

4.0 OVERVIEW

4.1 Deaths due to Injury

In 1999, injury and poisonings were the sixth leading cause of death in NSW (see Table 3), as well as the leading cause of death among people aged 1-44. Approximately 2,500 people died each year between 1986 and 1999 as the result of an injury. It is notable that in the under 45 age groups the number of injuries were far higher than the second leading cause of death, reinforcing the burden of injury in these young age groups.

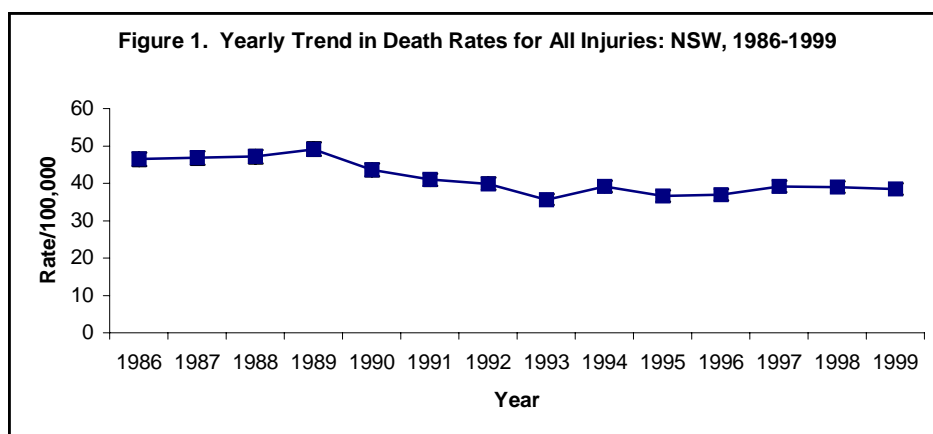


Figure 1 shows the trend in injury deaths rates between 1986 and 1999. The injury death rate has fallen over the period 1986 to 1999 although there was a small fluctuation in 1994 to a rate of 39.1/100,000 population. That year, injury was the fourth leading cause of death and the second leading cause of premature death (NSW Health Chief Health Officer's Report, 1997). Between 1995 and 1999, the injury death rate has fluctuated, increasing slightly. In this five-year period, 12,341 people died as the result of an injury, at a rate of 38.1/100,000 population.

Figure 2 shows the age-specific death rates for all injuries between 1995 and 1999. People aged 20-29 and 85 years and older were at greatest risk of dying from injuries and accounted for almost 30 percent of all injury deaths from 1995-1999.

