HIGHLIGHTS:

- Māori had higher hospitalisation rates from hazardous substances injuries than non-Māori.
- Hazardous substances-related hospitalisations increased with socio-economic deprivation.
- The male hospitalisation rate from exposure to hazardous substances was higher than for females.
- Children under five years old and young adults (15-24 years) had the highest rates of hospitalisations for hazardous substances injuries.
- There were 728 hazardous substances-related hospitalisations in 2017.

Injuries from hazardous substances are an important public health problem.

A hazardous substance is anything that can explode, catch fire, oxidise, corrode or be toxic to humans, as defined in the Hazardous Substances and New Organisms Act 1996. This definition does not include medicines in finished dose form, alcohol other than industrial alcohol, or radioactive materials. Injuries from hazardous substance exposures in New Zealand are often preventable. A high proportion of these incidents are caused by hazardous substances used in everyday domestic and workplace situations. Headaches, nausea or vomiting and skin corrosion are examples of acute health effects. Chronic health effects include asthma, dermatitis, nerve damage or cancer (MBIE 2013). It is important to note that this data does not adequately capture chronic disease from hazardous substances as in most cases the cause of chronic disease cannot be identified.

Māori had higher hospital discharge rates than non-māori from hazardous substances exposure.

During the period 2006-2016, the rate for Māori hospitalisations for hazardous substances injuries was higher than non-Māori (Figure 1).

*Figure 1: Hospitalisations related to hazardous substances injuries, by ethnicity, 2006-2017*
Hazardous substances-related hospital discharges

Hospital discharges due to hazardous substances exposure increased with socio-economic deprivation

From 2010 to 2017, the number of hospital discharges was highest among those who resided in deprivation quintile 5 (most deprived) areas, and lowest in quintile 1 (least deprived) areas.

The relationship between the deprivation level and the number of hazardous substances injuries was more apparent in the age groups 0-4, 15-24 and 25-44 years. In those age groups, the numbers of hazardous substances-related hospital discharges in quintile 5 areas were more than three times as high as the number in quintile 1 areas (Figure 2).

Figure 2: Hospitalisations related to hazardous substances injuries, by deprivation, 2017

More males were discharged hospital for exposure to hazardous substances than females

From 2006 to 2017, males had about double the female hospitalisation rates for unintentional hazardous substances injury (Table 1). However, for intentional hazardous substances injury, females had slightly higher hospitalisation rates than males.

Table 1: Hospitalisations related to hazardous substances injuries, by intent, 2006-17

<table>
<thead>
<tr>
<th>Year</th>
<th>Intentional exposure</th>
<th>Unintentional exposure</th>
<th>Unknown</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
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<td>6.2</td>
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<td>4.8</td>
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<tr>
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<td>3.0</td>
<td>5.5</td>
</tr>
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<td>4.2</td>
<td>3.0</td>
<td>7.2</td>
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<tr>
<td>2017</td>
<td>4.7</td>
<td>2.7</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Source: National Minimum Dataset
Hazardous substances-related hospital discharges

Children under five years old had the highest rates of hospital discharge from hazardous substances exposure
From 2006 to 2017, there were marked differences in age-specific hazardous substances-related discharge rates (Figure 3). Compared to all other age groups, children under five years old continued to have a higher discharge rates from hazardous substances. However, in 2010, 2014, 2015 and 2017, rates were highest in the 15-24 years age group. The 5-14 and 65+ years age groups had the lowest rates of hospital discharges over this 11-year period.

Figure 3: Hospitalisations related to hazardous substances injuries, by age group, 2014-17

Solvents, hydrocarbons and corrosive substances were the most common cause of hazardous substances injury for children under five years

Of the 1,037 hospital discharges among children aged 0-4 years between 2006 and 2017, 399 were due to solvents, hydrocarbons and corrosive substance exposures and 178 were due to pesticides exposures (Figure 4). In contrast, burns from hazardous substances were the most common injury across all age groups followed by injuries from solvents, hydrocarbons and corrosive substances. In comparison, the highest nature of injury for all age groups was burns with 3,057 followed by 2,017 hospitalisations for solvents, hydrocarbons and corrosive substances.

Figure 4: Number of hospitalisations related to hazardous substances injuries, by diagnosis group, 2006-2017
West Coast DHB had the highest rate of hospital discharges in 2017

In 2017, West Coast District Health Board (DHB) had the highest age-standardised rate of hospital discharges (31.7 per 100,000 population) for hazardous substances injuries, South Canterbury DHB had the lowest rate of hospital discharges (6.8 per 100,000 population).

Overall, 11 out of the 20 DHBs had higher hospital discharge rates than the national rate (16.3 per 100,000 population) in 2017 (Figure 5).

Figure 5: Hospitalisations related to hazardous substances injuries, by DHB, 2017

Source: National Minimum Dataset
Hazardous substances-related hospital discharges

There were 728 hospitalisations in 2017

In 2017, there were 728 hazardous substances-related hospital discharges compared to 689 in 2016. During the eleven-year period reviewed (2006 to 2017), there were 8,342 hospital discharges attributed to hazardous substances exposure, an average of approximately 700 per year. Each year males had a higher hospital discharge rate than females (Figure 6).

Figure 6: Hospitalisations related to hazardous substances injuries, by sex, 2006-17

![Hospitalisations related to hazardous substances injuries, by sex, 2006-17](chart)

Source: National Minimum Dataset

FURTHER INFORMATION AND RELATED INDICATORS

Related environmental health indicators for Hazardous substances-related hospital discharges are available from the EHINZ website.

DATA FOR THIS INDICATOR

The Ministry of Health defines 'injury' for the purposes of section 143 as any physical harm or damage serious enough to warrant medical treatment by a health professional either at the scene or in a hospital or primary care practice. Additional information for this indicator is available in the Metadata sheet.

REFERENCES:


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CITATION: