



## He iti hoki te mokoroa nāna i kakati te kahikatea

The mokoroa (grub) may be small, but it cuts  
through the kahikatea (whitepine)

This whakataukī reflects that small things can have a significant impact. It encourages us to think big: although numbers or resources may be small, like the mokoroa, it is possible to achieve great tasks.

## 8. Poisoning



This chapter sets out tamariki hospitalisations for injury from poisoning for tamariki. Poisoning can be caused by a range of products, many of them found in the home, including alcohol, petrol, insecticides, soaps, and detergents. Medications are a common cause of poisoning in tamariki, and the text box below describes the medications terms used in this chapter.

In the years 2014 to 2018, there were nine tamariki deaths from poisoning (a rate of 0.19 per 100,000), representing nearly 5% of all deaths from injury for tamariki over this period. Due to small numbers, there is no further analysis on fatalities from poisoning presented in this chapter.

Injury from poisoning from medication is a common cause of tamariki hospitalisations. Medications referred to in this chapter include:

- **Non-opioid analgesics, anti-pyretics and anti-rheumatics.** This includes common over-the-counter medicines like paracetamol, aspirin, and non-steroidal anti-inflammatory drugs (NSAIDs, such as ibuprofen). This also includes prescription medications such as colchicine and methotrexate.
- **Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs not elsewhere classified.** This includes antidepressants, anti-anxiety medications (i.e. benzodiazepines) and antipsychotic medications. This may also include therapeutic psychostimulants such as those used for Attention Deficit Hyperactivity Disorders (ADHD).
- **Other and unspecified drugs, medicaments, and biological substances.** These include most medications that are not otherwise specifically classified, such as prescription medications for diabetes or blood pressure, hormones (e.g. birth control), antibiotics, and herbal/traditional remedies.

**In brief**

In the years 2017 to 2021, 1,112 tamariki were hospitalised for injury from poisoning (23.3 per 100,000).

Over time, there has been a decrease in the rate of tamariki hospitalisation for poisoning, from 30.7 per 100,000 in 2012 to 23 per 100,000 in 2021.

Poisoning from drugs, such as medications was the cause of the vast majority of tamariki hospitalisations for injury from poisoning.

In the years 2017 to 2021, 82% (n=911) of all hospitalisations from poisoning were for tamariki aged 0 to 4 years. The majority of these were for tamariki aged 1 to 4 years (94%, n=854).

Within the age group 0 to 4 years, European/other children (40%, n=441) and tamariki Māori (27%, n=304) accounted for the greatest proportion of tamariki hospitalisations from poisoning. MELAA children aged 0 to 4 years had the highest rate (77.3 per 100,000), when compared with other ethnic groups, but this should be interpreted with caution due to the low numbers (3%, n=23).

Tamariki living in the most relatively deprived areas of Aotearoa had higher rates of hospitalisation from poisoning than those living in the least relatively deprived areas of Aotearoa, with those living in the most relatively deprived areas (NZDep quintiles 4 and 5) accounting for more than half of all hospitalisations for poisoning (52%, n=572).

**Trend over time**

The rates of tamariki hospitalisation for injury related to poisoning have decreased over time (from 30.7 per 100,000 in 2012 to 23.0 per 100,000 in 2021).

In the years 2017 to 2021, 1,112 tamariki were hospitalised for injury from poisoning.

Poisoning from medications represented the cause of the vast majority of tamariki hospitalisations for injury from poisoning. This included poisoning by:

