4. Falls.

While minor slips and falls are a very common and normal part of tamariki development and are very common, some can result in broken bones, cuts, or more significant injuries. A serious fall may result in a traumatic brain injury or spinal injury that can have lifelong impact on tamariki. On a global scale, fall related injuries are one of the main causes of child related disabilities. [117]

This section covers tamariki injury due to falls, with a focus on tamariki hospitalisations between 2017 and 2021.

There were also 7 tamariki fatalities from falls in the years 2014 to 2018. Due to the small numbers, no further analysis on fatalities from falls has been presented in this chapter.

In brief

In the years 2017 to 2021, 16,218 tamariki were hospitalised in Aotearoa with injuries from falls.

The rates of tamariki hospitalisation related to falls have decreased over time since 2012, with the downward trend more marked since 2019.

117. Harvey, A., et al., 2009

Tamariki aged 5 to 9 years had the highest rate of hospitalisation for injury related to falls (403.3 per 100,000), followed by those aged 0 to 4 years (312.0 per 100,000) and 10 to 14 years (300.2 per 100,000). Looking further at what has happened by age group:

- For tamariki aged 0 to 4 years, fall-related injuries mostly happened at home. For those aged under 1 year, tamariki Māori had the highest rate of hospitalisation for fall-related injury. For tamariki aged 1 to 4 years, Pacific children had the highest rate of hospitalisation for fall-related injury.

- For tamariki aged 5 to 9 years, fall-related injuries mostly occurred at school and were mostly related to playground equipment. There were significant differences in this age group between tamariki Māori, Pacific, and European/other children (higher rates of hospitalisation for fall-related injury) and Asian and MELAA children (lower rates of hospitalisation).

- For tamariki between the ages of 10 and 14 years, fall-related injuries leading to hospitalisation mostly occurred at sports and athletics areas, with Pacific children having the highest rate for this age group.

Overall, tamariki Māori, European/other children, and Pacific children had the highest rates of hospitalisation for fall-related injury across these three age groups. Tamariki living in the most relatively deprived areas of Aotearoa (the highest NZDep quintiles) had higher rates of hospitalisation for fall-related injury than those living in the least relatively deprived areas of Aotearoa (the lower NZDep quintiles).

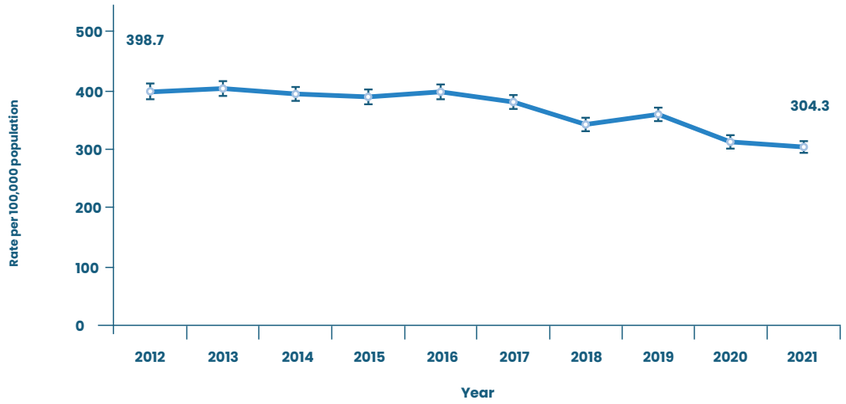
Trend over time

In the years 2017 to 2021, a total of 16,218 tamariki were hospitalised for injury from falls.

Rates of tamariki hospitalisation for injury from falls have decreased since 2012, from 398.7 per 100,000 in 2012 to 304.3 per 100,000 in 2021. This downward trend has been more marked since 2019.

Figure 34 shows the rates of tamariki hospitalisation for injury from falls, for the years 2012 to 2021.

