12 Injury

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12.1 Background

In 1986, injuries were recognised as a leading cause of morbidity and death, and were made one of the original National Health Priority Areas in 1996. Injuries were responsible for 7% of the total burden of disease in Australia in 2003, represented 11% of the fatality burden, and were the largest cause of fatalities in people under the age of 35 years. The major contributors to the injury burden in 2003 were suicide and self-inflicted injury, road traffic accidents, and falls, which together accounted for 64% of the burden.[1]

Injuries, as defined by the National Injury Prevention Advisory Council, include traumatic injuries and poisonings.[2] However, the definition set by the International Classification of Primary Care—Version 2 (ICPC-2)[3], used in BEACH, includes adverse medical events, so these data are also presented. The injury-specific code groups are listed in Appendix 3.

12.2 Policies and initiatives

Policies on injury prevention and control are predominantly aimed at population groups that are considered at risk, including children, young males, older people, Aboriginal and Torres Strait Islander peoples, and people living in rural and remote areas. The policies also cover situational factors such as alcohol-related injuries, sports-related injuries and self-inflicted injuries.

- The National Injury Prevention Plan: Priorities for 2001–2003 listed falls in older people, falls in children, drowning and near drowning, and poisoning among children as the top priorities for the 3-year plan.[4] Some of the strategies that involved general practitioners aimed to encourage their use of health assessments for people aged 75 years and over and for Indigenous Australians, and to educate them about the risks of psychotropic medications and encourage reduction in their use.
- Following this plan, the National Injury Prevention and Safety Promotion Plan: 2004–2014[5] listed as priority populations: children, youth and young people, adults, older people, Aboriginal and Torres Strait Islander peoples, and rural and remote populations, as well as those who suffered alcohol-related injuries. Each group have their own key issues and priority activities.
- The National Falls Prevention for Older People Plan: 2004 Onwards[6] aimed to involve multiple sectors of government and community in preventing falls.
- The National Aboriginal and Torres Strait Islander Safety Promotion Strategy (2005)[7] aimed to promote safety, and strengthen leadership in the Indigenous community to prevent injuries.

Since 2001, the Australian Transport Council has provided advice to governments with the aim of improving the safety and efficiency of the Australian transport system. They have released a National Road Safety Action Plan every 2 years, and three progress reports.[8] The most recent action plan was released in 2007–08, and the most recent progress report in 2006.

- The National Suicide Prevention Strategy[9] which began in 1999, aims to improve support networks for those who have attempted suicide or are suicidal, and to increase the community's understanding of suicide.

12.3 Management rates in general practice

As shown in Table 12.1, in both 1998–00 and 2006–08, National Health Priority Area (NHPA) musculoskeletal injuries made up almost half of all injuries managed at BEACH encounters, led by sprain/strain and fracture. Skin injuries made up a further third of all injuries with laceration/cut and bruise/contusion being the largest contributors.

Over the study period, while the management rates of musculoskeletal and skin injuries did not change, there was a decrease in sprains/strains, bruises/contusions and insect bites/stings. There was no change in the management rates of injuries related to the eye, the neurological system and the ear, or of those of a social nature.

Adverse events from medical care injuries (included in the injury class in ICPC-2) were managed at a rate of 1.0 per 100 encounters in 2006–08. While effects of prosthetic devices were less often managed in 2006–08 than in 1998–00, adverse effects of a medical agent were managed significantly more often in 2006–08 than in 1998–00 (Table 12.1). In a 2003–04 BEACH substudy, 10.4% of patients had experienced an adverse drug event within the previous 6 months. Patients aged 45 years and over, children aged 1–4 years, and female patients were significantly more likely to have had an adverse drug event.[10]

Table 12.1: Changes in injury management rates in general practice, 1998–00 and 2006–08

