

Appendix A: Description of medicines

This appendix provides a description of the medicines discussed in this report. Grouped by type (for example, analgesics, NSAIDs), the generic and brand names and purpose of each medication, along with common side effects, are outlined below.

Analgesics

Table A1: Analgesics

Medicine name	Brand names	How they work
Buprenorphine	Norspan, Subutex, Suboxone	Management of moderate to severe chronic pain.
Oxycodone	Endone, Proladone, OxyContin, OxyNorm	Relieves moderate to severe pain.
Paracetamol	Panadol, Panamax, Chemadol, Sandoz, Parahexal, Febridol	Reduces pain but has limited or no effect on inflammation.
Paracetamol and codeine	Codalgin Forte, Codapane Forte, Dolaforte, Prodeine Forte, Comfarol Forte	Reduces mild to moderate pain and fever.
Tramadol	Tramal, Tramahexal, Tramedo, Zydol	Reduces moderate to severe pain.

Side effects

The most common side effects associated with analgesics are nausea, vomiting, constipation, dizziness, dry mouth, headaches, fatigue and perspiration. Rare side effects include speech impairments, respiratory problems, cardiac problems and changes in blood composition.

Anti-resorptives

Table A2: Anti-resorptives

Medication name	Brand names	How they work
Alendronate	Adronat, Alendrobell, APO-Alendronate, Alendronate Sandoz, Chemmart Alendronate, Fosamax, Terry White Chemists Alendronate	Reduces remodelling by osteoclasts and slows or stops the destruction of bone tissue.
Alendronate with cholecalciferol*	Fosamax Plus	A combination of alendronate and cholecalciferol*, this medicine inhibits the osteoclasts from breaking down old bone and increases the levels of Vitamin D in the body.
Risedronate	Actonel	Used to strengthen bone, prevent or manage osteoporosis and Paget's disease.
Risedronate with calcium carbonate	Actonel Combi	A combination of risedronate and calcium. Reduces remodelling aspects of osteoclasts, increasing bone density and calcium levels in the blood stream. Can also be used for Paget's disease.
Strontium ranelate	Protos	Slows breakdown of bone and increases bone formation and density. Used to help prevent and reduce osteoporotic fractures.

*Cholecalciferol is a form of vitamin D3 and helps to reduce the reabsorption of calcium and phosphorus in bone.

Side effects

The most common side effects of the use of bisphosphonates include irritations to the oesophagus, abdominal pain, diarrhoea, constipation, muscle pain and bone pain. Rare side effects of bisphosphonates include nausea and vomiting.

In recent studies, bisphosphonates have been linked to osteonecrosis (reduced blood flow to the bones in the joints) of the jaw (Sambrook & Cooper 2006). This side effect is quite rare and information from the Food and Drugs Administration (FDA) and the National Prescribing Service (NPS) indicates intravenous bisphosphonates such as zoledronic acid and pamidronate are more likely to be associated with this side effect (Purcell & Boyd 2005).

Complementary medicines

Table A3: Complementary medicines

Medication name	How they work
Calcium compounds (including calcium phosphate and calcium carbonate)	Promote bone formation and strength.
Chondroitin	Can help reduce damage to cartilage, relieve pain and may assist in the synthesis of new cartilage.*
Glucosamine*	Helps rebuild cartilage and manage arthritis.
Fish oils	Can offer analgesic qualities, reducing tenderness in joints, pain and morning stiffness.
Omega 3	Helps in the reduction of joint stiffness, pain and swelling.
Methyl salicylate & menthol (Deep heat)	This is used to relieve pain of muscle aches and sprains, rheumatism, arthritis and similar conditions.
Glucosamine & chondroitin	Relieves pain and inflammation.*

* There is no strong evidence that glucosamine or glucosamine and chondroitin rebuild damaged cartilage. Studies have been varied and inconclusive about the effectiveness of these medicines (McAlindon et al. 2000; Ebell 2006; Fox et al. 2006) .

Side effects

Complementary medicines still remain largely understudied. Side effects associated with their use are not well known, but may include headaches, rashes, gastrointestinal upsets and sleepiness.

Corticosteroids

Table A4: Corticosteroids

Medication name	Brand names	How they work
Prednisone	Panafcort, Predsone, Sone	Inhibits the inflammatory response, reducing pain and swelling, but does not prevent further joint degeneration.
Prednisolone	Panafcortelone, PredMix, Prednefrin Forte, Predsol, Predsolone, Redipred, Solone	Inhibits the inflammatory response, reducing pain and swelling, but does not prevent further joint degeneration.

Side effects

Common side effects associated with the use of corticosteroids can include indigestion, acne, weight gain, muscle weakness and mood changes or depression. Other less common side effects include peptic ulcers, headaches, coughs, muscle weakness, thin skin, excess perspiration and mild infections due to suppressed immune response.

A major side effect of corticosteroid use is induced osteoporosis. This occurs because corticosteroids inhibit the body's ability to absorb calcium and speed up bone breakdown. This causes bones to become weak and lose mineral density (thickness), leading to osteoporosis.

Disease-modifying anti-rheumatic drugs (DMARDs)

Table A5: DMARDs

Medication name	Brand names	How they work
Hydroxychloroquine*	Plaquenil	Prevents further degeneration of joints, reducing the activity of antibodies.
Methotrexate	HH brand, Ledertrexate, Methotrexate Ebewe, Methoblastin	Reduces pain and inflammation by lowering the activity of the immune system, limiting damage to joints.
Sodium aurothiomalate	Myocrisin	Reduces some elements of the body's immune response, altering the progression of the disease. Can relieve swelling, pain and inflammation of the disease.
Sulfasalazine	Pyralin, Salazopyrin	Used to manage inflammation, pain and slow or alter autoimmune responses.

* Hydroxychloroquine was commonly used as an anti-malarial medication to prevent and treat malaria and other parasitic infections. However, due to the resistance of the parasites towards this medication, it is no longer routinely used for this purpose (ARA 2008b).

Side effects

The side effects commonly associated with DMARD use include nausea, vomiting, diarrhoea, mouth ulcers and dryness of skin, rashes, increased sensitivity to the sun, tiredness, headaches and mental clouding. More uncommonly, DMARDs may also, in extreme cases, cause a drop in white blood cell and platelet counts, inflammation of the lungs and hair thinning.

Non-steroidal anti-inflammatory drugs (NSAIDs) and COX-2 inhibitors

Table A6: NSAIDs and COX-2 inhibitors

Medication name	Brand names	How they work
Celecoxib	Celebrex	Selective COX-2 inhibitor, primarily inhibits the isoform of cyclo-oxygenase. This reduces inflammation (and pain) while minimising gastrointestinal adverse drug reactions.
Diclofenac sodium	Voltaren, Diclohexal, GenRx Diclofenac, Dinac, Fenac, Arthrotec	Inhibits prostaglandin production and reduces inflammation, swelling and pain.
Ibuprofen	Brufen, Rafen	Reduces inflammation and pain.
Lumiracoxib	Prexige	Blocks only the COX-2 isoenzyme, reducing inflammation, pain and stiffness. Minimises adverse reactions in the gastrointestinal tract found in other NSAIDs. Has since been removed from the market due to liver complications *
Meloxicam	Chem mart Meloxicam, GenRx Meloxica, Pharmacor Meloxicam Meloxibell, Mobic, Movalis, Ranbaxy, Sandoz, Terry White Chemists Meloxicam, Winthrop	Reduces pain, inflammation and stiffness in arthritis by inhibiting both the COX-1 and COX-2 enzymes.
Naproxen	Anaprox, Crysanal, Inza, Naprosyn, Proxen	Reduces the symptoms of pain, inflammation and stiffness in arthritis by inhibiting both the COX-1 and COX-2 enzymes.
Piroxicam	Chem mart Piroxicam, GenRx Piroxicam, Feldene, Mobilis, Terry White Chemists Piroxicam	Reduces the symptoms of pain, inflammation and stiffness in arthritis by inhibiting both the COX-1 and COX-2 enzymes.
Rofecoxib	Vioxx	Blocks only the COX-2 enzyme, reducing inflammation, pain and stiffness. Minimises adverse reactions with the gastrointestinal tract found in other NSAIDs. Has since been removed from the market due to heart complications.

