

## Hazardous substances notifications

This report presents data relating to hazardous substances injuries entered into the Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) from 2014–2022.

### Headline



Regional Public Health reported 83% of hazardous substances notifications in 2022.

### Key facts



Child, 0–14 years, exposures are most common in the home while adult, 15+ years, exposures occurred in the home and workplace equally from 2018–22.



Almost half of all notifications involving females aged between 5–34 years, were intentional exposures from 2020–22.

### Reporting of Hazardous Substances

In New Zealand, any injury or disease caused by hazardous substances must be notified to the Medical Officer of Health. Examples of cases that should be reported include:

- a fireworks injury
- ingestion of cleaning products or cosmetics
- poisoning with agrichemicals (includes spraydrift)
- unintentional carbon monoxide poisoning
- illness caused by exposure to solvents or chlorine
- contact dermatitis due to chemicals
- huffing of butane and other hydrocarbons.

This report covers hazardous substance injury notifications from the Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) developed in 2013. It includes data on substances covered by the Hazardous Substances and New Organisms Act (HSNO) 1996 and the Health Act 1956 (“poisoning arising from chemical contamination of the environment”), including unintentional carbon monoxide exposures, blue-green algae, and agricultural spray drift.

A hazardous substance is any substance that has any of the following hazardous properties:		A hazardous substance does NOT include:	
Explosive	Toxic	Medicine in finished dose form	Alcohol when classified as food item
Oxidises	Flammable	Chemical toxins associated with food (food poisoning)	Radioactive materials
Corrosive		Manufactured items (eg, button batteries)	

## Hazardous substance notifications are primarily to Regional Public Health

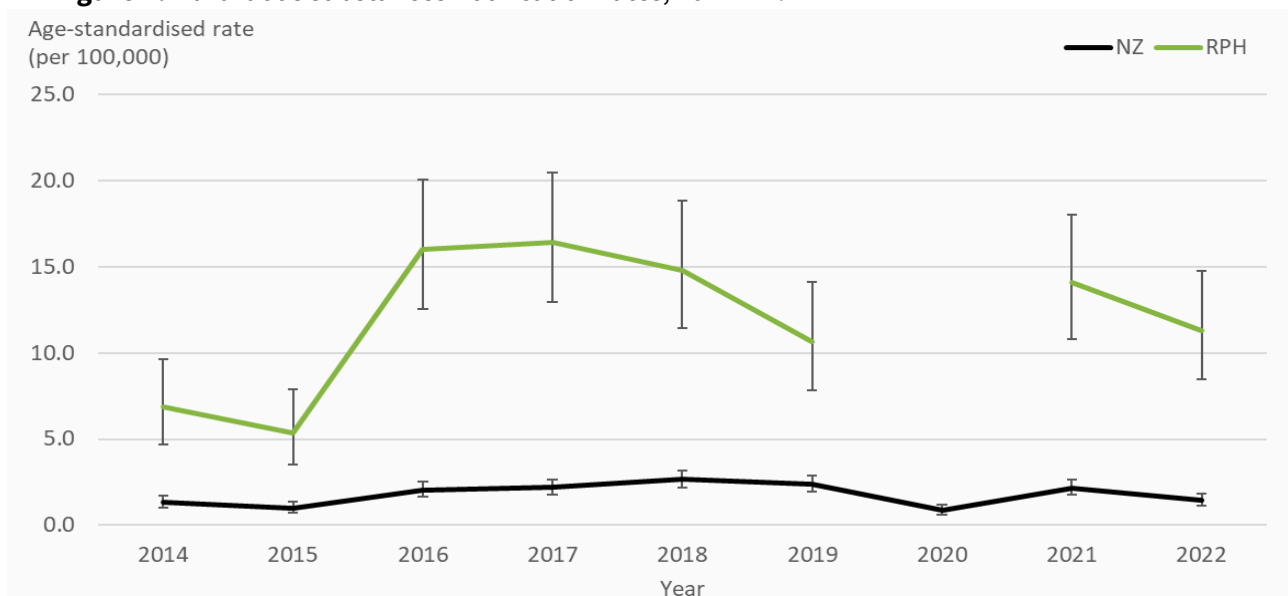
In 2022, 83% of hazardous substance notifications were to Regional Public Health (RPH). Similarly, 15% were to Auckland Regional Public Health Service (ARPHS). The remaining two percent of notifications occurred elsewhere. Data from 2014–22 shows the same pattern (Table 1 & Figure 1).

