11 Arthritis and musculoskeletal conditions

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11.1 Background

The *Burden of disease and injury in Australia 2003* study reported that musculoskeletal conditions accounted for 4% of the total burden of disease and injury in Australia in 2003. Of musculoskeletal conditions, the greatest burden was caused by osteoarthritis (33% of all musculoskeletal burden), followed by back pain (28%) and rheumatoid arthritis (16%). The majority of the musculoskeletal burden was in females (58%).[1]

According to the 2007–08 National Health Survey, 15% of Australians reported they had arthritis. Of these, 51% of people specified they had osteoarthritis and 14% specified rheumatoid arthritis. The proportion of the survey population who reported having osteoarthritis increased with age, to 48% of those aged 65 years and over. Osteoporosis was reported by 3% of those surveyed.[2]

A 2007 report by Access Economics estimated that $4.2 billion in health system expenditure was related to arthritis, including $300 million for medical services provided outside hospitals.[3]

In recognition of the burden caused by musculoskeletal conditions, in 2002 Arthritis and musculoskeletal conditions were added to the Australian National Health Priority Areas.[4] A national action plan for osteoarthritis, rheumatoid arthritis and osteoporosis was released in 2004. Its goal was 'to decrease the burden of disease and disability associated with osteoarthritis, rheumatoid arthritis and osteoporosis within Australia and improve health-related quality of life'. One area highlighted in the plan related to encouraging best practice in the management of the listed musculoskeletal conditions. Specifically, decision support mechanisms, medical workforce issues and education of health professionals about musculoskeletal conditions were strategies identified.[5]

Subsequently, a national service improvement framework for osteoarthritis, rheumatoid arthritis and osteoporosis was released in 2005 and endorsed by the Australian Health Ministers' Conference. The content of the framework reiterated the areas identified in the national action plan, and developed nine priorities for action, which again emphasised the importance of evidence-based care and workforce issues.[6]

Internationally, the decade of 2000–2010 is designated the 'Bone and Joint Decade'. This initiative aims to raise the profile of bone and joint disorders as a growing burden of disease, and to advance research and education about these conditions.[7] Australia endorsed the initiative in 2001.[8]

Other health policies introduced over the 10-year period from 1998–99 to 2007–08 influencing but not directly related to arthritis and musculoskeletal conditions were contained in the Enhanced Primary Care Program in the Medicare Benefits Schedule. This program began in 1999 for the general practice management of Australians with chronic and complex health conditions[9], with subsequent modifications to this program occurring since.

Initiatives such as multidisciplinary team care arrangements (formerly chronic disease management plans) and general practice management plans aim to improve the quality of care for these patients and allow GPs to develop and maintain a plan of care directly relating to chronic and complex conditions.[10]

Previous research undertaken by the BEACH program

The BEACH program includes a series of substudies, where the GP and/or the patient are asked about a particular topic of interest. These are referred to as Supplementary Analysis of Nominated Data (SAND) (see Chapter 2 for more detail). SAND substudies have been used to investigate a variety of topics related to musculoskeletal disease.[11]

- In a 2005 SAND substudy about arthritis, the prevalence of all diagnosed arthritis was estimated to be 26.5% of the sample, with the majority of these patients having diagnosed osteoarthritis (23.6%). Of the patients with any arthritis, 43.9% indicated that they had taken a non-steroidal anti-inflammatory drug (NSAID) for their arthritis in the previous 12 months.[11]
- Other BEACH substudies have investigated the use of NSAIDs:
  - A 2002 substudy indicated that 14.3% of general practice patients were taking an NSAID.
  - A 2004–05 substudy reported that 7.7% of patients were using non-specific NSAIDs and 6.9% were taking cox-2 inhibitors. One quarter of patients on non-specific NSAIDs and 70% of patients on cox-2 inhibitors were taking these medications for arthritis.
- A 2007 substudy that investigated the risk factors for osteoporosis indicated that half (51.9%) of those screened for osteoporosis had been diagnosed with the condition, with no difference in the likelihood of being diagnosed after screening between males and females. Over half (54.1%) the patients who had diagnosed osteoporosis or were screened for it were aged 75 years or more.[12]
- Estimates of the population prevalence of selected chronic conditions in 2005 suggest that:
  - 14.8% of the Australian population had any type of arthritis: 12.6% with osteoarthritis and 0.7% with rheumatoid arthritis
  - 7.4% of the population were under management for chronic back pain.[13]
- Of the 20.4% of the GP patient population with arthritis and/or chronic back pain, 16.6% had at least one other listed morbidity, 10.7% experienced two or more other morbidities and 5.7% had 3 or more other morbidities. The multimorbidity combination most frequently reported was arthritis/chronic back pain and vascular disease, by 10.6% of the general practice patient population in Australia.[14]

11.2 Overview of musculoskeletal problems managed

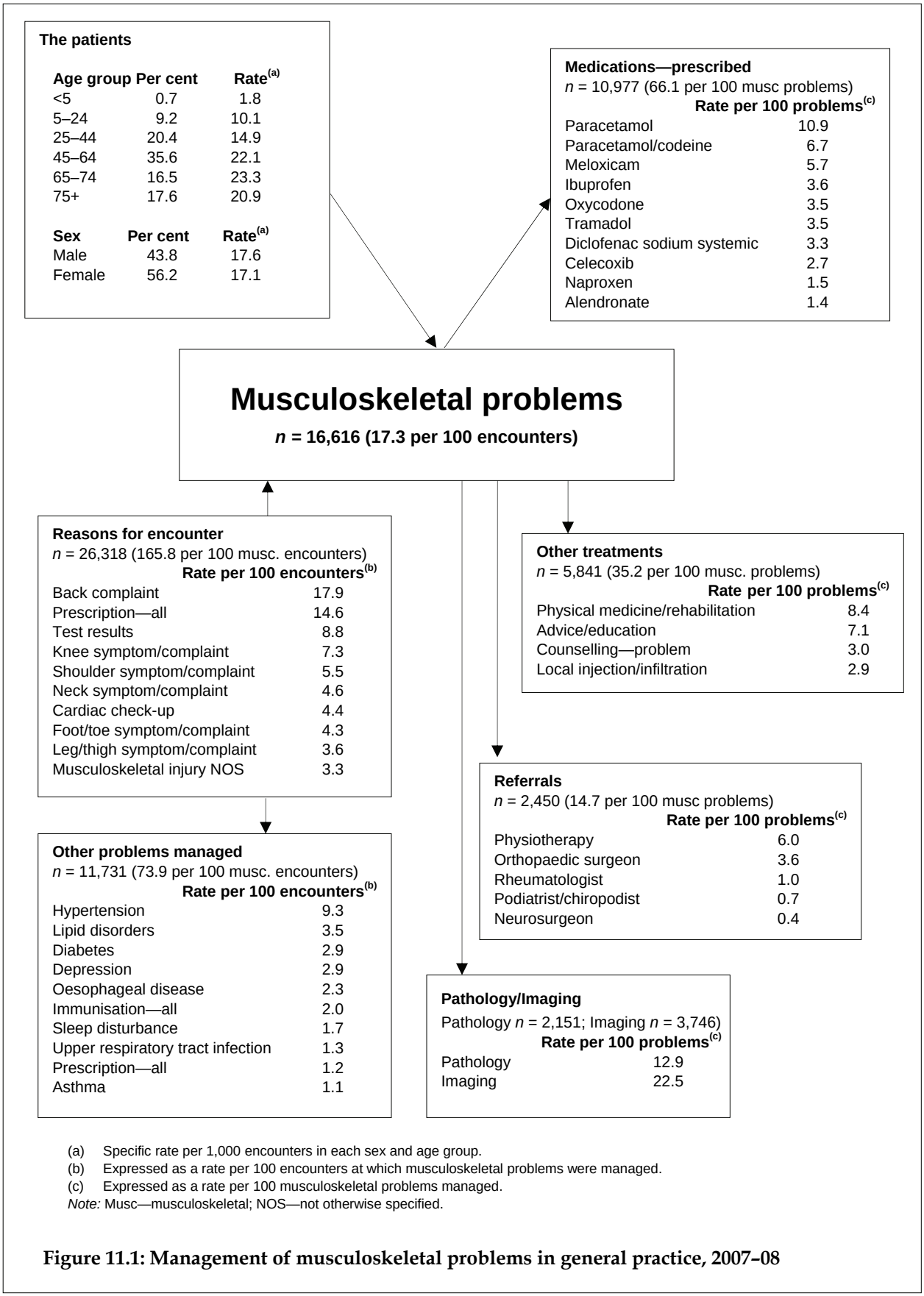
Details of the BEACH method are outlined in Chapter 2. Some problem and concept labels in this chapter include grouped ICPC-2 and ICPC-2 PLUS codes (see Chapter 2). A full list of code groups is provided in Appendix 3.

