

9 External causes for admitted patients

Introduction

An external cause is defined in the *National Health Data Dictionary* as the event, circumstance or condition associated with the occurrence of an injury, poisoning or violence. Whenever a patient has a principal or additional diagnosis of an injury or poisoning, an external cause should be recorded and, with it, a place of occurrence code.

External causes are classified, coded and reported to the National Hospital Morbidity Database using the *Australian Version of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)* (National Coding Centre 1996). The external cause classification is hierarchical, consisting of 192 3-digit categories, mostly divided into a larger number of very specific categories represented by 4-digit codes. The tables and figures in this chapter use the codes and abbreviated descriptions of the ICD-9-CM external cause classification. Full descriptions of the categories are available in the ICD-9-CM publication.

The information in this chapter is presented by grouping records into 10 groups based on the ICD-9-CM external cause classification to provide an overview of the reported external causes. The information in Table 9.6 is also presented according to the place of occurrence classification, common to the *National Health Data Dictionary* and the ICD-9-CM publication.

The tables in this chapter include separations for which an external cause was reported and for which the principal diagnosis was an injury or poisoning for which an external cause must be reported, according to the Australian Coding Standards (diagnosis codes 800–999, V71.3–V71.6). External causes were also reported for other separations and are likely to have related to other principal diagnoses or to additional diagnoses of injury or poisoning; these are not reported here.

The tables exclude separations for which only supplementary codes were reported rather than codes for external causes. These included separations for which a type of sporting injury (E889, for example, hockey) was reported as the external cause but the nature of the external cause (a fall or being struck, for example) was not reported. In contrast with Tables 7.1 and 7.2, also excluded are separations for which an injury or poisoning diagnosis was reported, but an external cause was not.

Tables are presented with summary national separation, patient day and length of stay statistics for public and private hospitals. Also provided are summary separation and patient days data by State and Territory, national information on age group and sex distributions and summary information on reported places of occurrence. The data on relative rankings of the various external cause groups (by numbers of separations or patient days) depend to some extent on the chosen groups of external cause codes.

Sector

There were 383,728 separations in 1997–98 with an external cause and an injury or poisoning principal diagnosis and these separations accounted for 1,661,437 patient days (Table 9.1). This represented 7% of all separations (21 separations per 1,000 population) and 7% of all patient days. The majority of separations (315,012, 82%) and patient days (1,304,687, 79%) were reported for the public sector. Overall, the average length of stay was longer in the private sector (5.2 days) than the public sector (4.1 days).

The most frequently reported external cause group in both the public and private sectors was *Accidental falls* (E880–E888). Second most frequently reported in both sectors was *Other accidents, late effects of accidental injury* (E900–E929), mainly accidents caused by cutting or piercing instruments or objects, striking against or struck accidentally by objects or persons, and other and unspecified environmental and accidental causes. Together, these groups accounted for 55% of separations (207,719) and 52% of patient days (860,836) for which an external cause and an injury and poisoning diagnosis was reported.

Transport accidents (E800–E848) accounted for a further 14% of external cause separations from public hospitals (43,944), but only 6% from private hospitals (4,180). *Suicide and self-inflicted injury* (E950–E959) and *Homicide, injury purposely inflicted by others* (E960–E969) each accounted for 6% of external cause separations from public hospitals (19,507 and 17,857, respectively) but less than 1% each of external cause separations from private hospitals (624 and 479, respectively).

Average length of stay was highest for *Accidents caused by fire or flames* (E890–E899) in the public sector (8.0 days) and for *Accidental falls* in the private sector (6.9 days).

States and Territories

External causes were recorded for between 5.7 and 8.3% of separations for all States and Territories, with proportions above the average reported for those which reported high proportions of injury and poisoning principal diagnoses (see Table 7.2)— Queensland (74,086, 6.9%), Western Australia (39,852, 7.9%) and the Northern Territory (4,338, 8.3%).

