

14 Motor vehicle traffic accidents

Characteristics

In the context of this report a motor vehicle traffic accident is any motor vehicle accident occurring on a public road (i.e. originating, terminating or involving a vehicle partially or fully on the road). Motor vehicle traffic accidents exclude accidents involving motor vehicles being used in recreational or sporting activities off a public road, accidents occurring entirely off a public road, and accidents involving motor vehicles and aircraft in the same collision (WHO 1977).

Most deaths due to motor vehicle accidents are preventable, given safe roads, safe cars and safe driving practices. Risk factors include speeding, increased blood alcohol levels, tiredness, poor road standards and winding country roads. Road safety initiatives have been established in Australia and have been very successful in reducing the number of motor vehicle deaths. This is particularly pertinent as the number of persons driving has increased.

Road traffic accidents are one of the largest contributors to the burden of injury. They are the highest contributing factor for females (about 26%), while for males they contribute about 30%, the second highest contributor after suicide (Mathers et al. 1999).

Motor vehicle traffic accidents are the second largest cause of death due to external injury. It is estimated that there are about 64,000 PYLL before the age of 75 each year, ranked third for males and fifth for females on this measure.

Historic view

Statistics on motor vehicle deaths began in 1925. Statistics collected at the time reflected motor vehicle accidents that occurred on the road and the off road. In 1925 the rates were 157 and 40 deaths per million population for males and females respectively. These rates climbed steadily to a high of 490 and 171 deaths per million population in 1970 (except during World War II when they fell). Since then the rates have fallen to 134 and 53 deaths per million population for males and females respectively, emphasising the success of the road safety campaigns and improvements in motor vehicles and road infrastructure.

Age–sex distribution

In 1998, 1.3% of all deaths were due to motor vehicle traffic accidents. Of these 1,731 deaths, 1,224 were of males and 507 were of females (Table 14.1).

- The number of males who died from motor vehicle traffic accidents was about 2.5 times the number of females, for the whole period.
- In 1998, half of the male deaths (51%) were between ages 15–34 while 16% of male deaths occurred after age 60 and 6% occurred from age 75.
- For females, 35% of deaths were between ages 15–34, 30% of deaths occurred after age 60 and 14% occurred from age 75.
- In 1998, the mortality rate for males were 134 deaths per million population, and risk of death became significantly greater between ages 15 and 34, and age 70 and over.

- The mortality rate for females was 53 deaths per million population. The age distribution was less pronounced for women with risk of death becoming significantly greater between the ages 15 and 24, and 70 and over.

Twelve-year trends 1987–1998

Motor vehicle traffic accident mortality rates decreased significantly over the 1987–1998 period. For males, the rates decreased by 6.1% per year, with significant decreases for all ages (Figure 14.1). Mortality rates for females decreased by 5.8% per year, with significant decreases for all age groups except 35–39 and 85 and over (Table 14.1).

Geographic differences in mortality

As discussed in Chapter 4, geographic differences are a complex interplay of many factors. Population density, standard of roads and age of the vehicle fleet vary among geographic regions and have important effects on motor vehicle accident risk. Areas with a higher proportion of Aboriginal and Torres Strait Islander people will have higher mortality rates because of the higher mortality rates experienced by the Aboriginal and Torres Strait Islander population. Some of these factors are discussed separately below.

State and Territory comparison

Mortality rates due to motor vehicle traffic accidents decreased between the two periods 1987–1991 and 1994–1998 for males and females in all States and Territories except for females in Western Australia (Table 14.2). The mortality rates due to motor vehicle accidents also showed some variation among the States and Territories. During the 1987–1991 period, compared with the national motor vehicle traffic accidents mortality rate:

- Mortality rates for males in Victoria and the Northern Territory were significantly higher.
- The mortality rate for males in New South Wales was significantly lower.
- The mortality rate for females in the Northern Territory was significantly higher.
- The mortality rate for females in Western Australia was significantly lower.