Side effects

The most common side effects associated with the use of NSAIDs include dizziness, headaches, stomach ulcerations, gastrointestinal bleeding and nausea.

There have been more serious side effects identified with the COX-2 inhibitors lumiracoxib and rofecoxib. Both of these medications have been removed from the Australian market amid concerns of liver and heart failure (see pages 25 and 27 for further information).

Other medications

Selective oestrogen receptor modulator (SERM)

The SERM raloxifene is often used when a person has an intolerance to alendronate and risedronate (NPS 2007). Raloxifene is the only SERM available in Australia for the treatment of osteoporosis. Raloxifene has a pro-oestrogen effect on the skeletal system, increasing bone density, but has an anti-oestrogen effect on breast and uterine tissue. It reduces spinal

fractures, but not non-spinal fractures, in the majority of females. Raloxifene is listed on the PBS for the management of osteoporosis in post-menopausal females with a fracture due to minimal trauma, and is sold under the brand name Evista.

Side effects

The common side effects associated with the use of raloxifene include hot flushes, leg cramps and swollen ankles or feet. Other less common side effects include headaches, rashes and, in some extreme cases, deep vein thrombosis (exhibiting as discoloration, pain, tenderness or swelling in one leg). A positive effect of this medication is that it may reduce the risk of developing breast cancer.

Vitamin D analog

Calcitriol is a vitamin D analog, which increases blood calcium and phosphate levels, increasing absorption of calcium and phosphate in the gastrointestinal tract and kidneys, but inhibiting the release of parathyroid hormone (thereby preventing excess calcium levels). Common brand names for calcitriol in Australia include Calcitriol-DP, Citrihexal, GenRx Calcitriol, Kosteo, Rocaltrol and Sical.

Side effects

The most common side effect associated with the use of vitamin D analogs is hypercalcaemia. Other symptoms may also include nausea, vomiting, constipation, anorexia, apathy, headache, thirst, sweating, muscular and joint pain, and polyuria (passing large volumes of urine).

References

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Appendix B: Data sources and methodology

This appendix describes the data sources used to obtain the various estimates provided in this report and the methodologies used for these calculations.

Data sources

The data collated for this report have come from three national sources: the National Health Survey (NHS) of 2004–05, the Bettering the Evaluation and Care of Health (BEACH) GP surveys from 1998–99 to 2007–08 and the Pharmaceutical Benefits Scheme (PBS) for 2007. Each of the data sources is outlined below, describing the collection's purpose, how the data are collected and what limitations each has for pharmacotherapy analysis.

National Health Survey

The Australian Bureau of Statistics (ABS) conducts the National Health Survey (NHS) every 3 years and it is designed to obtain information on the health status of Australians, their use of health services and facilities, and health-related aspects of their lifestyle (ABS 2006a). The survey is community-based and does not include information from people living in nursing homes or otherwise institutionalised. The most recent NHS was conducted in 2007–08, with previous surveys being conducted in 2004–05, 2001, 1995, 1989–90, 1983 and 1977. This report uses data from the 2004–05 survey, as at the time of writing this was the most recent available for detailed analysis.

Data are collected via face-to-face interviews of people from all states and territories (ABS 2006b). The survey covers a wide range of health topics, with particular focus given to the national health priorities, including arthritis and osteoporosis. For medications, data are collected for up to three pharmaceuticals and three complementary medicines for each condition (ABS 2006b). Information is only collected on medications taken in the 2 weeks prior to the interview.

Limitations for medications data

Limitations with using NHS data to analyse medications include:

- Up to three pharmaceuticals and three complementary medicines are collected for each condition. Arthritis and osteoporosis are chronic conditions in which multiple medications may be needed to manage the condition and related symptoms. The restriction to three pharmaceuticals and three complementary medicines may not collect all medicines used to manage these conditions.
- Medications are only recorded if they have been used during the 2 weeks prior to the interview. For rheumatoid arthritis, specialist medications such as bDMARDs and corticosteroids may be used in treatment cycles. These medications would be missed in the collection process if the participant is in between treatment cycles.
- Limited detail on less commonly reported medications is released for analysis. This makes it difficult to identify all the medications being used to manage a condition.

Bettering the Evaluation and Care of Health (BEACH) GP surveys

The BEACH program is an ongoing survey looking at the clinical activities of general practitioners (GPs). The Australian General Practice Statistics and Classification Centre (AGPSCC; an AIHW collaborating unit) of the University of Sydney conducts the study. BEACH began in April 1998 and involves an ever-changing random sample of approximately 1,000 GPs per year, collecting information on about 100,000 GP-patient encounters (AIHW: Britt et al. 2008). Data collected include patient reasons for the encounter, problems managed, and management of each problem, including details of pharmacological and non-pharmacological treatments prescribed. The survey is conducted annually from April to March.

The BEACH survey offers more detailed information about medications than the NHS. Unlike the NHS, detailed information on all medications reported is available. Medications are recorded at an individual problem level, allowing data to be extracted for more targeted populations. The BEACH survey records the names, dosages and forms of GP-recommended medications for each problem managed and identifies how the patient was to obtain the medicine (advised for over-the-counter purchase, supplied or prescribed). This enables a more detailed insight into which medications are being used to manage different conditions.

Limitations for medications data

The limitations of using the BEACH data sets to examine pharmacotherapy of arthritis and osteoporosis include:

- The BEACH survey only collects information for up to four medications for each problem managed. However, the very small proportion of cases (around 0.2% of all musculoskeletal problems) where four medications were recorded suggests that very little medication information is lost.
- BEACH is a collection focusing on the activities of GPs. Conditions such as rheumatoid arthritis may have a number of specialists and other health professionals involved in their management. Some medications may be under-represented as specialists and other health care professionals originally recommended their use.
- Some medications listed on the PBS and RPBS require a specialist prescription. A GP cannot prescribe these medications, so they would not be represented within the data set.
- A health professional needs to administer some medications (for example, gold injections) and these may be over-represented in the data as the patient must attend a GP each time a dose of the medication is required.

Pharmaceutical Benefits Scheme and Repatriation Pharmaceutical Benefits Scheme

The Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS) are national, government-funded schemes that subsidise the cost of a wide range of pharmaceutical medicines to help provide affordable access to medications for Australians. About 80% of all prescription medications available in Australian pharmacies are listed on the PBS or RPBS.