Figure 34: Rates of tamariki hospitalisation for injury from falls over time, 2012–2021



Age group

In the years 2017 to 2021, around 41% of tamariki hospitalisations for fall related injury were in those aged 5 to 9 years. This age group also had the highest rates of hospitalisation for fall-related injuries out of all three age groups (403.3 per 100,000).

Tamariki in the age groups 0 to 4 years and 10 to 14 years had similar numbers of hospitalisation, each making up around 29% of total hospitalisations for fall related injury.

The place where tamariki were injured by falls varied by age. Looking at the 10 year trend from 2012 to 2021, for the youngest tamariki (aged 0 to 4 years), the highest rate was for injuries sustained at home (184.1 per 100,000). For tamariki aged 5 to 9 years, the highest rate was for injuries sustained at school (150.7 per 100,000); and for tamariki aged 10 to 14 years, the highest rate was for injuries sustained at sports and athletics areas (81.8 per 100,000).

When looking at fall types, the highest rates of fall-related hospitalisation across all age groups were for injuries from playground equipment, with the highest rate in tamariki aged 5 to 9 years.

Table 15 shows tamariki hospitalisations for injury from falls, presented by age group, for the years 2017 to 2021.

Figure 35 shows the rates of tamariki hospitalisation for injury from falls, presented by location and age group, for the years 2012 to 2021.

Figure 36 shows the rates of tamariki hospitalisation for injury from falls, presented by age group and the top three fall types, for the years 2017 to 2021.

Additional data on fall-related hospitalisations of each tamariki age group, by cause of fall, is provided in Appendix 2. [118]

Table 15: Tamariki hospitalisations for injury from falls, by age group, 2017–2021

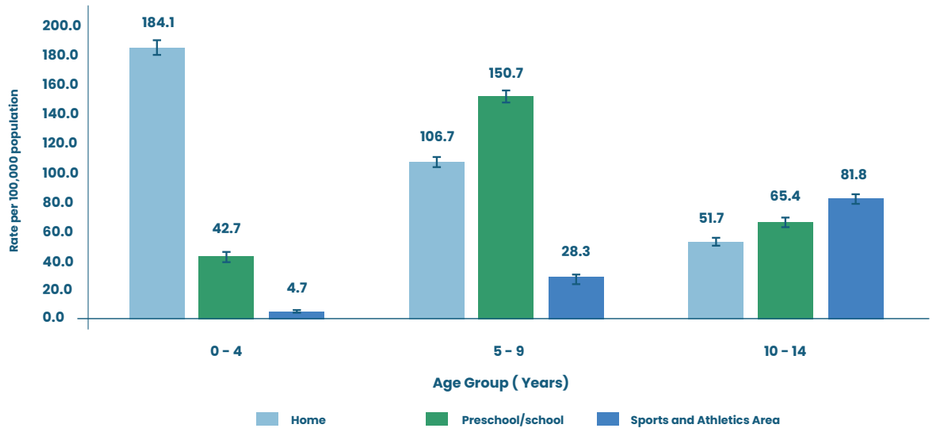
Age Group (Years)	Number	%	Rate per 100,000	95% CIs	
0 - 4	4,737	29	312.0	303.16	320.99
5 - 9	6.725	41	403.3	393.73	413.07
10 - 14	4,756	29	300.2	291.72	308.85
Total	**16,218**	**100**	**340.0**	**334.78**	**345.27**

Additional points to note from table 15:

- The rate of fall-related hospitalisation for tamariki aged 5 to 9 years was significantly higher than the rates of hospitalisation for the other two age groups.
- The rates of fall-related hospitalisation for tamariki aged 0 to 4 years and tamariki aged 10 to 14 years were similar to each other (312 per 100,00 for age 0 to 4 years and 300.2 per 100,000 for age 10 to 14 years).