Figure 11.1 provides an overview of the management of musculoskeletal problems in Australian general practice in 2007–08. Musculoskeletal problems were managed at a rate of 17.3 problems per 100 encounters (95% CI: 16.8–17.9). The management rate of musculoskeletal problems has not changed since 1998–99 (17.0 per 100 encounters, 95% CI: 16.4–17.6). The figure shows that those aged 45–64 years accounted for one-third of all musculoskeletal problems.

- At encounters where one or more musculoskeletal problems were managed, the most common patient reasons for encounter were back complaints, followed by requests for prescriptions and for test results. Other commonly recorded reasons for encounter centred on symptoms and complaints of body parts (for example, knees, shoulder).
- Another problem was managed with a musculoskeletal problem at three out of four musculoskeletal encounters, with hypertension the comorbidity managed most often (9.3 per 100).
- Medications were given in the management of two-thirds of musculoskeletal problems. The most frequent medication listed was paracetamol (10.9 per 100 musculoskeletal problems), followed by a combination product of paracetamol and codeine (6.7 per 100).
- Other treatments were given for one-third of musculoskeletal problems, with physical medicine/rehabilitation the most frequent other treatment provided (6.1 per 100 musculoskeletal problems).
- Referrals were provided at a rate of 14.7 per 100 musculoskeletal problems managed, with referrals to physiotherapists (6.0 per 100 musculoskeletal problems) and orthopaedic surgeons (3.6 per 100) the most common (Figure 11.1).

Table 11.1 compares the management rates of musculoskeletal problems in general practice in 1998–99 and 2007–08.

- In both years back complaint was the musculoskeletal problem managed most frequently, at a rate of 2.7 per 100 encounters. This problem accounted for 16% of all musculoskeletal problems managed and 1.8% of all problems managed in each of the 2 years reported.
- There was a marginal increase in the management rate of osteoarthritis between 1998–99 and 2007–08, from 2.2 per 100 encounters to 2.6 per 100.
- There was a marginal decrease in the management rate of arthritis (not specified as either osteoarthritis or rheumatoid arthritis) from 0.8 per 100 encounters to 0.6 per 100. This suggests a drift in labelling from 'arthritis' to the more specific 'osteoarthritis', perhaps reflecting more frequent gathering of evidence for the more specific diagnosis.
- The rate at which osteoporosis was managed doubled over the 10-year period from 0.5 per 100 encounters in 1998–99 to 1.0 per 100 in 2007–08 (Table 11.1).



(a) Specific rate per 1,000 encounters in each sex and age group.
(b) Expressed as a rate per 100 encounters at which musculoskeletal problems were managed.
(c) Expressed as a rate per 100 musculoskeletal problems managed.
Note: Musc—musculoskeletal; NOS—not otherwise specified.

Figure 11.1: Management of musculoskeletal problems in general practice, 2007–08

Table 11.1: Most frequently managed musculoskeletal problems, 1998–99 and 2007–08

Problem managed	Rate per 100 encounters (95% CI)		Percentage of all problems		Percentage of musculoskeletal problems		Change[(a)]
	1998–99 (*n* = 96,901)	2007–08 (*n* = 95,898)	1998–99 (*n* = 140,824)	2007–08 (*n* = 145,078)	1998–99 (*n* = 16,466)	2007–08 (*n* = 16,616)	
Musculoskeletal problems (all)	17.0 (16.4–17.6)	17.3 (16.8–17.9)	11.7	11.5	100.0	100.0	—
Back complaint	2.7 (2.4–2.9)	2.7 (2.6–2.9)	1.8	1.8	15.6	15.8	—
Osteoarthritis	2.2 (2.0–2.4)	2.6 (2.4–2.8)	1.5	1.7	12.9	15.0	↑
Sprain/strain	1.9 (1.7–2.2)	1.6 (1.4–1.7)	1.3	1.0	11.4	9.1	↓
Fracture	1.1 (1.0–1.2)	1.0 (0.9–1.1)	0.7	0.7	6.4	5.8	—
Unspecified arthritis	0.8 (0.7–0.9)	0.6 (0.5–0.7)	0.6	0.4	4.7	3.3	↓
Musculoskeletal injury NOS	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.5	0.6	4.6	5.1	—
Bursitis/tendonitis/ synovitis NOS	0.7 (0.6–0.8)	0.8 (0.8–0.9)	0.5	0.5	4.1	4.8	—
Musculoskeletal disease, other	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.5	0.4	4.0	3.9	—
Muscle pain	0.6 (0.5–0.6)	0.4 (0.3–0.5)	0.4	0.3	3.2	2.3	—
Osteoporosis	0.5 (0.4–0.6)	1.0 (0.9–1.1)	0.3	0.6	2.9	5.6	↑
Shoulder syndrome	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.3	0.3	2.9	2.6	—
Rheumatoid arthritis	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.3	0.3	2.8	2.6	—

(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change.

Note: CI—confidence interval; NOS—not otherwise specified.

Table 11.2 provides an overview of changes in the management of musculoskeletal problems over the 10 years from 1998–99 to 2007–08. There was no overall change in the total medication rate; however, the prescription rate of medications for musculoskeletal problems decreased significantly with a concurrent significant increase in the rates of advised over-the-counter and GP-supplied medications. There were no changes in the rate at which other treatments were provided for musculoskeletal problems. The rate of referrals for musculoskeletal problems increased between 2000–01 and 2007–08, from 12.5 per 100 encounters to 14.7 per 100.

Between 2000–01 and 2007–08, there were significant increases in the rates of both pathology and imaging tests ordered in the management of musculoskeletal problems (Table 11.2).

Table 11.2: Musculoskeletal problems—summary of management changes, 1998–99 to 2007–08

	Rate per 100 problems (95% CI)			
	1998–99 (*n* = 16,466)	2000–01 (*n* = 17,408)	2007–08 (*n* = 16,616)	Change[(a)]
Medications	69.8 (67.4–72.3)	72.1 (69.6–74.6)	66.1 (63.7–68.4)	—
Prescribed	60.4 (58.0–62.9)	60.5 (58.0–62.9)	52.2 (50.0–54.4)	↓
Advised over-the-counter	6.0 (5.3–6.6)	6.4 (5.5–7.3)	8.9 (8.0–9.9)	↑
GP-supplied	3.5 (2.9–4.0)	5.2 (4.2–6.2)	4.9 (4.2–5.6)	↑
Other treatments	38.9 (36.1–41.7)	40.3 (38.0–42.7)	35.2 (32.9–37.4)	—
Clinical treatments	21.4 (19.7–23.0)	23.7 (22.0–25.3)	20.6 (19.1–22.2)	—
Procedures	17.5 (15.1–19.9)	16.7 (15.0–18.4)	14.5 (12.8–16.2)	—
Referrals	NAv	12.5 (11.7–13.2)	14.7 (13.8–15.7)	↑
Specialist	5.3 (4.8–5.8)	5.9 (5.4–6.4)	6.3 (5.8–6.8)	↑
Allied health	NAv	6.0 (5.4–6.5)	7.5 (6.8–8.3)	—
Other referrals	0.0 (0.0–0.0)	0.2 (0.1–0.2)	0.5 (0.3–0.6)	↑
Pathology orders	NAv	9.1 (8.1–10.1)	12.9 (11.6–14.3)	↑
Imaging orders	NAv	18.6 (17.6–19.7)	22.5 (21.3–23.8)	↑

(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change.

Note: CI—confidence interval; NAv—not available.

