FACTSHEET:

TAMARIKI MĀORI UNINTENTIONAL INJURIES

safekids Aotearoa

In New Zealand, Māori are a youthful population compared to other ethnic populations. According to the 2013 New Zealand census, 33.8% of Māori were under the age of 15 years. Compared to the New Zealand population, children under the age of 15 years account for 20% of the total population. [1]

Of the total child (< 15 years) population, tamariki Māori make up one-quarter (24.6%; 202,314) of all children in New Zealand. [1]

2,120 tamariki are hospitalised each year

That's 6 a day

Injury*

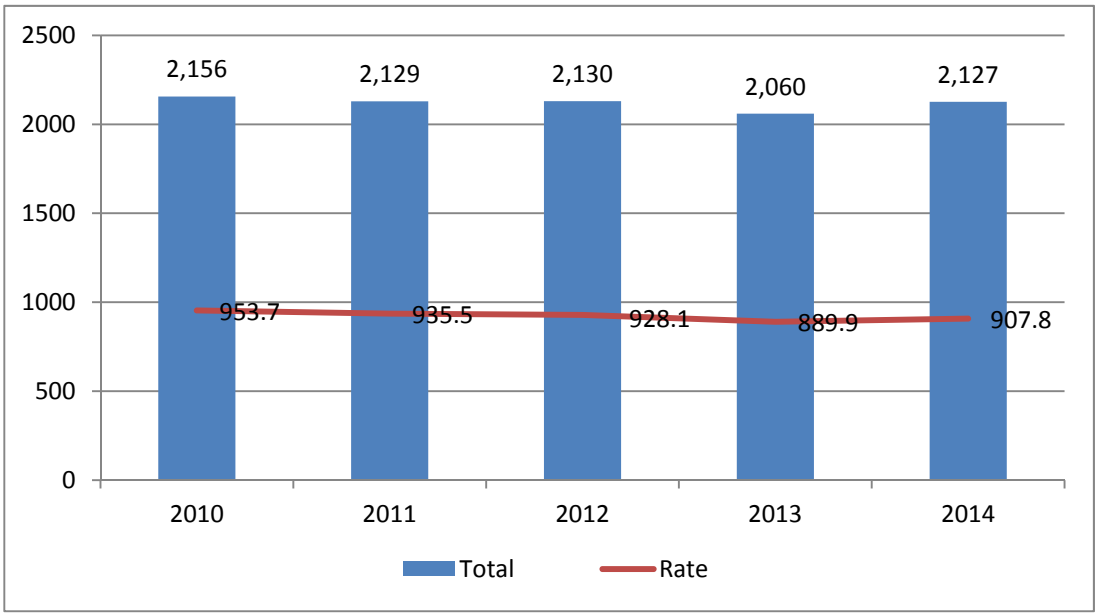
On average (2010-2014), around 2,120 tamariki Māori were injured severely enough to be admitted to hospital for an unintentional injury each year. That is around 6 tamariki Māori per day.

Tamariki Māori account for 29% (10,602; 2010-2014) of all child unintentional injury hospitalisations in New Zealand. Between 2010 and 2014, the rate of child unintentional injury hospitalisations for tamariki Māori (922.8 per 100,000 children) was higher than the rate for all children (816.1 per 100,000 children) in New Zealand.

Between 2010 and 2014, the rate of hospitalisation for tamariki remained relatively steady. (See Figure 1) [2]

Compared to other ethnic groups tamariki Māori have non-fatal injury rates twice the injury rate of Asian children and 1.5 times the rate of European children. [3]

Figure 1: Number and rate of child unintentional injury hospital admissions, Māori, by year, 2010-2014. [2]



Data source: Injury Prevention Research Unit, University of Otago. Analysis by Safekids Aotearoa.

** Data excludes discharges: as a result of readmission for an existing injury; for a length of stay in hospital of less than one day; where there was not a primary diagnosis of injury; for patients who died in hospital.*

Between 2010 and 2014, non-fatal injuries were most common amongst children aged 0 to 4 years, where they accounted for 40% of hospital admissions. However, by 2014 the gap between the rate of injury for children aged 0 to 4 years (rate=774 per 100,000) and 5 to 9 years (rate=758 per 100,000) had almost closed. (See Figure 2)

