15. Machinery injuries

This section describes hospitalisations due to unintentional machinery-related injuries. Different types of machinery can cause injury-related hospitalisations. These types of machinery include *agricultural* and *lifting and transmission*, and *other* types of machinery (WHO, 1977; WHO, 1992). For example, machinery-related injuries could result from contact with lifting and transmission devices, such as chain hoists or winches, or from contact with agricultural machinery, like harvesting machinery, such as threshers.

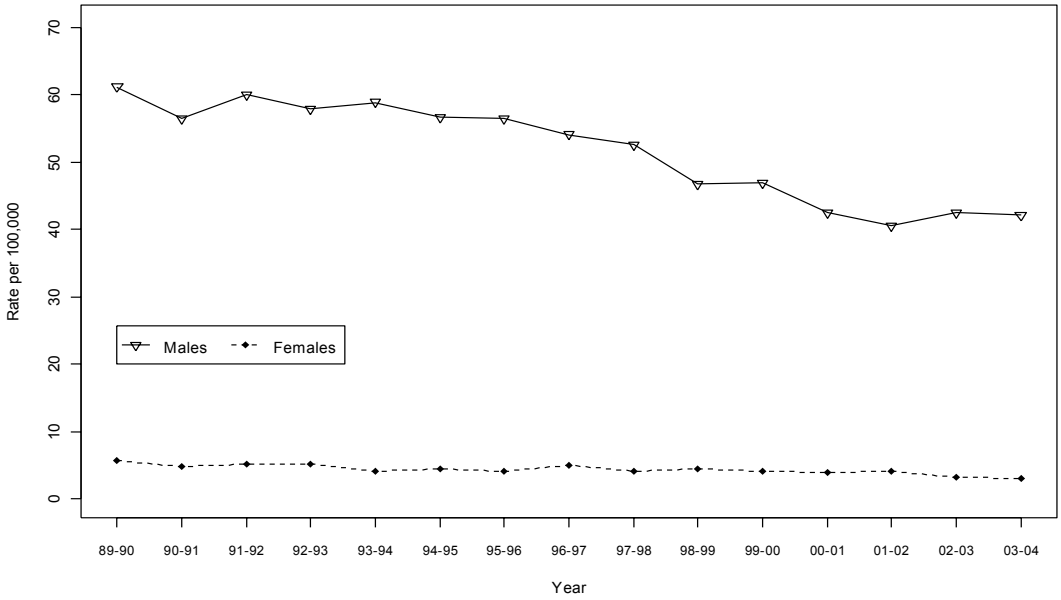
In NSW, machinery-related incidents were the fourteenth leading cause of death in NSW during 1998-2002, with 40 deaths, giving a mortality rate of 0.1 per 100,000 population (Schmertmann et al, 2004). The lifetime cost of fatal and non-fatal machinery-related incidents in NSW has been estimated at $35.6 million—$8.4 million in direct costs and $27.3 million in mortality and morbidity costs (Potter-Forbes & Aisbett, 2003).

Hospitalisation data for machinery-related injuries were used to describe the profile of machinery-related injuries involving NSW residents. Hospitalisation data during 1999–2000 to 2003–2004 were used for the majority of the analyses, except for the trend analyses, which used data from 1989–1990 to 2003–2004.

Machinery-related injuries were the twelfth leading cause of injury hospitalisation in the period 1999–2000 to 2003–2004, and accounted for 1.5% of all injury hospitalisations (Table 3). During this period, there were 7,656 hospitalisations for machinery-related injuries, at a rate of 23.3 per 100,000 population. There were about 1,531 hospitalisations each year in the period 1999–2000 to 2003–2004.

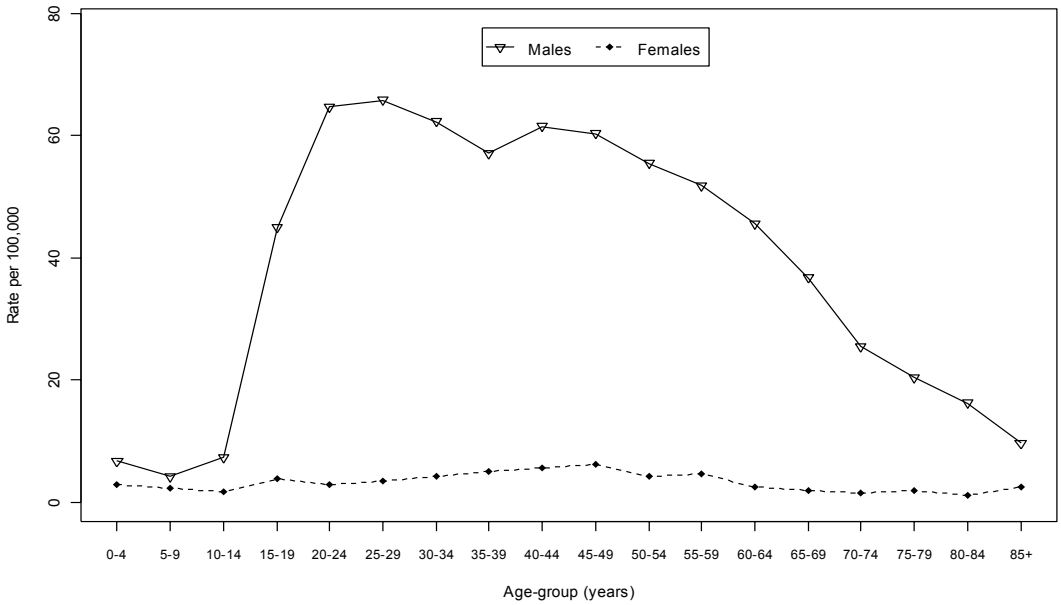
The age-adjusted hospitalisation rate for machinery-related injuries by year decreased significantly between 1989–1990 and 2003–2004 (Figure 25) by 3.0% each year for both males and females (95% confidence interval for the decrease: 2.6% to 3.3%).