Length of consultation

Start and finish times were recorded for a subsample of encounters during each year of the BEACH study, allowing the calculation of the length of consultations with at least one musculoskeletal problem managed. Table 11.3 shows that the length of consultations with at least one musculoskeletal problem managed did not change between 2000–01 and 2007–08. However, in both years, these consultations were on average significantly longer than the average MBS/DVA-claimable consultations in BEACH which were 14.9 minutes (95% CI: 14.6–15.2) in 2000–01 and 15.1 minutes (95% CI: 14.8–15.3) in 2007–08.[15]

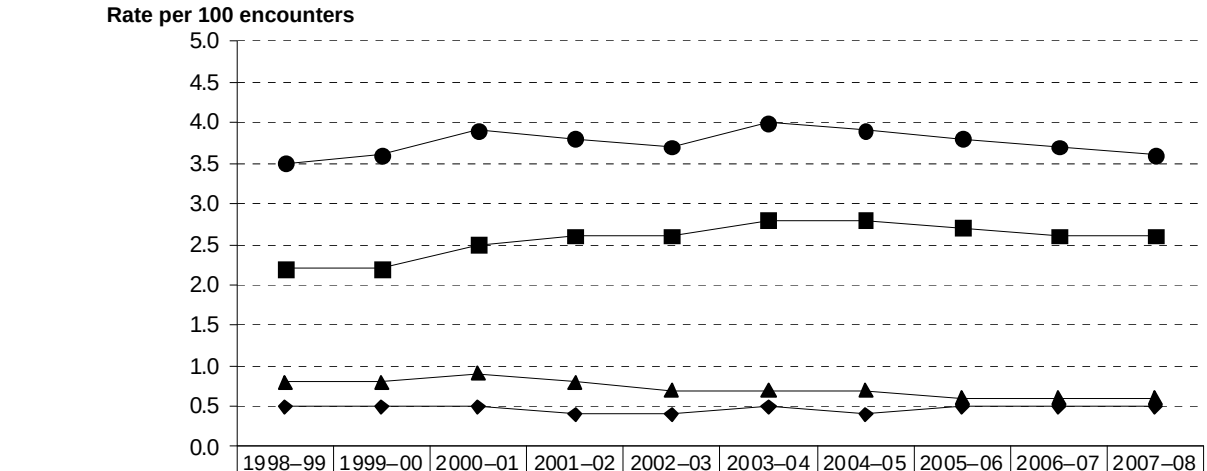
Table 11.3: Mean length of MBS/DVA claimed musculoskeletal consultations, 2000–01, 2003–04 and 2007–08

	2000–01 (*n* = 6,367) (95% CI)	2003–04 (*n* = 6,219) (95% CI)	2007–08 (*n* = 5,830) (95% CI)
Mean consultation length (minutes)	16.0 (15.6–16.3)	15.9 (15.5–16.2)	16.2 (15.8–16.6)

Note: CI—confidence interval.

11.3 Arthritis

Figure 11.2 shows the annual management rate of all types of arthritis between 1998–99 and 2007–08, and demonstrates there was no change over the 10-year period. Osteoarthritis was the most frequently managed type of arthritis, and there was a marginal increase in the management rate of this problem from 2.2 per 100 encounters in 1998–99 (95% CI: 2.0–2.4) to 2.6 per 100 in 2007–08 (95% CI: 2.4–2.8). Unspecified arthritis was managed less frequently than osteoarthritis and decreased significantly over the 10 years, from 0.8 per 100 encounters in 1998–99 (95% CI: 0.7–0.9) to 0.6 per 100 in 2007–08 (95% CI: 0.5–0.6). The management rate of rheumatoid arthritis did not change throughout the decade.



	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Arthritis (all)	3.5	3.6	3.9	3.8	3.7	4.0	3.9	3.8	3.7	3.6
Osteoarthritis	2.2	2.2	2.5	2.6	2.6	2.8	2.8	2.7	2.6	2.6
Unspec. arthritis	0.8	0.8	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.6
Rheum. arthritis	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.5	0.5	0.5

Note: Unspec—unspecified; rheum—rheumatoid.

Figure 11.2: Management rates of arthritis, 1998–99 to 2007–08

Medications for arthritis

Table 11.4 provides a summary of the medications provided for the different types of arthritis over the 10-year period from 1998–99 to 2007–08. There were no significant changes in the overall medication rates for any type of arthritis. Changes were observed however, in the method used to provide medication to patients:

- Significantly fewer prescriptions were given to patients for arthritis overall in 2007–08 than in 1998–99. This was reflected in the significant decrease in the prescription rate for both osteoarthritis (from 80.5 per 100 problems to 71.5 per 100 problems) and rheumatoid arthritis (from 116.2 per 100 to 88.2 per 100).

- In contrast, the rate of medications advised for over-the-counter purchase increased significantly for arthritis overall, from 3.8 per 100 problems in 1998–99 to 7.4 per 100 in 2007–08. This was reflected in the rise of over-the-counter medications advised for osteoarthritis, from 4.4 per 100 problems in 1998–99 to 8.6 per 100 in 2007–08.
- There was a marginal increase in the rate of GP-supplied medications for arthritis overall, from 3.0 per 100 problems in 1998–99 to 5.0 in 2007–08. However, it is notable that GP supply of medications for rheumatoid arthritis increased four-fold, from 3.0 per 100 problems in 1998–99 to 12.3 per 100 problems in 2007–08.

Table 11.4: Changes in medications provided for arthritis, 1998–99 to 2007–08

	Medication rate per 100 problems (95% CI)				
Medications	**1998–99**	**2000–01**	**2003–04**	**2007–08**	**Change[(a)]**
All medication					
Arthritis (all)	91.9 (88.7–95.2)	95.3 (92.1–98.4)	92.2 (89.1–95.3)	87.7 (83.6–91.8)	—
Osteoarthritis	88.2 (84.4–91.9)	91.9 (88.4–95.5)	90.1 (86.8–93.4)	84.3 (79.9–88.7)	—
Rheumatoid arthritis	120.6 (109.2–132.1)	115.7 (106.1–125.3)	108.1 (98.1–118.1)	102.7 (91.3–114.1)	—
Unspecified arthritis	85.2 (79.7–90.7)	94.2 (88.6–99.8)	89.2 (82.8–95.5)	91.2 (83.8–98.6)	—
Prescribed					
Arthritis (all)	85.2 (81.8–88.5)	85.0 (81.6–88.3)	81.8 (78.4–85.2)	75.3 (71.4–79.2)	↓
Osteoarthritis	80.5 (76.6–84.4)	80.7 (76.9–84.4)	79.8 (76.2–83.5)	71.5 (67.3–75.7)	↓
Rheumatoid arthritis	116.2 (104.9–127.5)	106.9 (96.6–117.2)	99.5 (89.3–109.7)	88.2 (77.2–99.3)	↓
Unspecified arthritis	79.5 (73.7–85.2)	85.6 (79.7–91.5)	77.0 (70.6–83.3)	82.2 (75.3–89.0)	—
Advised over-the-counter					
Arthritis (all)	3.8 (2.9–4.6)	3.6 (2.5–4.8)	5.3 (4.2–6.4)	7.4 (6.0–8.7)	↑
Osteoarthritis	4.4 (3.2–5.6)	4.3 (2.7–5.9)	6.2 (4.7–7.7)	8.6 (6.8–10.3)	↑
Rheumatoid arthritis	1.4 (0.1–2.7)	1.2 (0.2–2.3)	2.2 (0.2–4.2)	2.2 (0.4–4.0)	—
Unspecified arthritis	3.5 (2.0–5.0)	3.0 (1.7–4.4)	4.0 (2.1–5.8)	6.2 (3.3–9.0)	—
GP-supplied					
Arthritis (all)	3.0 (2.1–4.0)	6.7 (5.0–8.4)	5.1 (4.0–6.3)	5.0 (4.0–6.1)	↑
Osteoarthritis	3.3 (2.1–4.5)	7.0 (5.0–9.0)	4.1 (2.9–5.2)	4.2 (3.1–5.4)	—
Rheumatoid arthritis	3.0 (1.3–4.8)	7.5 (4.3–10.8)	6.4 (3.8–9.0)	12.3 (8.3–16.3)	↑
Unspecified arthritis	2.2 (0.6–3.9)	5.5 (3.7–7.4)	8.2 (5.3–11.1)	2.8 (1.4–4.3)	—