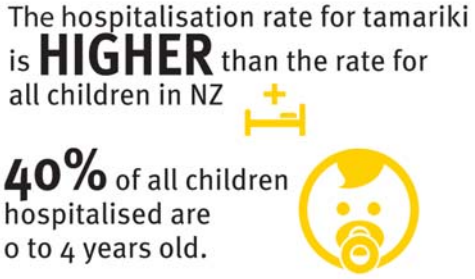
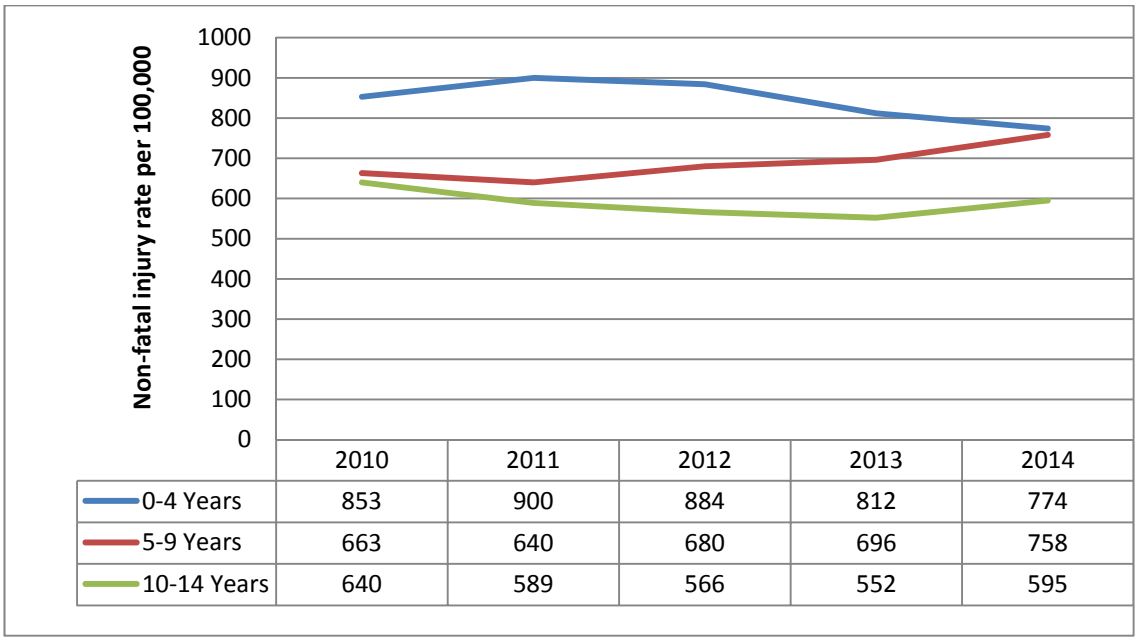


Figure 2: Rate of child unintentional injury hospital admissions, Māori, by 5 year age group, 2010-2014. [2]



	2010	2011	2012	2013	2014
0-4 Years	853	900	884	812	774
5-9 Years	663	640	680	696	758
10-14 Years	640	589	566	552	595

Data source: Injury Prevention Research Unit, University of Otago. Analysis by Safekids Aotearoa.
Data excludes discharges: as a result of readmission for an existing injury; for a length of stay in hospital of less than one day; where there was not a primary diagnosis of injury; for patients who died in hospital

The leading causes of non-fatal injuries were: fall-related injuries (46%), struck by or against somebody or an object (7%), natural/ environmental (5%), cutting and/or piercing injury (5%), poisoning (4%), and cyclist injury (non-traffic) (4%).

Fall-related injury

- The most common causes of fall-related injuries are falls from playground equipment (32%), falls off roller-skates or skateboards (10%) slipping or tripping on same level ground (8%) and falls out of or through a building or structure, such as a window (8%). [2]
- Tamariki Māori are disproportionately likely to be hospitalised from a fall injury than any other ethnic group. [3]
- Fall-related injuries account for around half (46%; rate=426.5 per 100,000) of all unintentional injury hospitalisations for tamariki Māori and are easily the leading cause of injury. Fall-related injuries are particularly high amongst tamariki Māori aged 5 to 9 years (rate=589.5 per 100,000). [2]

Struck by or against somebody or an object

- The most common causes of struck by or against injuries are being struck by or against an object (33%), accidental hit, strike, kick, twist, bite or scratch by another person (24%) and being struck by a thrown, projected or falling object (22%). [2]
- Tamariki Māori were hospitalised at around twice the rate of Asian and European/Other children when struck by an object, and nearly three times the rate of Asian children when unintentionally struck by a person. [3]
- Struck by or against injuries accounted for 7% (rate=67.8 per 100,000) of all unintentional injury hospitalisations for tamariki Māori, and is the second leading cause of injury. Struck by or against injuries are more common amongst tamariki Māori aged 10 to 14 years (rate=83.1 per 100,000). [2]

