male	1.49	2.74	5.64	9.87
	Female	3.66	6.55	13.74	23.94
55–64	All persons	7.94	11.34	29.41	48.70
	Male	2.36	4.47	9.79	16.61
	Female	5.59	6.88	19.63	32.09
65–74	All persons	8.51	8.38	18.74	35.63
	Male	2.71	2.33	5.79	10.83
	Female	5.81	6.05	12.95	24.80
75–84	All persons	6.35	6.90	9.36	22.61
	Male	1.51	2.28	2.64	6.43
	Female	4.84	4.62	6.72	16.18
85+	All persons	0.91	0.75	0.72	2.37
	Male	0.20	0.34	0.15	0.69
	Female	0.71	0.40	0.57	1.69
Total	All persons	34.29	44.65	92.13	171.07
	Male	10.37	14.88	27.48	52.73
	Female	23.92	29.76	64.66	118.34

Source: AIHW Disease expenditure database.

Table A2.9: Health care expenditure^(a) on slipped disc by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on slipped disc
\$ million					
0–4	All persons	0.20	0.00	0.06	0.26
	Male	0.12	0.00	0.03	0.15
	Female	0.08	0.00	0.03	0.12
5–14	All persons	0.43	0.01	0.01	0.45
	Male	0.02	0.01	0.01	0.04
	Female	0.40	0.01	0.01	0.41
15–24	All persons	2.02	1.77	0.33	4.13
	Male	1.03	1.34	0.26	2.63
	Female	0.99	0.44	0.07	1.50
25–34	All persons	12.57	3.81	0.87	17.25
	Male	7.48	2.07	0.45	10.00
	Female	5.09	1.74	0.42	7.25
35–44	All persons	24.62	5.77	2.19	32.58
	Male	13.56	3.60	1.43	18.59
	Female	11.06	2.17	0.76	13.99
45–54	All persons	25.88	6.63	2.21	34.72
	Male	13.20	3.09	0.95	17.24
	Female	12.68	3.54	1.27	17.49
55–64	All persons	21.11	3.59	1.59	26.29
	Male	10.58	1.98	0.79	13.36
	Female	10.52	1.61	0.80	12.93
65–74	All persons	17.53	2.02	0.66	20.21
	Male	8.43	0.75	0.30	9.48
	Female	9.10	1.27	0.36	10.73
75–84	All persons	12.87	0.30	0.18	13.35
	Male	5.22	0.19	0.08	5.49
	Female	7.65	0.11	0.10	7.86
85+	All persons	3.03	0.27	0.04	3.34
	Male	1.12	0.19	0.01	1.31
	Female	1.91	0.09	0.03	2.03
Total	All persons	120.25	24.19	8.14	152.58
	Male	60.76	13.22	4.30	78.28
	Female	59.49	10.97	3.84	74.30

Source: AIHW Disease expenditure database.

Table A2.10: Health care expenditure^(a) on other musculoskeletal conditions by age and sex, 2004–05

Age	Sex	Admitted patient services(b)	Out-of-hospital medical services	Prescription pharmaceuticals(c)	Total allocated expenditure on other musculoskeletal conditions
\$ million					
0–4	All persons	9.50	6.26	1.64	17.40
	Male	5.27	2.87	0.86	9.00
	Female	4.23	3.39	0.78	8.39
5–14	All persons	37.97	28.28	2.47	68.72
	Male	19.24	16.29	1.36	36.89
	Female	18.74	11.99	1.11	31.83
15–24	All persons	61.60	45.15	6.70	113.45
	Male	38.58	25.88	3.00	67.45
	Female	23.02	19.27	3.71	46.00
25–34	All persons	66.57	71.30	14.88	152.75
	Male	42.73	32.68	7.66	83.07
	Female	23.84	38.63	7.21	69.68
35–44	All persons	85.87	114.46	28.43	228.76
	Male	51.40	54.96	14.98	121.34
	Female	34.47	59.50	13.45	107.42
45–54	All persons	109.16	160.88	42.02	312.06
	Male	59.17	69.35	20.45	148.97
	Female	49.99	91.53	21.57	163.09
55–64	All persons	125.42	146.82	43.18	315.42
	Male	64.37	62.91	22.08	149.35
	Female	61.05	83.91	21.11	166.07
65–74	All persons	105.09	96.27	35.84	237.20
	Male	49.20	43.82	17.26	110.28
	Female	55.88	52.45	18.58	126.92
75–84	All persons	93.82	75.58	26.89	196.29
	Male	37.73	30.97	11.42	80.13
	Female	56.09	44.61	15.47	116.16
85+	All persons	34.70	16.13	7.44	58.28
	Male	11.49	6.22	3.07	20.78
	Female	23.22	9.91	4.37	37.50
Total	All persons	729.70	761.12	209.50	1,700.31
	Male	379.17	345.94	102.15	827.26
	Female	350.52	415.18	107.35	873.05

Source: AIHW Disease expenditure database.