This data source contains information about prescription medications that Australian pharmacies dispensed that were subsidised under either scheme. It includes details of medication type, date of prescription and supply, pharmacy postcode, patient details (date of

birth, sex, and postcode), prescribing doctor type (GP or specialist) and type of payment (that is, general, concession or safety net). Monthly data are available from 1992 onwards, however the data are more consistently reliable from 1996 onwards.

Limitations for medications analysis

Although the PBS and RPBS data sets contain a vast amount of information about prescription medication use in Australia, there are a number of limitations when using the data to analyse the pharmacotherapy of individual conditions. These limitations are:

- Data from the PBS and RPBS refer to subsidised prescription medications only. Over-the-counter (OTC) medications and the majority of complementary medicines are not represented in these data sets.
- Some prescription medications are private prescriptions, that is, either they are not listed on the PBS and RPBS, or they are listed but are not subsidised for the condition for which they were prescribed. These prescriptions are not recorded in the data set.
- Medications on the PBS and RPBS are not recorded in the data set unless the subsidy threshold is reached. If a prescription is listed on the PBS or RPBS for subsidy but the overall cost of the medication is under the subsidy threshold (which was \$30.70 for general patients in 2007), the prescription is not recorded.
- Medications prescribed for certain conditions may be subsidised for some patient groups and not others. For example, vitamin D is subsidised for people in the RPBS patient category but not for others.
- Prescriptions are not classified to a condition or a disease. Medications like NSAIDs and analgesics have a number of uses. Other than in cases where the subsidy is restricted to prescription of the drug for a particular condition (for example, bisphosphonates for osteoporosis), the indication of why the prescription was given is not recorded on the PBS or RPBS. The condition that the medication is managing is unknown.

Statistical methods

Prevalence

Data from the NHS were used to calculate the prevalence of each condition.

Age-specific rates

Age-specific rates are calculated by dividing the number of events (such as deaths, disease cases or hospital separations) occurring in each specified age group by the estimated resident population for the corresponding age group. The rates are expressed as events per 100 (that is, a percentage or proportion), per 1,000 or per million population.

Age-standardised rates

Age standardisation is a method of removing the influence of age when comparing populations with different age structures. Age-standardised rates in this report use the direct age-standardisation method. The directly age-standardised rate is the weighted sum of age-specific (five-year age group) rates, where the weighting factor is the corresponding age-specific standard population. For this report, the Australian estimated residential population as at 30 June 2001 was used as the standard population. The same population was used for males and females to allow valid comparison of age-standardised rates both between the sexes and over time.

Direct age standardisation

Direct age standardisation is the most common method of age standardisation, and is used in this report for prevalence. This method is generally used when the population under study is large and the age-specific rates are reliable. The calculation of direct age-standardised rates comprises three steps:

- Step 1: Calculate the age-specific rate for each age group.
- Step 2: Calculate the expected number of cases in each age group by multiplying the age-specific rate by the corresponding standard population for each age group.
- Step 3: Sum the expected number of cases in each age group and divide this sum by the total of the standard population to give the age-standardised rate.

In interpreting age-standardised rates, some issues need to be taken into consideration:

- The age-standardised rate is for comparison purposes only. The magnitude of an age-standardised rate has no intrinsic value since it is only an index measure. Therefore an age-standardised rate is not a substitute for age-specific rates.
- The frequency of the underlying diseases influences the age-standardised rate, and it is also dependent on the differences between the age structure of the population of interest and the standard population selected. Therefore, the results of comparisons based on age-standardised rates may not only reflect the difference in the frequency of the diseases compared, but also will be partly dependent on the standard population used. However, since the standard population used in this report is the total Australian population in 2001, the age distribution closely reflects that of the current Australian population. The results of comparisons based on these age-standardised rates are valid.

Classification of general practice encounters

The International Classification of Primary Care (ICPC) is used as a classification for primary care or general practice wherever applicable. Development of a primary care classification was initiated in the early 1970s to overcome a number of problems faced in applying the ICD system in primary care settings (such as difficulty in classifying symptoms and undiagnosed disease).

The World Organization of Family Doctors (WONCA) published the second edition of ICPC, known as ICPC-2, in 1998. ICPC-2 classifies patient data and clinical activity in the domains of general/family practice and primary care, taking into account the frequency distribution of problems seen in these domains. It allows classification of the patient's reason for the encounter, the problems/diagnoses managed, interventions, and the ordering of these data in an episode of care structure. In Australia, an interface terminology known as

ICPC-2-PLUS is used to more specifically code, and to classify general practice data in electronic health record systems, research projects and the BEACH GP survey program. Further information about ICPC-2 and ICPC-2-PLUS can be obtained from the Family Medicine Research Centre website at <www.fmrc.org.au>.

Table B1: ICPC-2 and ICPC-2-PLUS codes used in identifying arthritis and musculoskeletal conditions in general practice data

Condition	ICPC-2/ICPC-2-PLUS codes
Diseases of the musculoskeletal system and connective tissue	All IPC-2 rubrics in Chapter L—Musculoskeletal
Rheumatoid arthritis (excluding juvenile arthritis)	ICPC-2 code L88, excluding ICPC-2-Plus code L88011
Osteoarthritis	ICPC-2-Plus codes: L83011, L84004, L84009, L84010, L84011, L84012, L89001, L90001, L91001, L91003, L91008, L91015, L92007
Osteoporosis	ICPC-2 code L95

General practice encounters

To calculate the rate at which GPs managed specific conditions, the number of contacts for each condition (osteoporosis, osteoarthritis and rheumatoid arthritis) was extracted from the 2007–08 BEACH survey using the ICPC-2 classification or ICPC-2-PLUS codes (Table B1). To calculate the contact rate for each condition, the number of encounters in which each condition was managed was divided by the total number of encounters in that year, and multiplied by 100. Multiple conditions may be managed within an encounter. If a particular condition was reported more than once within a single encounter (for example, osteoarthritis of the hip and osteoarthritis of the wrist), this was counted as one ‘contact’ for that condition.

Medication data

Detailed information on medication use for osteoarthritis, rheumatoid arthritis and osteoporosis was derived from the 2007–08 BEACH survey and the 2004–05 NHS. The annual BEACH surveys from 1998–99 to 2007–08 were used to produce trend information about medications GPs recommended for each condition.

NHS data are reported as a number (in thousands) and percentage of people with the condition using each medication, whereas BEACH data are reported as the number of prescriptions for the condition per 100 encounters where the condition was managed (calculated as described above) and described as a number ‘per 100 contacts’. Confidence intervals were derived using the AGPSCC-recommended BEACH methodology (AIHW: Britt et al. 2008).

Expenditure

The expenditure estimates in each chapter were calculated using 2007–08 BEACH survey and January to December 2007 PBS and RPBS administrative data, accessed through the Medicare Australia website. The three most common GP-recommended prescription medications for osteoarthritis, rheumatoid arthritis and osteoporosis were used to calculate estimates of expenditure for subsidised prescription medicines.