Natural/ environmental injury [6]

- The most common causes of natural/ environmental related injuries are contact with a dog (60%), and being bitten or stung by nonvenomous insect (e.g. mosquitoes, fleas and ticks) and other nonvenomous arachnids (e.g. non venomous spiders, scorpions), myriapods (e.g. millipedes, centipedes), and crustaceans (e.g. crabs, lobsters, crayfish, and barnacles) (21%). [2]

- Tamariki Māori have the highest rate of injury from contact with dogs, with around 1.5 times the rate of Pacific and almost twice the rate of European children. [3]

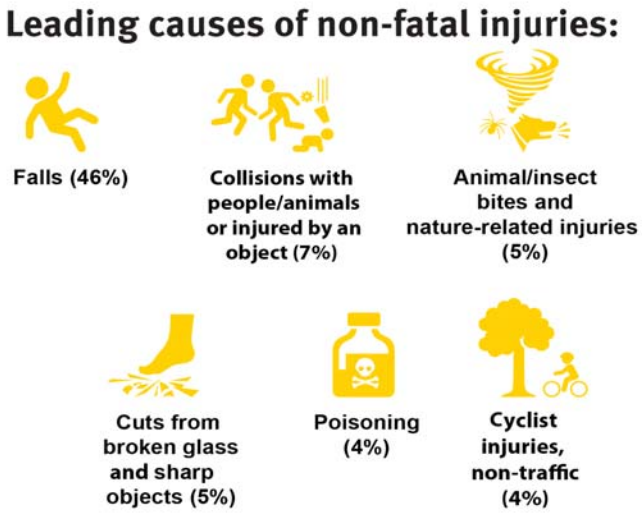
- A natural/ environmental related injury accounted for 5% (rate=49.6 per 100,000) of all unintentional injury hospitalisations for tamariki Māori and is the third equal leading cause of injury. Natural/ environmental related injuries are more common amongst tamariki Māori aged 0 to 4 years (rate=65.0 per 100,000). [2]

Cutting and/or piercing injury

- The most common causes of cutting and/or piercing injuries are contacts with sharp glass (51%), foreign body or object entering through skin e.g. edge of a stiff paper, nail, splinter, tin-can lid (23%) and being in contact with a non-powered hand tool (10%). [2]

- Tamariki Māori and Pacific were hospitalised for cutting and piercing injuries at around twice the rate of Asian and European/Other children. [3]

- A cutting and/or piercing related injury accounted for 5% (rate=47.3 per 100,000) of all unintentional injury hospitalisations for tamariki Māori and is the third equal leading cause of injury. Cutting and/or piercing related injuries are more common amongst tamariki Māori aged 5 to 9 years (rate=59.2 per 100,000) and 10 to 14 years (rate=59.0 per 100,000). [2]



Poisoning

- The most common causes of poisoning are (X44) accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (25%), (X41) accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs (19%) and (X49) accidental poisoning by and exposure to other and unspecified chemicals and noxious substances (17%). (See endnote [4] for examples). [2]

- Tamariki Māori are disproportionately likely to suffer a non-fatal injury from an unintentional poisoning with rates of 1.5 times that of European/Other, twice that of Pacific and nearly four times that of Asian children. [3]

- Poisoning accounted for 4% (rate=37.9 per 100,000) of all unintentional injury hospitalisations for tamariki Māori and is the fifth equal leading cause of injury. Poisoning is more common amongst tamariki Māori aged 0 to 4 years (rate=84.3 per 100,000). [2]

Cyclist injury (non-traffic) [5]

- The most common causes of non-traffic cycling injuries are cyclists who have fallen or have been thrown off a pedal cycle without colliding into anything (81%), cyclists injured in collision with fixed or stationary object such as a stationary car or a streetlight or electricity post (9%), and cyclists injured in collision with another pedal cycle (3%). [2]

- Tamariki Māori are more likely to be injured when cycling off-road with rates of around 1.5 times that of European/Other and Pacific children. [3]

- Non-traffic cycling injuries account for 4% (rate=36.8 per 100,000) of all unintentional injury hospitalisations for tamariki Māori and is the fifth equal leading cause of injury. Non-traffic cycling injuries are more common amongst tamariki Māori aged 5 to 9 years (rate=48.0 per 100,000) and 10 to 14 years (rate=48.3 per 100,000). [2]