Notes for the following per person expenditure tables by age and sex

Notes (a) Excludes research.

(b) Public and private acute hospitals and psychiatric hospitals. Includes medical services provided to private admitted patients in hospital.

(c) Includes all pharmaceuticals for which a prescription is needed, including benefit-paid prescriptions, private prescriptions and under co-payment prescriptions.

Components may not add to totals due to rounding.

Expenditure per person, current prices, by age and sex, 2004–05

Table A2.11: Health care expenditure^(a) on all musculoskeletal conditions, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services ^(b)	Out-of-hospital medical services	Prescription pharmaceuticals ^(c)	Total allocated expenditure on all musculoskeletal conditions
\$ per person					
0–4	All persons	8.01	5.12	1.99	15.11
	Male	8.87	4.53	1.94	15.35
	Female	7.10	5.73	2.03	14.87
5–14	All persons	14.59	10.71	1.18	26.49
	Male	14.23	12.02	1.20	27.45
	Female	14.97	9.34	1.17	25.47
15–24	All persons	23.74	18.09	3.51	45.34
	Male	28.60	19.85	2.98	51.43
	Female	18.68	16.26	4.06	39.00
25–34	All persons	31.70	29.79	8.22	69.72
	Male	39.27	27.44	7.62	74.32
	Female	24.15	32.15	8.82	65.12
35–44	All persons	48.86	50.68	16.99	116.53
	Male	56.83	49.32	16.06	122.21
	Female	41.00	52.03	17.90	110.93
45–54	All persons	86.53	81.90	33.97	202.40
	Male	88.65	69.70	27.30	185.65
	Female	84.44	93.93	40.54	218.91
55–64	All persons	183.64	113.33	66.96	363.93
	Male	176.09	94.42	48.52	319.03
	Female	191.25	132.39	85.54	409.17
65–74	All persons	345.05	139.84	112.49	597.38
	Male	317.75	113.72	69.65	501.13
	Female	371.03	164.69	153.26	688.98
75–84	All persons	445.47	158.77	154.65	758.89
	Male	397.08	141.60	98.11	636.80
	Female	482.47	171.90	197.89	852.26
85+	All persons	337.91	108.49	150.06	596.45
	Male	321.14	118.72	108.44	548.30
	Female	345.78	103.68	169.59	619.05
Total	All persons	98.22	57.90	33.36	189.47
	Male	92.27	50.28	22.85	165.41
	Female	104.09	65.40	43.72	213.21

Source: AIHW Disease expenditure database.

Table A2.12: Health care expenditure^(a) on osteoarthritis, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on osteoarthritis
\$ per person					
0–4	All persons	0.00	0.13	0.19	0.32
	Male	0.00	0.01	0.26	0.27
	Female	0.00	0.25	0.12	0.37
5–14	All persons	0.01	0.08	0.04	0.14
	Male	0.02	0.02	0.02	0.06
	Female	0.01	0.15	0.06	0.22
15–24	All persons	0.39	0.14	0.11	0.64
	Male	0.47	0.16	0.08	0.71
	Female	0.30	0.11	0.15	0.56
25–34	All persons	1.46	1.01	0.32	2.79
	Male	1.76	1.01	0.28	3.05
	Female	1.15	1.02	0.36	2.53
35–44	All persons	6.37	3.44	1.24	11.04
	Male	7.62	3.73	1.18	12.53
	Female	5.13	3.15	1.30	9.58
45–54	All persons	27.56	9.31	4.06	40.92
	Male	27.19	6.83	3.01	37.03
	Female	27.93	11.75	5.09	44.76
55–64	All persons	97.39	22.50	11.30	131.20
	Male	92.09	19.18	8.85	120.12
	Female	102.73	25.86	13.77	142.36
65–74	All persons	218.32	36.74	22.10	277.15
	Male	200.87	30.33	17.41	248.61
	Female	234.92	42.83	26.56	304.31
75–84	All persons	258.88	40.50	26.56	325.94
	Male	235.63	39.31	19.41	294.35
	Female	276.67	41.42	32.02	350.10
85+	All persons	119.53	32.92	27.47	179.93
	Male	124.53	35.49	27.85	187.87
	Female	117.19	31.72	27.30	176.20
Total	All persons	44.05	9.25	5.17	58.48
	Male	39.29	7.69	3.83	50.82
	Female	48.75	10.78	6.50	66.03

Source: AIHW Disease expenditure database.