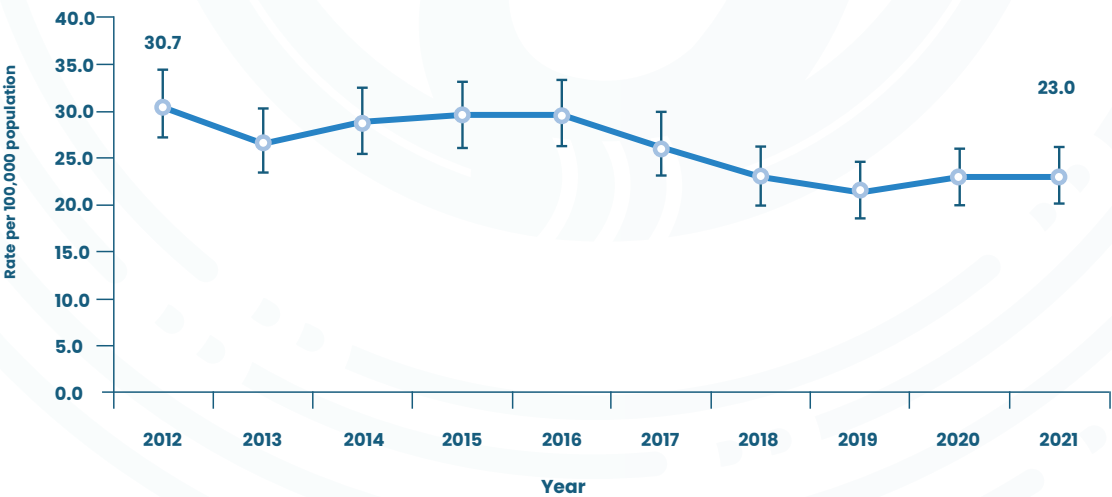
- ‘Other and unspecified drugs, medicaments, and biological substances’ (29%, n=317)
- ‘Antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs, not elsewhere classified’ (20%, n=220)
- ‘Nonopioid analgesics, antipyretics, and antirheumatics’ (17%, n=191).

Thirteen per cent of tamariki hospitalisations in these years related to poisoning were caused by ‘accidental poisoning by, and exposure to, other and unspecified chemicals and noxious substances’ (n=145).<sup>159</sup>

**Figure 54** shows the rates of tamariki hospitalisation for injury from poisoning, for the years 2012 to 2021.

Additional data on tamariki hospitalisations for poisoning in the years 2017 to 2021, and data on the causes of poisoning, are provided in Appendix 2.<sup>160</sup>

Figure 54: Tamariki hospitalisations for injuries from poisoning, 2012–2021



159. This category of poisoning is code ICD-10-AM-X-49 and includes poisoning from glues, poisonous foods and plants, soaps, and detergents.

160. Tables 55 and 56, Appendix 2.

Age Group

In the years 2017 to 2021, 82% (n=911) of all hospitalisations for injury from poisoning were for tamariki aged 0 to 4 years, representing the highest rate of hospitalisation of all the age groups (60.0 per 100,000). Most of these hospitalisations were for those aged 1 to 4 years (94%, n=854).

The rate of hospitalisation for injury from poisoning was significantly lower for tamariki aged 5 years or more (6.0 per 100,000 for those aged 5 to 9 years; 6.4 per 100,000 for those aged 10 to 14 years).

Looking at specific causes of injury from poisoning, tamariki aged 0 to 4 years had the highest hospitalisation rates of all the age groups for:

- ‘Accidental poisoning by, and exposure to, other and unspecified drugs, medicaments, and biological substances’ (17.0 per 100,000)
- ‘Accidental poisoning by, and exposure, to antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs, not elsewhere classified’ (11.5 per 100,000)
- ‘Accidental poisoning by, and exposure to, nonopioid analgesics, antipyretics, and antirheumatics’ (11.1 per 100,000).

**Table 23** shows tamariki hospitalisations for injury from poisoning, presented by age group, for the years 2017 to 2021.

**Figure 55** shows the rates of tamariki hospitalisation for injury from poisoning, presented by age group and the top three causes, for the years 2017 to 2021.

