

4. Falls

This section describes injury hospitalisations due to unintentional falls. WHO classifies the cause of fall-related hospitalisations by the circumstance in which the fall occurs. The types of falls include *falls on the same level* (for example, due to tripping, stumbling), *from one level to another*, *from a building or other structure*, *on stairs*, *while being carried*, and *on a ladder/scaffolding* (WHO, 1977; WHO, 1992).

In NSW, falls were the fourth leading cause of injury-related death during 1998–2002, with 1,093 deaths, giving a mortality rate of 3.4 per 100,000 population (Schmertmann et al, 2004). The lifetime cost of fatal and non-fatal falls in NSW has been estimated at \$644 million—\$333 million in direct costs and \$311 million in mortality and morbidity costs (Potter-Forbes & Aisbett, 2003).

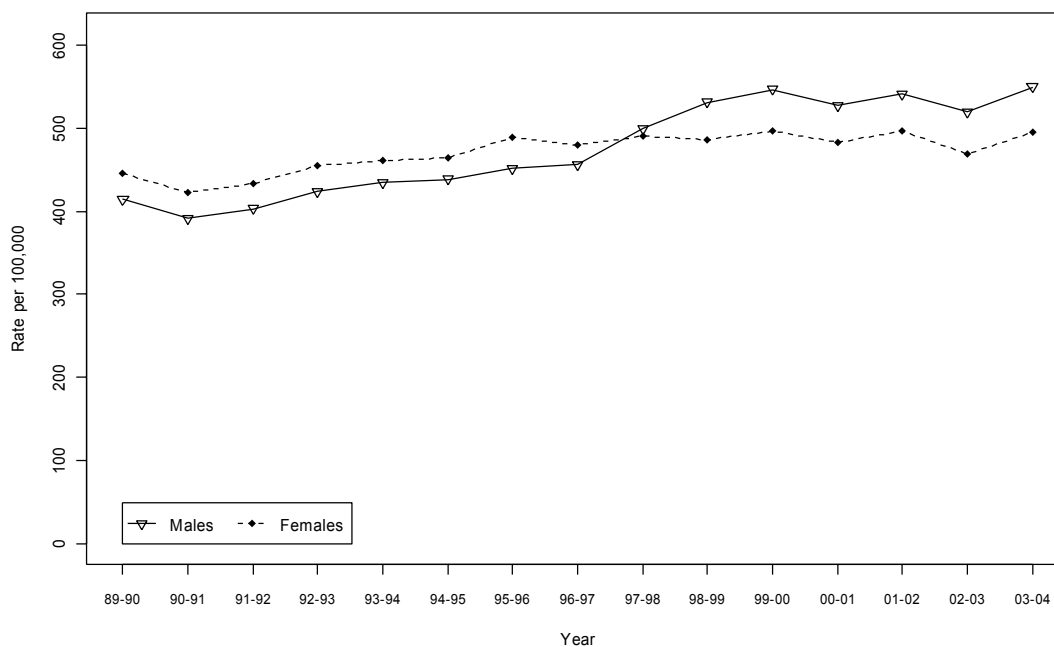
Data from 1989–1990 to 2003–2004 were used to describe the profile of hospitalisations due to falls for NSW residents. Hospitalisation data from 1999–2000 to 2003–2004 were used in the majority of the analyses, except for the trend analyses, which used hospitalisation data from 1989–1990 to 2003–2004.

Falls were the leading cause of injury hospitalisation during 1999–2000 to 2003–2004, and accounted for approximately 34.8% of all hospitalisations due to injury (Table 3). During this period, there were 175,077 hospitalisations due to a fall. The age-adjusted hospitalisation rate for fall-related injuries was 522.8 per 100,000 population.

Figure 3 shows the trend in the hospitalisation rate for falls from 1989–1990 to 2003–2004. The yearly hospitalisation rate was estimated to have increased significantly by 3.0% per year (95% confidence interval: 2.2% to 3.9%) for males and to significantly increase by 1.1% (95% confidence interval for the increase: 0.3% to 2.0%) for females over this period.