Table 3. Top Ten Leading Causes of Death by Age Group: NSW, 1999*

	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Perinatal Conditions 257	Injury and Poisoning 38	Injury and Poisoning 25	Injury and Poisoning 18	Injury and Poisoning 355	Injury and Poisoning 499	Injury and Poisoning 415	Cancer 863	Cancer 1,834	Diseases of Circulatory System 12,202	Diseases of Circulatory System 13,854
2	Ill-defined Conditions 50	Nervous System Diseases 9	Cancer 16	Cancer 8	Mental Disorders 49	Cancer 88	Cancer 275	Diseases of Circulatory System 446	Diseases of Circulatory System 913	Cancer 9,696	Cancer 12,841
3	Congenital Abnormalities 43	Endocrine Diseases 8	Respiratory Diseases #	Nervous System Diseases 6	Cancer 46	Mental Disorders 78	Diseases of Circulatory System 179	Injury and Poisoning 297	Endocrine Diseases 322	Endocrine Diseases 2,810	Endocrine Diseases 3,318
4	Diseases of Circulatory System 29	Infectious Diseases 7	Nervous System Diseases #	Endocrine Diseases 5	Infectious Diseases 33	Infectious Diseases 60	Infectious Diseases 116	Infectious Diseases 189	Infectious Diseases 270	Mental Disorders 2,611	Infectious Diseases 3,053
5	Nervous System Diseases 20	Respiratory Diseases 7	Endocrine Diseases #	Infectious Diseases #	Nervous System Diseases 29	Diseases of Circulatory System 51	Mental Disorders 76	Endocrine Diseases 101	Injury and Poisoning 201	Infectious Diseases 2,353	Mental Disorders 2,978
6	Infectious Diseases 19	Cancer 7	Infectious Diseases #	Diseases of Circulatory System #	Diseases of Circulatory System 22	Nervous System Diseases 26	Nervous System Diseases 42	Nervous System Diseases 73	Nervous System Diseases 122	Nervous System Diseases 1,763	Injury and Poisoning 2,633
7	Respiratory Diseases 17	Diseases of Circulatory System 6	Diseases of Circulatory System #	Respiratory Diseases #	Endocrine Diseases 15	Endocrine Diseases 13	Endocrine Diseases 34	Mental Disorders 69	Respiratory Diseases 114	Respiratory Diseases 1,340	Nervous System Diseases 2,092
8	Injury and Poisoning 12	Blood Diseases #	Blood Diseases #	Congenital Abnormalities 1	Respiratory Diseases 9	Respiratory Diseases 11	Digestive Diseases 23	Respiratory Diseases 51	Mental Disorders 94	Injury and Poisoning 773	Respiratory Diseases 1,564
9	Cancer 8	Congenital Abnormalities #	Digestive Diseases #	Mental Disorders #	Blood Diseases 5	Ill-defined Conditions 6	Respiratory Diseases 11	Digestive Diseases 30	Digestive Diseases 43	Blood Diseases 446	Blood Diseases 501
10	Endocrine Diseases 8	Perinatal Conditions #			Ill-defined Conditions 5	Digestive Diseases 5	Ill-defined Conditions 8	Blood Diseases 8	Blood Diseases 30	Digestive Diseases 226	Digestive Diseases 334

* Category of principle diagnosis was classified according to ICD-10 chapter headings for diseases and external causes of injuries and poisonings

Cell size less than five cases

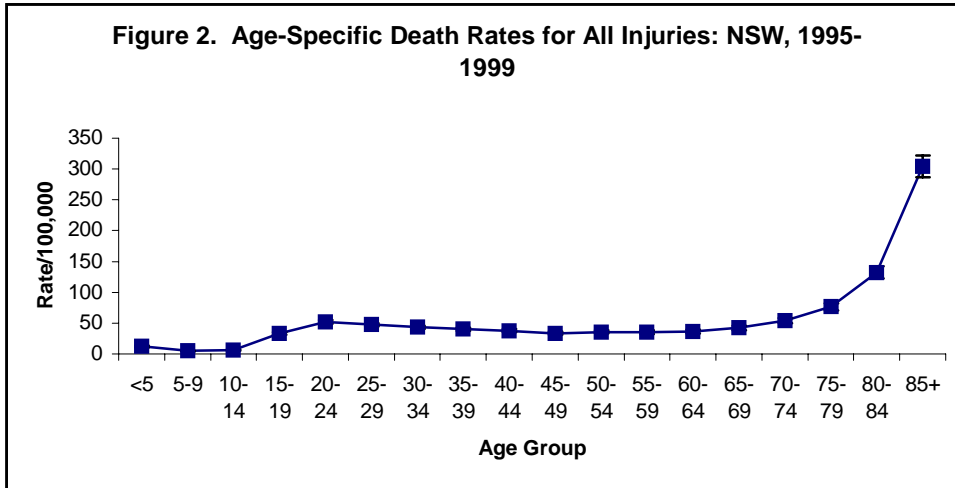
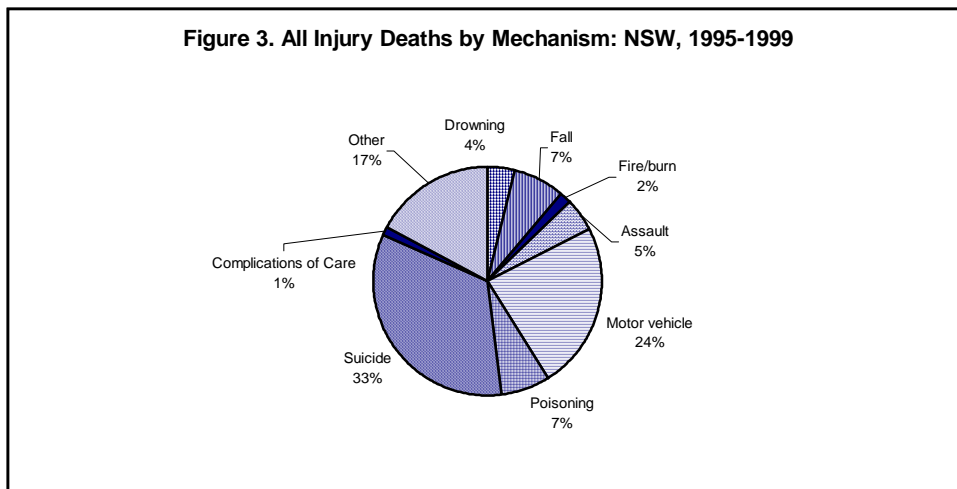