The distributions of separations amongst the external cause groups were similar amongst the States and Territories (Table 9.2). Notable exceptions were the high proportions of separations for *Transport accidents* (E800–E848) and *Homicide, injury purposely inflicted by others* (E960–E969) in the Northern Territory (16%, 684, and 22%, 959, compared with the national averages of 13% and 5%). For *Misadventure during or due to medical care* (E870–E879), the Northern Territory reported a lower proportion (10%, 445) than the national average (17%).

The distributions of patient days amongst the external cause groups were similar among the States and Territories (Table 9.3). However, as for separations, the Northern Territory reported higher than average proportions for *Transport accidents* (24%, 5,793) and *Homicide, injury purposely inflicted by others* (17%, 3,947) than the national averages (13% and 3%, respectively). The Australian Capital Territory reported a greater proportion of patient days for *Suicide and self-inflicted injury* (E950–E959) (7%, 1,760) than the national average (3%).

Age group and sex

For females, 5% of separations overall were reported with external causes (163,263) whereas 9% of separations for males had external causes recorded (220,467).

The numbers of separations with an external cause varied by age group and sex (Tables 9.4 and 9.5). The most common external cause group for females was *Accidental falls* (E880–E888) (37% of the total for females, 60,991), followed by *Misadventure during or due to medical care* (E870–E879) (19%, 32,106). For males, *Other accidents, late effects of accidental injury* (E900–E929) was the most commonly reported group (31% of the total for males, 69,253), followed by *Accidental falls* (E880–E888) (24%, 51,858). *Misadventure during or due to medical care* (E870–E879) accounted for 15% of male external cause separations (34,094) and 20% of female separations (32,106).

Overall, the highest number of separations for external causes were for the 75 years and over age group for females, whereas for males highest numbers were reported for the 15 to 24 and 25 to 34 years age groups.

In the under 14 years age groups, *Accidental falls* (E880–E888) and *Other accidents, late effects of accidental injury* (E900–E929) were the most commonly reported external causes. The *Other accidents* group also dominated in most adult age groups. However, in the 15 to 24 years age group, *Transport accidents* were also a common external cause for both sexes; in the 35 to 64 years age groups, *Misadventure during or due to medical care* was common; and in the over 65 years age groups, *Accidental falls* were reported for large proportions of external cause separations, especially for females.

Place of occurrence

A place of occurrence (other than *Unspecified place*) was reported for 55% of separations with an external cause (210,482, Table 9.6), *Home* and *Street and highway* accounting for the majority. *Home* was the most commonly reported place of occurrence for all but two of the external cause groups. The exceptions were *Transport accidents*, for which *Street and highway* was most frequently reported, and *Misadventure during or due to medical care* for which *Residential institute* (which includes hospitals) was the most common place of occurrence. *Home* was the most frequently reported place of occurrence for *Accidental poisoning* (53% of those for which a place of occurrence was reported, 7,875) and for *Suicide and self-inflicted injury* (57%, 11,511).

Accidental falls was the most common external cause group in the *Home* category, accounting for 45% of these separations (39,233), while *Misadventure during or due to medical care* was reported for 53% of separations in the *Residential institute* category (12,543).

Table 9.1: Separation, same day separation, patient day and average length of stay statistics by external cause in ICD-9-CM groupings and hospital sector, Australia, 1997-98