	1998–00 (*n* = 203,100)		2006–08 (*n* = 188,300)		
NHPA injuries	**Number**	**Rate per 100 encs (95% CI)**	**Number**	**Rate per 100 encs (95% CI)**	**Change[(a)]**
Musculoskeletal injuries	**8,223**	**4.05 (3.90–4.20)**	**7,149**	**3.80 (3.64–3.95)**	**—**
Sprain/strain	3,676	1.81 (1.71–1.91)	2,800	1.49 (1.39–1.58)	↓
Fracture	2,245	1.11 (1.04–1.17)	2,001	1.06 (1.00–1.12)	—
Injury musculoskeletal NOS	1,542	0.76 (0.70–0.81)	1,607	0.85 (0.80–0.91)	—
Acute internal damage knee	520	0.26 (0.23–0.28)	516	0.27 (0.25–0.30)	—
Neck injury	272	0.13 (0.11–0.16)	191	0.10 (0.08–0.12)	—
Dislocation/subluxation	158	0.08 (0.06–0.09)	153	0.08 (0.06–0.10)	—
Skin injuries	**5,461**	**2.69 (2.58–2.80)**	**4,709**	**2.50 (2.40–2.60)**	**—**
Laceration/cut	1,769	0.87 (0.82–0.92)	1,687	0.90 (0.84–0.95)	—
Injury skin, other	1,107	0.55 (0.50–0.59)	1,062	0.56 (0.51–0.62)	—
Bruise/contusion	1,122	0.55 (0.51–0.59)	851	0.45 (0.42–0.49)	↓
Abrasion/scratch/blister	377	0.19 (0.17–0.21)	303	0.16 (0.14–0.18)	—
Insect bite/sting	369	0.18 (0.16–0.20)	254	0.13 (0.12–0.15)	↓

(continued)

Table 12.1 (continued): Changes in injury management rates in general practice, 1998–00 and 2006–08