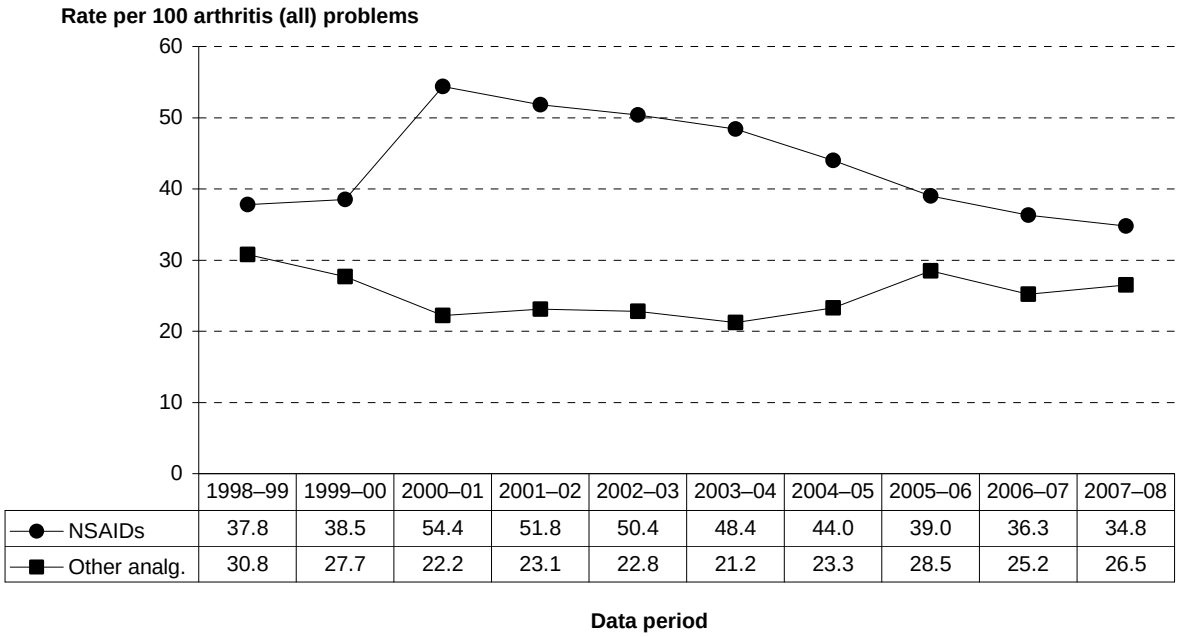
(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change.

Note: CI—confidence interval.

Figure 11.3 shows all medications given (prescribed/advised/supplied) for any arthritis, comparing total NSAIDs with the Anatomical Therapeutic Chemical group 'Other analgesics/antipyretics', which contains both aspirin and paracetamol. The graph shows that NSAIDs given for arthritis peaked in 2000–01 at a rate of 54.4 per 100 arthritis problems (95% CI: 52.0–56.8), stayed relatively steady until 2003–04 when it steadily declined to a rate of 34.8 per 100 arthritis problems (95% CI: 32.1–37.6) in 2007–08.

The rate of analgesic/antipyretic medications prescribed/advised/supplied was 30.8 per 100 arthritis problems in 1998–99 (95% CI: 28.5–33.1). The rate dropped in 2000–01 to 22.2 per

100 (95% CI: 20.2–24.2), rose significantly to 28.5 per 100 in 2005–06 (95% CI: 24.4–30.6), and in 2007–08, was 26.5 per 100 arthritis encounters (95% CI: 26.5–28.6). This would be an underestimate of use of analgesics/antipyretics for arthritis, as many would purchase these over-the-counter after initial advice from their GP.



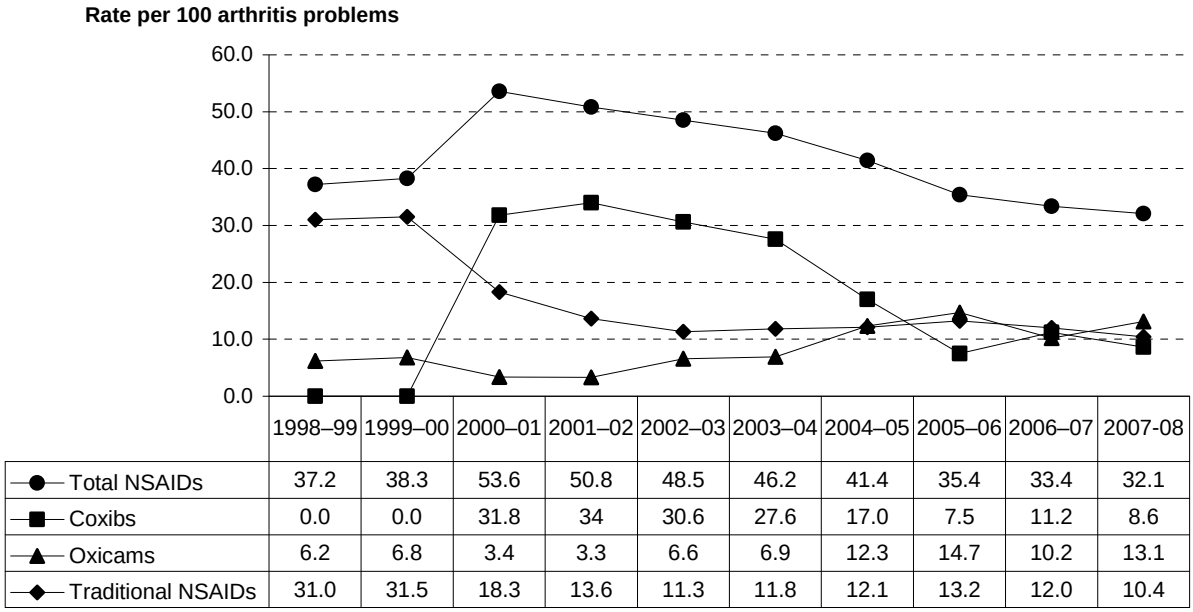
	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSAIDs	37.8	38.5	54.4	51.8	50.4	48.4	44.0	39.0	36.3	34.8
Other analg.	30.8	27.7	22.2	23.1	22.8	21.2	23.3	28.5	25.2	26.5

Note: NSAID—non-steroidal anti-inflammatory drug; analg—analgesics/antipyretics.

Figure 11.3: NSAID and analgesic medications for all arthritis, 1998–99 to 2007–08

Figure 11.4 shows the pattern of GP prescribing of the different types of NSAIDs over the decade.

- The majority of the changes can be accounted for by the introduction of coxibs in 1999, their sudden uptake in 2000–01 when approved under the Pharmaceutical Benefits Scheme (31.8 per 100 arthritis problems, 95% CI: 29.4–34.2), and the withdrawal of rofecoxib from the Australian market in September 2004.[16] This created concern about coxibs in general and the rate of coxib prescriptions dropped to 7.5 per 100 arthritis problems (95% CI: 6.4–8.5) in 2005–06. It has remained steady since this time (8.6 per 100 arthritis problems in 2007–08, 95% CI: 7.3–9.9).
- The rate of oxicams prescribed in general practice decreased between 1998–99 and 2000–01, from 6.2 per 100 arthritis problems (95% CI: 5.2–7.3) to 3.4 per 100 (95% CI: 2.7–4.2), coinciding with the rapid uptake of coxibs. However, their prescription rate doubled between 2003–04 (6.9 per 100 arthritis problems, 95% CI: 5.8–7.9) and 2005–06 (14.7 per 100, 95% CI: 13.0–16.4), coinciding with the move away from coxibs. The prescribing rate of oxicams remained steady from then on.
- The prescription of traditional NSAIDs nearly halved between 1999–00 and 2000–01, from 31.5 per 100 arthritis problems (95% CI: 29.2–33.8) to 18.3 per 100 (95% CI: 16.6–20.1). This rate continued to decline steadily over time, to a rate of 10.4 per 100 arthritis problems in 2007–08 (95% CI: 9.0–11.7) (Figure 11.4).



	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007-08
Total NSAIDs	37.2	38.3	53.6	50.8	48.5	46.2	41.4	35.4	33.4	32.1
Coxibs	0.0	0.0	31.8	34	30.6	27.6	17.0	7.5	11.2	8.6
Oxicams	6.2	6.8	3.4	3.3	6.6	6.9	12.3	14.7	10.2	13.1
Traditional NSAIDs	31.0	31.5	18.3	13.6	11.3	11.8	12.1	13.2	12.0	10.4

Data period

Note: NSAIDs—non-steroidal anti-inflammatory drugs.

Figure 11.4: NSAID prescribing rate per 100 arthritis problems, 1998–99 to 2007–08

Other management of arthritis

There were few changes in the rates of other treatments provided in the management of arthritis between 1998–99 and 2007–08. However, there was a significant increase in the rate of other treatments provided for rheumatoid arthritis, from 18.4 per 100 problems to 31.6 per 100, due to a rise in the number of procedures performed for rheumatoid arthritis, from 6.6 per 100 problems in 1998–99 to 17.5 per 100 in 2007–08 (Table 11.5). This may in part be due to a change in the BEACH methods used to code injections over the 10 years of the study.