Figure 3 shows the percentage of deaths between 1995 and 1999 by the injury mechanisms listed in Table 4. This figure shows that 33 percent of the deaths in NSW were due to suicide and 24 percent were due to motor vehicle injuries. These two categories of injury deaths combined account for more than 50 percent of all injury deaths. Deaths due to drowning (4%) and complications of care (1%) were much less common. The injury mechanisms selected for study in this analysis accounted for more than 80 percent of all injury-related deaths from 1995 to 1999 in NSW.



The following table (See Table 4) shows the number of deaths and death rates by injury mechanism for all persons, males and females from 1995 to 1999.

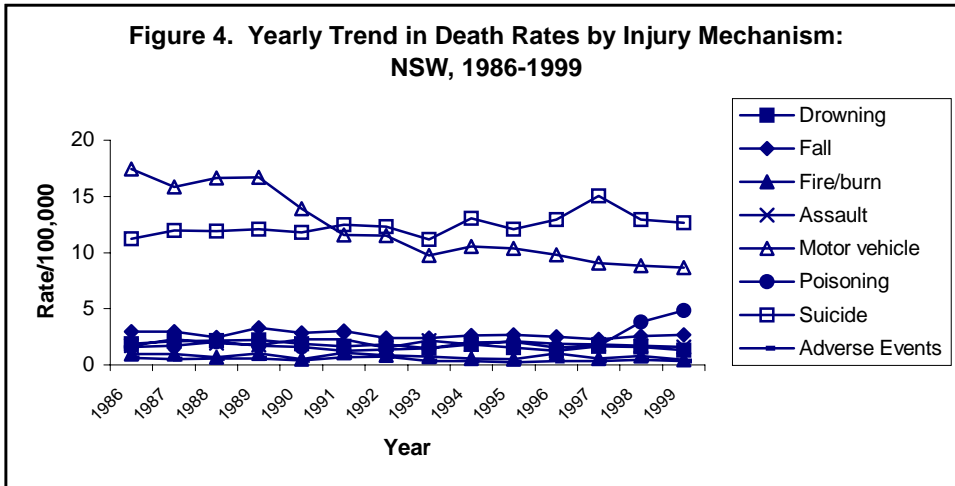
Table 4. Number of Deaths and Death Rates/100,000* by Injury Mechanism: NSW, 1995-1999

Injury Mechanism	Total Number	Rate /100,000	Number of Males	Male Rate /100,000	Number of Females	Female Rate /100,000
Suicide	4,151	13.1	3,276	21.1	875	5.4
Motor Vehicle	2,915	9.3	2,032	13.4	883	5.4
Falls	901	2.5	541	3.6	360	1.6
Poisoning	870	2.8	649	4.2	221	1.4
Interpersonal Violence	566	1.8	401	2.6	165	1.0
Drowning	465	1.5	366	2.3	99	0.6
Fire/Burns	223	0.7	142	0.9	81	0.5
Complications of care	121	0.3	59	0.4	62	0.3
All Injury	12,341	38.1	8,671	56.8	3,670	20.2

*Death rates have been age-adjusted using the 1991 Australian census population

Table 4 shows that death rates for males were higher than for females in all injury mechanisms. Table 4 also shows that 70 percent of all injury deaths between 1995 and 1999 were male. Males committed suicide, were poisoned and drowned three to four times more often than females from 1995 to 1999. In contrast, there was much less difference between males and females for complications of care and for fire/burns.