External cause		Separations	Same day separations	Per cent same day separations	Separations per 1,000 population	Patient days	Patient days per 1,000 population	ALOS (days)	ALOS (days) excluding same day
Public hospitals									
E800–E848	Transport accidents	43,944	11,385	25.9	2.4	199,326	10.8	4.5	5.8
E850–E869	Accidental poisoning	14,127	5,209	36.9	0.8	25,412	1.4	1.8	2.3
E870–E879	Misadventure during or due to medical care	47,134	8,635	18.3	2.6	295,690	16.1	6.3	7.5
E880–E888	Accidental falls	90,573	21,770	24.0	4.9	485,784	26.4	5.4	6.7
E890–E899	Accidents caused by fire or flames	1,940	466	24.0	0.1	15,577	0.8	8.0	10.3
E900–E929	Other accidents, late effects of accidental injury	76,210	28,303	37.1	4.1	174,272	9.5	2.3	3.0
E930–E949	Adverse effects of therapeutic drugs, biologicals	3,015	649	21.5	0.2	10,466	0.6	3.5	4.1
E950–E959	Suicide & self-inflicted injury	19,507	5,535	28.4	1.1	52,302	2.8	2.7	3.3
E960–E969	Homicide, injury purposely inflicted by others	17,857	6,711	37.6	1.0	43,726	2.4	2.4	3.3
E970–E999	Other injuries	705	250	35.5	<0.1	2,132	0.1	3.0	4.1
Total		315,012	88,913	28.2	17.1	1,304,687	70.8	4.1	5.4
Private hospitals									
E800–E848	Transport accidents	4,180	673	16.1	0.2	19,323	1.1	4.6	5.3
E850–E869	Accidental poisoning	641	94	14.7	<0.1	1,988	0.1	3.1	3.5
E870–E879	Misadventure during or due to medical care	19,066	2,881	15.1	1.0	126,892	7.0	6.7	7.7
E880–E888	Accidental falls	22,277	4,019	18.0	1.2	153,379	8.4	6.9	8.2
E890–E899	Accidents caused by fire or flames	118	21	17.8	<0.1	784	<0.1	6.6	7.9
E900–E929	Other accidents, late effects of accidental injury	20,659	7,824	37.9	1.1	47,401	2.6	2.3	3.1
E930–E949	Adverse effects of therapeutic drugs, biologicals	600	50	8.3	<0.1	3,352	0.2	5.6	6.0
E950–E959	Suicide & self-inflicted injury	624	82	13.1	<0.1	2,248	0.1	3.6	4.0
E960–E969	Homicide, injury purposely inflicted by others	479	134	28.0	<0.1	1,154	0.1	2.4	3.0
E970–E999	Other injuries	72	22	30.6	<0.1	229	<0.1	3.2	4.1
Total		68,716	15,800	23.0	3.8	356,750	19.6	5.2	6.4

Note: Abbreviation: ALOS—average length of stay.

Table 9.2: Separations by external cause in ICD-9-CM groupings and hospital sector, States and Territories, 1997–98

		NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
External cause		Public hospitals								
E800–E848	Transport accidents	15,936	9,673	7,904	4,653	3,643	882	569	684	43,944
E850–E869	Accidental poisoning	4,391	3,012	3,669	1,102	1,417	333	82	121	14,127
E870–E879	Misadventure during or due to medical care	15,556	12,563	7,111	5,109	4,471	1,136	743	445	47,134
E880–E888	Accidental falls	35,403	20,736	15,650	8,049	7,359	1,529	1,026	821	90,573
E890–E899	Accidents caused by fire or flames	657	338	327	345	166	35	9	63	1,940
E900–E929	Other accidents, late effects of accidental injury	23,896	15,458	19,469	8,096	6,119	1,422	720	1,030	76,210
E930–E949	Adverse effects of therapeutic drugs, biologicals	986	689	582	304	306	68	55	25	3,015
E950–E959	Suicide & self-inflicted injury	6,708	5,239	3,090	2,052	1,473	453	317	175	19,507
E960–E969	Homicide, injury purposely inflicted by others	5,877	2,903	3,731	2,619	1,394	272	102	959	17,857
E970–E999	Other injuries	132	187	143	125	64	29	10	15	705
Total		109,542	70,798	61,676	32,454	26,412	6,159	3,633	4,338	315,012
		Private hospitals								
E800–E848	Transport accidents	1,074	1,249	694	468	343	330	22	n.a.	4,180
E850–E869	Accidental poisoning	135	131	173	58	52	90	2	n.a.	641
E870–E879	Misadventure during or due to medical care	5,378	5,756	3,078	2,145	1,792	672	245	n.a.	19,066
E880–E888	Accidental falls	5,179	6,573	4,649	2,239	2,398	1,036	203	n.a.	22,277
E890–E899	Accidents caused by fire or flames	49	31	5	13	16	3	1	n.a.	118
E900–E929	Other accidents, late effects of accidental injury	5,507	5,469	3,453	2,226	3,028	848	128	n.a.	20,659
E930–E949	Adverse effects of therapeutic drugs, biologicals	96	197	151	53	69	25	9	n.a.	600
E950–E959	Suicide & self-inflicted injury	131	164	108	122	59	37	3	n.a.	624
E960–E969	Homicide, injury purposely inflicted by others	146	94	76	65	45	48	5	n.a.	479
E970–E999	Other injuries	14	16	23	9	4	2	4	n.a.	72
Total		17,709	19,680	12,410	7,398	7,806	3,091	622	n.a.	68,716

n.a. not available.