Table 11.5: Changes in other treatments provided for arthritis, 1998–99 to 2007–08

Treatment type	Rate per 100 problems (95% CI)				Change[(a)]
	1998–99	2000–01	2003–04	2007–08	
All other treatments					
Arthritis (all)	22.2 (19.6–24.7)	23.4 (21.1–25.7)	23.9 (21.5–26.3)	23.1 (20.6–25.5)	—
Osteoarthritis	24.5 (21.1–27.9)	25.0 (22.2–27.7)	23.4 (20.5–26.4)	22.8 (20.1–25.6)	—
Rheumatoid arthritis	18.4 (14.1–22.7)	19.1 (14.3–23.9)	27.2 (22.3–32.0)	31.6 (25.5–37.8)	↑
Unspecified arthritis	18.0 (14.2–21.7)	21.3 (17.2–25.4)	23.5 (19.2–27.8)	17.1 (13.1–21.2)	—
Clinical treatments					
Arthritis (all)	14.3 (12.3–16.2)	15.5 (13.7–17.3)	15.0 (13.1–16.9)	15.1 (13.1–17.1)	—
Osteoarthritis	15.4 (12.9–18.0)	16.0 (13.8–18.2)	14.8 (12.6–17.0)	15.9 (13.6–18.2)	—
Rheumatoid arthritis	11.8 (8.5–15.1)	13.2 (9.4–17.0)	14.0 (10.3–17.8)	14.1 (9.7–18.5)	—
Unspecified arthritis	12.5 (9.2–15.7)	15.0 (11.7–18.4)	16.4 (12.7–20.1)	12.6 (9.2–15.9)	—
Procedures					
Arthritis (all)	7.9 (6.2–9.6)	7.9 (6.5–9.3)	8.9 (7.5–10.4)	7.9 (6.7–9.2)	—
Osteoarthritis	9.1 (6.8–11.3)	8.9 (7.2–10.6)	8.6 (6.8–10.4)	7.0 (5.6–8.3)	—
Rheumatoid arthritis	6.6 (3.3–9.9)	5.9 (2.5–9.2)	13.1 (9.6–16.6)	17.5 (12.7–22.3)	↑
Unspecified arthritis	5.5 (3.6–7.5)	6.3 (4.0–8.6)	7.2 (4.9–9.4)	4.6 (2.5–6.6)	—

(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, and — indicates there was no change.

Note: CI—confidence interval.

Table 11.6 shows that referrals for all arthritis increased significantly between 2000–01 and 2007–08 from 7.2 per 100 problems to 11.3 per 100. However, this was largely due to a doubling of referrals for rheumatoid arthritis from 8.0 per 100 problems in 2000–01 to 15.5 per 100 in 2007–08, particularly to specialists for rheumatoid arthritis, from 4.8 per 100 problems in 1998–99 to 11.8 per 100 in 2007–08.

No changes were demonstrated in the referral rates to any other group of health providers for any type of arthritis. Significantly, more imaging tests were ordered for unspecified arthritis in 2007–08 than in 1998–99 (Table 11.7). There were no other significant changes in pathology and imaging test order rates for arthritis problems over the 10-year period.

Table 11.6: Changes in referrals provided for arthritis problems, 1998–99 to 2007–08

	Rate per 100 problems (95% CI)				
	1998–99	2000–01	2003–04	2007–08	Change[(a)]
Referrals (all)					
Arthritis (all)	NAv	7.2 (6.2–8.2)	9.1 (8.0–10.2)	11.3 (9.9–12.8)	↑
Osteoarthritis	NAv	7.6 (6.3–8.9)	8.6 (7.2–9.9)	11.2 (9.6–12.8)	—
Rheumatoid arthritis	NAv	8.0 (5.0–11.0)	13.1 (8.8–17.5)	15.5 (11.2–19.9)	↑
Unspecified arthritis	NAv	5.6 (3.9–7.4)	8.2 (6.0–10.5)	8.8 (5.7–11.9)	—
Specialist					
Arthritis (all)	4.9 (4.1–5.7)	4.8 (4.0–5.6)	5.4 (4.6–6.2)	6.7 (5.6–7.8)	—
Osteoarthritis	5.1 (4.0–6.2)	5.0 (4.0–6.1)	4.5 (3.6–5.5)	6.2 (5.0–7.5)	—
Rheumatoid arthritis	4.8 (2.8–6.8)	6.5 (3.7–9.2)	9.2 (6.3–12.2)	11.8 (8.2–15.4)	↑
Unspecified arthritis	4.4 (2.9–5.9)	3.4 (1.9–4.8)	6.1 (4.1–8.2)	4.7 (2.5–7.0)	—
Allied health services					
Arthritis (all)	NAv	**2.1 (1.6–2.6)**	**3.3 (2.6–4.0)**	**4.1 (3.2–4.9)**	—
Osteoarthritis	NAv	2.4 (1.7–3.0)	3.7 (2.8–4.6)	4.4 (3.4–5.4)	—
Rheumatoid arthritis	NAv	1.2 (0.0–2.4)	3.3 (0.9–5.8)	3.5 (1.3–5.7)	—
Unspecified arthritis	NAv	1.8 (0.9–2.7)	1.6 (0.7–2.5)	3.0 (1.5–4.6)	—

(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change and — indicates there was no change.

Note: CI—confidence interval; NAv—not available.

Table 11.7: Changes in pathology and imaging orders made in the management of arthritis, 1998–99 to 2007–08

	Rate per 100 problems (95% CI)				
Test type	1998–99	2000–01	2003–04	2007–08	Change[(a)]
Pathology orders					
Arthritis (all)	NAv	15.6 (12.8–18.4)	18.8 (16.0–21.7)	15.8 (13.1–18.4)	—
Osteoarthritis	NAv	4.6 (3.0–6.2)	6.1 (4.1–8.1)	4.8 (3.2–6.5)	—
Rheumatoid arthritis	NAv	59.6 (45.5–73.6)	71.9 (58.2–85.7)	61.7 (48.5–74.9)	—
Unspecified arthritis	NAv	23.6 (16.2–30.1)	30.3 (21.5–39.1)	29.0 (19.4–38.6)	—
Imaging orders					
Arthritis (all)	NAv	12.3 (10.8–13.8)	12.4 (10.9–13.9)	15.5 (13.7–17.2)	—
Osteoarthritis	NAv	14.7 (12.7–16.8)	13.6 (11.9–15.4)	16.6 (14.5–18.7)	—
Rheumatoid arthritis	NAv	3.8 (1.3–6.4)	4.5 (2.4–6.6)	6.8 (3.5–10.0)	—
Unspecified arthritis	NAv	9.9 (7.2–12.5)	13.1 (9.2–17.0)	17.2 (13.4–21.3)	↑