Table 1: Leading causes of child unintentional injury hospital admissions,

Māori, by 5 year age group, 2010-2014 [2]

0-4 Years					5-9 Years					10-14 Years					0-14 Years				
External cause	Non-fatal 2010-2014	Average per year	Rate per 100,000	%	External cause	Non-fatal 2010-2014	Average per year	Rate per 100,000	%	External cause	Non-fatal 2010-2014	Average per year	Rate per 100,000	%	External cause	Non-fatal 2010-2014	Average per year	Rate per 100,000	%
Fall	1591	318.2	364.4	37.7%	Fall	2001	400.2	589.8	58.2%	Fall	1308	261.6	350.7	44.5%	Fall	4900	980.0	426.5	46.2%
Poisoning	368	73.6	84.3	8.7%	Cut/Pierce	201	40.2	59.2	5.8%	Struck by or against	310	62.0	83.1	10.5%	Struck by or against	779	155.8	67.8	7.3%
Hot object/substance	318	63.6	72.8	7.5%	Natural/Environmental	194	38.8	57.2	5.6%	Cut/Pierce	220	44.0	59.0	7.5%	Natural/Environmental	570	114.0	49.6	5.4%
Struck by or against	279	55.8	63.9	6.6%	Struck by or against	190	38.0	56.0	5.5%	Pedal Cyclist, non-traffic	182	36.4	48.8	6.2%	Cut/Pierce	544	108.8	47.3	5.1%
Natural/Environmental	263	52.6	60.2	6.2%	Pedal Cyclist, non-traffic	163	32.6	48.0	4.7%	Other Land Transport	154	30.8	41.3	5.2%	Poisoning	435	87.0	37.9	4.1%
Cut/Pierce	123	24.6	28.2	2.9%	Occupant	74	14.8	21.8	2.2%	Overexertion	122	24.4	32.7	4.1%	Pedal Cyclist, non-traffic	423	84.6	36.8	4.0%
Pedal Cyclist, non-traffic	78	15.6	17.9	1.8%	Pedestrian	68	13.6	20.0	2.0%	Natural/Environmental	113	22.6	30.3	3.8%	Hot object/substance	371	74.2	32.3	3.5%
Occupant	75	15.0	17.2	1.8%	Other Land Transport	64	12.8	18.9	1.9%	Occupant	101	20.2	27.1	3.4%	Other Land Transport	251	50.2	21.8	2.4%
Suffocation	64	12.8	14.7	1.5%	Hot object/substance	31	6.2	9.1	0.9%	Pedestrian	46	9.2	12.3	1.6%	Occupant	250	50.0	21.8	2.4%
Pedestrian, non-traffic	46	9.2	10.5	1.1%	Poisoning	30	6.0	8.8	0.9%	Poisoning	37	7.4	9.9	1.3%	Overexertion	164	32.8	14.3	1.5%
All the rest	850	170.0		20.1%	All the rest	366	73.2	107.9	10.6%	All the rest	278	55.6		9.4%	All the rest	1915	383.0		18.1%
Unspecified	168	33.6	38.5	4.0%	Unspecified	55	11.0	16.2	1.6%	Unspecified	71	14.2	19.0	2.4%	Unspecified	294	58.8	25.6	2.8%
Total	4223	844.6	967.1	100%	Total	3437	687.4	1013.0	100%	Total	2942	588.4	788.8	100%	Total	10602	2120.4	922.8	100%

Data source: Injury Prevention Research Unit, University of Otago. Analysis by Safekids Aotearoa. Data excludes discharges: as a result of readmission for an existing injury; for a length of stay in hospital of less than one day; where there was not a primary diagnosis of injury; for patients who died in hospital.

Deaths

Between 2008 and 2012, 196 tamariki Māori died as a result of an unintentional injury. That is approximately 39 tamariki Māori deaths each year in New Zealand (death rate 17.4 per 100,000 children). During this period, tamariki Māori deaths accounted for over half (52.3%) of all child unintentional injury deaths in New Zealand. [2]

Between 2008 (rate 22.7 per 100,000 children) and 2012 (rate 13.9 per 100,000), the rate of Māori child unintentional injury fatalities decreased by 38.8 % (See Figure 3). Although the decreasing trend is a positive sign, there are still significant causes for concern. Compared to other ethnic groups, tamariki Māori are significantly more at risk of a preventable injury. [3]