During the 1994–1998 period:

- Mortality rates for males in Queensland, Western Australia and the Northern Territory were significantly higher.
- Mortality rates for males in New South Wales, Victoria, South Australia and the Australian Capital Territory were significantly lower.
- Mortality rates for females in Queensland, Western Australia and the Northern Territory were significantly higher.

Geographic category (by metropolitan, rural and remote area)

During 1995–1997, motor vehicle traffic accident mortality rates were significantly higher in rural and remote areas (Table 14.3; Figure 14.2). Note that region refers to usual place of residence, not place of death; see Appendix D.

- The mortality rate for males in metropolitan areas was 122 deaths per million population; rates were 82% higher in rural areas (222) and 135% higher in remote areas (287).
- The mortality rate for females in metropolitan areas was 50 deaths per million population; they were 79% higher in rural areas (89) and 178% higher in remote areas (139).
- Females living in remote areas had a mortality rate comparable to males living in metropolitan areas.

Country of birth

For the period 1992–1994, the world-standardised mortality rate for motor vehicle traffic accidents for Australian males born in Australia was 151 deaths per million population (Table 14.5).

- Mortality rates for Australian males born in Korea, Chile, Mauritius, Malta and France were significantly lower than for Australian males born in Australia.
- The mortality rate for Australian males born in Japan was significantly higher than for Australian males born in Australia.

For the period 1992–1994, the world-standardised mortality rate for motor vehicle traffic accidents for Australian females born in Australia was 62 deaths per million population (Table 14.5).

- The mortality rates for Australian females born in Hungary, Italy, Malta and Singapore were significantly lower than for Australian females born in Australia.
- The mortality rate for Australian females born in the United States of America was significantly higher than for Australian females born in Australia.

International comparison

Compared internationally, the 1987–1998 Australian motor vehicle traffic accident mortality rates for males are middle to low in range and similar to Canada and Germany.

Australian rates for females are about mid-range, and are similar to rates for Canada, Austria and Germany. See Table C.2 & C.3 in Appendix C.

Socioeconomic status

Overall, risk of death from motor vehicle traffic accidents during 1987–1998 was inversely related to socioeconomic status for males, using the SEIFA Index of Relative Socioeconomic Disadvantage. Males in the lowest of the five SEIFA groups had a mortality rate (196 deaths per million population) significantly higher (123%) than that for males in the highest SEIFA group (88) (Table 14.4) (see Appendix D).

There was a similar but less strong inverse relationship for females. The mortality rate for females in the lowest socioeconomic group (75 deaths per million population) was significantly higher (79%) than for the highest socioeconomic group (42 deaths per million population).

