

9 Suffocation

Suffocation is an unintentional cause of injury death (WHO 1977, WHO 1996). WHO classifies the cause of suffocation deaths by the object or circumstance that affects a person's ability to breathe (other than drowning) (WHO 1996). The causes of suffocation include *food*, *non-food* (items other than food), *bed* (linens, pillows, co-sleeping) and *cave-ins* (WHO 1977, WHO 1996). Suffocation deaths can also be intentional. A self-inflicted suffocation injury that results in death is classified as a suicide and a suffocation injury inflicted on one person by another that results in death is classified as an interpersonal violence death. Deaths due to intentional suffocation (i.e., subcategory *hanging, strangulation and suffocation*) are covered in earlier chapters (see the suicide and interpersonal violence chapters).

Suffocation death data from 1986 to 2002 were used to describe the demographic profile of suffocation deaths in NSW. Death data during 1998–2002 were used for the majority of the analyses, but trend analyses used death data from 1986 to 2002.

Suffocation was the seventh leading cause of injury death from 1998–2002 and accounted for almost 3% of all injury deaths (see Table 2). During these years, 331 people died from suffocation, at an overall rate of 1.0/100,000 population and 64% were male. Approximately 53 people died each year from 1986 to 2002 as the result of suffocation.

Figure 16 shows the yearly trend in death rates for suffocation from 1986 to 2002. The suffocation death rate showed no statistically significant trend between 1998 and 2002, though there is a rising trend since 1995.

Figure 16. Yearly trend in death rates for suffocation: NSW, 1986–2002

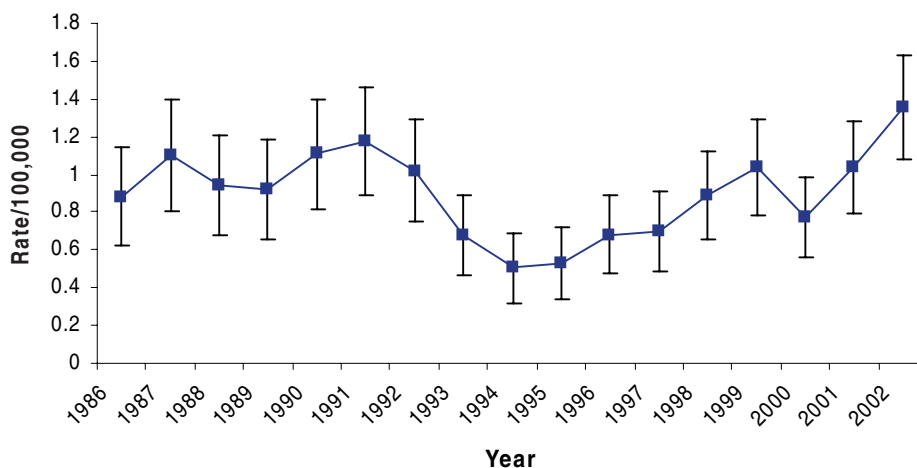


Figure 17 shows the age-specific death rates for suffocation between 1998 and 2002. People aged 75+ years had the highest rates of death due to suffocation. Suffocation deaths in people aged 75+ years accounted for 36% of all suffocation deaths between 1998 and 2002. An elevated rate was also seen in children under age five years and suffocation deaths in this age group accounted for 12% of all suffocation deaths.

Figure 17. Age-specific death rates for suffocation: NSW, 1998–2002

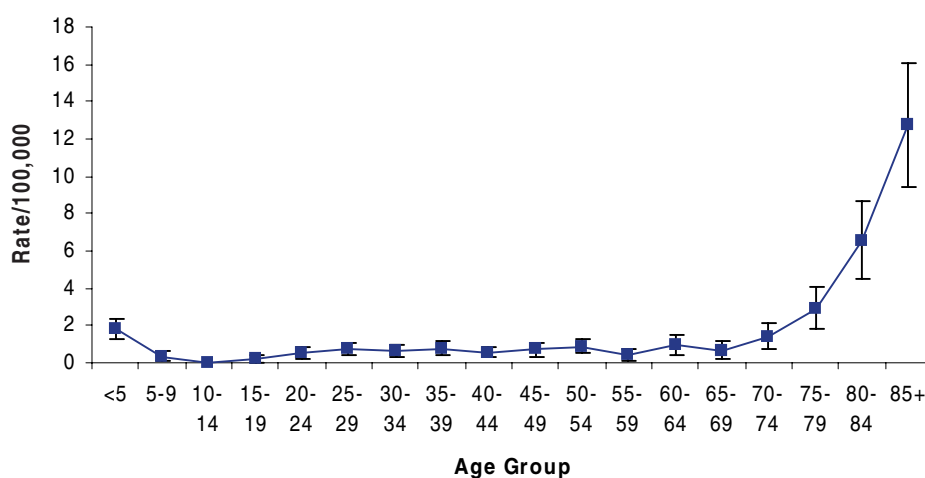


Table 15 shows the number of suffocation deaths and death rates by cause for all persons, males and females, during 1998–2002. *Other and unspecified causes* and *food* were the causes that led to a suffocation death most often and accounted for 47% and 29% of all suffocation deaths respectively. Males accounted for 70% of all suffocation deaths due to *other and unspecified causes* and 57% of all suffocation deaths due to *food*.

