

# Hazardous substances notifications

This factsheet presents a national indicator, which allows us to monitor injuries from hazardous substances.

## Key facts



Hazardous substance notifications significantly increased for children in the five years from 2014 to 2018



Those aged 0–4 years old had the highest notification rate in 2018



More than half of the notifications were males



Most notifications involved household chemicals



For children under five years old, household chemicals were the most common cause of injury from a hazardous substance



Most notifications were injuries that occurred in the home

## Injury from hazardous substances is an important public health problem

A hazardous substance under the Hazardous Substances and New Organisms (HSNO) Act 1996 is anything that can explode, catch fire, oxidise, corrode or be toxic to humans. 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 (Worksafe 2017). Exposure to hazardous substances can occur through various pathways, including:

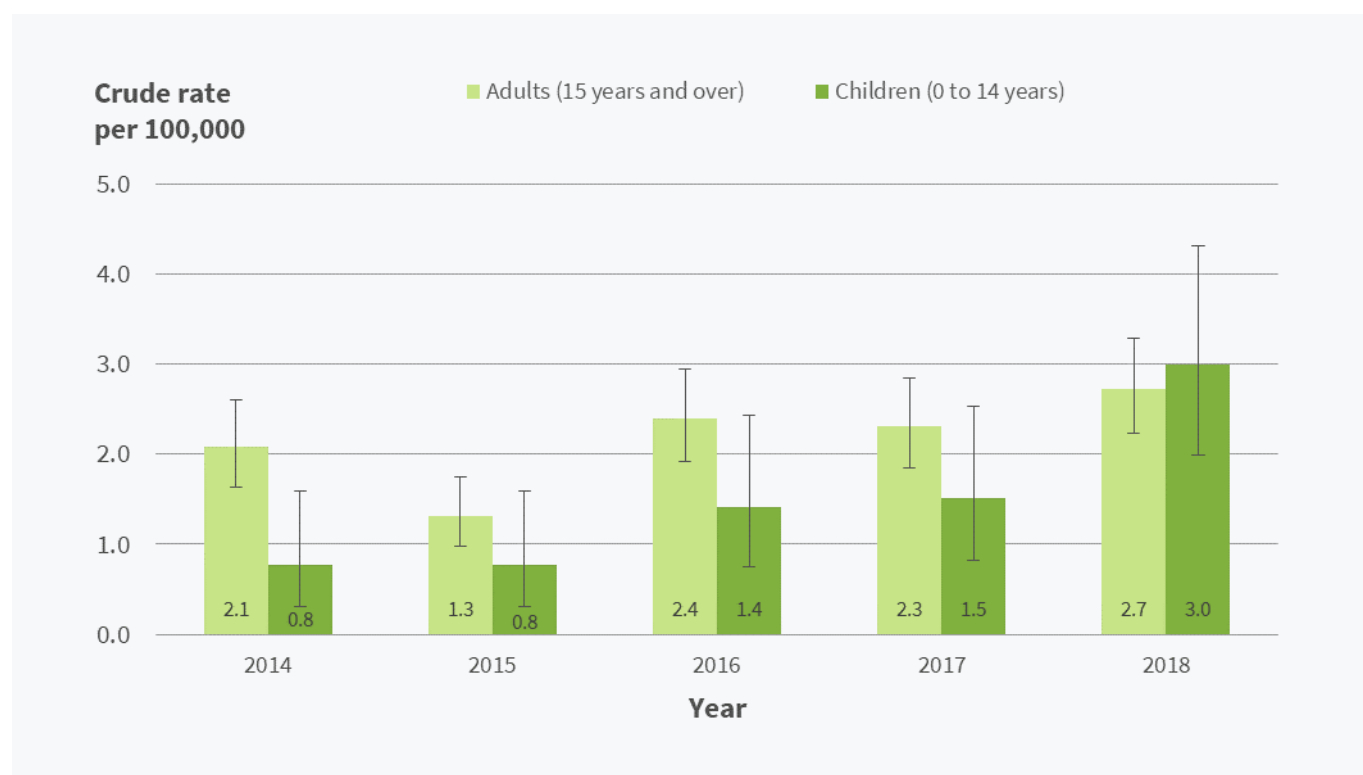
- Breathing in contaminated air and dust
- Ingesting contaminated water and food
- Skin/mucous membrane exposure to chemicals