**Table 1:** Total hazardous substances notifications, by PHS, 2014–22.

Public Health Service	Notifications	Percentage of total notifications
RPH	477	62.9%
ARPHS	170	22.5%
Te Mana Ora	33	4.4%
Taranaki	22	2.9%
Toi Te Ora	14	1.8%
Waikato	12	1.6%
Hawkes Bay	11	1.5%
MidCentral	10	1.3%
Nelson-Marlborough	5	0.7%
Southern	4	0.5%
Northland	0	0.0%
Tairāwhiti	0	0.0%
<b>Total</b>	<b>757</b>	<b>-</b>

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) 2023.

**Figure 1:** Hazardous substances notification rates, 2014–22.



**Note:** 95% confidence intervals have been presented as error bars. See [Metadata](#) for more information.

The rate for RPH in 2020 was suppressed due to low counts.

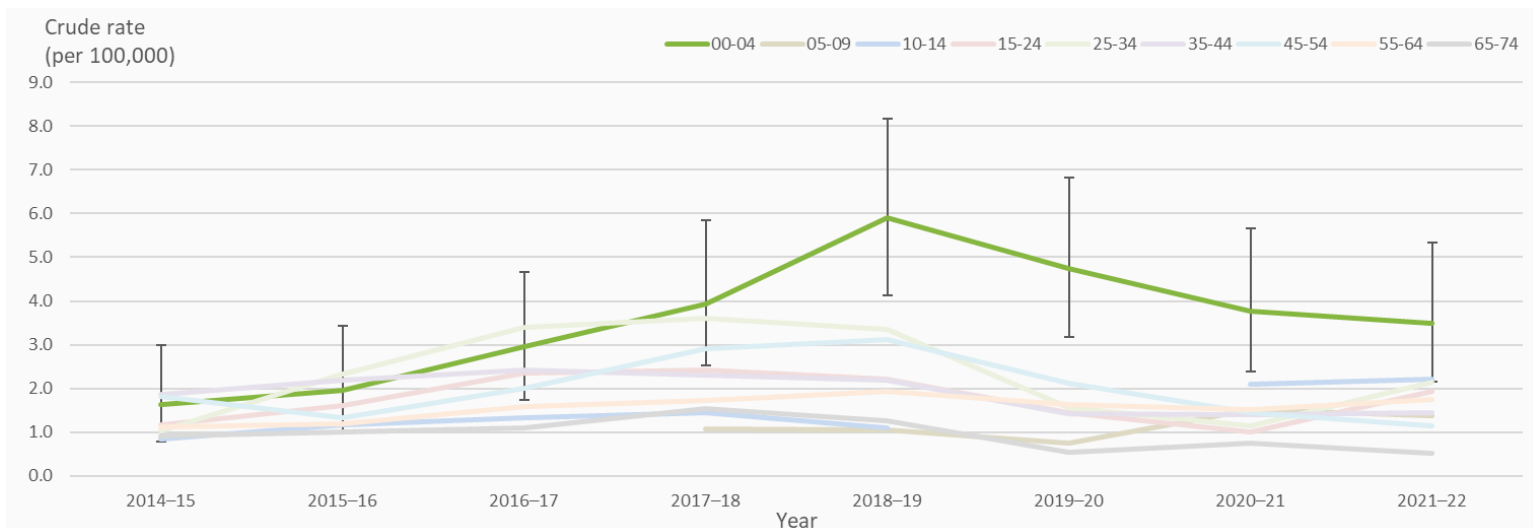
**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) 2023.

It is very unlikely that the national rates are reflective of national hazardous substance injuries given hazardous substances-related hospitalisations and deaths do not show the same pattern (EHINZ 2021, EHINZ 2022). Variable notification of hazardous substance injuries by region is the most likely explanation rather than any differences in incidence.

## Children are most at risk at home but substances causing injury are similar across age groups

Hazardous substance notification rates for young children, 0–4 years, peaked in 2018–19 (5.9 per 100,000) and have roughly halved in 2021–22 (3.5 per 100,000) (Figure 2). Notifications for other age groups have been relatively stable over time.