These estimates were derived using the steps below:

1. PBS item numbers were identified using the 2007 December PBS schedule.
2. Total prescription frequencies and governmental cost for each PBS item number was extracted from the Medicare website by patient category (general, general safety net, concessional, concessional safety net, RPBS and RPBS safety net)
3. For each medication, the list of conditions for which it was prescribed was extracted from 2007–08 BEACH, and the proportion of these prescriptions allocated to each condition was calculated by patient category (general, concessional and repatriate).
4. Using information from the Medicare website and the BEACH survey, the estimated cost and number of prescriptions by patient category were calculated by multiplying the total cost or frequency from the Medicare website by the proportion of prescriptions written for the condition from the BEACH survey. This was then divided by 100.
5. To calculate the estimated expenditure on the medication for the Australian Government, sum the costs across patient categories for the medication.
6. To calculate the estimated expenditure for consumers, multiply the estimated prescription frequencies by the maximum recordable value for safety net for each patient category. Then sum the patient categories for the medication.

References

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Appendix C: Statistical tables

The statistical tables in this appendix contain the data that have been used to formulate the figures within the report. Additional detailed medication use data for 'all persons' is also provided. The tables have been organised by chapter, according to the location of the figure or table in the body of the report. A reference to the respective figure or table is also given.

Chapter 1

Table C1.1: Actions taken for arthritis and osteoporosis, 2004–05

Action taken	Arthritis		Osteoporosis	
	Number ('000)	Per cent	Number ('000)	Per cent
Pharmaceutical medicine	881.9	37.4	251.4	43.2
Complementary medicine	919.5	39.0	221.5	38.1
Physical aids	54.8	2.3	10.2	*1.8
Weight loss/diet	169.3	7.2	40.5	7.0
Alternate therapy	221.7	9.4	35.1	6.0
GP/specialist visit	255.0	10.8	53.9	9.3
Physical exercise	488.4	20.7	121.6	20.9
Other health professional	103.4	4.4	21.4	3.7
Other action	42.5	1.8	10.1	*1.7
No action	695.4	29.5	156.5	26.9

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

Notes

1. See Figure 1.1.
 2. Based on self-reported doctor-diagnosed cases of arthritis and osteoporosis.
 3. Actions taken in the 2 weeks prior to the survey.
 4. More than one action may be reported.
 5. 'Alternate therapy' includes water therapy and massage.
 6. 'Other health professional' includes pharmacists, physiotherapists, chiropractors and occupational therapists.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Chapter 2

Table C2.1: Prevalence of arthritis and osteoporosis, by age and sex, 2004–05

Age group	Arthritis				Osteoporosis			
	Males		Females		Males		Females	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
35–44 years	94.5	6.4	128.4	8.6	2.9	**0.2	22.2	1.5
45–54 years	168.5	12.5	272.3	19.7	9.1	*0.7	48.3	3.5
55–64 years	272.0	25.6	357.7	33.9	22.6	2.1	116.8	11.1
65–74 years	183.2	27.8	333.6	48.0	25.1	3.8	133.8	19.3
75–84 years	126.6	33.5	234.8	45.6	17.5	4.6	134.4	26.1
85 years and over	38.7	46.9	54.9	49.7	4.1	*5.0	28.0	25.3
All ages	917.2	9.5	1,443.1	13.8	89.1	0.9	492.4	4.6

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 2.1.
 2. Based on self-reported doctor-diagnosed cases of arthritis and osteoporosis.
 3. Rates for all ages include those aged less than 35 years and have been age-standardised to the Australian population as at 30 June 2001.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C2.2: Types of medicines used for arthritis and osteoporosis, 2004–05

Type of medicine	Osteoarthritis		Rheumatoid arthritis		Osteoporosis	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
NSAIDs	283.9	21.7	86.2	22.5	20.9	3.6
Complementary	568.8	43.4	140.0	36.4	221.5	38.1
Bisphosphonates	26.7	2.0	1.1	**0.3	166.8	28.7
Analgesics	123.0	9.4	21.5	5.6	10.6	*1.8
DMARDs	0	0	26.7	6.9	0.5	**0.1
Other	21.4	1.6	27.5	7.2	16.6	2.8

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 2.2.
 2. Based on self-reported doctor-diagnosed cases.
 3. Medicines used in the 2 weeks prior to the survey.
 4. More than one medication type may be reported.
 5. NSAIDs = non-steroidal anti-inflammatory drugs.
 6. DMARD = disease-modifying anti-rheumatic drugs.
 7. Other = other medications commonly used for musculoskeletal conditions.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C2.3: Types of medication used for osteoarthritis, by area of residence, 2004–05

Type of medicine	Major cities		Inner regional		Other areas	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Bisphosphonates	21.0	2.5	4.8	*1.5	0.9	**0.6
Analgesics	72.3	8.6	37.0	11.5	13.6	*9.1
DMARDs	0	0	0	0	0	0
Complementary	368.8	44.1	140.2	43.5	59.9	39.8
NSAIDs	183.2	21.9	70.6	21.9	30.2	20.1
Other	16.7	2.0	2.5	*0.8	2.1	**1.4

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 2.3.
2. Based on self-reported doctor-diagnosed cases of osteoarthritis.
3. Medicines used in the 2 weeks prior to the survey.
4. More than one medication type may be reported.
5. NSAIDs = non-steroidal anti-inflammatory drugs.
6. DMARDs = disease-modifying anti-rheumatic drugs.
7. Other = other medications commonly used for musculoskeletal conditions.

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

Table C2.4: Types of medication used for rheumatoid arthritis, by area of residence, 2004–05

Type of medicine	Major cities		Inner regional		Other areas	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Bisphosphonates	1.1	**0.5	0	0	0	0
Analgesics	12.3	*5.4	3.7	*3.6	5.5	*10.2
DMARDs	21.4	9.4	4.4	*4.2	0.9	**1.7
Complementary	83.7	36.8	37.0	36.0	19.1	35.7
NSAIDs	50.3	22.1	21.8	21.2	14.2	26.5
Other	11.7	*5.1	12.2	*11.9	3.6	*6.7

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 2.4.
2. Based on self-reported doctor-diagnosed cases of rheumatoid arthritis.
3. Medications used in the 2 weeks prior to the survey.
4. More than one medication type may be reported.
5. NSAIDs = non-steroidal anti-inflammatory drugs.
6. DMARDs = disease-modifying anti-rheumatic drugs.
7. Other = other medications commonly used for musculoskeletal conditions.

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

Table C2.5: Types of medication used for osteoporosis, by area of residence, 2004–05

Type of medicine	Major cities		Inner regional		Other areas	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Bisphosphonates	131.2	32.0	23.8	19.8	11.9	*23.1
Analgesics	3.9	*1.0	4.8	*4.0	1.9	**3.6
DMARDs	0.5	**0.1	0	0	0	0
Complementary	161.3	39.3	41.9	34.9	18.3	35.5
NSAIDs	15.4	*3.8	3.5	*2.9	2.1	**4.0
Other	10.7	*2.6	2.0	**1.7	3.8	*7.4

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 2.5.
2. Based on self-reported doctor-diagnosed cases of osteoporosis.
3. Medications used in the 2 weeks prior to the survey.
4. More than one medication type may be reported.
5. NSAIDs = non-steroidal anti-inflammatory drugs.
6. DMARDs = disease-modifying anti-rheumatic drugs.
7. Other pharmaceuticals = other medications commonly used for musculoskeletal conditions.