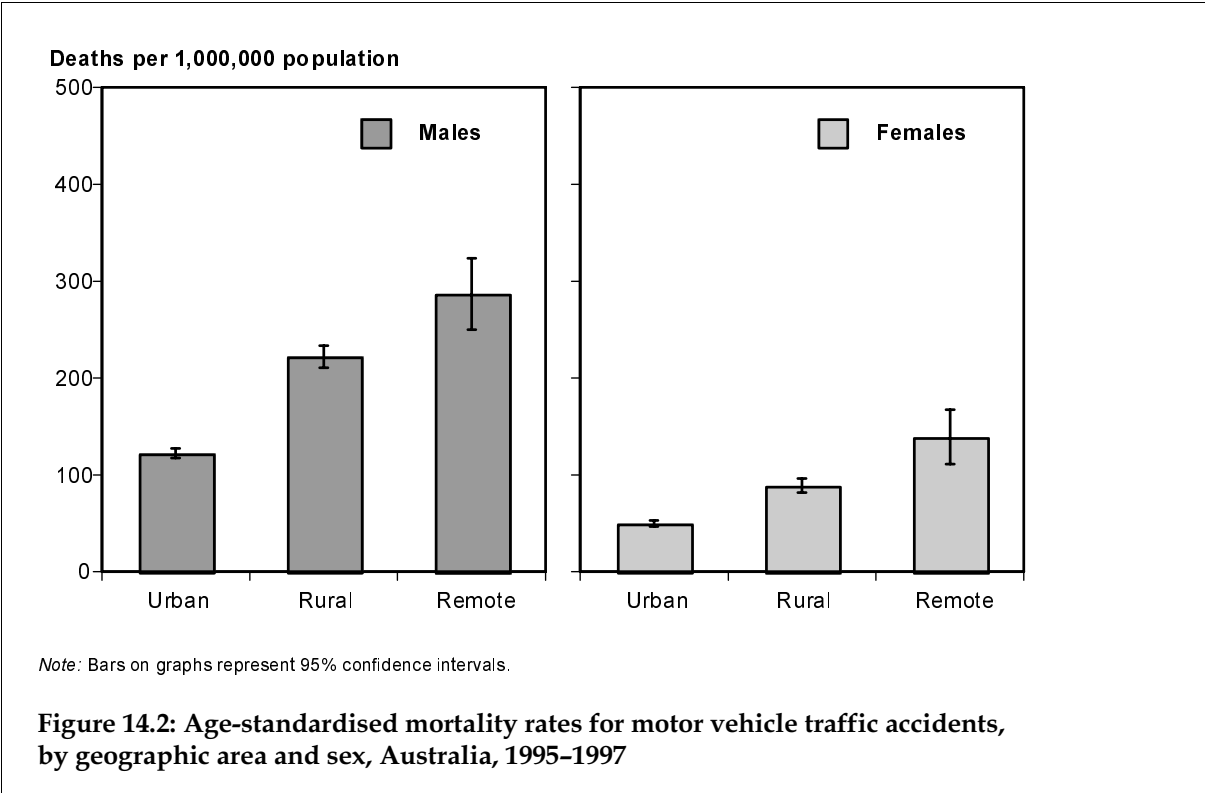
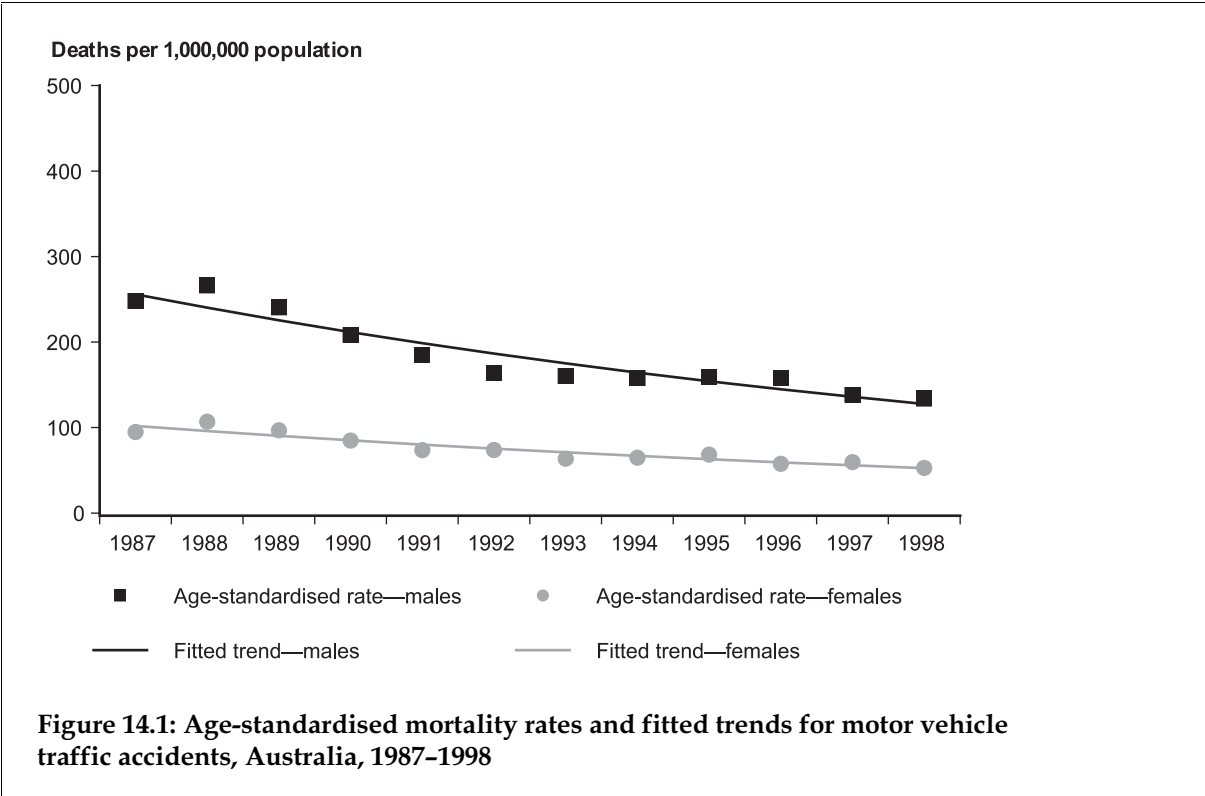