This factsheet reports on hazardous substance injury notifications from the Hazardous Substances Disease and Injury Reporting Tool (HSDIRT). As well as HSNO Act notifications, some Health Act 1956 notifications are included. This covers poisoning arising from chemical contamination of the environment and includes non-HSNO Act notifications such as carbon monoxide poisoning, cyanotoxin (also known as blue-green algae or cyanobacteria) poisoning, and agrichemical spraydrift notifications. Agrichemical spraydrift notifications may also be notified under the HSNO Act as specific agrichemical notifications.

## Both adults and children are at risk of injury from hazardous substances

There were 106 hazardous substance notifications in 2018 involving adults (15 years and over, 2.7 per 100,000), and 28 involving children (0 to 14 years, 3.0 per 100,000) (Figure 1).

**Figure 1: Hazardous substances notification rate, 2014 – 18 (crude rate per 100,000)**



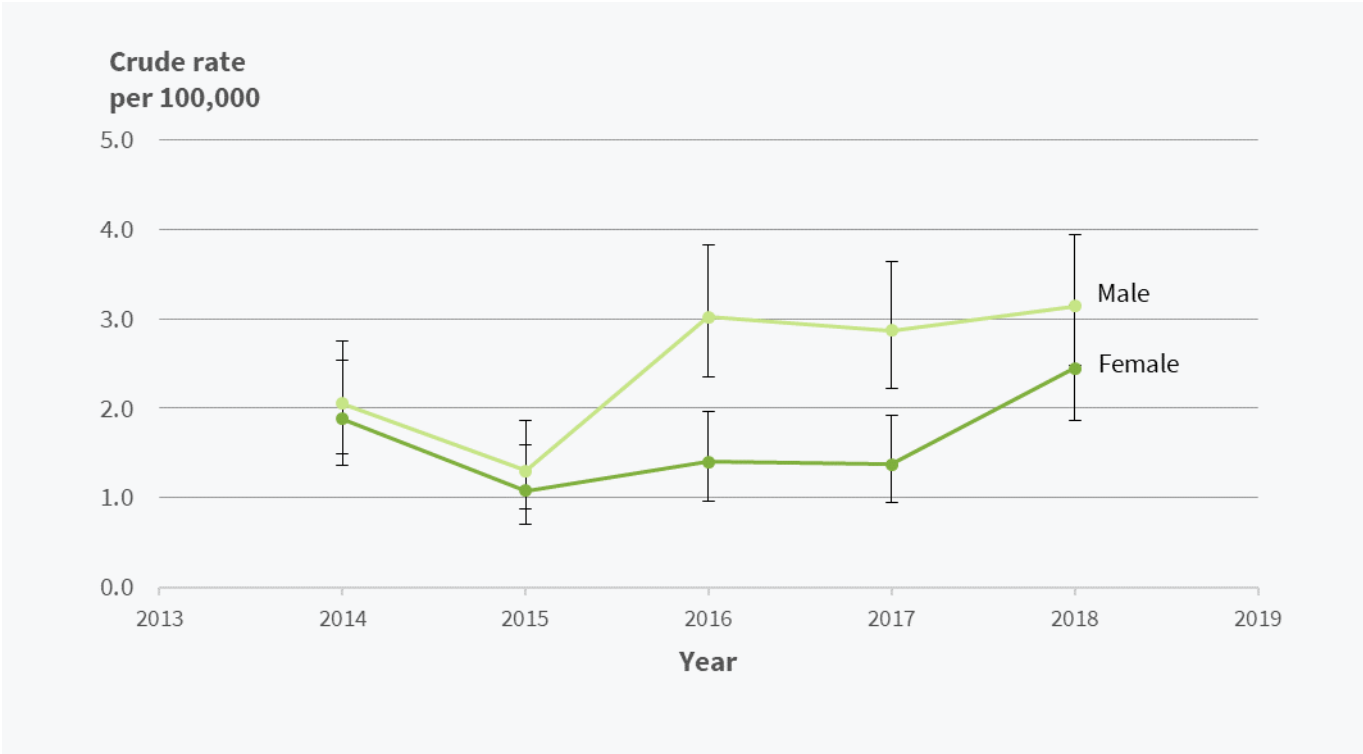
**Note:** Cases where age was unknown or not entered have been excluded from the above graph. Total cases in 2018 is 137.