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

Chapter 3

Table C3.1: Prevalence of osteoarthritis, by age and sex, 2004–05

Age group	Males		Females	
	Number ('000)	Per cent	Number ('000)	Per cent
25–34 years	7.0	*0.5	16.4	*1.2
35–44 years	41.8	2.8	52.8	3.5
45–54 years	83.2	6.2	137.2	9.9
55–64 years	144.2	13.5	221.1	20.9
65–74 years	100.8	15.3	203.1	29.2
75–84 years	77.9	20.6	157.5	30.6
85 years and over	26.3	31.8	34.2	31.0
<i>All ages</i>	<i>481.6</i>	<i>5.0</i>	<i>828.0</i>	<i>7.9</i>

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

Notes

1. See Figure 3.1.
 2. Based on self-reported doctor-diagnosed cases of osteoarthritis.
 3. Rates for all ages include people under 25 years of age, and have been age-standardised to the Australian population at 30 June 2001.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C3.2: Medication types used for osteoarthritis, by sex, 2004–05

Type of medicine	Males		Females		Persons	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
NSAIDs/COX-2	107.4	22.3	176.5	21.3	283.9	21.7
Complementary	173.4	36.0	395.4	47.8	568.8	43.4
Analgesics	41.5	8.6	81.5	9.8	123.0	9.4
Other	7.3	*1.5	14.1	*1.7	21.4	1.6

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

Notes

1. See Figure 3.2.
 2. Based on self-reported doctor-diagnosed cases of osteoarthritis.
 3. Medications taken in the 2 weeks prior to the survey.
 4. More than one medication type may be reported.
 5. NSAIDs = non-steroidal anti-inflammatory drugs.
 6. COX-2 = selective non-steroidal anti-inflammatory drugs that inhibit the COX-2 enzyme.
 7. DMARDs = disease-modifying anti-rheumatic drugs.
 8. Other = other medications commonly used for musculoskeletal conditions (excluding bisphosphonates and DMARDs).
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C3.3: Self-reported pharmaceutical use for osteoarthritis, by age, 2004–05

Medicine name	Age group							
	35–54 years		55–74 years		75 years & over		35 years & over	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Celecoxib	15.3	*4.8	61.9	9.3	27.5	9.3	104.7	8.2
Paracetamol	17.2	5.5	48.1	7.2	21.6	7.3	87.0	6.8
Meloxicam	14.9	*4.7	34.4	5.1	19.8	6.7	69.1	5.4
Diclofenac	9.3	*3.0	28.6	4.3	12.1	*4.1	49.9	3.9
Paracetamol combinations	5.9	*1.9	11.3	*1.7	3.3	**1.1	20.5	1.6

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Table 3.1.
 2. Based on self-reported doctor-diagnosed cases of osteoarthritis.
 3. More than one medication may be reported.
 4. Five most frequently reported pharmaceutical medicines presented.
 5. Paracetamol combinations may include paracetamol with codeine and paracetamol with dextropropoxyphene.
 6. A description of all medicines can be found in Appendix A.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C3.4: Pharmaceuticals recommended by GPs for osteoarthritis, by age, 2007–08

Medicine name	Age group				
	35–54 years (n=380)	55–74 years (n=1,245)	75–84 years (n=577)	85 years & over (n=227)	35 years & over (n=2,429)
Per 100 osteoarthritis contacts (95% confidence interval)					
Paracetamol	12.8 (8.9,16.8)	20.9 (18.0,23.7)	28.4 (23.4,33.4)	39.6 (32.2,47.0)	23.1 (20.8,25.4)
Meloxicam	15.6 (11.0,20.2)	13.9 (11.0,16.9)	9.7 (6.3,13.1)	9.7 (5.4,14.0)	12.8 (10.4,15.2)
Celecoxib	7.6 (4.6,10.7)	8.8 (6.5,11.0)	7.2 (4.7,9.7)	4.3 (1.2,7.3)	7.8 (6.2,9.4)
Paracetamol & codeine	7.5 (4.1,11.0)	6.7 (4.9,8.4)	5.8 (3.8,7.8)	5.7 (2.4,8.9)	6.5 (5.2,7.8)
Tramadol	3.8 (1.7,5.9)	4.3 (2.8,5.7)	4.4 (2.4,6.4)	5.5 (0.6,10.4)	4.3 (3.3,5.4)

Notes

1. See Table 3.2.
 2. Based on GP–patient encounter data.
 3. More than one medication may be recommended.
 4. The five most frequently reported pharmaceuticals are presented.
 5. Sample sizes may not add to totals due to missing values.
 6. A description of all medicines can be found in Appendix A.
- Source:* AIHW analysis of the 2007–08 BEACH survey.

Table C3.5: Self-reported complementary medicine use for osteoarthritis, by age, 2004–05

Medicine name	Age group							
	35–54 years		55–74 years		75 years & over		35 years & over	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Glucosamine	74.0	23.5	180.4	27.0	60.5	20.4	314.9	24.6
Omega 3	49.3	15.7	115.2	17.2	36.8	12.5	201.4	15.7
Calcium	36.2	11.5	66.4	9.9	41.8	14.1	144.3	11.3
Chondroitin	21.0	6.7	43.7	6.5	11.1	*3.7	75.8	5.9

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

Notes

1. See Table 3.3.
 2. Based on self-reported doctor-diagnosed cases of osteoarthritis.
 3. Medicines used in the 2 weeks prior to the survey.
 4. More than one medication may be reported.
 5. Four most frequently reported complementary medicines presented.
 6. A description of all medicines can be found in Appendix A.
- Source:* AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C3.6: Complementary medicines recommended by GPs for osteoarthritis, by age, 2007–08

Medicine name	Age group				
	35–54 years (n=380)	55–74 years (n=1,245)	75–84 years (n=577)	85 years & over (n=227)	35 years & over (n=1,463)
Per 100 osteoarthritis contacts (95% confidence interval)					
Glucosamine	6.8 (3.6,10.0)	3.1 (2.0,4.2)	3.4 (1.7,5.0)	2.5 (0.5,4.5)	3.7 (2.6,4.8)
Fish oils/omega 3	1.0 (0.0,2.0)	1.1 (0.4,1.8)	0.8 (0.0,1.6)	0	0.9 (0.4,1.4)

Notes

1. See Table 3.4.
 2. Based on GP–patient encounter data.
 3. More than one medication may be recommended.
 4. The two most frequently reported complementary medicines are presented.
 5. Sample sizes may not add to totals due to missing values.
- Source:* AIHW analysis of the 2007–08 BEACH survey.

Table C3.7: Trends in pharmaceutical medicines recommended by GPs for osteoarthritis, 1998–99 to 2007–08

Medicine name	Year of BEACH survey									
	98–99	99–00	00–01	01–02	02–03	03–04	04–05	05–06	06–07	07–08
Recommendations per 100 osteoarthritis contacts										
Paracetamol	24.8	23.8	17.6	18.4	18.4	18.3	19.9	25.2	22.7	23.1
Meloxicam	0.0	0.0	0.0	0.5	5.0	6.1	10.6	14.0	9.4	12.8
Celecoxib	0.0	4.0	31.6	19.8	16.2	14.8	14.1	8.1	8.6	7.8
Rofecoxib	0.0	0.0	2.3	15.6	16.0	15.3	3.9	0.0	0.0	0.0
Naproxen	7.6	4.8	2.9	2.5	2.1	1.7	1.6	2.8	1.8	2.4
Diclofenac sodium	11.7	11.0	8.7	5.2	5.0	5.2	6.2	6.6	5.9	4.2

Notes

1. See Figure 3.3.
 2. Based on GP–patient encounter data.
 3. A description of all medicines can be found in Appendix A.
 4. People aged 35 years or over.
- Source:* AIHW analysis of the 1998–99 to 2007–08 BEACH surveys.