Table A2.13: Health care expenditure^(a) on chronic back pain, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on chronic back pain
\$ per person					
0–4	All persons	0.30	0.10	0.07	0.47
	Male	0.57	0.18	0.11	0.86
	Female	0.02	0.02	0.03	0.07
5–14	All persons	0.19	0.13	0.05	0.37
	Male	0.17	0.20	0.03	0.40
	Female	0.23	0.05	0.06	0.34
15–24	All persons	0.63	0.99	0.30	1.93
	Male	0.53	0.62	0.32	1.47
	Female	0.74	1.39	0.28	2.41
25–34	All persons	2.32	1.98	0.83	5.12
	Male	2.26	1.75	0.91	4.92
	Female	2.38	2.20	0.75	5.33
35–44	All persons	4.95	5.62	1.88	12.46
	Male	5.26	5.71	2.10	13.07
	Female	4.65	5.53	1.67	11.85
45–54	All persons	8.67	7.95	3.19	19.80
	Male	8.13	8.21	3.14	19.48
	Female	9.20	7.69	3.23	20.12
55–64	All persons	14.61	12.20	4.91	31.71
	Male	12.92	10.72	4.57	28.20
	Female	16.31	13.69	5.25	35.24
65–74	All persons	28.76	16.05	7.34	52.16
	Male	25.89	12.41	6.17	44.47
	Female	31.49	19.52	8.46	59.47
75–84	All persons	51.23	16.25	9.61	77.08
	Male	46.04	14.94	9.28	70.26
	Female	55.20	17.24	9.86	82.30
85+	All persons	54.27	7.88	6.17	68.32
	Male	47.90	8.99	5.67	62.56
	Female	57.27	7.35	6.41	71.03
Total	All persons	9.09	5.64	2.45	17.18
	Male	7.80	5.03	2.27	15.10
	Female	10.36	6.23	2.63	19.23

Source: AIHW Disease expenditure database.

Table A2.14: Health care expenditure^(a) on osteoporosis, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on osteoporosis
\$ per person					
0–4	All persons	0.06	0.00	0.35	0.41
	Male	0.06	0.00	0.22	0.28
	Female	0.06	0.00	0.48	0.55
5–14	All persons	0.14	0.01	0.03	0.18
	Male	0.16	0.00	0.01	0.17
	Female	0.13	0.01	0.05	0.19
15–24	All persons	0.06	0.07	0.06	0.19
	Male	0.06	0.00	0.03	0.09
	Female	0.06	0.13	0.10	0.29
25–34	All persons	0.04	0.10	0.50	0.64
	Male	0.01	0.06	0.35	0.43
	Female	0.07	0.13	0.65	0.86
35–44	All persons	0.12	0.39	0.69	1.20
	Male	0.09	0.04	0.42	0.55
	Female	0.15	0.73	0.96	1.84
45–54	All persons	0.30	1.59	4.04	5.93
	Male	0.27	0.65	1.73	2.64
	Female	0.34	2.52	6.32	9.17
55–64	All persons	0.89	4.54	16.77	22.19
	Male	0.53	1.24	5.31	7.08
	Female	1.24	7.86	28.32	37.43
65–74	All persons	3.47	10.17	43.24	56.88
	Male	1.82	1.65	11.56	15.03
	Female	5.04	18.28	73.38	96.70
75–84	All persons	15.72	14.41	79.93	110.06
	Male	6.84	5.66	34.87	47.38
	Female	22.51	21.10	114.39	158.00
85+	All persons	37.47	11.48	89.55	138.50
	Male	17.38	4.99	41.82	64.19
	Female	46.90	14.52	111.95	173.38
Total	All persons	1.72	2.32	10.54	14.58
	Male	0.71	0.63	3.53	4.86
	Female	2.71	3.99	17.46	24.16

Source: AIHW Disease expenditure database.

Table A2.15: Health care expenditure^(a) on rheumatoid arthritis, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on rheumatoid arthritis
\$ per person					
0–4	All persons	0.11	0.02	0.05	0.18
	Male	0.08	0.00	0.00	0.08
	Female	0.14	0.04	0.10	0.28
5–14	All persons	0.21	0.16	0.16	0.52
	Male	0.17	0.19	0.16	0.52
	Female	0.24	0.13	0.17	0.53
15–24	All persons	0.22	0.35	0.55	1.12
	Male	0.16	0.26	0.30	0.73
	Female	0.28	0.44	0.81	1.53
25–34	All persons	0.48	0.69	1.12	2.29
	Male	0.44	0.53	0.46	1.43
	Female	0.52	0.86	1.78	3.15
35–44	All persons	0.90	1.50	3.05	5.45
	Male	0.63	0.87	1.44	2.93
	Female	1.17	2.12	4.64	7.93
45–54	All persons	1.84	3.31	6.91	12.06
	Male	1.07	1.97	4.05	7.09
	Female	2.59	4.64	9.73	16.96
55–64	All persons	3.64	5.20	13.47	22.31
	Male	2.15	4.08	8.93	15.16
	Female	5.14	6.32	18.05	29.52
65–74	All persons	6.14	6.04	13.51	25.68
	Male	4.00	3.44	8.56	16.01
	Female	8.17	8.51	18.21	34.89
75–84	All persons	6.72	7.31	9.91	23.93
	Male	3.69	5.58	6.44	15.71
	Female	9.04	8.63	12.56	30.22
85+	All persons	2.98	2.44	2.35	7.77
	Male	2.01	3.51	1.51	7.04
	Female	3.43	1.94	2.74	8.11
Total	All persons	1.68	2.19	4.52	8.39
	Male	1.02	1.47	2.71	5.21
	Female	2.33	2.90	6.30	11.53

Source: AIHW Disease expenditure database.