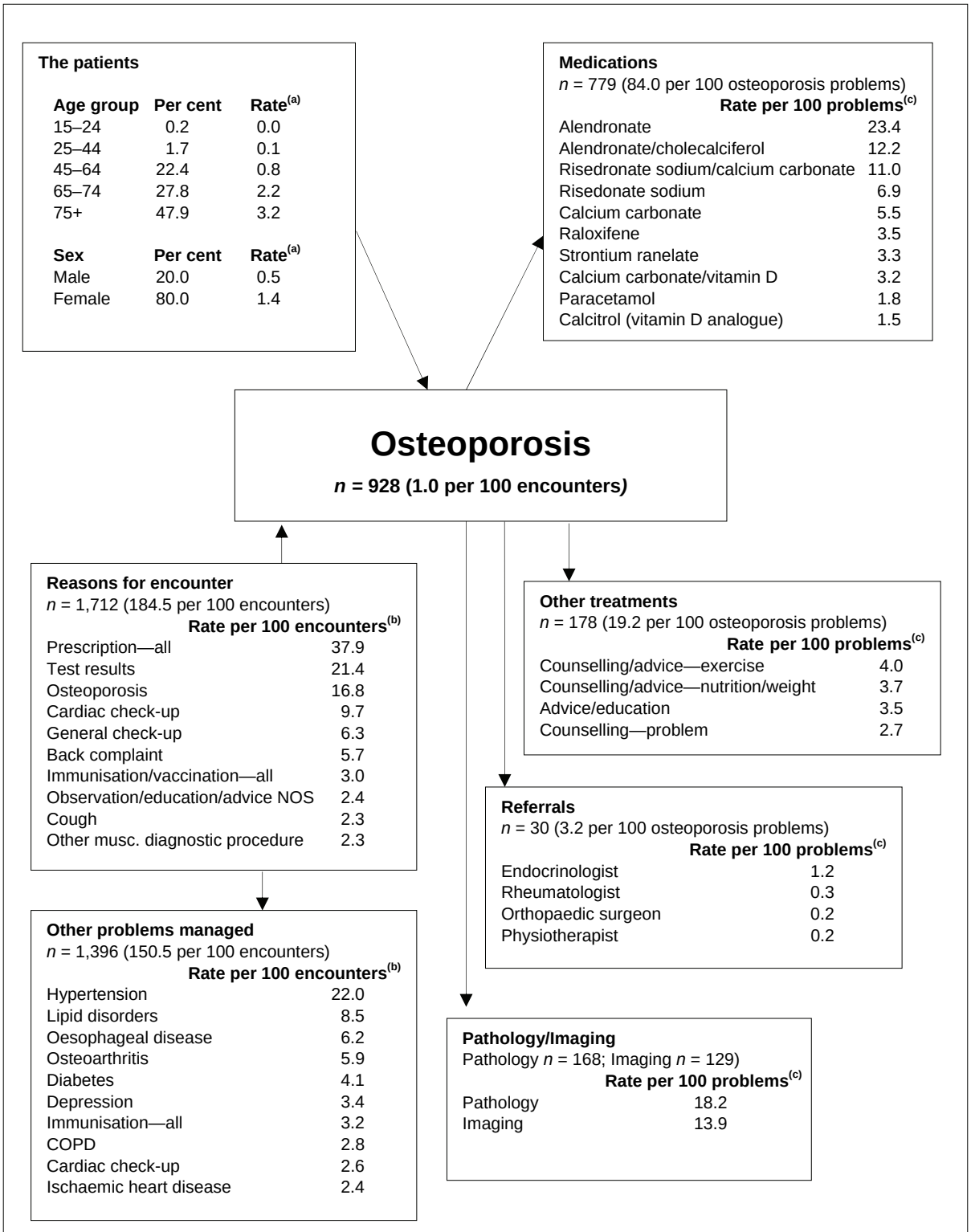
(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, and — indicates there was no change.

Note: CI—confidence interval; NAv—not available.

11.4 Osteoporosis

Figure 11.5 provides an overview of the management of osteoporosis in Australian general practice in 2007–08. Osteoporosis was managed at a rate of 1.0 per 100 encounters, and the rate increased with the age of the patient, with 47.9% of patients being aged 75 years or over.

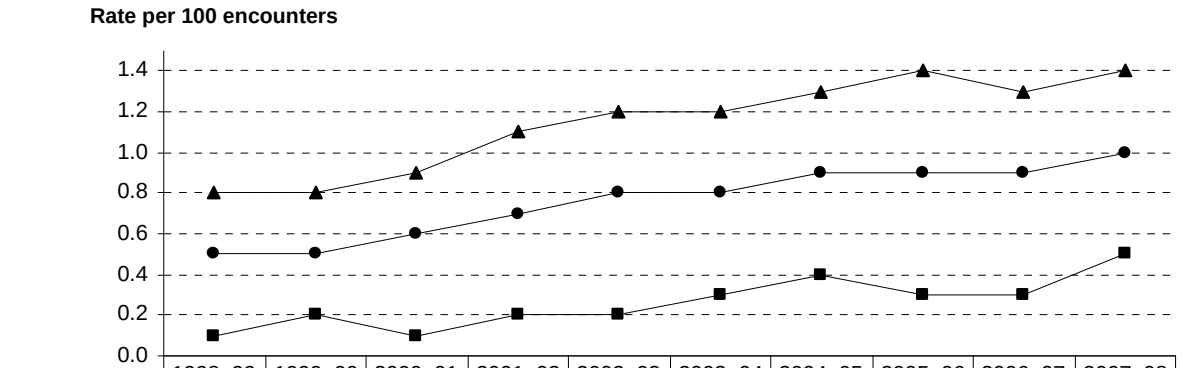
- Hypertension was the problem most frequently managed with osteoporosis, at a rate of 22.0 per 100 osteoporosis problems.
- Requests for prescriptions were the most commonly reported reasons for encounters (37.9 per 100 encounters).
- Medications were prescribed/advised/supplied in the management of more than four out of five osteoporosis problems. The most frequently prescribed was alendronate (23.4 per 100 osteoporosis problems), followed by a combination product of alendronate and cholecalciferol (12.2 per 100).
- Other treatments were given for one-fifth of osteoporosis problems, with counselling/advice about exercise the most frequently provided (4.0 per 100 osteoporosis problems).
- Referrals were provided at a rate of 3.2 per 100 osteoporosis problems, with endocrinologists the most common health provider referred to (1.2 per 100 osteoporosis problems) (Figure 11.5).



(a) Specific rate per 1,000 encounters in each sex and age group.
(b) Expressed as a rate per 100 encounters at which osteoporosis was managed.
(c) Expressed as a rate per 100 osteoporosis problems managed.
Note: Musc—musculoskeletal; NOS—not otherwise specified; COPD—chronic obstructive pulmonary disease.

Figure 11.5: Management of osteoporosis in general practice, 2007–08

The management rate of osteoporosis doubled between 1998–99 and 2007–08, from 0.5 per 100 encounters (95% CI: 0.4–0.6) to 1.0 per 100 encounters (95% CI: 0.9–1.1). This increase was apparent for both males and females. For females, the management rate almost doubled from 0.8 per 100 encounters in 1998–99 (95% CI: 0.7–0.9) to 1.4 per 100 encounters in 2007–08 (95% CI: 1.2–1.5). For males, it increased five-fold from 0.1 per 100 encounters in 1998–99 (95% CI: 0.1–0.2) to 0.5 per 100 in 2007–08 (95% CI: 0.4–0.6).



	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
All	0.5	0.5	0.6	0.7	0.8	0.8	0.9	0.9	0.9	1.0
Males	0.1	0.2	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.5
Females	0.8	0.8	0.9	1.1	1.2	1.2	1.3	1.4	1.3	1.4

Figure 11.6: Management rate of osteoporosis, 1998–99 to 2007–08

Investigation of the management of osteoporosis between 1998–99 and 2007–08 showed few changes. There was no change in the overall medication rate, but the rate of prescribed medications for osteoporosis decreased significantly from 91.9 per 100 problems to 72.9 per 100 problems. Partly counteracting this was a large and significant increase in the rate of medications advised for over-the-counter purchase from 1.0 per 100 problems to 9.6 per 100 (Table 11.8). This is largely due to a trend towards the purchase of vitamin D and calcium over-the-counter rather than through prescription, and the increased availability of combination products including vitamin D and calcium.

Table 11.9 shows that in the management of osteoporosis, orders for calcium phosphate tests more than doubled between 2000–01 and 2007–08 from 3.1 per 100 problems to 8.3 per 100 problems. The ordering of densitometry tests (bone mineral density tests) did not change significantly, although the sample size may have been too small to identify changes.

Table 11.8: Osteoporosis—summary of management changes, 1998–99 to 2007–08

	Rate per 100 problems (95% CI)			
	1998–99 (*n* = 481)	2000–01 (*n* = 560)	2007–08 (*n* = 928)	Change[(a)]
Medications	96.1 (88.9–103.4)	91.6 (83.6–99.5)	84.0 (78.6–89.4)	—
Prescribed	91.9 (85.0–98.9)	84.8 (77.3–92.3)	72.9 (67.8–78.0)	↓
Advised OTC	1.0 (0.2–1.8)	1.7 (0.5–2.9)	9.6 (6.7–12.6)	↑
GP-supplied	3.2 (1.3–5.1)	5.1 (1.0–9.2)	1.4 (0.6–2.3)	—
Other treatments	18.0 (13.3–22.7)	22.2 (17.5–27.0)	19.2 (15.4–22.9)	—
Clinical treatments	16.5 (12.1–21.0)	20.0 (15.3–24.6)	18.2 (14.5–21.8)	—
Procedures	1.5 (0.2–2.7)	2.3 (0.9–3.6)	1.0 (0.3–1.7)	—
Referrals	NAv	2.9 (1.5–4.4)	3.2 (2.0–4.4)	—
Specialist	4.0 (2.3–5.6)	2.3 (1.0–3.6)	2.2 (1.2–3.2)	—
Allied health	NAv	0.6 (0.1–1.2)	0.7 (0.2–1.2)	—
Other referrals	0.1 (0.0–0.3)	NAv	0.3 (0.0–0.8)	—
Pathology orders	NAv	11.7 (6.2–17.2)	18.2 (12.9–23.4)	—
Imaging orders	NAv	13.0 (9.4–16.6)	13.9 (10.7–17.2)	—

(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, and — indicates there was no change.