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT).

### More than half of notifications were males

From 2014–18, the majority (59%) of all hazardous substances notifications were males (285 notifications). In 2018 the hazardous substances notification rate was not significantly different between males (3.1 per 100,000; 75 notifications) and females (2.4 per 100,000; 60 notifications) (Figure 2).

Figure 2: Hazardous substances notification rate, by sex, 2014–18 (crude rate per 100,000)

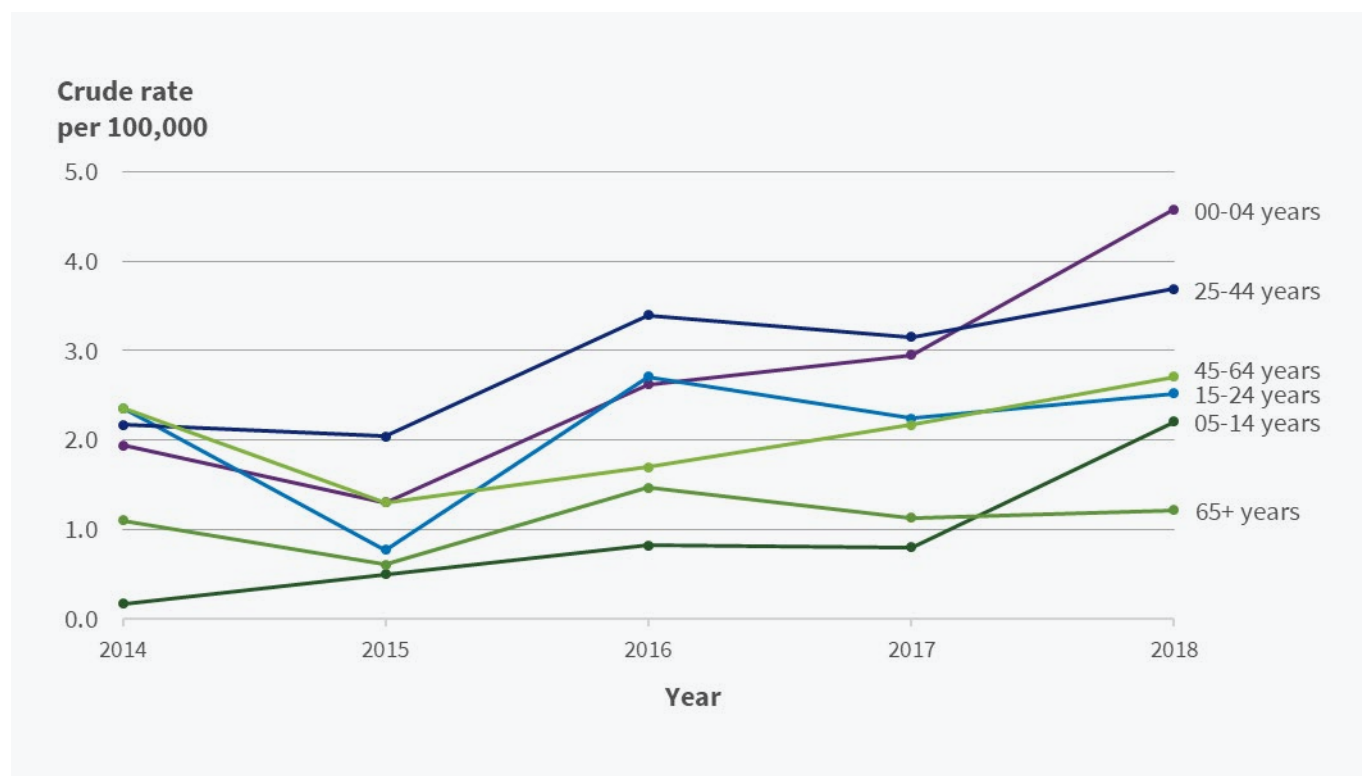


Source: Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

## Children aged 0–4 years have the highest notification rate

In 2018, the 0–4 years age group had the highest notification rate with 4.6 per 100,000 (14 notifications), followed by the 25–44 years age group with 3.7 per 100,000 (47 notifications). In the five-year period 2014–2018, the 25–44 year age group had the highest notification rate in 2015, 2016 and 2017 (Figure 3).

**Figure 3: Hazardous substances notification rate, by age group, 2014–18 (crude rate per 100,000)**



**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

## ‘Household chemicals’ were the most commonly notified substance category in 2018

Most hazardous substances injury notifications in 2018 fell under the HSNO Act (106 of 137 notifications). The most commonly identified substance was petrol (9 notifications) followed by LPG, bleach, chlorine, solvent, and weed killer (4 notifications each) (Table 1).