Table 14.1: Age-specific and age-standardised mortality rates for motor vehicle traffic accidents per million population, Australia, 1987-1998

Year	Age																	ASMR		
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Crude rate	Augst 1991
Males																				
1987	67	65	84	496	593	342	239	220	158	163	172	150	160	161	324	392	540	690	246	248
1988	65	69	83	500	603	435	292	175	176	184	183	160	241	188	324	468	488	633	264	266
1989	49	55	80	439	548	368	288	226	160	151	145	170	148	228	240	401	558	400	238	241
1990	54	77	63	382	459	319	219	126	151	143	157	139	166	178	229	395	470	481	206	209
1991	41	51	61	352	407	287	198	122	122	118	131	144	139	175	249	270	462	339	182	185
1992	43	55	53	286	337	255	205	145	127	93	119	136	102	163	138	222	362	380	162	164
1993	45	29	42	303	358	251	167	149	104	141	112	91	103	118	136	312	386	298	157	160
1994	32	23	50	292	320	242	147	147	129	112	103	114	121	174	182	263	406	394	154	158
1995	30	42	36	280	367	230	159	174	95	110	97	128	124	164	137	265	331	546	155	159
1996	50	31	55	278	358	203	179	144	151	101	95	107	116	116	156	284	255	514	154	158
1997	42	24	42	288	283	184	180	125	99	94	91	81	117	131	142	179	304	281	135	138
1998	32	29	34	245	291	202	148	117	116	99	107	114	98	108	164	170	182	307	131	134
Females																				
1987	50	50	44	184	173	89	62	61	47	88	62	109	98	111	168	166	275	175	97	95
1988	40	61	36	168	198	113	83	65	65	80	98	113	100	140	179	287	341	160	109	107
1989	43	53	35	181	179	86	69	71	79	64	85	100	111	105	154	196	224	165	98	97
1990	33	55	35	145	143	72	52	58	55	71	82	58	130	118	151	217	223	114	86	85
1991	24	24	20	123	116	100	79	47	34	54	68	61	70	125	135	204	172	109	75	74
1992	27	29	28	116	129	77	52	56	48	46	68	96	74	125	157	179	132	112	75	74
1993	29	32	29	101	101	46	73	70	46	40	35	43	78	87	125	178	120	57	64	64
1994	28	35	29	111	92	65	39	60	38	44	66	70	73	113	120	140	144	118	66	65
1995	24	22	36	120	102	67	60	52	58	62	67	43	87	88	108	146	180	134	70	68
1996	22	28	27	91	78	58	53	48	44	41	42	74	67	65	95	144	159	155	59	58
1997	24	17	19	90	114	69	56	45	48	53	50	48	80	63	125	86	117	114	60	60
1998	29	15	22	92	90	35	48	51	33	34	56	44	78	57	97	112	128	115	54	53

Note: ASMR = age-standardised mortality rate.