Note: CI—confidence interval; OTC—over-the-counter; NAv—not available.

Table 11.9: Changes in pathology and imaging tests ordered for osteoporosis, 1998–99 and 2007–08

	Rate per 100 problems (95% CI)		
	2000–01 (*n* = 481)	2007–08 (*n* = 928)	Change[(a)]
Calcium phosphate test	3.1 (1.5–4.6)	8.3 (5.5–11.2)	↑
Densitometry test	7.1 (4.8–9.4)	11.5 (8.6–14.5)	—

(a) The direction and type of change is indicated for each variable: ↑ indicates a statistically significant increase, and — indicates there was no change.

Note: CI—confidence interval.

11.5 Back complaints

Figure 11.7 provides an overview of the management of back complaints in Australian general practice in 2007–08. Back complaints were managed at a rate of 2.7 problems per 100 encounters, remaining steady since 1998–99 (Table 11.1). Figure 11.7 shows that almost half the encounters (42.6%) involving management of back complaints were with patients aged 45–64 years, who were managed at a rate of 4.2 back complaint problems per 100 encounters.

- Two-thirds of these patients (66.9 per 100 encounters) specifically presented to the GP about their back problem. Requests for prescriptions were also often stated as reasons for encounters (16.7 per 100 encounters).
- The problem most frequently managed concurrently with back complaints was hypertension at a rate of 6.9 per 100 encounters.
- Medications were prescribed/advised/supplied at a rate of 81.4 per 100 back complaint problems. The most frequently prescribed was the combination of paracetamol/codeine (13.1 per 100 back complaint problems), followed by paracetamol (9.8 per 100).
- Other treatments were given at a rate of 33.2 per 100 back complaint problems, with physical medicine/rehabilitation used most often (7.3 per 100 back complaint problems).
- Referrals were provided at a rate of 16.1 per 100 back complaint problems, with physiotherapists (8.6 per 100 back complaint problems) and neurosurgeons (2.0 per 100) the most common recipients (Figure 11.7).

There were few changes in the form of management of back complaints over the decade. Table 11.10 indicates that there were no changes in the rates of medications, referrals or orders for pathology or imaging tests. However, the rate at which other treatments were provided, particularly procedural treatments, marginally decreased over this period.

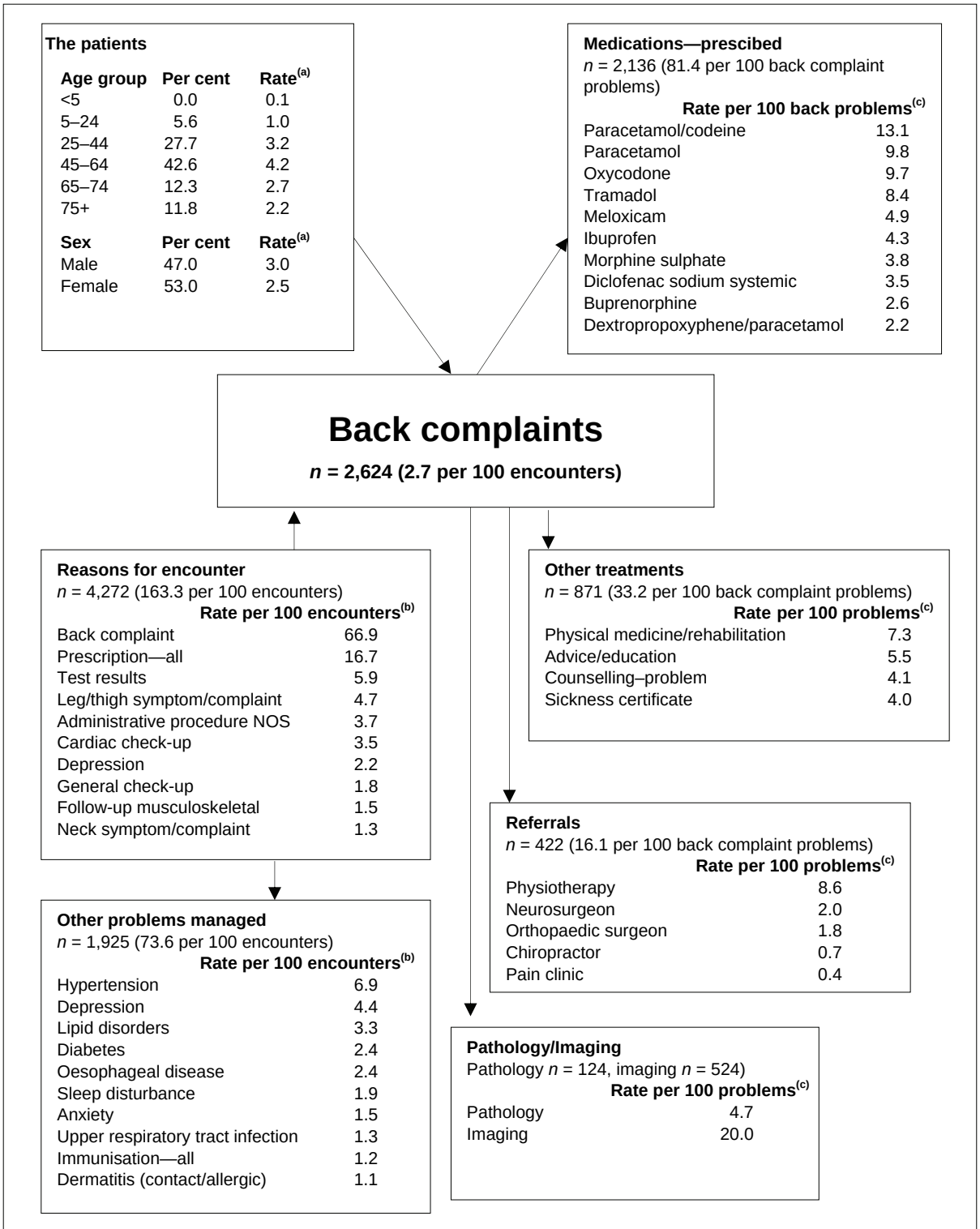
Back pain is currently not specified as a condition included in the National Health Priority Area (NHPA) for arthritis and musculoskeletal conditions. Recent debate has led some people to suggest it may warrant becoming a NHPA in its own right in the same manner as obesity, or be specified as an inclusion in the NHPA for musculoskeletal conditions.[17]

Table 11.10: Back complaints—summary of management changes, 1998–99 to 2007–08

	Rate per 100 problems (95% CI)			
	1998–99 (*n* = 2,573)	2000–01 (*n* = 2,568)	2007–08 (*n* = 2,624)	Change[(a)]
Medications	84.3 (78.6–90.1)	84.9 (79.9–89.8)	81.4 (77.2–85.6)	—
Prescribed	74.9 (69.2–80.5)	75.1 (70.4–79.9)	70.3 (66.1–74.4)	—
Advised OTC	5.2 (4.0–6.3)	4.2 (3.0–5.4)	7.7 (6.1–9.3)	—
GP-supplied	4.3 (3.0–5.7)	5.6 (4.1–7.0)	3.5 (2.4–4.6)	—
Other treatments	40.5 (33.8–47.2)	44.1 (39.9–48.2)	33.2 (29.9–36.5)	§
Clinical treatments	22.5 (19.2–25.9)	27.1 (23.9–30.2)	21.7 (19.0–24.4)	—
Procedures	17.9 (12.6–23.3)	17.0 (13.8–20.2)	11.5 (9.4–13.6)	§
Referrals	NAv	13.9 (12.1–15.7)	16.1 (13.8–18.3)	—
Specialist	3.4 (2.6–4.2)	5.7 (4.5–6.9)	5.3 (4.1–6.4)	—
Allied health	NAv	7.8 (6.4–9.2)	10.4 (8.8–12.1)	—
Other referrals	NAv	0.2 (0.1–0.4)	0.2 (0.0–0.4)	—
Pathology orders	NAv	3.5 (1.9–5.1)	4.7 (3.1–6.4)	—
Imaging orders	NAv	15.7 (13.5–17.8)	20.0 (17.6–22.4)	—

(a) The direction and type of change is indicated for each variable: § indicates a non-linear significant or marginal change, and — indicates there was no change.