Household chemicals were the most commonly notified substance for notifications involving children under five years old (9 of 14 notifications).

**Table 1: HSNO Act notifications, 2018**

Substance	Number of notifications
Petrol	9
LPG	4
Sodium hypochlorite/bleach	4
Solvent	4
Weedkiller/herbicide	4
Chlorine	4
Cleaning agent	3
Drain cleaner	3
Gas (unidentified)	3
Oven Cleaner	3
Adhesive	2
Dishwashing liquid/tablet	2
Fireworks	2
Hydrogen peroxide	2
Mercury	2
Sulfuric acid	2
Turpentine	2
Accelerant	1
Ammonium chloride	1
Antifreeze	1
Argon gas	1
Arsenic	1

Substance	Number of notifications
Butane	1
Car cleaner and degreaser (brakleen fast dry)	1
Carbon dioxide	1
Caustic crystals	1
Charcoal BBQ	1
Chemical hardener	1
Degreaser	1
Dichloromethane	1
Diesel	1
Diethylene Glycol/Dye	1
Flea bomb	1
Foam cleaner	1
Formalin	1
Hydrogen sulphide	1
Ice pack contents	1
Kerosene	1
Lighter fluid	1
Methylated spirits	1
Paint stripper	1
Rug doctor	1
Thinners	1
Unknown	22
<b>Total</b>	<b>106</b>

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

Of the notifications that fell under the Health Act in 2018 (31 of 137 notifications) the most commonly identified substances were mushroom compost and carbon monoxide (Table 2).

**Table 2: Health Act notifications, 2018**

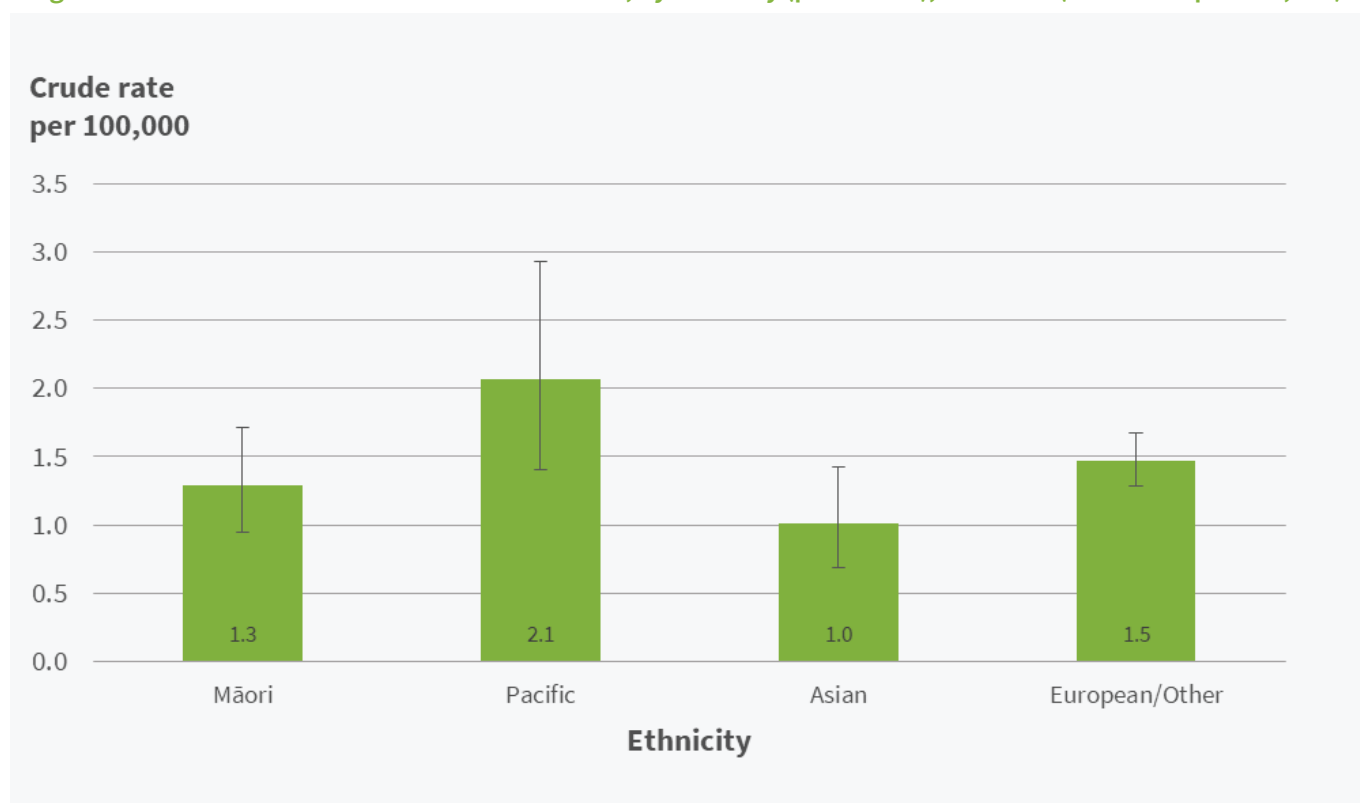
Substance	Number of notifications
Carbon Monoxide	10
Mushroom Compost	10
Smoke	6
Glyphosate	2
Palm kernel expeller	2
Coloured powder at Hindu Festival	1
<b>Total</b>	<b>31</b>

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

## Pacific people had the highest hazardous substance notification rate

Pacific people had the highest notification rate when data was pooled for the five-year period 2014–2018 (2.1 per 100,000) (Figure 4).