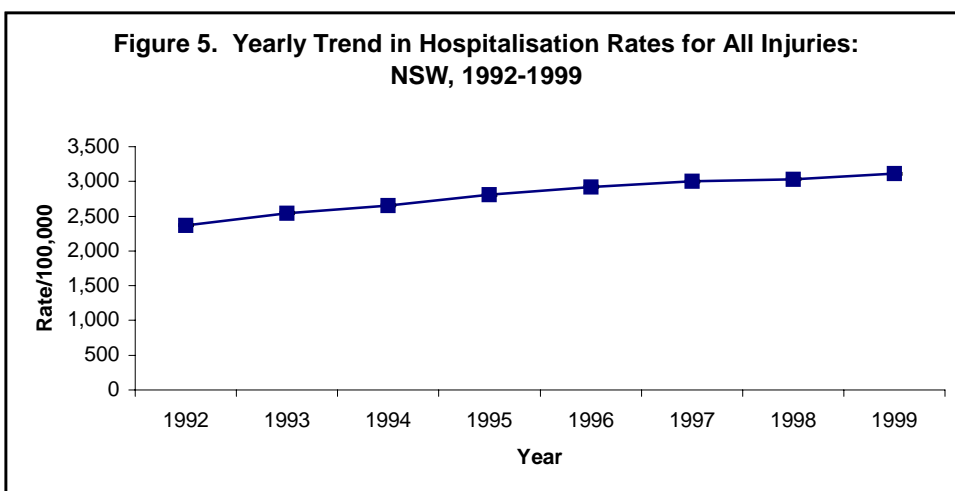
Figure 4 compares the trend in death rates between 1986 and 1999 for the injury mechanisms listed in Table 4.



In 1991, suicide overtook motor vehicles as the leading cause of death and exhibited a steadily increasing trend until 1997 and since then it has decreased. Motor vehicle crashes have steadily decreased since 1989, although the rate of decrease has slowed considerably in recent years. Of the other injury mechanisms shown in Figure 4, poisoning death rates have been increasing since 1996 and overall, motor vehicle death rates are decreasing the most rapidly.

4.2 Hospitalisations due to Injury

In 1999, injury and poisonings were the fourth leading cause of hospitalisation in NSW (see Table 5), as well as the leading cause of hospitalisation among people aged 10-14. More than 178,000 people were hospitalised each year between 1992 and 1999 as the result of an injury. Figure 5 shows the trend in injury hospitalisation rates between 1992 and 1999.



The injury hospitalisation rate increased by approximately 18 percent between 1992 and 1999. Between 1995 and 1999, nearly one million people were hospitalised as the result of an injury, at a rate of 2,978/100,000 population.

Figure 6 shows the age-specific rates for all injuries between 1995 and 1999. People aged 65 years and older were at the greatest risk of being hospitalised as a result of an injury from

1995-1999 and the risk clearly increased with increasing age. For all other age groups, the injury hospitalisation rates were very stable except for a slightly elevated hospitalisation rate for 15 to 35 year olds. As shown in Table 4, the 65 years and older age group accounted for around 26 percent of all injury hospitalisations in 1999, although most injury-related hospitalisations (56%) involved under 45 year olds.

