Deaths due to hazardous substances exposure

HIGHLIGHTS:

- **Death from hazardous substances is an important public health problem that is preventable.**
- **Deaths from hazardous substances are more common in males than females.**
- **There were no hazardous substances deaths of children less than five years old.**
- **Toxic effects of carbon monoxide caused the majority of deaths between 2006 and 2012.**
- **Deaths from huffing is most common in the 25-44 year age group.**

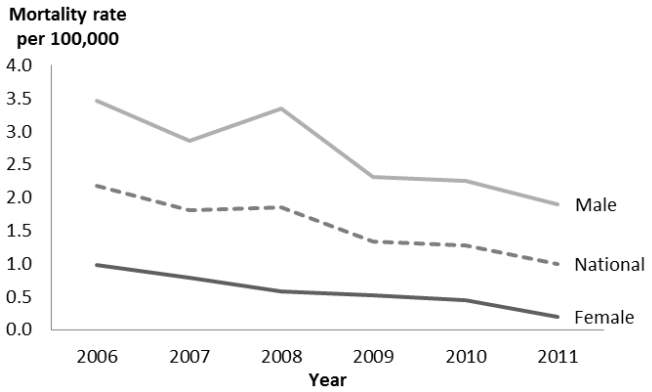
Deaths from hazardous substances is an important public health problem

Death from hazardous substances is an important public health problem in New Zealand. Deaths continue to occur from hazardous substance exposures that appear to be entirely preventable. A high proportion of these deaths are caused by hazardous substances used in everyday home and workplace situations.

Deaths from hazardous substances are more common in males than females

Between 2006 and 2011, male poisoning fatality rates in New Zealand were three times that of females (Figure 1). These results are similar to those previously found in New Zealand (Peiris-John, Kool et al, 2014). The number of females who died from hazardous substances has also declined over time, with only five deaths reported in 2011.

Figure 1: Age-standardised mortality rate per 100,000 of poisoning deaths by gender, 2006-2011



Source: National Mortality Collection

No hazardous substances-related deaths of children less than five years old

There were no reported deaths from hazardous substances exposure of children less than five years old between 2006 and 2011 (Table 1). This may be attributed to several factors such as education, the emergence of child resistant packaging, identification of poisonous substances and products, product modification, or supportive legislative changes (Safekids Aotearoa, 2015). Despite this, poisoning remains one of the major causes of childhood injury in New Zealand (Ministry of Health and ACC, 2013).

Table 1: Number of hazardous substances deaths, by age group and cause of death, 2006-2011

Diagnostic Group	Age group (years)					
	5-14	15-24	25-44	45-64	65+	Total
Carbon monoxide	0	34	116	107	41	298
Other gases, fumes and vapours	4	23	4	6	6	43
Solvents, hydrocarbons and corrosive	1	5	6	4	0	16
Other toxic substances	0	0	7	4	2	13
Pesticides	0	2	0	6	4	12
Burns	2	2	0	1	5	10
Unknown	0	2	4	5	0	11
Total	7	68	137	133	58	403

Source: National Mortality Collection

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Toxic effects of carbon monoxide caused the majority of deaths

Toxic effects of carbon monoxide caused 298 hazardous substances deaths between 2006 and 2011, of which more than 90 percent were intentional exposures. This was most common in the 25-44 and 45-64 year age groups (Table 1). According to Worksafe NZ (2010), common sources of carbon monoxide include running a vehicle in a confined space such as a garage, unflued gas heaters, burning fuel in a confined space, gas stoves not working properly, broken or blocked chimneys.

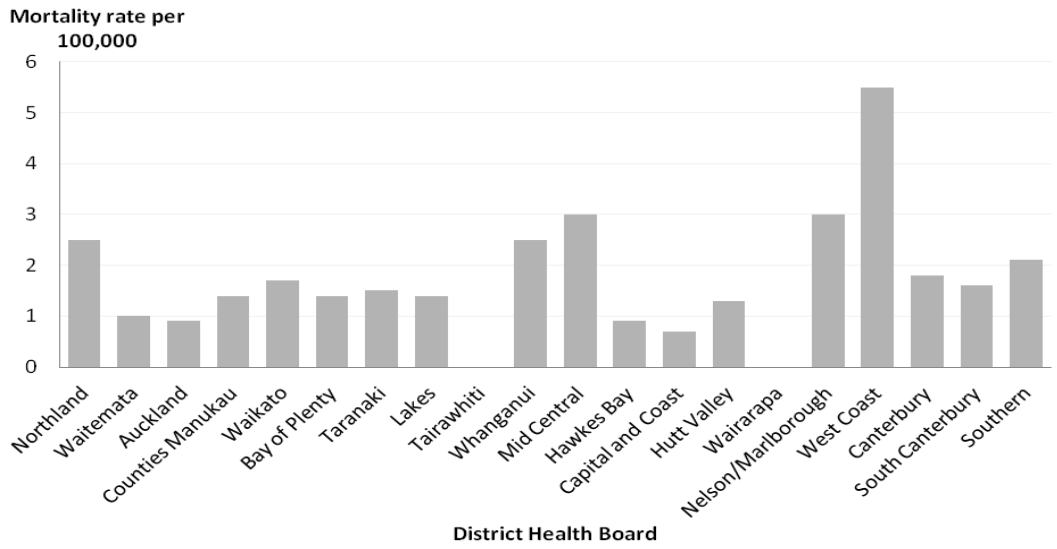
Huffing continues to cause deaths in the 15-24 year age group

From 2006 to 2011, there were 24 deaths due to huffing (inhaling volatile substance such as butane gas) in the 15-24 age group.
Of the seven deaths in the 5-14 year age group, five were related to inhaling butane, while the remaining two cases suffered burn injuries.
A report by the Office of the Chief Coroner (2012), reported 63 deaths relating to the recreational inhalation of butane-based substances between 2000 and 2012. Of those, fifty-five of them were under 24 years old.

West Coast had the highest rate of hazardous substances deaths

West Coast, MidCentral, and Nelson/Marlborough District Health Boards had the highest rates of deaths from hazardous substances in New Zealand (5.5, 3.0 and 3.0 per 100,000 respectively) (Figure 2) . There were 26 deaths registered in the West Coast DHB in 2011 and further examination of the data revealed that this was a result of the Pike River mine disaster in 2010. These were excluded from the analysis. Despite this, the West Coast DHB still had the highest rate of hazardous substances deaths in the country.

Figure 2: Age-standardised mortality rates per 100,000 of hazardous substances deaths by District Health Board, 2006-2011



Note: Rates for counts less than five have been omitted Tairawhiti and Wairarapa.

Source: National Mortality Collection

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For more information, please contact : Helene Marsters
t.h.marsters@massey.ac.nz