Table A2.16: Health care expenditure^(a) on slipped disc, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services ^(b)	Out-of-hospital medical services	Prescription pharmaceuticals ^(c)	Total allocated expenditure on slipped disc
\$ per person					
0–4	All persons	0.15	0.00	0.05	0.20
	Male	0.18	0.00	0.05	0.22
	Female	0.13	0.01	0.05	0.18
5–14	All persons	0.16	0.01	0.00	0.16
	Male	0.02	0.01	0.00	0.03
	Female	0.30	0.00	0.00	0.31
15–24	All persons	0.71	0.63	0.12	1.46
	Male	0.71	0.92	0.18	1.82
	Female	0.71	0.32	0.05	1.08
25–34	All persons	4.35	1.32	0.30	5.97
	Male	5.18	1.44	0.31	6.93
	Female	3.52	1.20	0.29	5.02
35–44	All persons	8.14	1.91	0.72	10.77
	Male	9.02	2.40	0.95	12.37
	Female	7.26	1.42	0.50	9.19
45–54	All persons	9.23	2.37	0.79	12.38
	Male	9.48	2.22	0.68	12.38
	Female	8.98	2.51	0.90	12.39
55–64	All persons	9.67	1.65	0.73	12.04
	Male	9.66	1.81	0.72	12.19
	Female	9.68	1.48	0.73	11.89
65–74	All persons	12.63	1.46	0.47	14.57
	Male	12.46	1.11	0.44	14.01
	Female	12.80	1.79	0.50	15.09
75–84	All persons	13.62	0.32	0.19	14.13
	Male	12.75	0.47	0.20	13.41
	Female	14.29	0.20	0.18	14.67
85+	All persons	9.92	0.90	0.12	10.94
	Male	11.47	1.92	0.06	13.45
	Female	9.19	0.42	0.15	9.76
Total	All persons	5.90	1.19	0.40	7.48
	Male	6.00	1.31	0.42	7.73
	Female	5.79	1.07	0.37	7.24

Source: AIHW Disease expenditure database.

Table A2.17: Health care expenditure^(a) on other musculoskeletal conditions, per person, by age and sex, 2004–05

Age	Sex	Admitted patient services^(b)	Out-of-hospital medical services	Prescription pharmaceuticals^(c)	Total allocated expenditure on other musculoskeletal conditions
\$ per person					
0–4	All persons	7.39	4.87	1.28	13.53
	Male	7.98	4.35	1.31	13.64
	Female	6.76	5.41	1.25	13.42
5–14	All persons	13.88	10.33	0.90	25.11
	Male	13.70	11.60	0.97	26.27
	Female	14.06	9.00	0.83	23.89
15–24	All persons	21.73	15.92	2.36	40.01
	Male	26.66	17.89	2.07	46.62
	Female	16.58	13.87	2.67	33.13
25–34	All persons	23.05	24.69	5.15	52.90
	Male	29.61	22.65	5.31	57.57
	Female	16.50	26.74	4.99	48.24
35–44	All persons	28.38	37.83	9.40	75.62
	Male	34.21	36.57	9.97	80.75
	Female	22.64	39.08	8.83	70.55
45–54	All persons	38.93	57.38	14.99	111.30
	Male	42.51	49.82	14.69	107.02
	Female	35.41	64.83	15.28	115.52
55–64	All persons	57.45	67.25	19.78	144.48
	Male	58.74	57.40	20.14	136.29
	Female	56.15	77.18	19.41	152.74
65–74	All persons	75.74	69.38	25.83	170.95
	Male	72.72	64.76	25.51	162.99
	Female	78.61	73.78	26.13	178.52
75–84	All persons	99.29	79.99	28.46	207.74
	Male	92.14	75.65	27.90	195.69
	Female	104.76	83.31	28.89	216.96
85+	All persons	113.73	52.87	24.39	190.99
	Male	117.85	63.82	31.53	213.21
	Female	111.79	47.73	21.04	180.56
Total	All persons	35.78	37.32	10.27	83.37
	Male	37.44	34.16	10.09	81.68
	Female	34.14	40.44	10.46	85.04

Source: AIHW Disease expenditure database.