118. Table 48, Apapendix 2.

Figure 35: Rates of tamariki hospitalisation for injury from falls for tamariki, by location and age group, 2012–2021



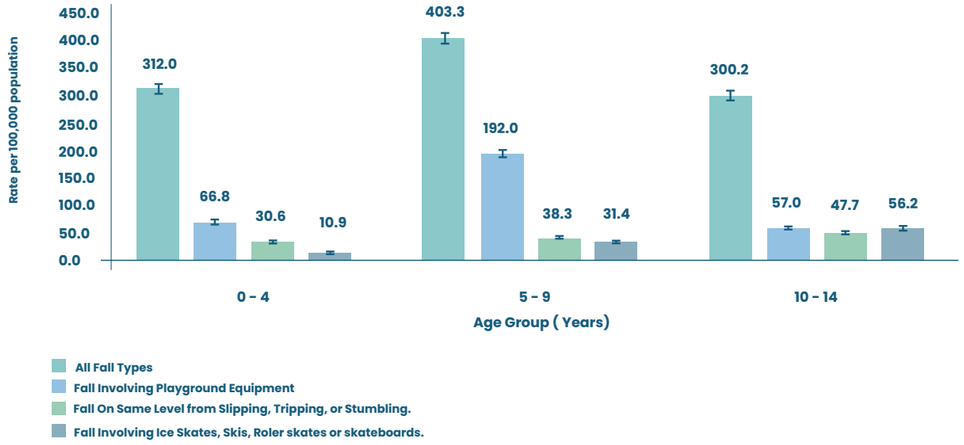
Additional points to note from Figure 35:

- During the period 2012 to 2021, the highest rate of fall-related hospitalisation for any of these age groups was for falls in the home for tamariki aged 0 to 4 years. This was significantly higher than the second most common location of fall-related injury for tamariki in this age group (at preschool/school, a rate of 42.7 per 100,000).

- In the age group 5 to 9 years, the highest rate of hospitalisation for fall-related injury was for falls at school (150.7 per 100,000), which was significantly higher than for the other locations.

- In the age group 10 to 14 years, the place of fall-related injury was less variable than in the other age groups. In this group, the highest hospitalisation rate for fall-related injury was for falls at sports and athletics areas (81.8 per 100,000, compared with 6.54 per 100,000 for at school and 51.7 per 100,000 for at home).

Figure 36: Rates of tamariki hospitalisation for injury from falls, by age group and top three fall types, [119] *2017–2021*



Additional points to note from figure 36:

- For younger tamariki (those aged 0 to 4 years and 5 to 9 years), the second-highest rate of fall related hospitalisations was from falls sustained on the same level from slipping, tripping, or stumbling. This was highest for tamariki aged 5 to 9 years (192 per 100,000).

- For tamariki aged 10 to 14 years, there was little difference between the top three fall types. Tamariki in this age group also had the highest rates of fall-related hospitalisation from falls involving ice skates, skis, roller skates or skateboards (56.2 per 100,000).

119. The 'all fall types' category includes other types of fall, such as a fall from one level to another; a fall on the same level due to collision with, or pushing by, another person; a fall involving a chair; a fall from, out of, or through a building or structure; a fall involving a bed; a fall from a tree; a fall on or from stairs or steps; a fall while being carried or supported by other persons; a fall involving other furniture, diving, or jumping into water causing injury other than drowning or submersion; a fall from a cliff; a fall on or from a ladder; a fall involving a wheelchair; a fall on the same level involving ice and snow; a fall on or from scaffolding; and unspecified falls.

Ethnicity

In the years 2017 to 2021, tamariki Māori, Pacific children, and European/other children had the highest rates of hospitalisation for fall-related injury when compared with tamariki in the Asian or MELAA ethnic groupings.

In the age group 0 to 4 years, tamariki Māori had the highest rate of hospitalisation for injury from falls (374.9 per 100,000), closely followed by Pacific children (366.4 per 100,000).

In tamariki aged 5 to 9 years, the rates of hospitalisation for injury from falls in the Māori, Pacific, and European/other categories were very similar to each other. Although European/other children in this age group had the highest rate of hospitalisation (431.8 per 100,000), this was not statistically significant when compared with tamariki Māori or Pacific children.