**Figure 2:** Hazardous substances notifications, by age, 2014–22.



**Notes:** 95% confidence intervals have been presented as error bars. Multiple overlapping confidence intervals for this graph have not been included for display purposes. See the [Metadata](#) for more information

75–84 and 85+ year age groups are not presented on this graph due to suppression of rates due to low counts.

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) 2023.

Roughly two thirds of exposures involving children, 0–14 years, occurred in the home from 2018–22. The most common substances were household cleaning products, other harmful gases, pesticides/insecticides and air fresheners/fragrances/deodorants (Table 2). This has been consistent since 2014 and reflects hospitalisation data involving children (EHINZ, 2022).

**Table 2:** Top 10 hazardous substances notified for children, 0–14 years, 2018–22.

Substance	2018	2019	2020	2021	2022	Total
Household cleaner	2	2	2	7	3	<b>16</b>
Other harmful gases	1	0	0	14 <sup>1</sup>	0	<b>15</b>
Pesticide/insecticide	2	7	2	2	1	<b>14</b>
Fragrance/air freshener/deodorant	0	6	2	2	1	<b>11</b>
Fertiliser/Compost/Cyanobacteria	9 <sup>2</sup>	0	0	1	1	<b>11</b>
Petrol/Diesel	2	2	1	1	0	<b>6</b>
Sanitizer	0	1	1	4	0	<b>6</b>
Car products	1	3	1	1	0	<b>6</b>
Laundry/dishwashing	1	0	1	1	0	<b>3</b>
Paints/thinners/turps/glues	0	1	0	1	0	<b>2</b>
<b>Total<sup>3</sup></b>	<b>25</b>	<b>25</b>	<b>10</b>	<b>37</b>	<b>8</b>	<b>105</b>

**Notes:** <sup>1</sup> 11 of the 14 “Other harmful gases” relate to a single event involving chlorine gas at a public pool.

<sup>2</sup> All 9 “Fertiliser/Compost/Cyanobacteria” relate to a single event involving composting material at a school.

<sup>3</sup> Totals include all notifications for that year, not just the top ten substances presented.

**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) 2023.

Adults, 15+ years, were exposed to similar chemicals including carbon monoxide and other harmful gases, household cleaning products and paints/thinners/ turps/glues (Table 3) in 2018–22. Exposures are equally common at home (152 notifications) and at work (140 notifications).

**Table 3:** Top 10 hazardous substances notified for adults, 15+ years, 2018–22.

Substance	2018	2019	2020	2021	2022	Total
Other harmful gases	31 <sup>1</sup>	10	8	9	7	<b>65</b>
Household cleaner	13	18	7	11	10	<b>59</b>
Carbon Monoxide	8	13	2	7	12	<b>42</b>
Paints/thinners/turps/glues	10	12	2	6	5	<b>35</b>
Petrol/Diesel	8	3	0	2	2	<b>15</b>
Herbicide/fungicide	6	3	2	2	1	<b>14</b>
Car products	1	6	0	3	0	<b>10</b>
Construction materials	0	2	1	4	3	<b>10</b>
Pesticide/insecticide	1	4	1	1	1	<b>8</b>
Sanitizer	0	3	0	1	2	<b>6</b>
<b>Total<sup>2</sup></b>	<b>100</b>	<b>89</b>	<b>32</b>	<b>63</b>	<b>61</b>	<b>345</b>

**Notes:** <sup>1</sup> 15 of the 31 “Other harmful gases” relate to a single event involving an unknown gas in an office building.

<sup>2</sup>Totals include all notifications for that year, not just the top ten substances presented.