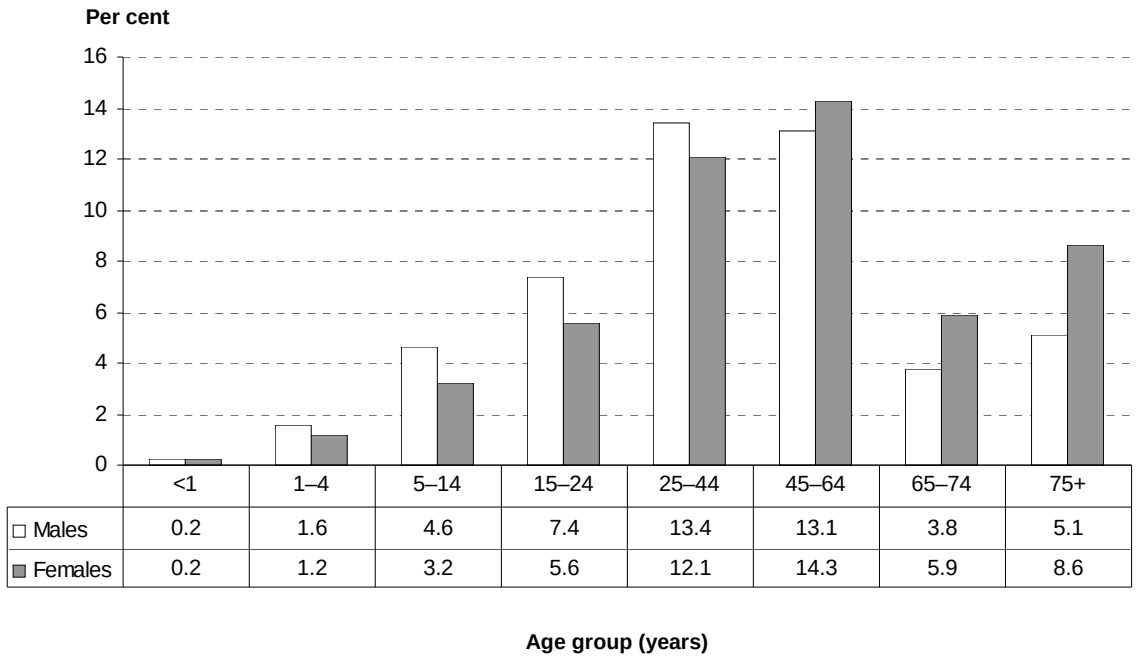
NHPA injuries	1998–00 (*n* = 203,100) Number	1998–00 (*n* = 203,100) Rate per 100 encs (95% CI)	2006–08 (*n* = 188,300) Number	2006–08 (*n* = 188,300) Rate per 100 encs (95% CI)	Change[a]
Skin injuries (continued)					
Foreign body in skin	235	0.12 (0.10–0.13)	172	0.09 (0.08–0.11)	—
Animal/human bite	156	0.08 (0.06–0.09)	94	0.05 (0.04–0.06)	↓
General injuries/poisonings	**399**	**0.20 (0.18–0.22)**	**358**	**0.19 (0.17–0.21)**	**—**
Trauma/injury NOS	293	0.14 (0.13–0.16)	275	0.15 (0.13–0.17)	—
Multiple trauma/injuries	42	0.02 (0.01–0.03)	40	0.02 (0.01–0.03)	—
Toxic effect non-medicinal substance	40	0.02 (0.01–0.03)	38	0.02 (0.01–0.03)	—
Eye injuries	**515**	**0.25 (0.23–0.28)**	**403**	**0.21 (0.19–0.24)**	**—**
Foreign body in eye	262	0.13 (0.11–0.15)	192	0.10 (0.09–0.12)	—
Contusion/haemorrhage eye	104	0.05 (0.04–0.06)	124	0.07 (0.05–0.08)	—
Injury eye, other	149	0.07 (0.06–0.09)	87	0.05 (0.04–0.06)	↓
Neurological injuries	**358**	**0.18 (0.15–0.20)**	**288**	**0.15 (0.13–0.17)**	**—**
Injury head, other	242	0.12 (0.10–0.14)	192	0.10 (0.09–0.12)	—
Concussion	82	0.04 (0.03–0.05)	61	0.03 (0.02–0.04)	—
Injury nervous system, other	47	0.02 (0.02–0.03)	38	0.02 (0.01–0.03)	—
Ear injuries	**164**	**0.08 (0.07–0.09)**	**162**	**0.09 (0.07–0.10)**	**—**
Perforation, ear drum	72	0.04 (0.03–0.04)	76	0.4 (0.03–0.05)	—
Social injuries	**117**	**0.06 (0.03–0.08)**	**96**	**0.05 (0.04–0.06)**	**—**
Assault/harmful event	117	0.06 (0.03–0.08)	96	0.05 (0.04–0.06)	—
Other NHPA Injuries (*n*, percentage of total)	**89**	**0.6%**	**93**	**0.7%**	**—**
Total NHPA injuries (n, percentage of total)	***15,326***	***88.2%***	***13,258***	***87.2%***	**—**
Non-NHPA injuries					
Adverse effect/poisoning by medical agent	**2,045**	**1.01 (0.96–1.06)**	**1,943**	**1.03 (0.97–1.09)**	**—**
Adverse effect medical agent	992	0.49 (0.45–0.52)	1,135	0.60 (0.56–0.65)	↑
Complication of medical treatment	703	0.35 (0.32–0.37)	563	0.30 (0.27–0.33)	—
Effect of prosthetic device	184	0.09 (0.08–0.11)	129	0.07 (0.06–0.08)	↓
Adverse effects of physical factors	116	0.06 (0.05–0.07)	85	0.05 (0.03–0.06)	—
Poisoning by medical agent	50	0.02 (0.02–0.03)	31	0.02 (0.01–0.02)	↓
Total ICPC-2 injuries	**17,371**	**8.55 (8.33–8.78)**	**15,201**	**8.07 (7.86–8.29)**	**↓**

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

Note: CI—confidence interval; NOS—not otherwise specified; Encs—encounters. NHPA—National Health Priority Area 95% Confidence intervals are presented to two decimal places to show statistical significance.

12.4 Age and sex distribution

Of the 14,917 encounters at which an injury was managed (ICPC-2 definition), 51.0% (95% CI: 49.9–52.0) were with females and 49.0% (95% CI: 48.0–50.1) were with males. Male patients accounted for a significantly greater proportion of these encounters than in total BEACH (42.9%, 95% CI: 42.1–43.7).[11] The age–sex distribution of patients at encounters involving injury is shown in Figure 12.1.