NHS prevalence estimates

Table A2.18: Prevalence of osteoarthritis by age and sex, 2004–05

Age group	Males ('000)	Males (per cent)	Females ('000)	Females (per cent)	Persons ('000)	Persons (per cent)
0–14	n.p.	n.p.	n.p.	n.p.	**0.7	**0.0
15–24	n.p.	n.p.	n.p.	n.p.	*6.3	*0.2
25–34	19.6	1.4	20.1	1.4	39.7	1.4
35–44	50.9	3.5	63.1	4.2	114.1	3.9
45–54	102.9	7.6	156.8	11.3	259.7	9.5
55–64	178.2	16.7	261.6	24.8	439.8	20.7
65–74	127.4	19.3	228.2	32.9	355.5	26.3
75–84	91.0	24.1	175.5	34.1	266.6	29.8
85 and over	26.6	32.2	38.6	35.0	65.2	33.8
All ages	597.4	6.1	950.2	9.6	1,547.6	7.9

* subject to high standard errors and should be used with caution

** subject to sampling variability too high for practical purposes (that is, relative standard error greater than 50%)

n.p. not published (data cannot be released due to quality issues, confidentiality, or permission not granted)

Note: Based on self-reported information.

Source: AIHW analysis of the 2004–05 National Health Survey.

Table A2.19: Prevalence of chronic back pain by age and sex, 2004–05

Age group	Males ('000)	Males (per cent)	Females ('000)	Females (per cent)	Persons ('000)	Persons (per cent)
0–14	*7.7	*0.4	*12.4	*0.6	20.1	0.5
15–24	90.8	6.6	118.8	9.0	209.6	7.8
25–34	177.9	12.7	162.3	11.5	340.2	12.1
35–44	229.1	15.6	235.2	15.8	464.4	15.7
45–54	209.9	15.5	185.1	13.4	395.0	14.4
55–64	193.0	18.1	150.5	14.3	343.6	16.2
65–74	84.7	12.8	95.3	13.7	180.0	13.3
75–84	46.6	12.3	58.1	11.3	104.8	11.7
85 and over	*9.5	*11.5	*9.2	*8.4	18.7	9.7
All ages	1,049.3	10.7	1,027.0	10.4	2,076.3	10.5

* subject to high standard errors and should be used with caution

Note: Based on self-reported information.

Source: AIHW analysis of the 2004–05 National Health Survey.

Table A2.20: Prevalence of osteoporosis by age and sex, 2004–05

Age group	Males ('000)	Males (per cent)	Females ('000)	Females (per cent)	Persons ('000)	Persons (per cent)
0–14	n.p.	n.p.	n.p.	n.p.	**1.5	**0.0
15–24	n.p.	n.p.	n.p.	n.p.	**1.6	**0.1
25–34	*7.3	*0.5	*6.6	*0.5	*13.8	*0.5
35–44	**2.9	**0.2	22.4	1.5	25.3	0.9
45–54	*9.1	*0.7	50.5	3.6	59.6	2.2
55–64	22.8	2.1	116.9	11.1	139.7	6.6
65–74	25.1	3.8	133.9	19.3	159.0	11.7
75–84	17.5	4.6	135.7	26.3	153.2	17.2
85 and over	*4.1	*5.0	28.0	25.3	32.1	16.6
All ages	89.4	0.9	496.4	5.0	585.8	3.0

* subject to high standard errors and should be used with caution

** subject to sampling variability too high for practical purposes (that is, relative standard error greater than 50%)

n.p. not published (data cannot be released due to quality issues, confidentiality, or permission not granted)

Note: Based on self-reported information.

Source: AIHW analysis of the 2004–05 National Health Survey.

Table A2.21: Prevalence of rheumatoid arthritis by age and sex, 2004–05

Age group	Males ('000)	Males (per cent)	Females ('000)	Females (per cent)	Persons ('000)	Persons (per cent)
0–14	n.p.	n.p.	n.p.	n.p.	**0.5	**0.0
15–24	n.p.	n.p.	n.p.	n.p.	*8.4	*0.3
25–34	*7.3	*0.5	*8.5	*0.6	*15.8	*0.6
35–44	24.4	1.7	39.5	2.6	63.9	2.2
45–54	31.7	2.3	60.6	4.4	92.4	3.4
55–64	69.2	6.5	58.9	5.6	128.1	6.0
65–74	45.4	6.9	69.9	10.1	115.2	8.5
75–84	25.2	6.7	32.8	6.4	58.0	6.5
85 and over	*4.8	*5.8	*3.9	3.5	*8.7	*4.5
All ages	209.8	2.1	281.2	2.8	491.0	2.5

* subject to high standard errors and should be used with caution

** subject to sampling variability too high for practical purposes (that is, relative standard error greater than 50%)

n.p. not published (data cannot be released due to quality issues, confidentiality, or permission not granted)

Note: Based on self-reported information.

Source: AIHW analysis of the 2004–05 National Health Survey.