Table 9.3: Patient days by external cause in ICD-9-CM groupings and hospital sector, States and Territories, 1997–98

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
External cause	Public hospitals								
E800–E848 Transport accidents	79,192	40,463	27,242	21,069	16,043	5,448	4,076	5,793	199,326
E850–E869 Accidental poisoning	8,561	4,910	6,277	1,730	2,806	627	181	320	25,412
E870–E879 Misadventure during or due to medical care	105,753	75,391	39,942	33,320	25,871	6,306	5,849	3,258	295,690
E880–E888 Accidental falls	192,493	117,446	69,450	48,101	35,996	9,250	8,294	4,754	485,784
E890–E899 Accidents caused by fire or flames	5,070	2,799	2,271	3,354	1,170	216	81	616	15,577
E900–E929 Other accidents, late effects of accidental injury	57,712	37,450	33,602	20,686	14,803	4,201	2,044	3,774	174,272
E930–E949 Adverse effects of therapeutic drugs, biologicals	3,476	2,237	1,533	1,106	1,237	272	473	132	10,466
E950–E959 Suicide & self-inflicted injury	20,381	11,166	8,414	4,837	3,866	1,252	1,739	647	52,302
E960–E969 Homicide, injury purposely inflicted by others	14,673	6,269	7,331	6,658	3,597	682	542	3,974	43,726
E970–E999 Other injuries	628	371	338	237	347	61	25	125	2,132
Total	487,939	298,502	196,400	141,098	105,736	28,315	23,304	23,393	1,304,687
	Private hospitals								
E800–E848 Transport accidents	5,239	6,533	3,020	1,935	1,088	1,359	149	n.a.	19,323
E850–E869 Accidental poisoning	526	454	556	135	129	156	32	n.a.	1,988
E870–E879 Misadventure during or due to medical care	34,960	39,899	18,289	15,598	12,127	4,371	1,648	n.a.	126,892
E880–E888 Accidental falls	34,992	45,335	37,083	13,070	14,704	7,073	1,122	n.a.	153,379
E890–E899 Accidents caused by fire or flames	407	220	10	72	70	4	1	n.a.	784
E900–E929 Other accidents, late effects of accidental injury	13,241	13,045	7,353	4,611	6,758	2,134	259	n.a.	47,401
E930–E949 Adverse effects of therapeutic drugs, biologicals	651	1,082	618	269	519	85	128	n.a.	3,352
E950–E959 Suicide & self-inflicted injury	698	572	362	292	170	133	21	n.a.	2,248
E960–E969 Homicide, injury purposely inflicted by others	329	229	163	235	91	91	16	n.a.	1,154
E970–E999 Other injuries	33	64	73	29	6	2	22	n.a.	229
Total	91,076	107,433	67,527	36,246	35,662	15,408	3,398	n.a.	356,750

n.a. not available.

Table 9.4: Separations for males by external cause in ICD-9-CM groupings and age group, all hospitals, Australia, 1997–98