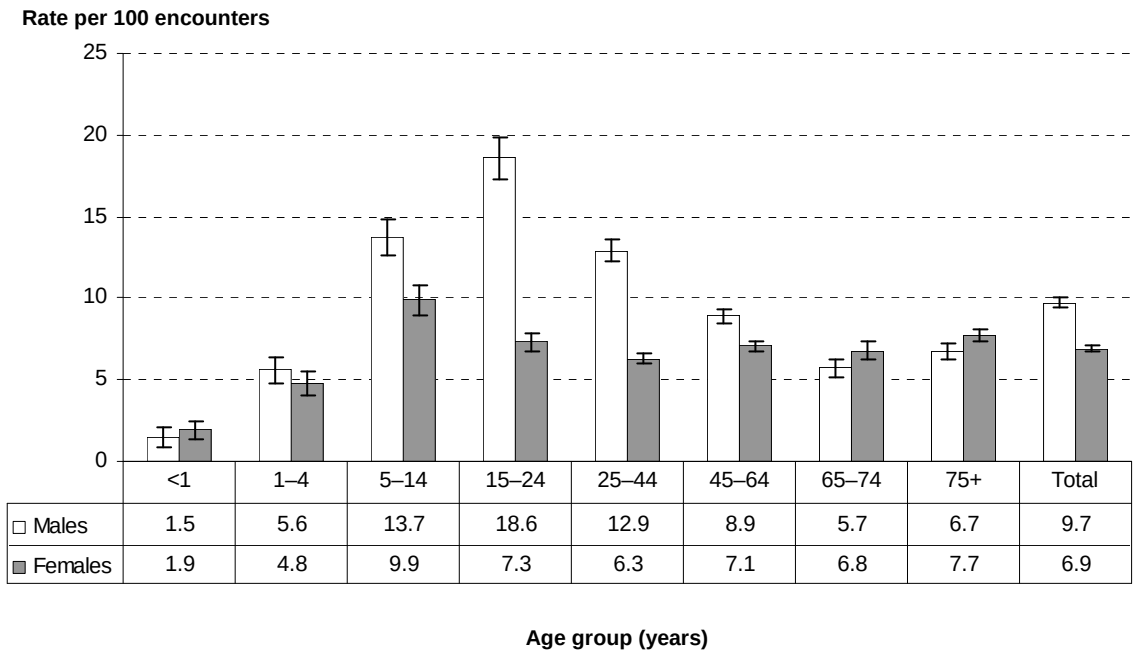


	<1	1–4	5–14	15–24	25–44	45–64	65–74	75+
Males	0.2	1.6	4.6	7.4	13.4	13.1	3.8	5.1
Females	0.2	1.2	3.2	5.6	12.1	14.3	5.9	8.6

Figure 12.1: Age–sex distribution of patients at encounters with at least one injury problem managed, 2006–08

Patients aged 45–64 years accounted for the largest proportion (27.4%) of all injury encounters, followed closely by those aged 25–44 years (25.5%). Male patients made up a greater proportion of patients within each age group up to 44 years. In patients aged 45 years and over, females made up the greater proportion of patients with injuries in each age group. This is almost an inverse of the age-sex distribution at all BEACH encounters in 2007–08, where males accounted for a smaller proportion of all encounters in all age groups except among the very young (aged less than five years).[11]

The age–sex-specific rates of injury problems managed demonstrate that males were significantly more likely to be managed for injury than were females, 9.7 per 100 encounters, compared with 6.9 per 100 female encounters. Further, the 15–24 year age group had the highest management rate, followed by younger patients in the 5–14 year age group, and then by those aged 25–44 years. The management rate for males aged 15–24 years was very high, at 18.6 injuries managed per 100 GP encounters (Figure 12.2).



	<1	1–4	5–14	15–24	25–44	45–64	65–74	75+	Total
Males	1.5	5.6	13.7	18.6	12.9	8.9	5.7	6.7	9.7
Females	1.9	4.8	9.9	7.3	6.3	7.1	6.8	7.7	6.9

Figure 12.2: Age–sex-specific rates of injury management, 2006–08 (95% CI)

12.5 Management

The remainder of this chapter uses all injuries as defined by ICPC-2 as the denominator which includes adverse effects of medical agents, rather than the National Health Priority Area definition.