Other and unspecified causes were responsible for the majority of male suffocation deaths, accounting for 51% of all male suffocation deaths. The rate for male suffocation deaths exceeded the corresponding rate for females for each cause in Table 15. Male suffocation death rates were also significantly higher for all suffocations due to *other and unspecified causes* and *non-food*. Male death rates were also more than twice the corresponding female death rates for suffocations due to *other and unspecified causes* and *non-food items*.

Other and unspecified causes were also responsible for the majority of female suffocation deaths during 1998–2002 and accounted for 39% of all female suffocation deaths.

Table 15. Number of suffocation deaths and death rates/100,000* by cause: NSW, 1998–2002

Causes	All persons		Males		Females		Ratio [‡]
	N	Rate [†]	N	Rate [†] (CI) ^{††}	N	Rate [†] (CI)	
Other and unspecified	154	0.47	108**	0.70 (0.57–0.83)	46**	0.27 (0.19–0.34)	2.63
Food	95	0.29	54	0.38 (0.27–0.48)	41	0.22 (0.15–0.29)	1.70
Nonfood	65	0.20	41	0.34 (0.23–0.45)	24	0.12 (0.07–0.17)	2.82
Bed	17	0.05	10	0.06 (0.02–0.10)	7	0.04 (0.01–0.08)	1.36
All suffocation	331	1.02	213	1.48 (1.27–1.68)	118	0.65 (0.53–0.77)	2.27

* Death rates have been age-adjusted using the 2001 Australian census population. † Rate/100,000. ‡ Mortality ratio for male/female. **includes cave-ins for males and females. †† 95% confidence interval.

Table 16 shows suffocation deaths by age group and cause in NSW for 1998–2002. *Other and unspecified causes* were responsible for the majority of suffocations in people aged one to 54 years. Children aged under one year died of suffocation caused *in bed* most often (due to linens, pillows, co-sleeping) and people aged 55+ years died most often due to suffocation caused by food.

SUMMARY

Suffocation was a leading cause of injury death for people in NSW, accounting for approximately 53 deaths each year from 1986 to 2002. Analysis of the trend for suffocation death rates showed no statistically significant change was present between 1986 and 2002, though there is a suggestion of a rise since 1995. People aged 75+ years had the highest rates of death due to suffocation. An elevated rate was also seen in children under age five years. No comparison can be made with previous results for male and female death rates as suffocation was not examined from 1995 to 1999 by Schmetzmann and Williamson (2002).

Other and unspecified causes and *food* were the causes that led to a suffocation death most often. *Other and unspecified causes* were responsible for the majority of suffocations in people aged one to 54 years. Children aged under one year died of suffocation caused *in bed* most often (due to linens, pillows, co-sleeping) and people aged 55+ years died most often due to suffocation caused by food.

Males accounted for nearly 64% of all suffocation deaths in NSW during 1998–2002. Males accounted for 70% of all suffocation deaths due to *other and unspecified causes* and 57% of all suffocation deaths *due to food*. Male suffocation death rates were also significantly higher for all suffocations due to *other and unspecified causes* and *non-food*.

These results indicate that suffocation is a serious public health problem for very young children and older people in NSW. Children aged less than one year are most at risk whilst in bed (e.g. own cot, parents bed) and older adults are at risk while eating. Further research is needed to study the factors contributing to suffocation deaths in these age groups.

Unfortunately, a large proportion of suffocation deaths were coded as *other and unspecified causes*, limiting the effectiveness of the results. Further work needs to be undertaken to clarify whether additional codes are needed to describe suffocation death or if inadequate information was presented on the death certificate to inform coding of the suffocation deaths.

Table 16. Suffocation deaths* by age group and cause†: NSW, 1998-2002

Rank	Age group											Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Other and unspecified	
1	Bed 15	Other and unspecified 6	Other and unspecified #		Other and unspecified 13	Other and unspecified 28	Other and unspecified 27	Other and unspecified 22	Food 11	Food 55	Other and unspecified 152	
2	Other and unspecified 11	Food #	Non-food items #		Non-food items #	Food #	Food 5	Food 11	Other and unspecified 6	Non-food items 52	Food 95	
3	Food #	Bed #	Food #		Food #	Non-food items #	Non-food items #	Non-food items #	Non-food items #	Other and unspecified 35	Non-food items 65	
4										Cave-in #	Bed 17	
5											Cave-in #	

* Numbers represent the number of cases. † See Appendix 4 for suffocation cause codes. # Cell size less than five cases