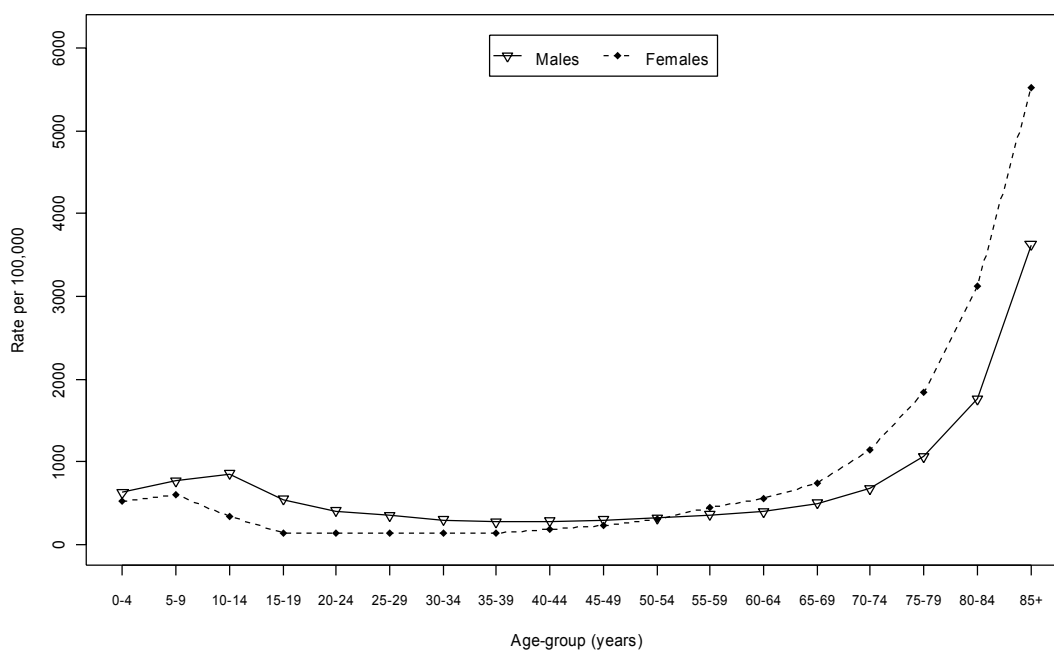
Figure 4 shows the age-specific hospitalisation rate for falls between 1999–2000 and 2003–2004. People aged 65 years or older were at greatest risk of being hospitalised for a fall-related injury. Those aged 5 to 14 years also showed a slight increase in hospitalisation rates compared to individuals aged 15 to 65 years. Males had higher rates than females till 49 years, then females 55 years or older had higher hospitalisation rates than men.

Figure 3. Hospitalisation rate for injury due to falls by sex, NSW, 1989–1990 to 2003–2004



Falls on the same level were the most common type of fall-related hospitalisations, accounting for nearly half of all fall-related hospitalisations (46.6%). The rate of hospitalisation for males for falls from a *building* and from *ladders and scaffolding* were both more than four times higher than the rate for females (Table 4). The age-adjusted hospitalisation rate for males was 10.1% higher than the rate for females between 1999–2000 and 2003–2004.

Figure 4. Age-specific hospitalisation rate for falls by sex, NSW, 1999–2000 to 2003–2004



The types of falls leading to hospitalisation by age group are shown in Table 5. For individuals aged less than 10 years, falls from *one level to another* were the most common type of fall. For individuals aged 10 years or older, falls *on the same level* were the most common type of falls leading to hospitalisation.

Table 4. Injury hospitalisations by fall submechanism, NSW, number, rate and CI, 1999–2000 to 2003–2004