Chapter 4

Table C4.1: Prevalence of rheumatoid arthritis, by age and sex, 2004–05

Age group	Males		Females	
	Number ('000)	Per cent	Number ('000)	Per cent
16–24 years	1.2	**0.1	6.6	*0.6
25–34 years	3.7	*0.3	7.4	*0.5
35–44 years	18.7	1.3	34.8	2.3
45–54 years	20.3	1.5	52.9	3.8
55–64 years	47.8	4.5	45.7	4.3
65–74 years	34.1	5.2	57.4	8.3
75–84 years	16.5	4.4	27.5	5.3
85 years and over	4.8	*5.8	3.9	*3.5
<i>16 years and over</i>	<i>147.2</i>	<i>1.9</i>	<i>236.1</i>	<i>2.9</i>

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 4.1.

2. Based on self-reported doctor-diagnosed cases of rheumatoid arthritis.

3. Rates for the 16 years and over group have been age-standardised to the Australian population at 30 June 2001.

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

Table C4.2: Types of medicines used for rheumatoid arthritis, by sex, 2004–05

Type of medicine	Males		Females		Persons	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Analgesics	6.5	*4.4	15.0	*6.3	21.5	5.6
DMARDs	7.0	*4.7	20.0	8.3	26.7	6.9
Complementary	52.5	35.7	87.3	36.9	140.0	36.4
NSAIDs/COX-2	28.9	19.6	57.4	24.2	86.2	22.5
Other pharmaceuticals	2.6	**1.8	24.8	10.5	27.5	7.2

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 4.2.

2. Based on self-reported doctor-diagnosed cases of rheumatoid arthritis.

3. Medicines used in the 2 weeks prior to the survey.

4. More than one medication type may be reported.

5. NSAIDs = non-steroidal anti-inflammatory drugs.

6. COX-2 = selective non-steroidal anti-inflammatory drugs that inhibit the COX-2 enzyme.

7. DMARDs = disease-modifying anti-rheumatic drugs.

8. Other pharmaceuticals included penicillamine, sulfasalazine and etanercept.

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

Table C4.3: Self-reported pharmaceutical use for rheumatoid arthritis, by age, 2004–05

Medicine name	Age group							
	35–54 years		55–74 years		75 years & over		35 years & over	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Celecoxib	13.2	*10.4	14.7	*7.9	1.0	**2.0	28.9	7.9
Methotrexate	8.5	*6.7	13.1	*7.1	1.0	**1.9	22.6	6.2
Diclofenac sodium	8.7	*6.9	9.3	*5.0	2.6	**4.9	20.6	5.6
Naproxen	2.8	**2.2	1.4	**0.8	0.0	**0.2	4.3	*1.2
Meloxicam	2.8	**2.2	4.3	*2.3	1.8	**3.3	8.9	*2.4

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Table 4.1.
 2. Based on self-reported doctor-diagnosed cases of rheumatoid arthritis.
 3. Medications used in the 2 weeks prior to the survey.
 4. More than one medication may be reported.
 5. Five most frequently reported pharmaceutical medicines presented.
 6. A description of all medicines can be found in Appendix A.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C4.4: Pharmaceuticals recommended by GPs for rheumatoid arthritis, by age, 2007–08

Medicine name	Age group				
	35–54 years	55–74 years	75–84 years	85 years & over	35 years & over
	(n=103)	(n=212)	(n=79)	(n=13)	(n=407)
Per 100 rheumatoid arthritis contacts (95% confidence interval)					
Methotrexate	15.6 (7.4,23.7)	21.4 (13.8,29.0)	18.9 (8.8,29.1)	9.3 (0,24.2)	19.1 (13.8,24.3)
Paracetamol	4.3 (0,8.8)	7.9 (3.4,12.4)	11.1 (2.8,19.5)	11.3 (0,26.6)	7.7 (4.7,10.8)
Hydroxychloroquine	3.5 (0,7.1)	8.0 (3.8,12.3)	7.8 (0.5,15.1)	0.0	6.6 (3.8,9.3)
Prednisolone	4.7 (0.4,8.9)	5.1 (1.3,8.9)	12.6 (3.8,21.5)	8.5 (0,22.6)	6.6 (3.6,9.5)
Meloxicam	11.8 (4.3,19.3)	5.6 (2.0,9.1)	2.5 (0,6.2)	0.0	6.4 (3.6,9.2)

Notes

1. See Table 4.2.
 2. Based on GP–patient encounter data.
 3. More than one medication may be recommended.
 4. The five most frequently reported pharmaceuticals are presented.
 5. Sample sizes may not add to totals due to missing values.
 6. A description of all medicines can be found in Appendix A.
- Source: AIHW analysis of the 2007–08 BEACH survey.

Table C4.5: Self-reported complementary medicine use for rheumatoid arthritis, by age, 2004–05

Medicine name	Age group							
	35–54 years		55–74 years		75 years & over		35 years & over	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Omega 3	21.8	17.2	28.7	15.5	8.9	*16.8	59.3	16.3
Glucosamine	16.8	13.3	25.1	13.6	11.3	*21.4	53.3	14.6
Calcium	3.9	*3.1	20.4	11.0	3.3	*6.3	27.6	7.6
Chondroitin	3.9	*3.1	5.2	*2.8	1.0	**2.0	10.1	*2.8

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Table 4.3.
 2. Based on self-reported doctor-diagnosed cases of rheumatoid arthritis.
 3. More than one medication may be reported.
 4. Four most frequently reported complementary medicines presented.
 5. A description of all medicines can be found in Appendix A.
- Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Table C4.6: Trends in pharmaceutical medicines recommended by GPs for rheumatoid arthritis, 1998–99 to 2007–08

Medicine name	Year of BEACH survey									
	98–99	99–00	00–01	01–02	02–03	03–04	04–05	05–06	06–07	07–08
	Recommendations per 100 rheumatoid arthritis contacts									
Methotrexate	19.6	19.3	17.8	19.2	20.6	18.9	16.1	24.8	23.2	19.1
Paracetamol	10.3	8.2	6.5	5.3	7.7	6.1	7.4	9.4	4.5	7.7
Sodium aurothiomalate	7.3	7.3	4.2	6.6	7.8	5.1	4.3	4.0	2.3	2.7
Hydroxychloroquine	3.0	3.5	3.4	3.1	3.2	3.0	3.3	2.0	2.6	6.6
Prednisolone	7.9	7.7	7.6	8.0	8.7	11.0	8.0	9.0	11.5	6.6
Prednisone	8.4	8.8	6.9	6.3	4.5	4.5	5.8	7.0	8.0	3.1

Notes

1. See Figure 4.3.
 2. Based on GP–patient encounter data.
 3. A description of all medicines can be found in Appendix A.
 4. People aged 35 years or over.
- Source: AIHW analysis of the 1998–99 to 2007–08 BEACH surveys.