Table 5. Top Ten Leading Causes of Hospitalisation by Age Group: NSW, 1999*

	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Perinatal Conditions 26,734	Respiratory Diseases 17,370	Respiratory Diseases 9,526	Injury and Poisoning 7,277	Pregnancy 35,047	Pregnancy 83,205	Digestive Diseases 27,847	Digestive Diseases 35,607	Digestive Diseases 35,165	Diseases of Circulatory System 77,987	Digestive Diseases 218,152
2	Respiratory Diseases 7,611	Infectious Diseases 8,991	Injury and Poisoning 6,656	Respiratory Diseases 4,242	Digestive Diseases 19,436	Digestive Diseases 22,296	Pregnancy 25,410	Genitourinary Disease 18,915	Diseases of Circulatory System 24,751	Digestive Diseases 64,647	Pregnancy 144,055
3	Congenital Abnormalities 6,333	Injury and Poisoning 6,202	Disease of Ear and Mastoid Process 3,718	Digestive Diseases 3,892	Injury and Poisoning 19,338	Genitourinary Disease 17,694	Genitourinary Disease 21,609	Cancer 18,283	Cancer 21,544	Cancer 56,459	Diseases of Circulatory System 135,309
4	Ill-defined Conditions 3859	Disease of Ear and Mastoid Process 4,997	Digestive Diseases 3,677	Mental Disorders 2,649	Mental Disorders 10,928	Injury and Poisoning 17,380	Injury and Poisoning 14,390	Diseases of Circulatory System 17,585	Musculoskeletal Diseases 15,792	Disease of Eye and Adnexa 43,491	Injury and Poisoning 126,397
5	Infectious Diseases 3,301	Ill-defined Conditions 4,653	Infectious Diseases 2,519	Ill-defined Conditions 2,120	Respiratory Diseases 8,237	Mental Disorders 12,857	Musculoskeletal Diseases 13,774	Musculoskeletal Diseases 16,118	Genitourinary Disease 14,277	Respiratory Diseases 33,201	Cancer 119,456
6	Digestive Diseases 1,856	Digestive Diseases 3,729	Ill-defined Conditions 1,978	Skin Diseases 1,494	Genitourinary Disease 7,990	Musculoskeletal Diseases 10,220	Mental Disorders 12,026	Ill-defined Conditions 13,484	Ill-defined Conditions 12,930	Injury and Poisoning 32,708	Genitourinary Disease 113,423
7	Genitourinary Disease 1191	Congenital Abnormalities 2,723	Mental Disorders 1,748	Musculoskeletal Diseases 1,339	Musculoskeletal Diseases 6,691	Ill-defined Conditions 8,675	Cancer 11,015	Mental Disorders 11,949	Injury and Poisoning 9,798	Musculoskeletal Diseases 32,531	Respiratory Diseases 109,699
8	Injury and Poisoning 932	Genitourinary Disease 2,023	Genitourinary Disease 1,320	Infectious Diseases 1,234	Ill-defined Conditions 6,519	Respiratory Diseases 6,654	Ill-defined Conditions 10,987	Injury and Poisoning 11,716	Respiratory Diseases 9,349	Ill-defined Conditions 31,768	Musculoskeletal Diseases 97,965
9	Mental Disorders 776	Cancer 1,349	Congenital Abnormalities 1,287	Genitourinary Disease 1,181	Skin Diseases 4,131	Cancer 5,373	Diseases of Circulatory System 8,899	Respiratory Diseases 7,074	Disease of Eye and Adnexa 5,793	Genitourinary Disease 27,223	Ill-defined Conditions 96,973
10	Skin Diseases 606	Skin Diseases 1,330	Nervous System Diseases 1,277	Cancer 1,109	Cancer 2,976	Diseases of Circulatory System 3,779	Respiratory Diseases 6,435	Nervous System Diseases 6,011	Mental Disorders 5,652	Mental Disorders 12,611	Mental Disorders 72,045

* Category of principle diagnosis was classified according to ICD-10 chapter headings for diseases and injuries and poisonings
Also, counts may represent multiple presentations by same patient for same type of disease and/or unrelated condition