External cause	<1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total ^(a)
E800–E848 Transport accidents	67	798	5,598	9,788	6,263	3,961	2,551	1,333	1,089	906	32,356
E850–E869 Accidental poisoning	139	1,837	362	1,453	1,406	1,017	527	250	174	178	7,344
E870–E879 Misadventure during or due to medical care	346	880	1,337	2,233	2,937	3,217	3,835	5,373	7,601	6,335	34,094
E880–E888 Accidental falls	428	3,686	11,108	7,368	5,256	4,380	3,808	3,264	4,151	8,410	51,859
E890–E899 Accidents caused by fire or flames	11	70	213	400	313	190	142	79	55	64	1,538
E900–E929 Other accidents, late effects of accidental injury	537	4,574	7,932	15,502	14,032	10,341	7,524	4,484	2,684	1,643	69,254
E930–E949 Adverse effects of therapeutic drugs, biologicals	65	91	79	114	158	177	174	195	243	235	1,531
E950–E959 Suicide & self-inflicted injury	0	6	96	1,972	2,647	1,938	1,096	395	204	152	8,508
E960–E969 Homicide, injury purposely inflicted by others	101	132	315	4,882	4,091	2,410	1,021	350	150	67	13,519
E970–E999 Other injuries	3	7	20	130	134	90	43	14	11	12	464
Total	1,697	12,081	27,060	43,842	37,237	27,721	20,721	15,737	16,362	18,002	220,467

(a) Includes separations for which age was not reported.

Table 9.5: Separations for females by external cause in ICD-9-CM groupings and age group, all hospitals, Australia, 1997–98

External cause	<1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total ^(a)
E800–E848 Transport accidents	68	498	2,602	3,736	2,423	1,810	1,456	981	1,026	1,170	15,770
E850–E869 Accidental poisoning	130	1,499	370	1,661	1,292	1,155	606	241	213	258	7,426
E870–E879 Misadventure during or due to medical care	161	473	975	1,937	3,280	4,447	4,744	4,204	5,620	6,265	32,106
E880–E888 Accidental falls	381	2,626	6,726	1,977	2,181	2,514	3,289	4,412	8,373	28,510	60,991
E890–E899 Accidents caused by fire or flames	9	54	64	69	97	63	49	35	37	44	521
E900–E929 Other accidents, late effects of accidental injury	382	3,081	3,814	3,792	3,864	3,494	2,907	1,797	1,778	2,705	27,614
E930–E949 Adverse effects of therapeutic drugs, biologicals	49	64	76	160	219	228	243	217	311	517	2,084
E950–E959 Suicide & self-inflicted injury	0	4	327	3,307	3,075	2,784	1,350	412	204	161	11,624
E960–E969 Homicide, injury purposely inflicted by others	83	90	150	1,199	1,622	983	392	119	65	111	4,814
E970–E999 Other injuries	3	3	17	87	79	61	27	20	6	10	313
Total	1,266	8,392	15,121	17,925	18,132	17,539	15,063	12,438	17,633	39,751	163,263

(a) Includes separations for which age was not reported.

Table 9.6: Separations by external cause in ICD-9-CM groupings and place of occurrence, all hospitals, Australia, 1997–98

External cause	Place of occurrence											Total ^(a)
	Home	Farm	Mine & quarry	Industrial place & premises	Place of recreation and sport	Street and highway	Public building	Residential institute	Other specified places	Unspecified place		
E800–E848 Transport accidents	1,602	1,542	153	391	2,188	27,686	308	195	2,518	11,492	48,124	
E850–E869 Accidental poisoning	7,875	284	32	236	89	125	361	283	249	5,227	14,768	
E870–E879 Misadventure during or due to medical care	1,798	141	28	19	19	15	125	12,543	336	50,868	66,200	
E880–E888 Accidental falls	39,233	984	94	2,255	9,344	3,172	6,293	8,612	3,433	39,117	112,850	
E890–E899 Accidents caused by fire or flames	902	71	8	112	27	14	28	26	144	723	2,058	
E900–E929 Other accidents, late effects of accidental injury	20,013	2,215	401	10,957	8,944	788	2,268	950	4,282	45,726	96,869	
E930–E949 Adverse effects of therapeutic drugs, biologicals	800	16	2	4	7	4	35	290	44	2,410	3,615	
E950–E959 Suicide & self-inflicted injury	11,511	221	3	81	96	191	287	454	348	6,932	20,131	
E960–E969 Homicide, injury purposely inflicted by others	3,023	99	3	164	266	1,250	2,035	341	742	10,389	18,336	
E970–E999 Other injuries	283	7	1	14	14	16	22	25	25	363	777	
Total	87,040	5,580	725	14,233	20,994	33,261	11,762	23,719	12,121	173,247	383,728	

(a) Includes separations for which place of occurrence was not reported.