**Figure 4: Hazardous substances notification rate, by ethnicity (prioritised), 2014 – 18 (crude rate per 100,000)**



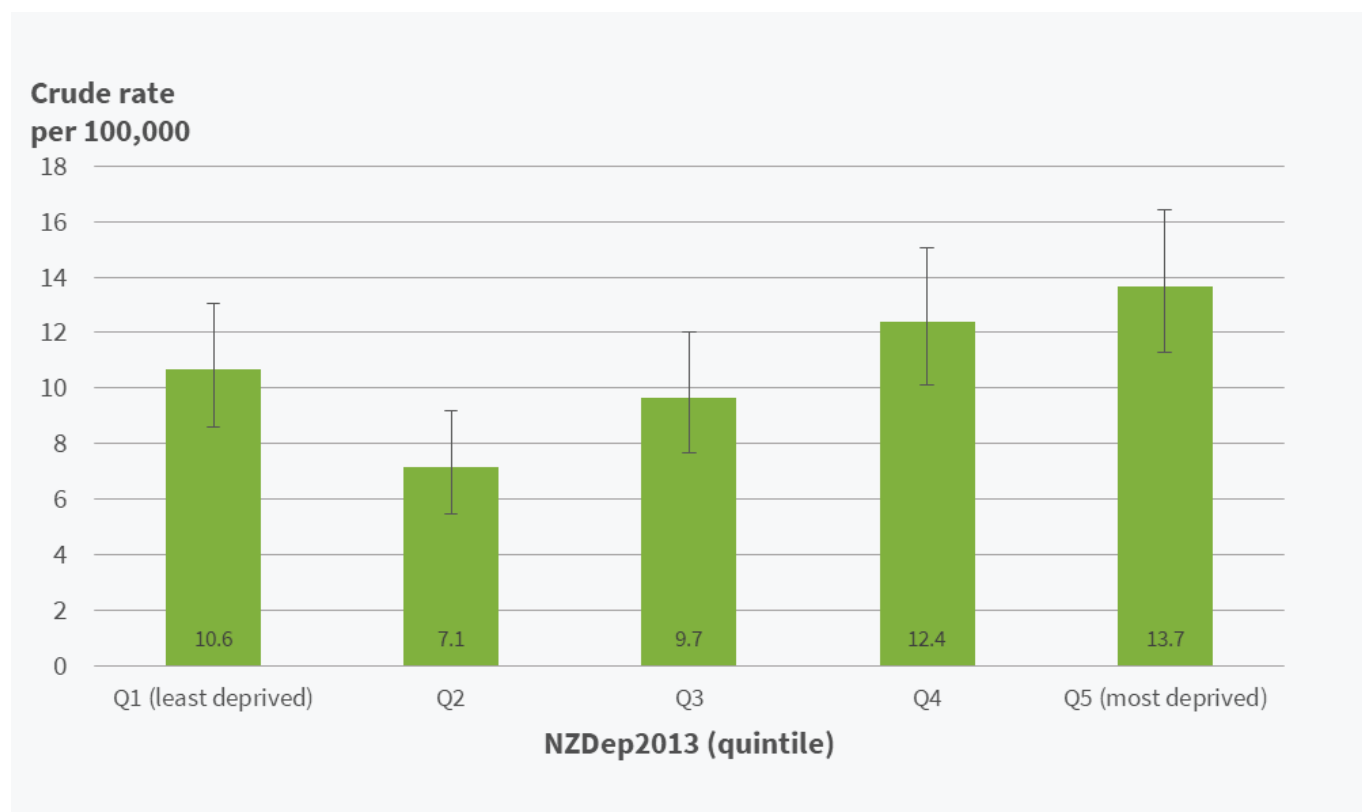
**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

In 2018, Pacific people had the highest rate of hazardous substances injury notifications (3.8 per 100,000: 12 notifications), followed by Asian people with 1.7 per 100,000 (12 notifications).

## Hazardous substances notifications showed no consistent trend with socioeconomic deprivation

Between 2014 and 2018, the hazardous substances injury notification rate was highest amongst those who resided in deprivation quintile 5 (most deprived) and quintile 4 areas (13.7 and 12.4 per 100,000 respectively), and lowest in quintile 2 areas (7.1 per 100,000) (Figure 5).