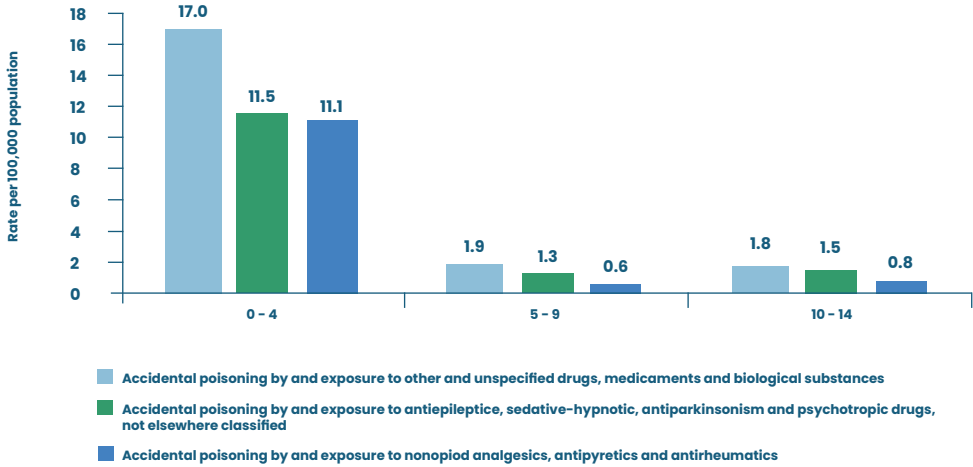
Additional data on tamariki hospitalisation for injury from poisoning are provided in Appendix 2.<sup>161</sup>

161. Table 57, Appendix 2.

Table 23: Tamariki hospitalisations for injury from poisoning, by age-group, 2017–2021

Age Group (Years)	No. of Hospitalisations	%	Rate per 100,000	95% CIs	
0 – 4	911	82	60.0	56.2	64.0
5 – 9	100	9	6.0	4.9	7.3
10 – 14	101	9	6.4	5.2	7.7
Total	1,112	100	23.3	22.0	24.7

Figure 55: Rates of hospitalisations for injury from poisoning for tamariki, by age group, and the top three causes, 2017–2021





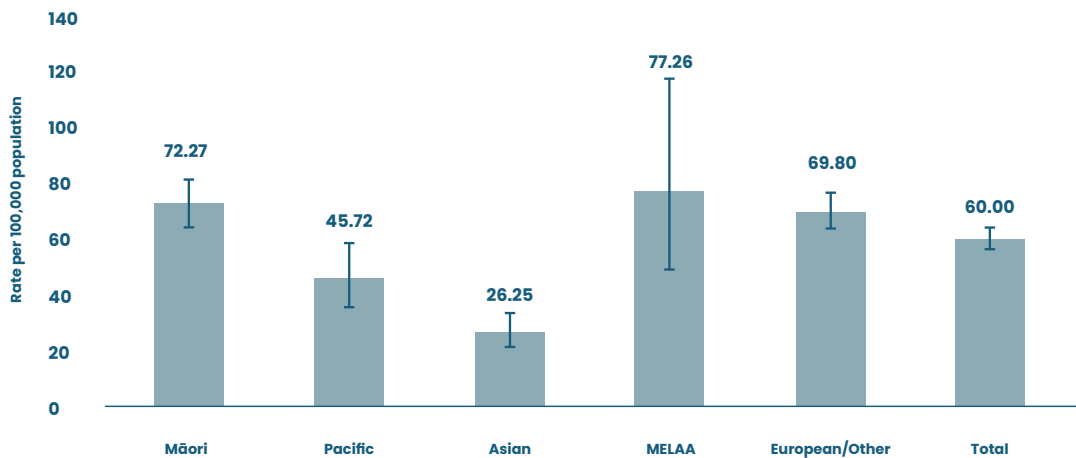
Ethnicity

As previously mentioned, the vast majority of tamariki hospitalisations for injury from poisoning in the years 2017 to 2021 were in the age group 0 to 4 years. European/other children aged 0 to 4 years (40%, n=441) and tamariki Māori (27%, n=304) aged 0 to 4 years accounted for the greatest proportion of hospitalisations, compared with Asian (7%, n=76), Pacific (6%, n=67), and MELAA (3%, n=23) children of the same age.

In this age group (0 to 4 years), MELAA children had the highest rate of hospitalisation (77.3 per 100,000), followed by tamariki Māori (72.3 per 100,000), European/other children (69.8 per 100,000), Pacific children (45.7 per 100,000) and Asian children (26.3 per 100,000). However, the rate for MELAA children aged 0 to 4 years should be interpreted with caution, due to the low numbers (n=23).

**Figure 56** shows the rates of hospitalisation for injury from poisoning for tamariki aged 0 to 4 years, by prioritised ethnicity, for the years 2017 to 2021.