Table 14.2: Number of deaths and age-standardised mortality rates for motor vehicle traffic accidents per million population, States and Territories, 1987–1991 and 1994–1998

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Males									
Deaths									
1987–1991	3,030	2,560	1,552	828	862	273	133	254	9,491
1994–1998	2,006	1,500	1,337	784	553	153	87	209	6,631
Deaths per million population									
1987–1991	214	245	222	235	223	246	191	637	229
1994–1998	134	136	164	221	130	137	117	470	149
Confidence intervals (95%)									
1987–1991	206–221	235–254	211–233	219–251	208–238	217–275	156–226	534–739	225–234
1994–1998	128–140	129–143	155–172	205–236	119–140	115–159	91–143	394–547	146–153
Females									
Deaths									
1987–1991	1,264	1,111	687	271	311	128	55	80	3,907
1994–1998	898	635	584	288	246	79	39	64	2,833
Deaths per million population									
1987–1991	85	100	97	75	80	110	83	208	91
1994–1998	56	54	70	78	56	65	52	142	61
Confidence intervals (95%)									
1987–1991	81–90	94–106	90–104	66–84	71–89	90–129	60–106	154–262	88–94
1994–1998	52–59	50–58	64–75	69–87	49–63	50–79	36–69	106–179	58–63

Table 14.3: Age-standardised mortality rates for motor vehicle traffic accidents per million population, by geographic area, 1995–1997

Geographic area	Males		Females	
	ASMR	95% confidence interval	ASMR	95% confidence interval
Metropolitan	122	117–127	50	47–53
Rural	222	211–234	89	82–96
Remote	287	250–324	139	111–167

Note: ASMR = age-standardised mortality rate.

Source: AIHW Mortality Database, based on *Statistical Local Area* resident population estimates compiled by the ABS.

Table 14.4: Age-standardised mortality rates for motor vehicle traffic accidents per million population, by socioeconomic status, 1995–1997

SEIFA quintile	Males		Females	
	ASMR	95% confidence interval	ASMR	95% confidence interval
1 High SES	88	80–96	42	37–47
2	134	124–143	56	50–63
3	166	155–177	66	59–73
4	166	155–177	62	55–69
5 Low SES	196	184–208	75	68–82

Notes

1. ASMR = age-standardised mortality rate; SES = socioeconomic status.

2. A description of the SEIFA Index of Relative Socioeconomic Disadvantage may be found in Appendix D.

Source: AIHW Mortality Database, based on *Statistical Local Area* resident population estimates compiled by the ABS.

Table 14.5: Age-standardised mortality rates per million population for motor vehicle traffic accidents, Australians by birthplace, 1992–1994

Males			Females		
Country of birth	ASMR (world)	95% CI	Country of birth	ASMR (world)	95% CI
Japan	614	253–975	Switzerland	266	0–620
Hungary	322	0–645	USA	186	78–295
China	279	30–527	Austria	119	0–343
Israel	202	0–481	Japan	114	10–218
New Zealand	196	155–236	Hong Kong and Macau	112	41–184
Austria	169	10–328	Korea	102	0–207
Singapore	165	50–281	Portugal	79	0–201
Finland	159	0–319	Netherlands	79	0–179
United Kingdom and Ireland	156	119–192	Finland	72	0–214
Greece	153	37–269	United Kingdom and Ireland	69	36–102
Australia	151	146–156	China	67	6–129
USA	148	55–241	Australia	62	58–65
Canada	138	26–250	Canada	62	0–125
Switzerland	137	2–272	New Zealand	59	35–83
Portugal	130	0–289	Germany	58	19–97
Hong Kong and Macau	117	38–196	Poland	48	15–82
Italy	110	14–206	Greece	46	16–76
Poland	110	31–189	Mauritius	39	0–94
Germany	94	42–147	Chile	32	0–76
Netherlands	92	0–186	France	31	0–90
France	54	0–130	Singapore	24	0–57
Malta	53	19–87	Malta	18	0–38
Mauritius	52	0–125	Italy	16	8–24
Chile	50	0–108	Hungary	15	0–44
Korea	19	0–55	Israel	—	—

Notes

1. ASMR = age-standardised mortality rate; CI = confidence interval.
2. Age-standardised mortality rates have been standardised to the World Standard Population.