Medications

In the 2006–08 BEACH years, 6,802 medications were prescribed/supplied by the GP or advised for over-the-counter purchase for an injury problem, at a rate of 44.8 per 100 injury problems. This was a significant decrease from the 1998–00 period, which showed medications at a rate of 50.2 per 100 injury contacts (Table 12.2). There was a significant shift from prescription to advice for over-the-counter medications over the study period: prescribed medications significantly decreased, from 37.8 per 100 injury problems managed in 1998–00, to 30.4 in 2006–08; medications advised for over-the-counter purchase increased from 7.5 in 1998–00 to 9.5 per 100 injury problems managed in 2006–08.

Prescription of other analgesics and antipyretics decreased (from 11.0 to 7.6 per 100 injury problems) as did anti-inflammatory and anti-rheumatic non-steroidal products (8.7 to 6.1 per 100 injury problems). However, opioid prescriptions increased significantly from 2.3 to 4.2 per 100 injury problems managed over the 10-year period.

Table 12.2: Injuries—summary of medication changes, 1998–00 and 2006–08

Type of management	1998–00 (*n* = 17,371) Rate per 100 injury problems (95% CI)	2006–08 (*n* = 15,201) Rate per 100 injury problems (95% CI)	Change[(a)]
Medications	**50.2 (48.7–51.6)**	**44.8 (43.3–46.2)**	↓
Prescribed	37.8 (36.5–39.1)	30.4 (29.2–31.6)	↓
Other analgesics and antipyretics	11.0 (10.4–11.7)	7.6 (7.0–8.1)	↓
Non-steroidal anti-inflammatory and anti-rheumatic products	8.7 (8.2–9.3)	6.1 (5.6–6.6)	↓
Opioids	2.3 (1.9–2.5)	4.2 (3.7–4.6)	↑
Advised for over-the-counter purchase	7.5 (7.0–8.1)	9.5 (8.7–10.2)	↑
GP-supplied	4.8 (4.3–5.4)	4.9 (4.4–5.4)	—

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

Note: CI—confidence interval

Other treatments

In 2006–08, 7,879 clinical and procedural treatments were performed at a rate of 51.8 per 100 injury problems. More than half of these were procedural treatments (such as dressings, fixations and physical medicine/rehabilitation) at a rate of 29.3 per 100 injury contacts. The remainder (22.5 per 100 injury contacts) were clinical treatments, such as advice/education and counselling. There have been some significant changes in the clinical and procedural treatments recorded in the management of injuries over the 10 years of BEACH. The overall rate of clinical treatments in the management of injuries decreased from 25.9 per 100 injury problems in 1998–00 to 22.5 per 100 in 2006–08 (Table 12.3).

The rate at which GPs provided sickness certificates in the management of injuries increased from 0.8 per 100 injuries in 1998–00 to 3.1 per 100 in 2006–08; however, this merely reflected the overall increase in their provision in the total BEACH encounter sample.[12]

Although there was no significant change in the rate at which procedures were undertaken in the management of injuries, physical medicine/rehabilitation decreased significantly from 6.2 per 100 injuries in 1998–00 to 3.8 per 100 in 2006–08. Repair/fixation-suture/cast/prosthetic device (apply/remove) also significantly decreased from 7.3 per 100 injury problems in 1998–00 to 5.9 per 100 in 2006–08. However, the rate at which a local injection/infiltration was given increased significantly from 0.5 per 100 injuries to 2.5 per 100 (Table 12.3). The latter change is similar to the overall increase seen in local injections/infiltrations in the total BEACH data set, partially explained by the development of more specific instructions to participating GPs about completing the 'other treatment' section.[13]

Table 12.3: Injuries—changes in clinical and procedural treatments in management, 1998–00 and 2006–08