Table C4.7: Medications recommended by GPs for 'new' cases of rheumatoid arthritis, 2007–08

Medication name	Recommendations per 100 'new' rheumatoid arthritis contacts (95% confidence interval)
Paracetamol	20.9 (7.0, 34.7)
Meloxicam	18.7 (4.9, 32.4)
Celecoxib	9.4 (0, 20.7)
Diclofenac sodium	8.3 (0, 17.1)
Methotrexate	3.9 (0, 11.4)
Prednisone	3.9 (0, 11.4)
Tramadol	2.6 (0, 7.8)

Notes

1. See Figure 4.4.
2. Based on GP–patient encounter data.
3. More than one medication may be recommended.
4. Seven most frequently recommended medications reported.
5. A description of all medications can be found in Appendix A.
6. Includes persons of all ages.

Source: AIHW analysis of the 2007–08 BEACH survey.

Chapter 5

Table C5.1: Prevalence of osteoporosis, by age and sex, 2004–05

Age group	Males		Females	
	Number ('000)	Per cent	Number ('000)	Per cent
40–49 years	5.6	*0.4	37.4	2.5
50–59 years	20.0	1.6	92.7	7.3
60–69 years	19.4	2.3	114.1	13.7
70–79 years	24.2	4.6	137.6	22.4
80 years and over	10.7	4.6	96.0	29.1
<i>All ages</i>	89.1	0.9	492.4	4.6

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

Notes

1. See Figure 5.1.
2. Based on self-reported doctor-diagnosed cases of osteoporosis.
3. Rates for all ages include people under 40 years and have been age-standardised to the Australian population at 30 June 2001.

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

Table C5.2: Types of medication used for osteoporosis, by sex, 2004–05

Type of medication	Males		Females		Persons	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Bisphosphonates	21.0	23.6	145.8	29.6	166.8	28.7
Complementary medicines	20.7	23.2	200.8	40.8	221.5	38.1
Analgesics	0	0	10.6	*2.2	10.6	*1.8
NSAIDs	4.9	*5.5	16.1	3.3	20.9	3.6
Other	1.4	**1.5	15.2	*3.1	16.6	2.8

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Figure 5.2.
2. Based on self-reported doctor-diagnosed cases of osteoporosis.
3. Medications taken in the 2 weeks prior to the survey.
4. More than one medication type may be reported.
5. NSAIDs = non-steroidal anti-inflammatory drugs.
6. Other = other medications commonly used for musculoskeletal conditions.

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

Table C5.3: Self-reported pharmaceutical use for osteoporosis, by age, 2004–05

Medicine name	Age group							
	40–59 years		60–74 years		75 years & over		40 years & over	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Alendronate	15.4	9.9	58.4	26.8	53.6	29.2	127.5	22.9
Risedronate	9.0	*5.8	11.8	*5.4	12.0	*6.5	32.8	5.9
Paracetamol	1.6	**1.0	2.3	**1.0	4.2	*2.3	8.1	*1.5
Other bisphosphonates	0	0	3.0	**1.4	1.4	**0.8	4.4	*0.8

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

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

Notes

1. See Table 5.1.
2. Based on self-reported doctor-diagnosed cases of osteoporosis.
3. Medications used in the 2 weeks prior to the survey.
4. More than one medication may be reported.
5. Four most frequently reported pharmaceutical medicines presented.
6. A description of all medicines can be found in Appendix A.

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

Table C5.4: Pharmaceuticals recommended by GPs for osteoporosis, by age, 2007–08

Medicine name	Age group			
	40–64 years (n=214)	65–84 years (n=587)	85 years & over (n=114)	40 years & over (n=915)
Per 100 osteoporosis contacts (95% confidence interval)				
Alendronate	24.3 (17.3,31.4)	23.3 (18.9,27.7)	24.8 (15.4,34.2)	23.7 (19.9,27.5)
Alendronate with cholecalciferol	6.3 (2.4,10.3)	14.5 (7.9,21.1)	12.4 (2.5,22.2)	12.3 (6.5,18.1)
Risedronate sodium with calcium carbonate	9.5 (5.1,13.8)	11.7 (8.4,14.9)	12.1 (4.7,19.5)	11.2 (8.5,13.9)
Risedronate sodium	7.3 (3.3,11.2)	5.7 (3.6,7.9)	12.8 (6.1,19.5)	7.0 (5.0,9.0)
Raloxifene	3.9 (1.3,6.5)	3.8 (2.0,5.7)	1.5 (0,3.7)	3.6 (2.2,4.9)

Notes

1. See Table 5.2.
2. Based on GP–patient encounter data.
3. More than one medication may be recommended.
4. The five most frequently reported pharmaceuticals are presented.
5. A description of all medicines can be found in Appendix A.

Source: AIHW analysis of the 2007–08 BEACH survey.

Table C5.5: Self-reported complementary medicine use for osteoporosis, by age, 2004–05

Medicine name	Age group							
	40–59 years		60–74 years		75 years & over		40 years & over	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Calcium	46.6	29.9	58.2	26.7	38.1	20.7	142.8	25.6
Glucosamine	13.0	*8.4	23.9	11.0	14.3	*7.8	51.2	9.2
Fish oils/omega 3	17.0	10.9	14.3	*6.6	15.0	8.1	46.3	8.3
Vitamin D	10.8	*6.9	10.9	*5.0	6.7	*3.7	28.5	5.1

* Subject to high standard errors and should be used with caution (i.e. relative standard error of 25–50%).

Notes

1. See Table 5.3
2. Based on self-reported doctor-diagnosed cases of osteoporosis.
3. Medications taken in the 2 weeks prior to the survey.
4. More than one medication may be reported.
5. Four most frequently reported complementary medicines presented.
6. A description of all medicines can be found in Appendix A.

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

Table C5.6: Complementary medicines recommended by GPs for osteoporosis, by age and sex, 2007–08

Medicine name	Males			
	40–64 years	65–84 years	85 years & over	40 years & over
	(n=34)	(n=124)	(n=24)	(n=182)
	Per 100 osteoporosis contacts (95% confidence interval)			
Calcium carbonate	6.1 (0,18.3)	7.4 (1.4,13.4)	0	6.2 (1.5,10.9)
Calcium carbonate with vitamin D	3.7 (0,11.4)	4.3 (0,9.0)	3.4 (0,10.7)	4.1(0.5,7.7)
Ergocalciferol	0	1 (0,2.5)	0	0.7 (0,1.7)
Vitamin D	6.1 (0,18.3)	1.2 (0,3.7)	0	2 (0, 4.7)
Calcium carbonate, vitamin D & minerals	0	1 (0,3)	0	0.7 (0,2.1)
Medicine name	Females			
	40–64 years	65–84 years	85 years & over	40 years & over
	(n=179)	(n=460)	(n=90)	(n=729)
	Per 100 osteoporosis contacts (95% confidence interval)			
Calcium carbonate	5.8 (2.6,9)	5.8 (3.2,8.3)	3.7 (0,7.6)	5.5 (3.6,7.4)
Calcium carbonate with vitamin D	2 (0.3,3.7)	3.8 (1.7,5.8)	1.4 (0,3.3)	3 (1.6,4.4)
Ergocalciferol	1.4 (0,3)	0.8 (0,1.6)	2. 3 (0,5.7)	1.1 (0.4,1.9)
Vitamin D	0.6 (0,10.8)	0.7 (0,1.6)	1.2 (0,3)	0.2 (0,1.4)
Calcium carbonate, vitamin D & minerals	2.3 (0,4.6)	0.3 (0,0.7)	0	0.7 (0.1,1.4)
Medicine name	Persons			
	40–64 years	65–84 years	85 years & over	40 years & over
	(n=214)	(n=587)	(n=114)	(n=915)
	Per 100 osteoporosis contacts (95% confidence interval)			
Calcium carbonate	5.8 (2.6,9)	6.1 (3.5,8.6)	2.9 (0,6)	5.6 (3.7, 7.6)
Calcium carbonate with vitamin D	2.2 (0.4,4.1)	3.9 (2,5.7)	1.8 (0,3.8)	3.2 (1.9,4.6)
Ergocalciferol	1.2 (0,2.5)	0.8 (0.1,1.5)	1.9 (0,4.5)	1 (0.4,1.6)
Vitamin D	1.5 (0,3.6)	0.8 (0,1.7)	1 (0,2.3)	1 (0,2)
Calcium carbonate, vitamin D & minerals	1.9 (0,3.8)	0.5 (0,0.1)	0	0.7 (0.2,1.3)