Table A2.22: Prevalence of slipped disc by age and sex, 2004–05

Age group	Males (’000)	Males (per cent)	Females (’000)	Females (per cent)	Persons (’000)	Persons (per cent)
0–14	n.p.	n.p.	n.p.	n.p.	**0.4	**0.0
15–24	n.p.	n.p.	n.p.	n.p.	41.0	1.5
25–34	57.5	4.1	37.1	2.6	94.6	3.4
35–44	113.8	7.7	85.6	5.7	199.3	6.7
45–54	134.8	10.0	108.1	7.8	242.8	8.9
55–64	146.0	13.7	98.7	9.3	244.7	11.5
65–74	80.7	12.2	70.9	10.2	151.6	11.2
75–84	26.7	7.1	44.1	8.6	70.9	7.9
85 and over	*8.8	*10.6	5.1	4.6	*13.9	*7.2
All ages	587.8	6.0	471.5	4.8	1,059.2	5.4

* subject to high standard errors and should be used with caution

** subject to sampling variability too high for practical purposes (that is, relative standard error greater than 50%)

n.p. not published (data cannot be released due to quality issues, confidentiality, or permission not granted)

Note: Based on self-reported information.

Source: AIHW analysis of the 2004–05 National Health Survey.

Glossary

Admitted patient	A patient who undergoes a hospital's formal admission process to receive treatment and/or care. This treatment and/or care is provided over a period of time and can occur in hospital and/or in the person's home.
Arthroplasty	Surgery to replace a painful, damaged or diseased joint with an artificial joint. Also called 'joint replacement surgery'.
Australian Refined Diagnosis Related Group (AR-DRG)	A variant of the DRG system designed specifically for use in Australia. Version 5.0, released in September 2002 was used for Round 9 (2004-05) and version 5.1 was used for Round 11 (2006-07) of the NHCDC.
Average cost	In the costing context, the total cost of production divided by the number of products in a period. Also known as full average cost. Used in the NHCDC estimates.
Average length of stay	The average of the length of stay in hospital for admitted patient episodes.
Casemix	Casemix is a scientific approach to the classification of patient care episodes. It allows the episodes to be grouped into an AR-DRG category to be matched with measures such as resource usage and average length of stay.
Chiropractor	A health professional that treats people with problems associated with the body's muscular, nervous, and skeletal systems, especially the spine.
Constant prices	Constant price expenditure adjusts for the effects of inflation to indicate what expenditure would have been had 2004-05 prices applied in all years.
Current prices	The term 'current prices' refers to expenditures reported for a particular year, unadjusted for inflation.
DMARD and bDMARD	Disease-modifying anti-rheumatic drugs (DMARDs) help prevent joint and cartilage damage and may produce major improvement in rheumatoid arthritis patients. Biologic DMARDs (bDMARDs) help to reduce the symptoms of rheumatoid arthritis by targeting the body's own immune system, to slow down the inflammation process and stop the progression of joint damage. Such medications are injected or given intravenously.
Densitometry	Bone densitometry or bone density scanning, also called dual-energy X-ray absorptiometry (DXA) is an enhanced form of X-ray technology used to measure bone loss.
Encounter	Any professional interchange between a patient and a GP.

Endocrinologist	Endocrinologists are specialist doctors trained to diagnose and treat hormone imbalances and problems by helping to restore the normal balance of hormones in your system.
General practitioner (GP)	‘A medical practitioner who provides primary comprehensive and continuing care to patients and their families within the community’ (Royal Australian College of General Practitioners).
Imaging	Medical imaging uses techniques and processes to create images of the human body to assist with disease diagnosis.
Major Diagnostic Category (MDC)	A Major Diagnostic Category is generally based around a particular body system (e.g. musculoskeletal system) and corresponds with particular medical specialties.
Morbidity	Refers to ill health in an individual and to levels of ill health in a population or group.
Neurosurgeon	A neurosurgeon is a specialist surgeon trained to perform brain and spinal surgery.
NSAID	Nonsteroidal anti-inflammatory drugs (NSAIDs) reduce pain and inflammation.
Orthopaedic surgeon	A medical practitioner who has specialised in surgery of the bones.
Physiotherapist	A health professional that treats people with physical problems by identifying and maximising movement potential.
Principal diagnosis	The diagnosis describing the problem that was chiefly responsible for the patient’s episode of care in hospital.
Principal procedure	The most significant procedure that was performed for treatment of the principal diagnosis.
Rheumatologist	A rheumatologist is a specialist doctor with expertise in diagnosing and treating diseases of the joints, muscles and bones.
Separation	The formal process by which a hospital records the completion of treatment and/or care for an admitted patient.
Spinal fusion	Spinal fusion is a surgical procedure to eliminate motion between vertebrae by fusing together two or more vertebrae, using bone grafts and metal rods and screws.