Figure 25. Hospitalisation rate for injury due to machinery-related injuries by sex, NSW 1989–1990 to 2003–2004



The age-specific hospitalisation rates for machinery-related injuries for the period 1999–2000 to 2003–2004 were highest for males aged 20–24 years and 25–29 years (Figure 26). Hospitalisation rates for males were higher than rates for females for all age groups, with the overall hospitalisation rate for males being about 1059% higher than for females.

Figure 26. Age-specific hospitalisation rate for machinery-related injuries by sex, NSW, 1999–2000 to 2003–2004



Rates of hospitalisations were highest for *other* machinery-related causes (Table 26). This category included hospitalisations due to injuries caused by *woodworking* and *metalworking* machinery, although the number of hospitalisations due to these causes was not able to be extracted individually for all of the period 1999–2000 to 2003–2004. For 2002-03 and 2003–2004, the most common causes of hospitalisation due to 'other machinery' were injuries due to woodworking machinery (30.7%), other specified machinery (27.7%) and metalworking machinery (10.7%).

Table 26. Injury hospitalisations by machinery-related cause, NSW, number, rate and CI, 1999–2000 to 2003–2004

	All Persons			Male			Female		
Cause	N	Rate[1]	95%CI[2]	N	Rate[1]	95%CI[2]	N	Rate[1]	95%CI[2]
Lifting and transmission	907	2.8	(2.6,2.9)	827	5.0	(4.7,5.4)	79	0.5	(0.4,0.6)
Agricultural	550	1.7	(1.5,1.8)	508	3.1	(2.8,3.4)	42	0.3	(0.2,0.3)
Other	6,199	18.8	(18.4,19.3)	5,719	34.8	(33.9,35.7)	480	2.9	(2.7,3.2)
All[3]	7,656	23.3	(22.7,23.8)	7,055	42.9	(41.9,43.9)	601	3.7	(3.4,4.0)

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.

Table 27 shows the number of hospitalisations due to machinery-related injuries by age group for the period 1999–2000 to 2003–2004. For all age groups, *other* machine-related injuries were the most common. For those aged 15–64 years, injuries due to *lifting and transmission machinery* were the second most common cause of machinery-related hospitalisation.

SUMMARY

Machinery-related injuries were the twelfth leading cause of injury-related hospitalisation involving NSW residents between 1999–2000 and 2003–2004, accounting for 1.5% of all injury-related hospitalisations. The yearly hospitalisation rate for fall-related injuries was estimated to have decreased by 3.0% per year for both males and females during 1989–1990 to 2003–2004.

In 2003–2004, there were 1,516 hospitalisations of NSW residents following a machinery-related injury, giving a hospitalisation rate of 22.5 per 100,000 population. More than four-fifths (84.8%) of those hospitalised following a machinery-related injury were aged 15–59 years.

Other types of machinery were the types of machinery that most commonly led to a hospitalisation. The overall hospitalisation rate was about 1059% higher for males than for females.

Table 27. Number of hospitalisations for machinery-related[1] injuries by age group and cause, NSW, 1999–2000 to 2003–2004

	Age group									
Rank	**0-4**	**5–9**	**10–14**	**15–24**	**25–34**	**35–44**	**45–54**	**55–64**	**65+**	**Total**
1	Agricultural 17	Lifting and transmission 12	Agricultural 13	Lifting and transmission 138	Lifting and transmission 219	Lifting and transmission 200	Lifting and transmission 150	Lifting and transmission 109	Agricultural 69	Lifting and transmission 907
2	Lifting and transmission 14	Agricultural 10	Lifting and transmission 11	Agricultural 65	Agricultural 80	Agricultural 98	Agricultural 113	Agricultural 85	Lifting and transmission 54	Agricultural 550
	Other 74	Other 53	Other 81	Other 1,108	Other 1,346	Other 1,325	Other 1,142	Other 661	Other 409	Other 6,199

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