Figure 56: Rates of hospitalisation for injury from poisoning for tamariki aged 0–4 years, by prioritised ethnicity, 2017–2021 <sup>162</sup>



162. Rates of hospitalisations for children aged 5–9 years and 10–14 years by ethnic group cannot be reported because of low numbers.

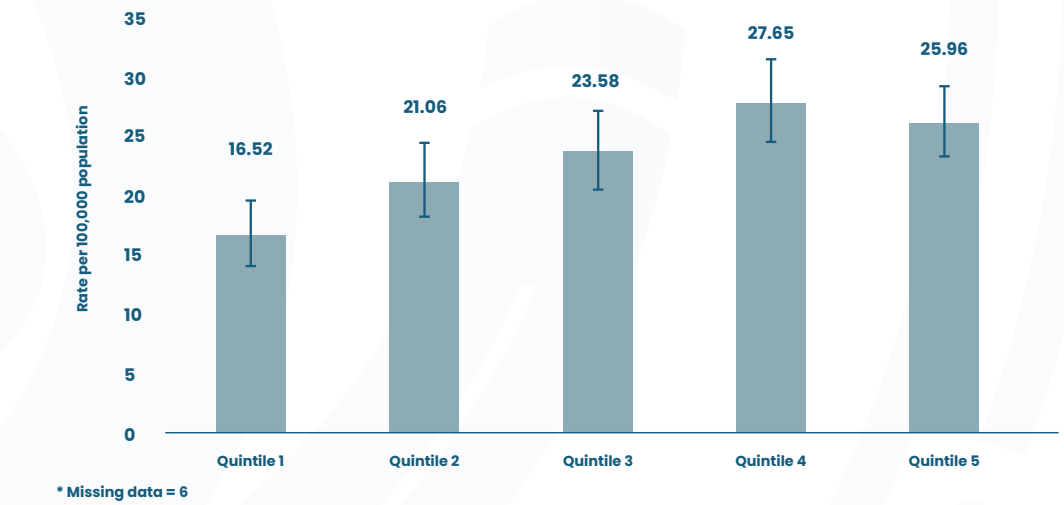
Socio-economic deprivation

In the years 2017 to 2021, tamariki living in the more relatively deprived areas of Aotearoa had higher rates of hospitalisation for poisoning than those living in the least deprived areas.

As the level of relative deprivation increased, there was a corresponding increase in tamariki hospitalisations for injury from poisoning. Tamariki living in NZDep quintiles 4 and 5 had the highest rates (27.7 per 100,000 for quintile 4; 26.0 per 100,000 for quintile 5) and accounted for over half of them (52%, n=572).

**Figure 57** shows the rates of tamariki hospitalisation for injury from poisoning, presented by NZDep quintile, for the years 2017 to 2021.

Figure 57: Rates of tamariki hospitalisations for injury from poisoning, by NZDep quintile 2017–2021\*



Gender

In the years 2017 to 2021, male tamariki accounted for a greater proportion of hospitalisations for injury from poisoning (54%, n=605) than female tamariki (46%, n=507). The hospitalisation rate for injury from poisoning for male tamariki was 24.7 per 100,000 compared with 21.8 per 100,000 for females.

**Table 24** shows tamariki hospitalisations for injury from poisoning, by gender, for the years 2017 to 2021.

Table 24: Tamariki hospitalisations for injury from poisoning, by gender, 2017–2021

	Number	%	Rate/100,000	95% CIs	
Females	507	45.6	21.9	20.0	23.8
Males	605	54.4	24.7	22.8	26.7
Total	1,112	100	23.3	22.0	24.7

Policy implications

The analysis in this report highlights the poisoning risk that medications pose to tamariki, especially those aged 1 to 4 years. The National Poisons Centre also reports that 50% of its calls relate to tamariki aged 5 years and under. Three of the top five reasons for those calls relate to medications of some kind (paracetamol, ibuprofen, and vitamin/supplements).<sup>163</sup> While not all calls received by the National Poisons Centre are for incidents that lead to hospitalisation, this information serves to reinforce the extent of the risks to tamariki posed by medications in the home.<sup>164</sup>

The following policy implications relate primarily to addressing this poisoning risk, by both putting regulated solutions in place and by providing improved support to parents, caregivers, and whānau to ensure medicines are stored safely.