Management action	1998–00 (*n* = 17,371) Rate per 100 injury problems (95% CI)	2006–08 (*n* = 15,201) Rate per 100 injury problems (95% CI)	Change[(a)]
Clinical treatments	**25.9 (24.7–27.0)**	**22.5 (21.3–23.8)**	↓
Advice/education	3.2 (2.8–3.6)	5.6 (4.9–6.3)	↑
Advice/education—treatment	8.5 (7.8–9.1)	2.9 (2.5–3.3)	↓
Counselling–problem	1.8 (1.5–2.1)	2.9 (2.5–3.2)	↑
Sickness certificate	0.8 (0.7–1.0)	3.1 (2.7–3.5)	↑
Advice/education/counselling–exercise	2.0 (1.7–2.4)	0.7 (0.4–1.1)	↓
Procedural treatments	**30.4 (29.1–31.6)**	**29.3 (27.8–30.8)**	—
Dressing/pressure/compression/tamponade	11.5 (10.8–12.1)	12.5 (11.8–13.2)	—
Repair/fixation-suture/cast/prosthetic device (apply/remove)	7.3 (6.7–7.9)	5.9 (5.4–6.4)	↓
Physical medicine/rehabilitation	6.2 (5.5–6.8)	3.8 (2.9–4.6)	↓
Excision/removal tissue/biopsy/ destruction/debridement/cauterisation	3.0 (2.7–3.3)	2.5 (2.2–2.8)	—
Local injection/infiltration	0.5 (0.2–0.9)	2.5 (2.0–3.0)	↑

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

Note: CI—confidence interval.

Referrals

Referrals for injury problems were given at a rate of 12.3 per 100 injury problems in 2006–08 (*n* = 1,862), made up of 5.7 referrals per 100 injury problems to an allied health service, and 5.3 referrals per 100 injury problems to a specialist. Referrals to hospitals/emergency departments were relatively rare at 0.8 per 100 injury contacts.

There were no significant changes in the rates of patient referrals to medical specialists and allied health professionals between 1998 and 2008. Only referrals to orthopaedic surgeons showed a marginal increase, from 2.7 (95% CI: 2.4–3.0) per 100 injury contacts in 1998–00 to 3.4 (95% CI: 3.0–3.7) per 100 in 2006–08.

Imaging

Imaging tests were ordered for an injury at a rate of 19.1 per 100 injury problems. Imaging test ordering data from the first 2 years are not comparable to later data because the imaging codes were expanded to incorporate greater specificity from April 2000 onward. While between 2000–02 and 2006–08 there was no change in the rate at which GPs ordered imaging in the management of injuries, orders for ultrasounds were significantly more frequent in 2006–08, increasing from 2.1 (95% CI: 1.8–2.3) ultrasounds per 100 injuries in 2000–02 to 3.1 (95% CI: 2.7–3.4) per 100 in 2006–08. The largest contributors to this change were shoulder ultrasounds which increased by about 55% from 0.9 (95% CI: 0.9–1.0) per 100 injuries contacts in 2000–02, to 1.4 (95% CI: 1.2–1.6) per 100 in 2006–08.

12.6 Groups at risk of an injury

The following four groups of patients have been investigated separately, as they are widely recognised as being at risk of developing an injury. These groups include patients aged 15–24 years, patients aged 75 years and over, Aboriginal and Torres Strait Islander patients and patients living in a rural or remote area.

Patients aged 15–24 years

In BEACH, between April 2006 and March 2008, there were 1,776 injury problems (11.2 per 100 encounters) managed at encounters with patients aged 15–24 years (Table 12.4). Patients in this group had the highest age-specific rates of injury problems, with males having an injury problem managed at 18.6 per 100 injury problems, and 7.3 per 100 for females (Figure 12.2). Sprains and strains were the most frequently managed injury in this age group, at a rate of 2.4 per 100 encounters, followed by fractures (1.4 per 100 encounters).

Male patients dominated in injuries associated with sports, such as fracture, dislocation/subluxation, and acute internal knee damage. Of all the male injuries, 18.1% were work-related (results not shown). Work-related musculoskeletal problems are discussed further in Section 11.6.

It is interesting to see that adverse effects of medical agents ranked as the sixth most commonly managed injury in this age group at a rate of 0.9 per 100 injuries (Table 12.4). Females accounted for 91.5% of these, and for more than half of the complications resulting from a medical treatment, including medication adverse effect and contraceptive breakthrough bleeding (results not shown).

Dressings were the most common procedural treatment given for injuries in patients aged 15–24 years, at a rate of 11.2 per 100 injury problems (results not shown).

Referrals to orthopaedic surgeons were given at a rate of 3.2 per 100 injury contacts, and to physiotherapists at a rate of 5.0 per 100 injury contacts. Imaging tests were ordered at a rate of 22.4 per 100 injury problems, with 82.9% being for an X-ray, of which ankle, foot, hand and wrist X-rays made up half (results not shown).