**Figure 5: Hazardous substances notification rate, by NZ Deprivation 2013 quintiles, 2014 – 18 (crude rate per 100,000)**



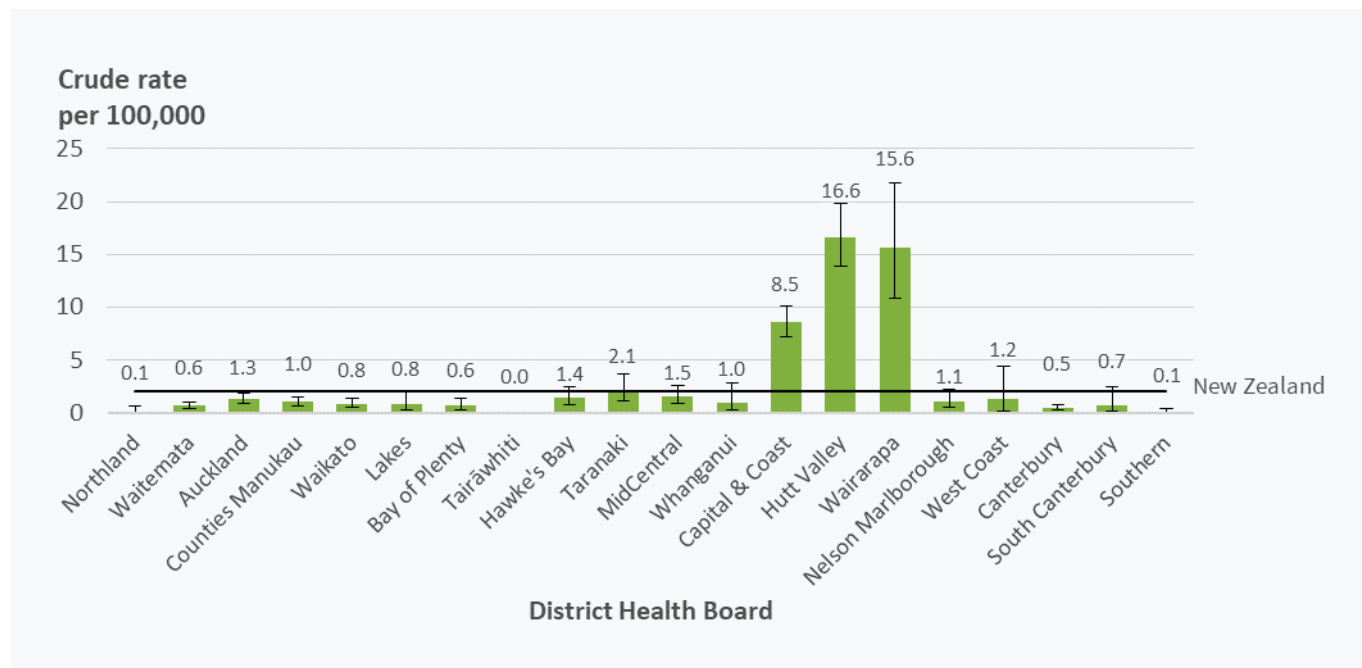
**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)



## Highest hazardous substances notification rates in Hutt Valley, Wairarapa and Capital & Coast DHBs

From 2014 to 2018, the DHBs with higher hazardous substance notification rates compared to the national rate were Hutt Valley (16.6%), Wairarapa (15.6%) and Capital & Coast (8.5%) DHBs (Figure 6). The lowest notification rates were in Northland, Southern and Tairāwhiti DHBs.