We recommend improving and extending the use of child resistant packaging of medicines

Under the Medicines Regulations 1984,<sup>165</sup> some groups of medicines – including aspirin, medicines containing elemental iron, paracetamol, barbiturates, phenothiazine (and derivatives), and tricyclic and tetracyclic (or analogous anti-depressants) – must be sold in a safety container that is reasonably resistant to attempts by young children to open it.<sup>166</sup> The regulations also allow for exemptions to be made,<sup>167</sup> including in situations where such packaging would make it difficult for disabled people or older people to access their medications. There is not, however, a New Zealand standard for child resistant packaging, as the previous standard was withdrawn in September 2014.

The following further safeguards could be put in place around packaging including:<sup>168</sup>

- Extending regulatory requirements for child-resistant packaging to cover a wider range of products, including over-the-counter medicines that may be toxic to tamariki.
- Develop a conjoint Australia and New Zealand standard to guide child-resistant packaging requirements in Aotearoa.

163. The National Poisons Centre, correspondence (January 2024). The full list of the top five reasons for calling the National Poisons Centre is: paracetamol, ibuprofen, vitamin/supplements, household chemicals (such as cleaning products), and plants.

164. The National Poisons Centre also advise that there is not a correlation between the number of calls on a particular substance and the risk of hospitalisation from that substance. Each of these medications have different level of risk, for example high-risk prescription medications (such as colchicine) might have a low call rate to the National Poisons Centre compared with over-the-counter medications but it is more likely to cause serious injury that in turn could lead to tamariki hospitalisation.

165. Made under the Medicines Act 1981.

166. Regulation 37 of the Medicines Amendment Regulations 1984

167. Ibid, subclause 2.

168. These are based on recommendations previously made in Safekids Aotearoa (2015) Position Paper: Child

We recommend increasing relevant support for parents, caregivers, and whānau

While child-resistant packaging increases the time it takes for tamariki to open a package and get to the medicine or other substance inside, it does not completely remove the risk of tamariki accessing, and being poisoned by, medicines. Therefore, it is important to ensure parents, caregivers, and whānau store and use medicines appropriately. This is also part of the ‘optimal use of medicines’, whereby ‘the impacts of illnesses are reduced and drug-related harms mitigated’.<sup>169</sup>

Increased supports to parents, caregivers, and whānau include:

- A focus on ‘medicines access equity’ and medicines optimisation so that medicines can be accessed, provided, and administered as prescribed in ways that are empowering. This includes providing good quality, low- or no-cost primary health care<sup>170</sup> so that the right medicines are prescribed in the right quantity (reducing the risks of wasted or excess medication being stored in homes), and so that people who are prescribed medicines are given appropriate information about medication use and storage. In making this recommendation we are aware that primary health care in Aotearoa is not always delivered in culturally safe ways that work for Māori and Pacific populations,<sup>171</sup> and that Māori in particular experience cost barriers to accessing care,<sup>172</sup> and the primary health care policy overall has failed to honour the principles of Te Tiriti o Waitangi.<sup>173</sup>
- Improving information provided to parents through official websites (e.g., Health New Zealand|Te Whatu Ora and Ministry of Health) on the safe storage of medicines and household chemicals and reducing the risk of poisoning young tamariki.<sup>174</sup>
- Maintaining the support provided by the National Poisons Centre, a free-of-charge 24/7 poisons information service available to all New Zealanders.

169. Te Karu, L., 2022, p234.

170. Primary health care refers to a full range of health services provided in the community and includes access to general practice, nurse prescribing, and pharmacy services.

171. Mullane, T., et. al. 2022.

172. Jeffries, M., et. al., 2023

173. Waitangi Tribunal, 2023

174. Currently, a small amount of information is provided on the Health New Zealand|Te Whatu Ora website (<https://www.tewhatuora.govt.nz/our-health-system/environmental-health/household-items-and-electronics/child-resistant-packaging/>) and the Ministry of Health website (<https://www.health.govt.nz/your-health/conditions-and-treatments/treatments-and-surgery/medications/medicine-safety>), the latter of which was last updated in 2015.