Patients aged 75 years and over

There were 2,070 injury problems (7.3 per 100 encounters) managed at encounters with patients aged 75 years and over between April 2006 and March 2008. Females accounted for two thirds of injury problems in older people, and had a higher injury management rate than males (Figure 12.2). Almost half of the injuries in patients aged 75 years and over consisted of laceration/cut (managed at a rate of 1.5 per 100 injury encounters), fracture (1.2 per 100) and adverse effect of a medical agent (0.8 per 100) (Table 12.4). Not surprisingly, osteoporosis was managed as a comorbidity at 2.4 per 100 injury problems with patients aged 75 years and older (results not shown).

Referrals to physiotherapists and orthopaedic surgeons were also relatively common among this age group (2.7 and 2.9 per 100 injury contacts, respectively), though referrals to physiotherapists were made significantly less often (2.7 per 100 injury problems, 95% CI: 1.9–3.4) than at injury encounters with patients aged 15–24 years (5.0 per 100 injury problems, 95% CI: 3.9–6.0) (results not shown).

Table 12.4: Most common injuries managed at encounters with patients aged 15–24 years, and patients aged 75 years and over, 2006–08

Problem	Encounters with patients aged 15–24 years, 2006–08 (*n* = 15,835) Number	Rate per 100 encounters[(a)] (95% CI)
Sprain/strain	375	2.4 (2.1–2.6)
Fracture	216	1.4 (1.1–1.6)
Laceration/cut	178	1.1 (0.9–1.3)
Injury musculoskeletal NOS	168	1.1 (0.9–1.2)
Injury skin, other	151	1.0 (0.8–1.1)
Adverse effect, medical agent	140	0.9 (0.7–1.0)
Bruise/contusion	120	0.8 (0.6–0.9)
Subtotal (n, percentage of total injuries managed)	*1,348*	*75.9*
Total injuries, patients 15–24 years	**1,776**	**11.2 (10.6–11.9)**
Problem	**Encounters with patients aged 75+ years, 2006–08 (*n* = 28,300) Number**	**Rate per 100 encounters[(a)] (95% CI)**
Laceration/cut	424	1.5 (1.3–1.7)
Fracture	329	1.2 (1.0–1.3)
Adverse effect, medical agent	223	0.8 (0.7–0.9)
Sprain/strain	178	0.6 (0.5–0.7)
Injury musculoskeletal NOS	161	0.6 (0.5–0.7)
Bruise/contusion	136	0.5 (0.4–0.6)
Subtotal (n, percentage of total injuries managed)	*1,451*	*70.1*
Total injuries, patients 75+ years	**2,070**	**7.3 (7.0–7.7)**

(a) Figures do not total 100, as more than one injury type can be recorded for each encounter and only the most frequently managed are listed.

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

Aboriginal and Torres Strait Islander patients

Indigenous encounter data between 2000 and 2008 was combined to allow a comparison between Indigenous encounters at which at least one injury was managed (*n* = 1,027) and total encounters between 2006 and 2008 where at least one injury was managed (*n* = 14,917). Injuries were managed significantly more often at encounters with Aboriginal and Torres Strait Islander patients (9.9 per 100 encounters, 95% CI: 9.0–10.7) than at all encounters (8.1 per 100 encounters, 95% CI: 7.9–8.3). This difference may be partly explained by the younger age distribution of Indigenous patients (see Chapter 6). The injuries most frequently managed at encounters with Indigenous patients were fractures (1.6 per 100 encounters), sprain/strain (1.4 per 100 encounters) and laceration/cut (1.2 per 100 encounters). Lacerations/cuts were managed marginally more often than at total BEACH encounters, and fractures were managed significantly more often at Indigenous encounters (tables 12.1 and 12.5). Assault/harmful events were also managed significantly more often, at almost 6 times the average rate of all encounters (Table 12.5).