Note: CI—confidence interval; OTC—over-the-counter; NAv—not available.



(a) Specific rate per 1,000 encounters in each sex and age group.
(b) Expressed as a rate per 100 encounters at which back complaints were managed.
(c) Expressed as a rate per 100 back complaint problems managed.

Note: NOS—not otherwise specified.

Figure 11.7: Management of back complaints in general practice, 2007–08

11.6 Work-related musculoskeletal problems

In the BEACH study, GPs are asked to indicate whether they consider the problem under management to be related to workplace activity, workplace exposure, or a pre-existing condition that has been exacerbated by work-related activity or exposure. In 2007–08, there were 2,719 work-related problems managed, of which 59.3% were musculoskeletal. Back complaints accounted for 14.6% of work-related problems and 11.3% were sprains and strains. Fractures accounted for 3.3%, and unspecified musculoskeletal injuries a further 9.0%. It is notable that there were no changes in the proportion of work-related problems specified as musculoskeletal between 1998–99 and 2007–08 (Table 11.11).

Table 11.11: Changes in the proportion of work-related problems managed, that were musculoskeletal, 1998–99 and 2007–08

	Percentage of work-related problems specified as musculoskeletal (95% CI)		Percentage of musculoskeletal problems specified as work-related (95% CI)		
Problem managed	**1998–99 (*n* = 3,860)**	**2007–08 (*n* = 2,719)**	**1998–99 (*n* = 16,466)**	**2007–08 (*n* = 16,616)**	**Change[a]**
Musculoskeletal problems (all)	**56.3 (53.9–58.8)**	**59.3 (56.5–62.0)**	**13.2 (12.2–14.2)**	**9.7 (8.9–10.5)**	↓
Back complaint	13.9 (12.4–15.4)	14.6 (12.9–16.3)	20.9 (18.5–23.2)	15.1 (13.3–16.9)	↓
Sprain/strain	11.0 (9.5–12.5)	11.3 (9.6–13.0)	22.6 (19.3–25.9)	20.4 (17.2–23.5)	—
Musculoskeletal injury NOS	7.0 (5.5–8.4)	9.0 (7.2–10.9)	35.8 (30.7–40.9)	29.2 (24.2–34.2)	—
Fracture	3.3 (2.5–4.2)	3.3 (2.4–4.1)	12.3 (9.4–15.3)	9.3 (7.0–11.6)	—
Shoulder syndrome	2.4 (1.8–3.0)	2.9 (2.2–3.7)	19.4 (15.1–23.8)	18.4 (14.2–22.6)	—
Bursitis/tendonitis/synovitis NOS	2.3 (1.8–2.9)	2.4 (1.6–3.3)	13.4 (10.2–16.6)	8.4 (5.7–11.1)	—
Osteoarthritis	1.5 (1.1–2.0)	1.1 (0.6–1.6)	2.7 (2.0–3.5)	1.2 (0.7–1.7)	↓
Musculoskeletal disease, other	1.2 (0.7–1.6)	1.3 (0.6–1.9)	6.9 (4.5–9.4)	5.4 (2.7–8.1)	—
Muscle pain	0.6 (0.3–0.9)	0.5 (0.0–1.0)	4.5 (2.5–6.5)	3.6 (0.3–6.9)	—
Arthritis	0.5 (0.2–0.8)	0.4 (0.1–0.6)	2.6 (1.1–4.1)	1.9 (0.5–3.2)	—
Rheumatoid arthritis	0.1 (0.0–0.3)	0.1[b]	1.1 (0.1–2.2)	0.4[b]	—
Osteoporosis	0.0[b]	0.0[b]	0.1[b]	0.0[b]	—

(a) The direction and type of change is indicated for each variable: ↑/↓ indicates a statistically significant change, and — indicates there was no change.

(b) No 95% confidence intervals are provided as the data were insufficient to calculate a meaningful estimate.

Note: CI—confidence interval; NOS—not otherwise specified.

Table 11.11 also shows the proportion of total contacts with each problem that were regarded as work-related.

- Nearly one in 10 (9.7%) musculoskeletal problems was regarded as work-related in 2007–08, and this proportion had decreased significantly since 1998–99 (13.2%).
- In 2007–08, almost one-third of unspecified musculoskeletal injuries (where no detail was given by the GP) were regarded as work-related, and this proportion had not significantly changed since 1998–99.

- One-fifth of sprains and strains managed were work-related in 1998–99 and 2007–08.
- The proportion of back complaints specified as work-related declined significantly, from 20.9% in 1998–99 to 15.1% in 2007–08.
- The proportion of osteoarthritis problems specified as work-related also significantly decreased over the 10-year period (from 2.7% in 1998–99 to 1.2% in 2007–08).

11.7 Discussion

Few changes are evident in the rates at which musculoskeletal problems were managed between 1998–99 and 2007–08. However, these problems are managed at nearly one in five encounters, and therefore constitute a considerable proportion of the general practice workload.

The most notable change was in the management rate of osteoporosis, which doubled over the 10-year period. This increase was apparent for both males and females. Given the constant and steady rise of osteoporosis management, it is not possible to attribute this increase to the inclusion of the condition as a National Health Priority Area. Previous research indicates that while the screening rate for osteoporosis has increased in males since 2000[18], it remains well below that for females.[18,19] Although there is no national screening program for osteoporosis, the association found by Charles et al.[18] between osteoporosis screening in men and a diagnosis of osteoporosis indicates that the management of this condition may continue to increase significantly in future years.

It is possible that there is a relationship between the marginal increase in the management rate of osteoarthritis and the marginal decrease in the rate of unspecified arthritis, indicating a trend for GPs to use the more specific label of 'osteoarthritis' when possible. This could be regarded as a change in labelling practice over the 10-year period. The increase in the rate of imaging test orders for unspecified arthritis over the 10 years supports this hypothesis.

Regarding medications provided for arthritis, the overall medication rate has not changed, but the practices within medications have changed. The overall increases and decreases in prescribing for all arthritis, and specifically for osteoarthritis, can largely be attributed to the availability of certain types of medications. The sudden rise in the prescription of NSAIDs in 1999–00 was caused by the introduction of coxibs onto the Australian market, which were regarded as less likely to cause gastrointestinal and renal side-effects.[20] However, rofecoxib was subsequently found to cause an increased risk of cardiovascular events[21,22], and was withdrawn from purchase in September 2004.[16] This led to a considerable decrease in prescriptions of coxibs overall. The rate of provision of other analgesic medication increased in parallel. The Therapeutic Guidelines for osteoarthritis recommend that NSAIDs should be used for the shortest time period possible, and that paracetamol can be used to reduce the amount of NSAIDs or opioids required to treat severe pain.[23]

Another area of interest is the decrease in GP prescribing of medications for rheumatoid arthritis, which occurred in parallel with an increase in the rate of GP-supplied medications for rheumatoid arthritis, and also with an increase in the number of referrals made to specialists for this condition. It is possible that medications for rheumatoid arthritis are more often given by specialists than GPs in recent years, though the GP management rate of this problem did not change over the decade.

11.8 Conclusion

Policies on the GP management of chronic and complex conditions do not appear to have had much, if any, measurable impact on the management of musculoskeletal problems in general practice. All the conditions profiled in this chapter fit within the policy guidelines, but the rate of musculoskeletal problems managed is almost identical in 1998–99 and 2007–08. However, given the ageing population, it may have been reasonable to expect an increase in the management rate of these morbidities. Therefore, the lack of measurable change in management rates may suggest is a positive effect of policy. Nor has the designation of arthritis and musculoskeletal conditions as a National Health Priority Area changed the GP management of these problems, according to results presented in this chapter. The inclusion of arthritis and musculoskeletal conditions is one of the more recent additions to the National Health Priority Areas, so there may not yet have been sufficient time for the impact of this initiative to be seen in general practice. The main impetus for change in the management of musculoskeletal problems over the decade to 2007–08 appears to have come from the development of new medications and priorities in osteoporosis screening for men.

Suggested chapter citation

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