For tamariki aged 10 to 14 years, Pacific children had the highest rate of hospitalisation for injury from falls (375.1 per 100,000).

When looking specifically at the age group 0 to 4 years:

- The overall rates of falls-related hospitalisation were lower for the tamariki aged under 1 year (271.8 per 100,000, compared with 321.3 per 100,000 for those aged 1 to 4 years).
- Among the tamariki aged under 1 year, tamariki Māori had the highest rate of falls-related hospitalisation (334.6 per 100,000), followed by European/other children (278.9 per 100,000) and Pacific children (270.5 per 100,000).
- In the age group 1 to 4 years, Pacific children had the highest rate of falls-related hospitalisation (390.7 per 100,000), followed by tamariki Māori (385.1 per 100,000) and European/other children (330.8 per 100,000).

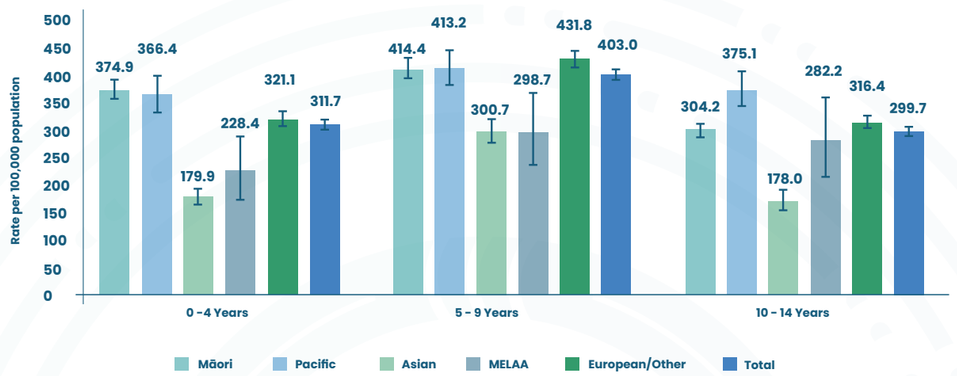
Figure 37 shows the rates of tamariki hospitalisation for injury from falls, presented by age group and prioritised ethnicity, for the years 2017 to 2021.

Figure 38 shows the rates of hospitalisation for injury from falls for tamariki aged 0 to 4 years, presented by prioritised ethnicity, for the years 2017 to 2021.

Additional data on tamariki hospitalisations from injury from falls are provided in Appendix 2. [120]

120. Table 49, Appendix 2.

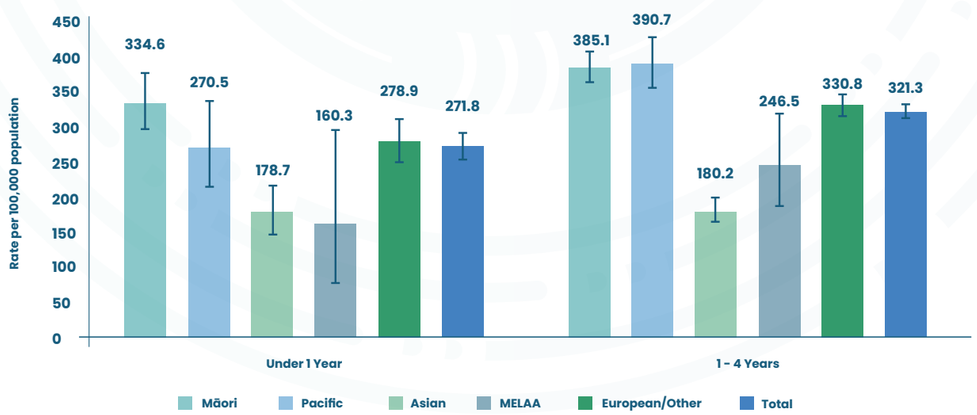
Figure 37: Rates of hospitalisation for injury from falls for tamariki, by prioritised ethnicity and age group, 2017–2021



Additional points to note from Figure 37:

- Across all age groups, the rate of hospitalisation for injury from falls was lowest for Asian tamariki. This was statistically significant.
- In tamariki aged 5 to 9 years, the rates of hospitalisation for injury from falls in the Māori, Pacific, and European/other categories were similar to each other, with the rates for each of these groups significantly higher than the rates for the Asian and MELAA ethnic groupings.