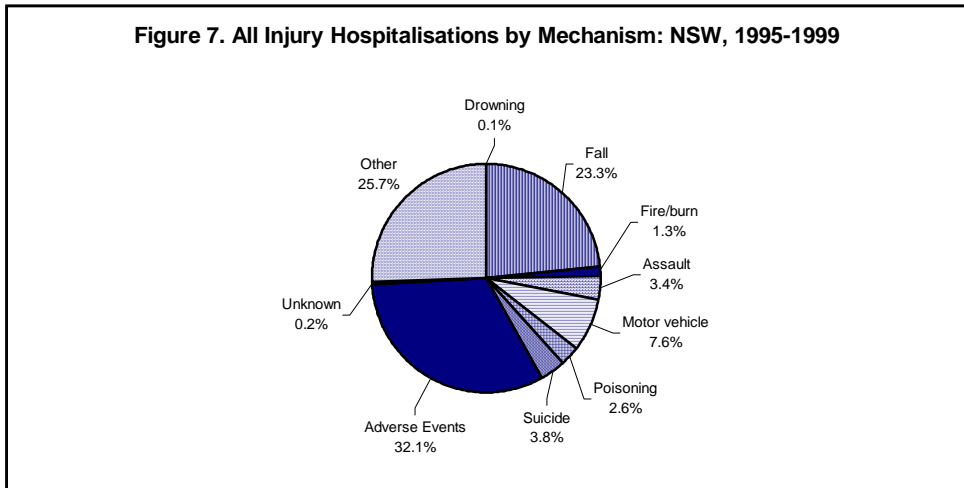
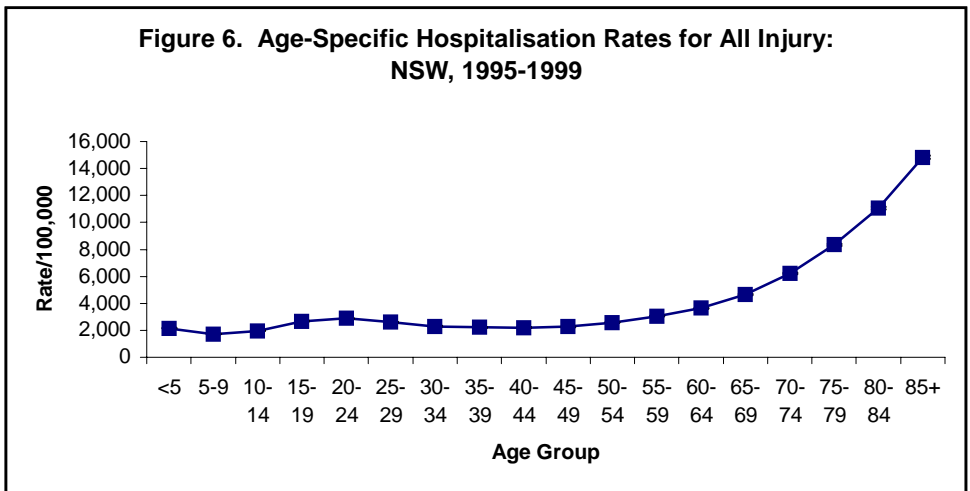


Figure 7 shows the percentage of hospitalisations between 1995 and 1999 by the injury mechanisms listed in Table 6.

Figure 7 shows that 32 percent of the hospitalisations in NSW were due to complications of care and 23 percent were due to falls injuries. These two categories of injury hospitalisations combined account for more than 50 percent of all injury hospitalisations. Hospitalisations due to fire/burns (1.3%) and near-drowning (0.1%) were much less common. The injury mechanisms selected for study in this analysis accounted for around three-quarters of all injury-related hospitalisations from 1995 to 1999 in NSW.

Table 6 shows the number of hospitalisations and hospitalisation rates by injury mechanism for all persons, males and females from 1995 to 1999.

Table 6. Number of Hospitalisations and Hospitalisation Rates/100,000* by Injury Mechanism: NSW, 1995-1999

Injury Mechanism	Total Number	Rate /100,000	Number of Males	Male Rate /100,000	Number of Females	Female Rate /100,000
Complications of care	309,102	922.1	155,853	997.8	153,240	870.9
Fall	224,141	661.7	97,939	644.8	126,202	646.2
Motor vehicle	73,245	238.0	47,439	311.9	25,806	163.3
Attempted Suicide	36,617	119.9	15,770	102.9	20,846	137.5
Interpersonal Violence	32,353	107.8	24,849	165.0	7,503	49.5
Poisoning	24,582	80.0	12,299	80.6	12,283	79.5
Fire/burn	12,838	42.0	8,074	52.9	4,764	31.0
Drowning	1,168	3.9	792	5.2	376	2.5
All Injury	963,300	2,978.1	535,910	3,486.7	427,372	2,452.3

*Hospitalisation rate has been age-adjusted using the 1991 Australian census population

Table 6 shows that hospitalisation rates for males were higher than for females in all injury mechanisms except falls and attempted suicide. Table 6 also shows that 56 percent of all injury hospitalisations between 1995 and 1999 were male. In particular, males had much higher assault and near-drowning hospitalisation rates than females from 1995 to 1999.