Fall submechanism	All Persons			Male			Female		
	N	Rate ¹	95%CI ²	N	Rate ¹	95%CI ²	N	Rate ¹	95%CI ²
Same level	81,577	243.1	(241.4,244.8)	37,478	238.7	(236.3,241.1)	44,094	235.6	(233.3,237.8)
One level to another	32,212	97.5	(96.4,98.5)	17,375	107.5	(105.9,109.1)	14,835	85.3	(84.0,86.7)
Stairs	12,665	37.8	(37.1,38.4)	5,358	33.8	(32.9,34.8)	7,302	41.1	(40.1,42.0)
Building	6,079	18.5	(18.1,19.0)	4,781	29.1	(28.2,29.9)	1,297	7.9	(7.5,8.4)
Ladder and scaffolding	6,017	18.0	(17.6,18.5)	5,080	31.1	(30.3,32.0)	931	5.4	(5.1,5.8)
Fall while being carried	732	2.2	(2.1,2.4)	384	2.3	(2.1,2.5)	348	2.1	(1.9,2.4)
Diving or jumping into water	697	2.1	(2.0,2.3)	537	3.3	(3.0,3.5)	159	1.0	(0.8,1.2)
Other and unspecified	35,099	103.5	(102.4,104.6)	13,745	91.1	(89.6,92.7)	21,349	109.4	(107.9,110.9)
All ³	175,077	522.8	(520.4,525.3)	84,743	537.1	(533.4,540.7)	90,333	487.7	(484.6,491.0)

1 Age-adjusted rate per 100,000 population.

2 95% confidence interval.

3 The number of NSW residents hospitalised interstate during 2003–2004 was imputed and as a result the sum of submechanisms may not equal the total.

SUMMARY

Falls were the leading cause of hospitalisation due to injury involving NSW residents between 1999–2000 and 2003–2004, accounting for 34.8% of all injury-related hospitalisations. The yearly hospitalisation rate for fall-related injuries was estimated to have increased significantly by 3.0% per year for males during 1989–1990 to 2003–2004 and increase significantly by 1.1% per year in females.

In 2003–2004, there were 36,860 hospitalisations of NSW residents following a fall, giving a hospitalisation rate of 532.4 per 100,000 population. More than two-fifths of those hospitalised following a fall (42.0%) were aged 65 years or older.

Falls on the same level, other and unspecified falls, and falls from one level to another were the types of falls that most commonly led to a hospitalisation. Females had higher hospitalisation rates for falls down stairs than males, while males had higher rates of hospitalisation than females for falls from *buildings or other structures* and *ladders and scaffolding*. The overall hospitalisation rate for fall-related injuries was 10.1% higher for males than for females.

Table 5. Number of hospitalisations for falls¹ by age group and cause, NSW, 1999–2000 to 2003–2004

Rank	Age group								Total	
	0-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64		65+
1	One level to another 6,293	One level to another 8,229	Same level 8,216	Same level 8,329	Same level 5,440	Same level 4,541	Same level 5,352	Same level 6,580	Same level 36,132	Same level 81,573
2	Same level 2,371	Same level 4,371	One level to another 3,017	One level to another 1,535	One level to another 1,409	One level to another 1,543	One level to another 1,614	Stairs 1,538	One level to another 7,072	One level to another 32,210
3	Stairs 752	Building 750	Building 464	Building 945	Stairs 1,079	Stairs 1,272	Stairs 1,598	One level to another 1,436	Stairs 4,793	Stairs 12,660
4	Building 642	Stairs 350	Stairs 351	Stairs 833	Building 964	Ladder and scaffolding 1,015	Ladder and scaffolding 1,289	Ladder and scaffolding 1,270	Ladder and scaffolding 1,423	Building 6,079
5	Fall while being carried 516	Fall while being carried 79	Diving 110	Ladder and scaffolding 271	Ladder and scaffolding 565	Building 802	Building 646	Building 434	Building 408	Ladder and scaffolding 6,011
6	Ladder and scaffolding 56	Ladder and scaffolding 75	Fall while being carried 41	Diving 216	Diving 120	Diving 71	Diving 45	Diving 22	Fall while being carried 26	Fall while being carried 732
7	Diving 16	Diving 66	Ladder and scaffolding 32	Fall while being carried 36	Fall while being carried 19	Fall while being carried #	Fall while being carried #	-	Diving 21	Diving 695
	Other and unspecified 1,231	Other and unspecified 1,535	Other and unspecified 1,392	Other and unspecified 1,525	Other and unspecified 1,558	Other and unspecified 1,859	Other and unspecified 2,336	Other and unspecified 2,690	Other and unspecified 20,868	Other and unspecified 35,094

¹ # Cell sizes represent fewer than five hospitalisations or data have been removed to prevent identification of cell sizes less than five.