Figure 38: Rates of hospitalisation for injury from falls for tamariki aged 0–4 years, by prioritised ethnicity, 2017–2021



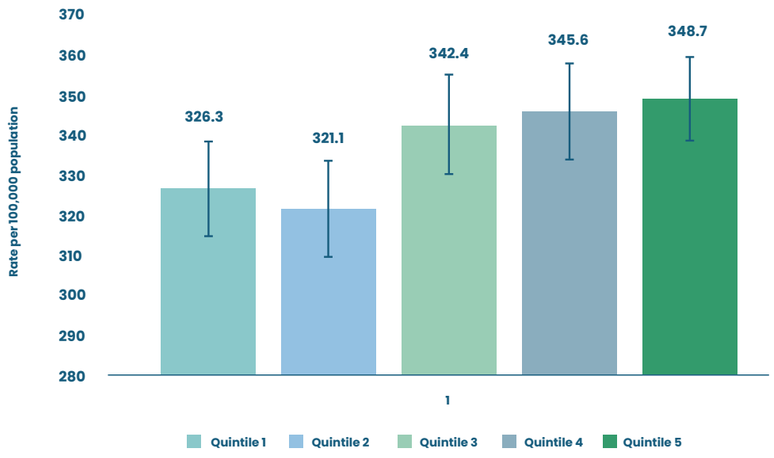
Socio-economic deprivation

Tamariki living in the most relatively deprived areas (higher NZDep quintiles) had higher rates of hospitalisation for injury from falls compared with tamariki living in the least relatively deprived areas (lower NZDep quintiles).

Tamariki living in NZDep quintile 5 areas had the highest rate of hospitalisation from fall-related injuries (348.7 per 100,000) out of all the NZDep quintiles.

Figure 39 shows the rates of tamariki hospitalisation for injury from falls, presented by NZDep quintile, for the years 2017 to 2021.*

*Figure 39: Rates of tamariki hospitalisation for injury from falls, by NZDep quintile, 2017–2021**



*** Total number of Hospitalisations = 16,110 (108 missing data in the source information)**

Gender

Male tamariki made up 56.7% of all hospitalisations for injury from falls in the years 2017 to 2021. The rate of falls-related hospitalisation for male tamariki (375.6 per 100,000) was significantly higher than that for females (302.4 per 100,000).

Table 16 shows tamariki hospitalisations for injury from falls, presented by gender, for the years 2017 to 2021.

Table 16: Tamariki hospitalisations for injury from falls, by gender, 2017–2021

	Number	%	Rate per 100,000	95% CIs	
Females	7,016	43.3	302.4	295.4	309.5
Males	9,201	56.7	375.6	367.9	383.3
Total	**16,218**	**100**	**340.0**	**334.8**	**345.3**

Policy implications

Increasing our knowledge

Falls at home are a serious concern, especially for tamariki Māori and Pacific children aged between 0 and 4 years. **We recommend research into the drivers of this inequity and into evidenced-based ways to best support families/whānau to protect their tamariki from falls**, as a top priority.

More attention is also needed to reduce the risk of injury from falls that occur at sports, athletics, or other play areas for tamariki aged 10 to 14 years, especially for Pacific children.

