

| Information topic | Details |
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| Indicator name | Hazardous substance-related deaths registered in New Zealand |
| Domain and topic | Hazardous substances domain: Hazardous substance-related deaths registered in New Zealand |
| Indicator definition and units | <p>The number and rate of deaths from a hazardous substance, in New Zealand. Rates are presented per 100,000 population.</p> <p>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 (HSNO) 1996. Substances that are covered by the HSNO Act, and the Health Act's "poisoning arising from chemical contamination of the environment", in particular carbon monoxide, are included.</p> <p>The following hospitalisations were excluded from analysis, as it is not covered by the HSNO Act:</p> <ul style="list-style-type: none"> • carbon monoxide poisoning from an engine exhaust, BBQ charcoal and cigarette • fumes • sulphur • fire • coal mine gas • phenol derivatives • explosion events • any mains/utility gas events (eg, gas exposure, gas oven where not from an LPG bottle) • cooking oil • smoke inhalation • smouldering plastic |
| Data source | New Zealand Mortality Collection, Ministry of Health 2021 |
| Numerator | The number of hazardous substances-related deaths in New Zealand. |
| Denominator | All people in New Zealand using the estimated resident population for the corresponding year (StatsNZ 2020). |
| Methodology | <p>District Health Board (DHB) refers to the DHB of residence.</p> <p>Prioritised ethnic groups have been used in the following prioritisation order: Māori, Pacific Peoples, Asian, European/Other.</p> <p>Confidence interval 95% confidence intervals were calculated based on the methodology outlined in APHO (2008). Confidence intervals are presented as error bars on graphs.</p> |

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| | <p>Interpreting graphs (including DHB graphs)</p> <p>Crude rates are suppressed for counts less than 5 or populations less than 30, due to unreliability of the estimate with small numbers.</p> <p>Age-standardised rates are suppressed for overall counts less than 20, or if any age-band of the calculation has a population less than 30, due to unreliability of the estimate with small numbers. Age-standardised rates have been calculated using the direct method, using the World Health Organization world population age distribution (Ahmad et al 2000).</p> <p>When comparing groups of varying population sizes, differences that involve small groups may not be statistically significantly different, compared with similar differences for larger groups. This is due to a higher variability associated with the rate of the small group. For a more detailed explanation of this issue, see Appendix 2 – EHINZ Analytical Toolkit & Glossary.</p> <p>For DHB graphs, tests for statistical significance with the national rate have used adjustments for multiple comparisons. All comparisons made are conservative (ie, the p value is slightly overstated) because the New Zealand estimate contains the DHBs, so the New Zealand and every DHB estimate are positively correlated. This means that in some instances, we might be slightly less likely to find a significant difference that exists.</p> <p>Causes of death were assigned using the external-cause of injury codes. All diagnoses are classified according to the World Health Organisation’s International Classification of Diseases (ICD-10AM). A list of external-cause (E code) are included in this analysis and is provided in Appendix 1.</p> <p>All hazardous substance deaths of individuals who were not New Zealand residents were excluded from this analysis as they would not be accounted for in the denominator. Individuals who are not residents are assigned the domicile code “9999” stating that they’re place of residents is outside of New Zealand</p> |
| Time period and time scale | Annual data, from 2001 the most recent available data, 2018. |
| Population coverage | New Zealand resident population of all ages. |
| Spatial Coverage | National. |
| Measures of frequency | Results are presented by year, ethnic group, age group, sex, DHB, intent and ICD-10 breakdown. |
| Limitations of indicator | The number of hazardous substance deaths in New Zealand is small and can cause marked fluctuations in rates between years. Rates derived from small numbers should be interpreted with caution. |

Metadata

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| Related indicators | Occupational lead absorption notifications Non-occupational/unknown source of lead absorption notifications Hazardous substances notifications Unintentional hazardous substances exposures in children (0–14 years) Hazardous substances-related deaths reported to the coroner in New Zealand |
| References | <p>Ahmad, O.B., et al. (2000). Age Standardization of Rates: A New WHO Standard (Technical Report). GPE Discussion Paper Series: No. 31. Geneva: World Health Organization.</p> <p>APHO. 2008. Commonly used public health statistics and their confidence intervals. Technical Briefing No.3. York: APHO.</p> <p>StatsNZ. 2020. Estimated resident population (2018-based): At 30 June 2018. URL: https://www.stats.govt.nz/information-releases/estimated-resident-population-2018-base-at-30-june-2018#new (Accessed August 2021)</p> |

Appendix 1:

| Code | Description | Intent |
|-------------|-----------------------------------------------------------------|---------------|
| U070 | Vaping related disorders | Intentional |
| W39 | Discharge of firework | Unintentional |
| X04 | Exposure to ignition of highly flammable material | Unintentional |
| X08 | Exposure to other specified smoke, fire and flames | Unintentional |
| X46 | Organic solvents and halogenated hydrocarbons and their vapours | Unintentional |
| X47 | Other gases and vapours | Unintentional |
| X48 | Pesticides | Unintentional |
| X49 | Other and unspecified chemicals and noxious substances | Unintentional |
| X58 | Accidental poisoning to other specified factors | Unintentional |
| X66 | Organic solvents and halogenated hydrocarbons and their vapours | Intentional |
| X67 | Other gases and vapours | Intentional |
| X68 | Pesticides | Intentional |
| X69 | Other and unspecified chemicals and noxious substances | Intentional |
| X75 | Intentional self-harm by explosive material | Intentional |
| X76 | Intentional self-harm by smoke, fire and flames | Intentional |
| X83 | Intentional self-harm by other specified means | Intentional |
| Y16 | Organic solvents and halogenated hydrocarbons and their vapours | Unknown |
| Y17 | Other gases and vapours | Unknown |
| Y18 | Pesticides | Unknown |
| Y19 | Other and unspecified chemicals and noxious substances | Unknown |
| Y25 | Contact with explosive material | Unknown |
| Y26 | Exposure to smoke, fire, and flames, undetermined intent | Unknown |
| Y33 | Other specified events | Unknown |