Table 12.5: Most common injuries managed at encounters with Indigenous patients, 2000–08

Problem	Number	Rate per 100 encounters with Indigenous patients)[(a)] (95% CI) (*n* = 10,701
Fracture	170	1.6 (1.3–1.9)
Sprain/strain	149	1.4 (1.2–1.6)
Laceration/cut	127	1.2 (1.0–1.4)
Injury skin, other	89	0.8 (0.6–1.1)
Injury musculoskeletal NOS	76	0.7 (0.5–0.9)
Assault/harmful event	31	0.3 (0.2–0.4)
Subtotal (n, percentage of total injuries managed)	*611*	*57.9*
Total injuries, Indigenous patients	**1,056**	**9.9 (9.0–10.7)**

(a) Figures do not total 100, as more than one injury type can be recorded for each encounter and only the most frequently managed are listed.

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

Patients living in rural/remote areas

The Australian Standard Geographical Classification (ASGC)[14] was used to compare management rates of injuries at encounters with patients from different regions. There were no significant differences in the management rates between encounters with patients from Major City areas, Inner Regional and Outer Regional areas. However, there was a marginally higher management rate of work-related injuries at encounters with patients from Outer Regional areas (16.1 per 100 injury contacts, 95% CI: 13.4–18.9) than at those with patients from Major Cities (12.5 per 100 injury contacts, 95% CI: 11.6–13.4), and a significantly higher rate than patients from Inner Regional areas (11.4 per 100 injury contacts, 95% CI: 9.9–12.9).

12.7 Discussion

The management rates of some injuries (mainly sprains/strains and bruises/contusions) significantly decreased over the 10 years recorded in BEACH, which may have caused the overall management rate of injuries to decrease, possibly indicating the effectiveness of policies. The only increase was in the management rate of adverse effects of medical agents, which is not included as an injury by the National Health Priority Action Council, but is recognised as an injury by international standards in the International Classification of Primary Care—Version 2 (ICPC-2).[3]

Overall, males and females had an injury problem managed at 9.7 and 6.9 per 100 encounters, respectively. The inclusion of males aged 15–24 years in the National Health Priority Areas as a group at risk is justified, as injuries were managed among this group more frequently than any other group, particularly in sports-related injuries. Males under the age of 65 years were more likely to be managed for an injury than their female counterparts, but females aged 65 years and over were managed for an injury more often than were older males.

Of all injury problems managed at encounters with patients over the age of 75 years, 11% were adverse effects of a medical agent. At encounters with patients aged 15–24 years, such adverse effects made up 8% of all injury problems managed, with 92% of these at encounters with females.

When adverse effects were investigated in the past, it was shown that half of the events were moderate to severe, and that some could potentially be prevented.[10] These findings reinforce the fact that adverse events are a significant common problem being managed by GPs.

Aboriginal and Torres Strait Islander patients, for whom specific policies have been designed to try to reduce their rates of injury, had an injury managed significantly more often than the average for all encounters. The most notable of these was a rate six times higher for assault/harmful event. Another patient group considered at risk are those in Outer Regional areas, but the only difference found was a higher work-related injury management rate at these encounters than at encounters in Inner Regional and Major City areas, which perhaps reflects the more physical nature of their work.

While the most common medications prescribed in the management of injuries were NSAIDS, and analgesics/antipyretics in the 10 years, there has been a move away from these medications, and a move towards opioid prescriptions. The move to opioids has been seen by some as of considerable concern.[15]

The lower rates of non-medicinal treatment in injury management, including advice/education, counselling and physical medicine/rehabilitation, coupled with the rise in opioid prescriptions, may indicate that pharmaceutical management has become the preferred choice for injury management.

12.8 Conclusion

The BEACH data show that the high rate of assault/harmful event in the Aboriginal and Torres Strait Islander population is a significant issue for GP management, and so may be the increasing use of opioids as the method of managing physical injuries.

In particular, an emerging issue is the increased management rates of adverse medical events in older patients and young women. Adverse events in older patients are raising some concern, as Australia has an ageing population with increasing multimorbidity. In turn, this results in more polypharmacy, increasing the chance of adverse drug events. The data suggest that this is an area for future policy consideration.

Suggested chapter citation

Fahridin S 2009. Injury. In: Britt H & Miller GC (eds). General practice in Australia, health priorities and policies 1998 to 2008. General practice series no. 24. Cat. no. GEP 24. Canberra: Australian Institute of Health and Welfare.

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