Figure 8 compares the trend in hospitalisation rates between 1992 and 1999 for the injury mechanisms listed in Table 6.

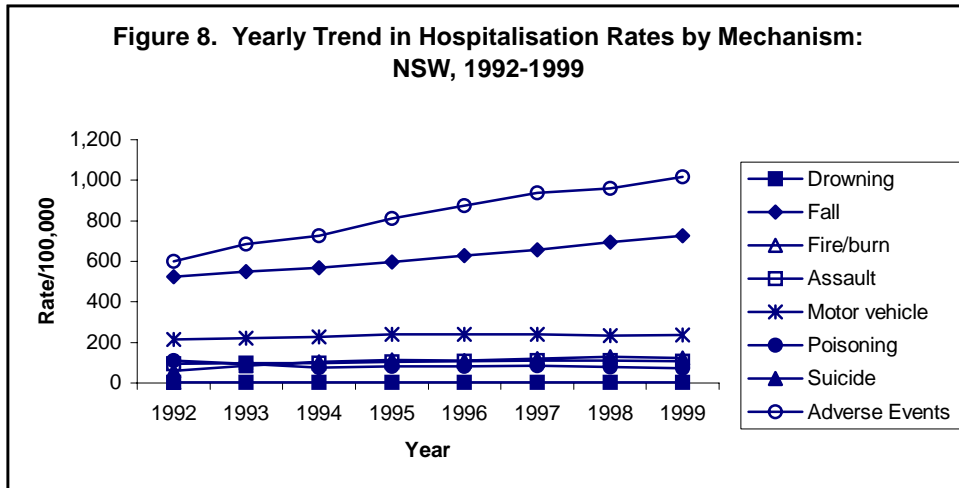


Figure 8 shows that the hospitalisation rates for complications of care and falls exceeded the rates for other injury types each year since 1992. The trends in complications of care and falls injury hospitalisations have also been increasing steadily, to their current rates of 1,016/100,000 and 726/100,000. Motor vehicle accidents were the next most common reason for injury-related hospitalisation, but the rates were less than half those shown for complications of care and falls.

For specific types of injury, the level of vulnerability varied across age groups. The following section examines each injury type in more detail in terms of the distribution across ages and the causes of each of the injury mechanisms.

4.3 Summary

Injury death rates have decreased in NSW since the early 1990's, although there has not been much change in since 1997. On the other hand, injury hospitalisations have been increasing steadily over the same time period. This suggests that we may be gaining better control over the most severe injuries, but that there is clearly still a need for injury prevention activities. One of the most concerning characteristics of injury is that it affects so many younger people. Not only was injury the leading cause of death in 1999 for under 45 year olds, the number of injury deaths in this age group were between two and eight times the number for the next highest cause of death. Injury also has clear effects on the older sections of the community. Both death and hospitalisation rates increase two to three-fold between 65 and 85 years of age.

This analysis points to the causes of injury that need most attention. Suicide and motor vehicle are important targets for injury prevention activities. Although death rates for both of these injury mechanisms have decreased slowly since the mid to late 1990's, these injuries mechanisms still account for more than half of all injury deaths. In addition, poisoning is also important as death rates for poisoning have been increasing significantly since 1997. Further information emerges from the analysis of injury hospitalisations, which shows a different pattern. Complications of care and falls clearly show the highest hospitalisation rates and unlike rates for other injury causes, the rates have been increasing steadily from 1992 to 1999.

The analysis of injury mechanisms shows that males are much more likely to die due to all injury causes examined in this analysis except complications of care. For hospitalisations, the only causes where males and females differ greatly were interpersonal violence, drowning, motor vehicle accidents and fire/burns.