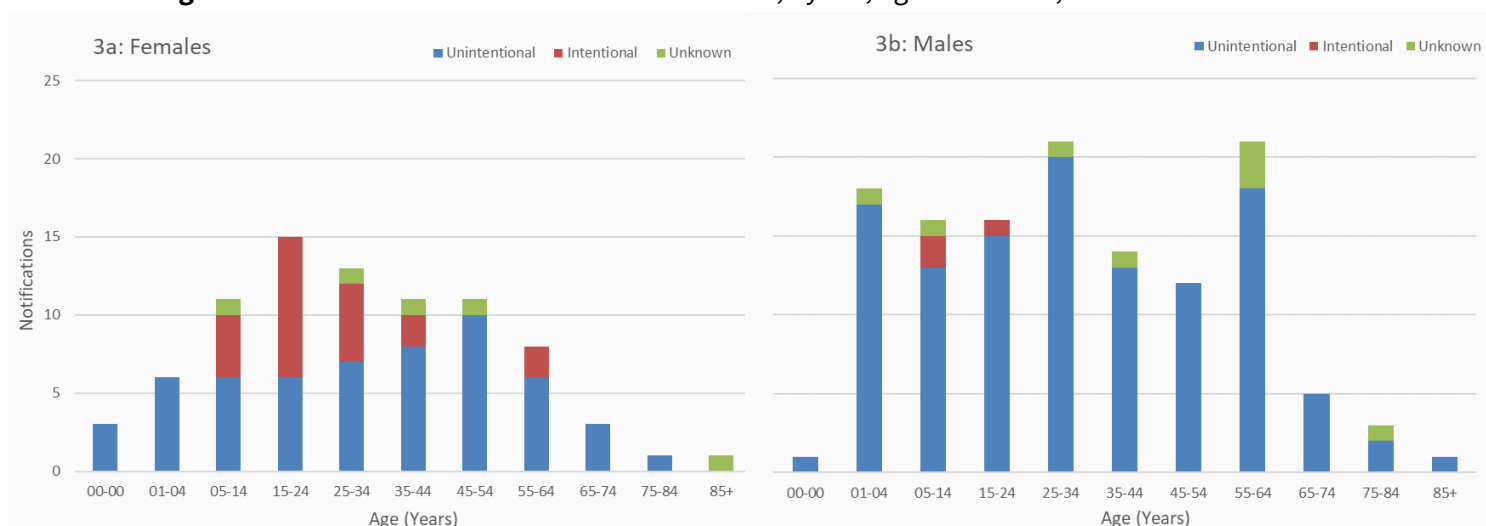
**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) 2023.

### Half of all notifications involving young females are intentional exposures

From 2020–22, 18 out of 39 notifications relating to females aged 5–34 years were reported as intentional exposures (Figure 3a). While males of the same age had more notifications over this time period, 53 notifications, only three were reported as intentional (Figure 3b).

The most common substances involved in intentional injuries for young females were bleach and other household cleaning products, accounting for 11 out of 18 notifications.

**Figure 3a & 3b:** Hazardous substance notifications, by sex, age and intent, 2020–22.



**Source:** Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) 2023.

These differences weren’t as clear prior to 2020. From 2014–19, 23% of notifications relating to females and 12% relating to males aged 5–34 years were intentional. It should again be highlighted that the Wellington region (Regional Public Health) represents two thirds of this data, meaning it may not be an accurate reflection of national patterns.

## DATA FOR THIS INDICATOR

This indicator reports HSDIRT hazardous substances notifications from 2014 to 2022. The data were extracted from the HSDIRT system on 6 March 2023. Updates or additions made to HSDIRT are this date are not reflected in this report.

Crude rates presented in this report do not take into account varying age distributions when comparing between populations. Age-standardised rates presented in this report take into account varying age distributions when comparing between populations.

For additional information, see the metadata link below.

## REFERENCES

Environmental Health Intelligence NZ. 2021. *Hazardous substance-related deaths registered in New Zealand*. Wellington: Environmental Health Intelligence NZ, Massey University.

Environmental Health Intelligence NZ. 2022. *Unintentional Hazardous Substances-Related Hospitalisations*. Wellington: Environmental Health Intelligence NZ, Massey University.

## Other related topics include:

[Hazardous substances-related deaths reported to the coroner in New Zealand](#)

[Hazardous substances-related deaths registered in New Zealand](#)

[Unintentional hazardous substances-related hospitalisations](#)

[Unintentional hazardous substances exposures in children \(0–14 years\)](#)

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## Contact

[ehinz@massey.ac.nz](mailto:ehinz@massey.ac.nz)

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Environmental Health Intelligence NZ. 2023. *Hazardous substances notifications*. Wellington: Environmental Health Intelligence NZ, Massey University.

## Further information

For descriptive information about the data [✉ Metadata Sheet](#)

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