References

- ABS (Australian Bureau of Statistics) 2006. 2004–05 National health survey: summary of results, Australia. ABS cat. no. 4364.0. Canberra: ABS.
- AIHW (Australian Institute of Health and Welfare) 2006a. Australian hospital statistics 2004–05. Cat. no. HSE 41. Canberra: AIHW.
- AIHW 2006b. National indicators for monitoring osteoarthritis, rheumatoid arthritis and osteoporosis. Cat. no. PHE 77. Canberra: AIHW.
- AIHW 2008a. Arthritis and osteoporosis in Australia 2008. Cat. no. PHE 106. Canberra: AIHW.
- AIHW 2008b. Australia's health 2008. Cat. no. AUS 99. Canberra: AIHW.
- AIHW 2009a. Chronic disease and participation in work. Cat. no. PHE 109. Canberra: AIHW.
- AIHW 2009b. Health system expenditure on disease and injury in Australia, 2004–05. In press. Canberra: AIHW.
- AIHW: Begg S, Vos T, Barker B, Stevenson C, Stanley L & Lopez A 2007. The burden of disease and injury in Australia 2003. Cat. no. PHE 82. Canberra: AIHW.
- AIHW: Britt H, Miller G, Charles J, Knox S, Valenti L, Henderson J et al. 2005. General practice activity in Australia 2004–05. Cat. no. GEP 18. Canberra: AIHW.
- AIHW: Goss J 2008. Projection of Australian health care expenditure by disease, 2003 to 2033. Cat. no. HWE 43. Canberra: AIHW.
- AIHW: Mathers C, Stevenson C, Carter R & Penm R 1998. Disease costing methodology used in the disease costs and impact study 1993-94. Cat. no. HWE 7. Canberra: AIHW.
- AIHW: Mathers C, Vos T & Stevenson C 1999. The burden of disease and injury in Australia. Cat. no. PHE 17. Canberra: AIHW.
- AIHW: Rahman N & Bhatia K 2007. Impairments and disability associated with arthritis and osteoporosis. Cat. no. PHE 90. Canberra: AIHW.
- Britt H 1997. A new coding tool for computerised clinical systems in primary care – ICPC plus. *Australian Family Physician* 26:S79-S82.
- Classification Committee of the World Organization of Family Doctors 1997. *ICPC-2: International Classification of Primary Care*. Oxford: Oxford University Press.
- DoHA (Department of Health and Ageing) 2006. National Hospital Cost Data Collection. Cost Report round 9 (2004-2005).
- DoHA 2008. National Hospital Cost Data Collection. Cost Report round 11 (2006-2007).
- Dunlop D, Manheim L, Yelin E, Song J & Chang R 2003. The Costs of Arthritis. *Arthritis & Rheumatism (Arthritis Care & Research)* 49:101-13.
- Medicare Australia 2009. Pharmaceutical Benefits Schedule Group Reports. Canberra: Medicare Australia. Viewed 19 Feb 2009, <www.medicareaustralia.gov.au/statistics/pbs_group.shtml>.
- NHMRC (National Health and Medical Research Council) 2009. NHMRC research funding statistics and data. Canberra: Viewed 11 January 2009, <www.nhmrc.gov.au/grants/dataset/index.htm>.

List of tables

Table 1.1:	Prevalence of various arthritis and musculoskeletal conditions, by sex, 2004–05	3
Table 2.1:	Direct health expenditure on various arthritis and musculoskeletal conditions, 2004–05	4
Table 3.1:	Hospital-admitted patient services expenditure and separations, 2000–01 and 2004–05	10
Table 3.2:	Hospital separations 2004–05 and 2006–07.....	11
Table 3.3:	Estimated cost (\$ million) of hospital treatment for hip fracture, public hospitals, persons aged 40 years and over, 2004–05 and 2006–07.....	13
Table 4.1:	Age when first diagnosed, 2004–05 (per cent of people with rheumatoid arthritis)	31
Table 5.1:	Changes in expenditure, constant prices, 2000–01 to 2004–05	34
Table 5.2:	Projected health and residential aged care expenditure, 2002–03 to 2032–33.....	35
Table A1.1:	ICD-10, ICPC-2 and ICPC-2 PLUS codes used in this bulletin for extraction of data for arthritis and musculoskeletal conditions	42
Table A2.1:	Distribution of arthritis and musculoskeletal expenditure by health service area, 2004–05	43
Table A2.2:	Distribution of arthritis and musculoskeletal expenditure by health service area, 2000–01	43
Table A2.3:	Change in arthritis and musculoskeletal expenditure by health service area, 2000–01 to 2004–05	44
Table A2.4:	Health care expenditure on all musculoskeletal conditions by age and sex, 2004–05	45
Table A2.5:	Health care expenditure on osteoarthritis by age and sex, 2004–05.....	46
Table A2.6:	Health care expenditure on chronic back pain by age and sex, 2004–05.....	47
Table A2.7:	Health care expenditure on osteoporosis by age and sex, 2004–05.....	48
Table A2.8:	Health care expenditure on rheumatoid arthritis by age and sex, 2004–05.....	49
Table A2.9:	Health care expenditure on slipped disc by age and sex, 2004–05.....	50
Table A2.10:	Health care expenditure on other musculoskeletal conditions by age and sex, 2004–05	51
Table A2.11:	Health care expenditure on all musculoskeletal conditions, per person, by age and sex, 2004–05	53
Table A2.12:	Health care expenditure on osteoarthritis, per person, by age and sex, 2004–05.....	54
Table A2.13:	Health care expenditure on chronic back pain, per person, by age and sex, 2004–05	55
Table A2.14:	Health care expenditure on osteoporosis, per person, by age and sex, 2004–05.....	56
Table A2.15:	Health care expenditure on rheumatoid arthritis, per person, by age and sex, 2004–05	57
Table A2.16:	Health care expenditure on slipped disc, per person, by age and sex, 2004–05.....	58
Table A2.17:	Health care expenditure on other musculoskeletal conditions, per person, by age and sex, 2004–05	59