Notes

1. See Figure 5.3.
2. Based on GP–patient encounter data.
3. More than one medication may be recommended.
4. The five most frequently reported complementary medicines are presented.
5. Sample sizes may not add to totals due to missing values.
6. A description of all medicines can be found in Appendix A.

Source: AIHW analysis of the 2007–08 BEACH survey.

Table C5.7: Trends in pharmaceutical medicines recommended by GPs for osteoporosis, 1998–99 to 2007–08

Medicine name	Year of BEACH survey									
	98–99	99–00	00–01	01–02	02–03	03–04	04–05	05–06	06–07	07–08
Recommendations per 100 osteoporosis contacts										
Alendronate	13.4	12.6	17.1	29.1	34.9	35.0	33.0	39.4	40.0	23.7
Alendronate with cholecalciferol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	12.3
Risedronate sodium with calcium carbonate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	11.2
Risedronate sodium	0.0	0.0	0.0	2.0	3.7	10.8	12.0	15.4	10.6	7.0
Raloxifene	0.0	0.0	6.1	7.2	8.1	6.6	6.8	4.4	5.7	3.6
Calcium carbonate	20.1	16.1	19.2	18.2	15.3	16.8	19.0	16.3	6.4	5.6
Calcitriol	18.0	18.3	11.1	7.5	5.7	3.8	2.6	1.8	0.8	1.6

Notes

1. See Figure 5.4.
 2. Based on GP–patient encounter data.
 3. A description of all medicines can be found in Appendix A.
 4. People aged 40 years or over.
- Source:* AIHW analysis of the 1998–99 to 2007–08 BEACH surveys.

Appendix D: PBS restrictions for biological DMARDs (bDMARDs)

In order to use bDMARDs to manage rheumatoid arthritis, a patient must have a practitioner submit an application form to Medicare Australia.

This form requires supporting evidence that the use of these medications would benefit the patient, and needs to outline the expected progression of the disease. On the form practitioners must supply baseline measurements for erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP), and the number of active joints (more than 20 need to be affected). A patient may also be considered for the use of bDMARDs when at least four major joints (elbows, wrists, knees, shoulders and/or hips) have severe active rheumatoid arthritis.

The baseline evidence required for the original application is then used to assess if the bDMARD has improved the baseline levels of ESR or CRP, and has reduced the number of active joints. This assessment is normally completed after 12 weeks of therapy and must be submitted to Medicare no longer than 4 weeks after the therapy has concluded (initial therapy for abatacept, adalimumab, etanercept and anakinra is 16 weeks, and infliximab is 22 weeks).

Apart from changes in blood chemistry levels and the number of active joints, four main criteria must also be met before a patient can qualify for the use of bDMARDs. These are outlined below:

1. Only a rheumatologist or clinical immunologist can prescribe bDMARDs.
2. Patients must have trialed three DMARDs (one of which must be methotrexate) before a bDMARD can be prescribed.
3. Currently people with rheumatoid arthritis who have qualified for the use of a bDMARD must show a response to the medicine within a treatment cycle (normally 3 months). Each person is entitled to trial up to two other bDMARDs if the first bDMARD fails to show remission. If one of the bDMARDs is successful in managing their rheumatoid arthritis and shows appropriate levels of response, the person can continue to use the bDMARD until they no longer respond to the medicine. On the other hand, if the person fails to show an adequate response to three different bDMARDs within a treatment cycle (3 months), they are not allowed to be prescribed any other bDMARD for a minimum period of 5 years.
4. The medications must be monitored on a regular basis, for example at 3 or 6-month intervals (Nash & Florin 2005).

There are also a number of other restrictions placed on the individual bDMARDs. These can include the previous treatment and the severity of the disease, and will dictate which bDMARD can be used for the patient. Detailed information on these restrictions can be found in the PBS schedules, available at <www.pbs.gov.au>.

For further information on the use of bDMARDs and prescribing requirements, see the Medicare Australia website at <www.medicare.gov.au>.

Reference

Nash P & Florin T 2005. Tumour necrosis factor inhibitors. Medical Journal of Australia 183:4205-08.

Appendix E: Usual area of residence— remoteness

The Australian Standard Geographical Classification (ASGC) Remoteness Structure groups geographic locations such that the locations in each group share common characteristics of remoteness (ABS 2005). It is based on the Accessibility/Remoteness Index of Australia (ARIA), an index which classifies geographical location by the distance a city, town or community is from major service centres (DHAC & University of Adelaide 1999). This indicates whether people living within the location have reasonable access to a range of opportunities, goods and services, which can include pharmacies, GPs, hospitals and specialist services. Using this classification, three groups were defined for this report, as classified within the National Health Survey:

1. *Major cities* are areas within Australia that have excellent access to services, with minimal restrictions caused by distance. Examples of major cities include the state capitals (except Hobart), Canberra, and large satellite cities such as Newcastle and Geelong.
2. *Inner regional areas* are areas with very good access to services. People living in these areas may need to travel for more specialised care, but generally have good local access to hospitals, pharmacies and GPs. Examples of *Inner regional areas* include Tamworth, Townsville, Hobart and Darwin.
3. *Other areas* (including *Outer regional* and *Remote* locations) are locations in which people have less, or sometimes highly restricted, access to services. People living in these areas may have to travel to gain access to hospitals, pharmacies, specialist services and even GPs. Although many of these areas may have a variety of services, they are generally limited in what they can provide. Examples of these areas include places such as Goulburn, Mt Isa, Alice Springs and Broome.

Note: Although the group *Other areas* includes *Remote* locations, *Very remote* locations (such as Bourke, Halls Creek and some Indigenous communities) are not included in the National Health Survey and so are not included in the area of residence analysis in this report.

References

- ABS (Australian Bureau of Statistics) 2005. Australian standard geographical classifications (ASGC). ABS cat. no. 1216.0. Canberra: ABS.
- DHAC (Department of Health and Aged Care) & University of Adelaide 1999. Measuring remoteness: accessibility/remoteness index of Australia (ARIA). DHAC Occasional Papers no 6. Canberra: AusInfo.

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