Prioritising equity and improving what is already in place

In relation to falls, we recommend:

- **Use targeted approaches for whānau Māori and Pacific families as part of a holistic approach to services for tamariki aged under 5 years.** As noted in our 2015 report, there is good evidence for ways to reduce exposure to falls from and within buildings and homes, such as using safety gates for stairs and window latches. However, a one-size-fits-all approach to this issue is unlikely to address the inequities that have been highlighted in this current report. Targeted approaches could complement the work by government agencies and community-based providers on *Kahu Taurima* (the first 2,000 days) [121] and healthy-home programmes. They could also build on existing resources to increase awareness of what works in reducing falls at home, such as the *Preventing Falls to Under Fives Project Plan* produced by Safekids Aotearoa.

- **Increase opportunities for safe play and tākaro for tamariki.** In its 2022 Play Plan, Kia Hīanga, Sport New Zealand/IHI Aotearoa identified a number of areas that could be improved to support play and that we think could also reduce fall injuries in tamariki. These include the need for:

    - The voices of tamariki to be included as part of decisions on play spaces in their communities
    - Making sure neighbourhoods have access to enough play spaces for tamariki
    - Play space design guidelines that combine all aspects of equity and inclusiveness.
    - Coordinated approaches across government agencies and communities to support sustainable neighbourhood play systems and environments. [122]

121. Kahu Taurima is an approach to health care and support during pregnancy and the first five years for tamariki. More information is available on the website for Health NZ|Te Whatu Ora: https://www.tewhatuora.govt.nz/for-the-health-sector/maternity/kahu-taurima/
122. Sport New Zealand | IHI Aotearoa, 2022

- **Provide more guidance and support to School Board on playground design and equipment.** The data in this report indicate that safe playground equipment at schools is critically important, especially for tamariki between the ages of 5 and 9 years. School Boards are responsible for ensuring that their school is a physically safe place for all students and staff. [123] They are also responsible for all aspects of building or upgrading their playgrounds and must comply with New Zealand Standard 5828:2015: Playground Equipment and Surfacing, as well as other guidance from the Ministry of Education. [124] While the data appear to suggest that the current arrangements provide a universal standard of playground safety, additional support to School Boards is needed to further reduce playground injuries for tamariki in the age group 5 to 9 years. This could include more widespread use of the S.A.F.E. (Supervision, Age Appropriateness, Fall Surfacing & Height, and Equipment Maintenance) checklist [125] by School Boards. Additional support could also be provided by the Ministry of Education to help School Boards ensure their playgrounds meet the safety and accessibility needs of disabled tamariki (e.g., through the provision of rails for fort or climbing equipment, wheelchair-inclusive equipment, and ramps). [126]

Addressing regulatory and policy gaps

- **We recommend that the Australian trampoline standard be adopted and that manufacturers, retailers, and sellers should be required to include and convey appropriate safety information to consumers at the point of sale** (including second-hand trampolines sold through online trading sites). Although there is not specific data in this report on what playground or sports equipment might have contributed to a fall, we know that some equipment has particular dangers. For example, trampolines provide a valuable opportunity for physical activity and motor skill improvement for tamariki, and they can contribute to tamariki development by encouraging risk taking and play. However, trampolines also pose a significant risk to tamariki safety. Unfortunately, there is no New Zealand standard for trampolines, as the previous voluntary standard was revoked in 2015 and has not been replaced. In the same period, the Australian standard equivalent (A4989 -2015) was strengthened to include safety net measures.

123. Education and Training Act 2020, section 127.
124. Guidance on playgrounds on school sites is provided by the Ministry of Education: https://www.education.govt.nz/school/property-and-transport/school-facilities/playgrounds/
125. The S.A.F.E checklist is produced by Safekids Aotearoa and is available at https://media.starship.org.nz/download-playground-safety-school-lesson-plan-teacher-background%3E%3E/Starters_and_Strategies_Playground_Safety_School_lesson_plan.pdf
126. A useful resource for policy makers and schools is the 2020 profile of hospital treated child injury in primary schools in Victoria by Monash University Accident Research Centre, available online at https://www.monash.edu/__data/assets/pdf_file/0019/2431414/Hazard88-web_FA.pdf.

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