Table A2.18: Prevalence of osteoarthritis by age and sex, 2004–05	60
Table A2.19: Prevalence of chronic back pain by age and sex, 2004–05	60
Table A2.20: Prevalence of osteoporosis by age and sex, 2004–05	61
Table A2.21: Prevalence of rheumatoid arthritis by age and sex, 2004–05	61
Table A2.22: Prevalence of slipped disc by age and sex, 2004–05	62

List of figures

Figure 2.1:	Direct health expenditure by health service area, 2004–05.....	5
Figure 2.2:	Total direct health expenditure on National Health Priority Areas, 2004–05.....	6
Figure 2.3:	Distribution of health expenditure for National Health Priority Areas and all diseases combined, 2004–05.....	6
Figure 2.4:	Estimated average cost per separation, by selected Major Diagnostic Category (MDC), 2000–01 and 2004–05.....	8
Figure 3.1:	Health expenditure distribution for arthritis and musculoskeletal conditions, 2004–05	9
Figure 3.2:	Expenditure on hospital-admitted patient services for arthritis and musculoskeletal conditions, 2004–05.....	13
Figure 3.3:	Expenditure on out-of-hospital medical services for arthritis and musculoskeletal conditions, 2004–05	16
Figure 3.4:	Expenditure on prescription pharmaceuticals for arthritis and musculoskeletal conditions, 2004–05	19
Figure 3.5:	National Health and Medical Research Council funding for arthritis and musculoskeletal conditions research, 2001 and 2005 (calendar year)	21
Figure 3.6:	National Health and Medical Research Council funding for National Health Priority Area research, 2000–01, 2004–05 and 2007–08	21
Figure 4.1:	Expenditure on arthritis and musculoskeletal conditions, by age and sex, 2004–05.....	22
Figure 4.2:	Expenditure on arthritis and musculoskeletal conditions, per person, by age and sex, 2004–05.....	23
Figure 4.3:	Health service area expenditure on arthritis and musculoskeletal conditions, by sex, 2004–05.....	24
Figure 4.4:	Expenditure on arthritis and musculoskeletal conditions, by sex, 2004–05.....	24
Figure 4.5:	Expenditure on hospital-admitted patient services for osteoarthritis, by age and sex, 2004–05.....	25
Figure 4.6:	Expenditure on osteoarthritis, per person, by age and sex, 2004–05	26
Figure 4.7:	Expenditure on chronic back pain, by age and sex, 2004–05	27
Figure 4.8:	Health service area expenditure on chronic back pain, by sex, 2004–05	27
Figure 4.9:	Health service area expenditure on osteoporosis, by sex, 2004–05	28
Figure 4.10:	Expenditure on prescription pharmaceuticals for osteoporosis, by age and sex, 2004–05	28
Figure 4.11:	Expenditure on osteoporosis, per person, by age and sex, 2004–05.....	29
Figure 4.12:	Expenditure on rheumatoid arthritis, by age and sex , 2004–05.....	29
Figure 4.13:	Health service area expenditure on rheumatoid arthritis, by sex, 2004–05	30
Figure 4.14:	Expenditure on rheumatoid arthritis, per person, by age and sex, 2004–05.....	30
Figure 4.15:	Expenditure on slipped disc, by age and sex , 2004–05	32
Figure 4.16:	Health service area expenditure on slipped disc, by sex, 2004–05	32
Figure 4.17:	Expenditure on slipped disc, per person, by age and sex, 2004–05.....	33

Figure 4.18:	Expenditure on other musculoskeletal conditions, by age and sex , 2004-05	33
Figure 5.1:	Changes in total health expenditure, constant prices, for various arthritis and musculoskeletal conditions, 2000-01 to 2004-05	34

List of boxes

- Box 1.1: Various arthritis and musculoskeletal conditions 2
- Box 3.1: The AIHW Disease expenditure database health service areas where expenditure
can be allocated by disease group in 2004–05 10
- Box 3.2: ICPC codes and the AIHW Disease expenditure database 15
- Box A1.1: Hospital-admitted patients 41