**Figure 6: Hazardous substances notification rate, by District Health Board, 2014 – 18**  
(crude rate per 100,000)



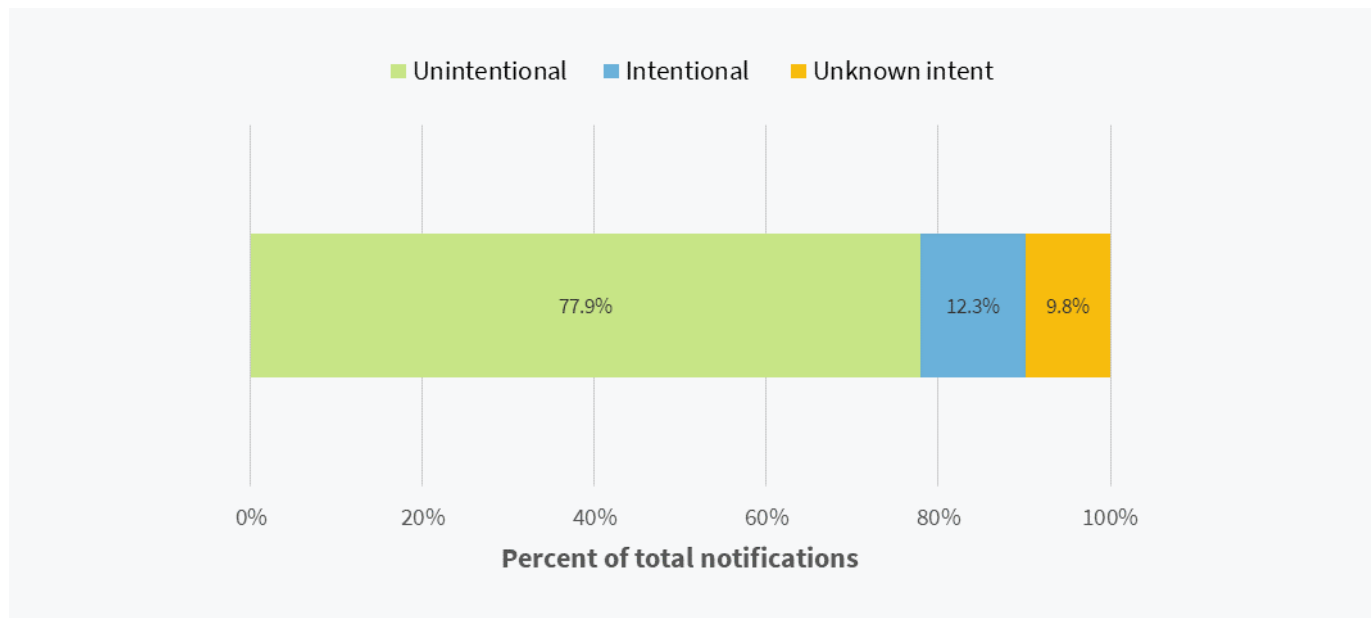
**Note:** The notification rate is influenced by the variable use of HSDIRT by DHB.

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

## The majority of hazardous substance injuries notified in 2014-18 were unintentional

In the five-year period 2014–2018, 77.9% of hazardous substance injury notifications listed intent as “unintentional” (380 of 488 notifications), 12.3% were intentional (60 notifications), and 9.8% were listed as “unknown intent” or left blank (48 notifications) (Figure 7).

Figure 7: Hazardous substances notifications, by intent, 2014-18 (% of total notifications)



Source: Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

## The most commonly notified place of injury was the home in 2014-18

In 2014–18, 45.9% of hazardous substance injuries occurred in the home (224 notifications), followed by the workplace at 31.6% (154 notifications) (Table 3). Most notifications were in the 25–44 year age range. For children under five, most hazardous substance injuries occurred in the home (36 of 41 notifications).

Table 3: Number of hazardous substances notifications, by exposure place and age group, 2014–18

Exposure Place	00–04 years	05–14 years	15–24 years	25–44 years	45–64 years	65+ years	Unknown age	Total
Home	36	11	23	72	50	26	6	224
Workplace	1	0	30	69	45	2	7	154
Public Place	0	1	4	6	7	3	1	22
School/Early childhood centre	0	12	1	0	0	0	0	13
Unknown exposure place	4	4	12	29	19	7	0	75

Source: Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)

## Data for this indicator

This indicator reports HSDIRT hazardous substance injury notifications, not including lead, from 2014 to 2018. Data has been pooled to give sufficient numbers for analysis where appropriate.

## References

Worksafe – Mahi Humaru Aotearoa. 2017. Information on Hazardous Substances.

<https://worksafe.govt.nz/topic-and-industry/hazardous-substances/about-hazardous-substances/>

## Other hazardous substances topics include:

[Health effects of hazardous substances](#)

## Author

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## Citation

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## Further information

For descriptive information about the data [!\[\]\(0d5ec72f61334709c3fc9450209b754f\_img.jpg\) Metadata Sheet](#)

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