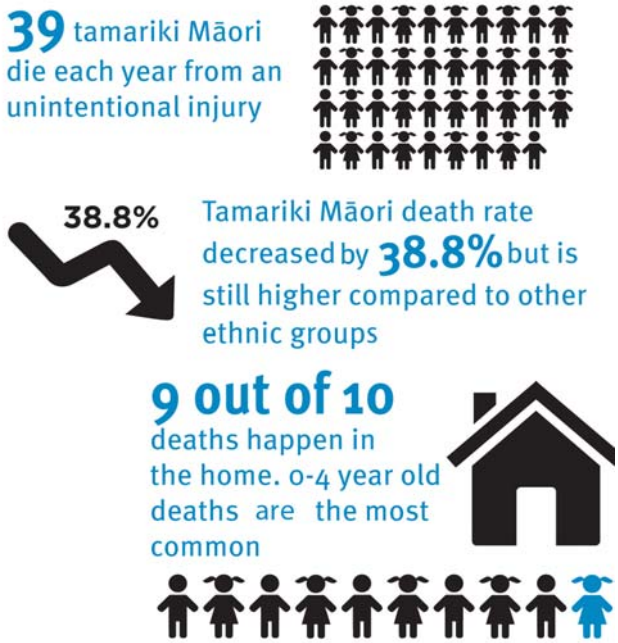
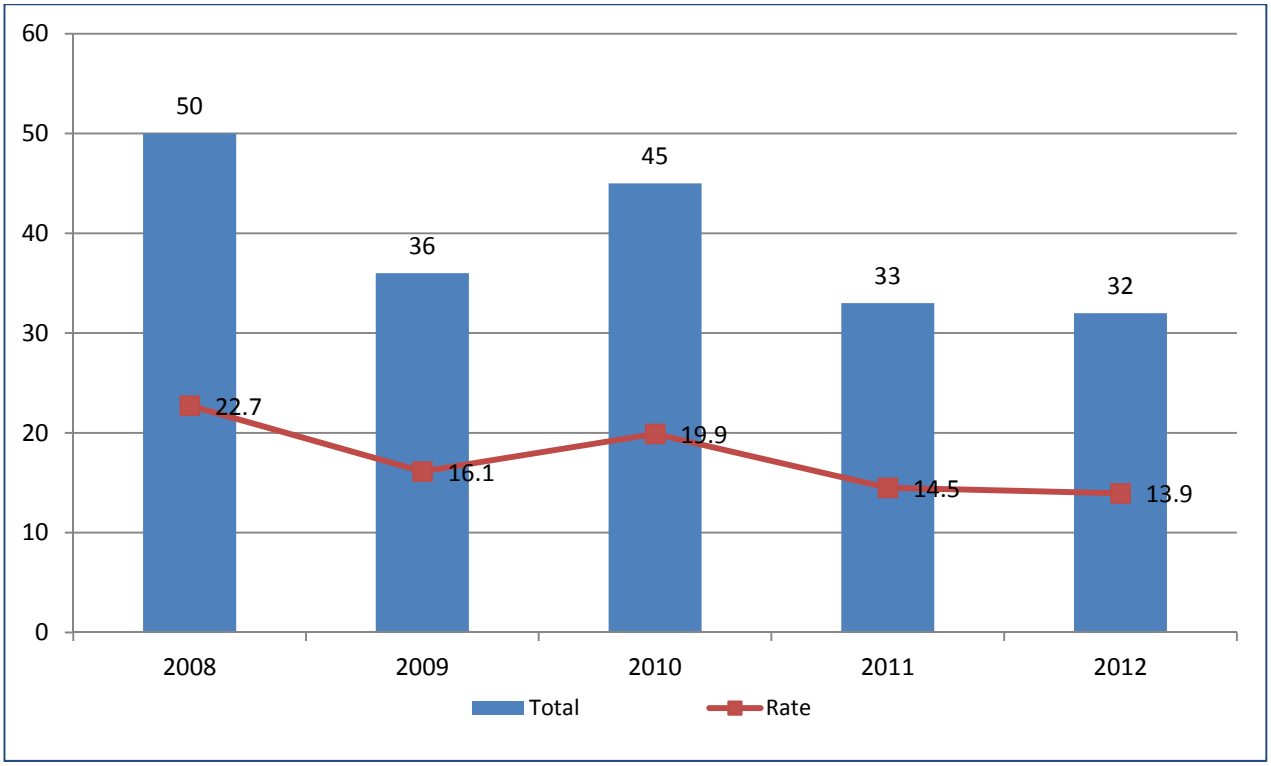


Figure 3: Number and rate of Māori unintentional injury deaths, children aged 0-14 years, 2008-2012. [2]



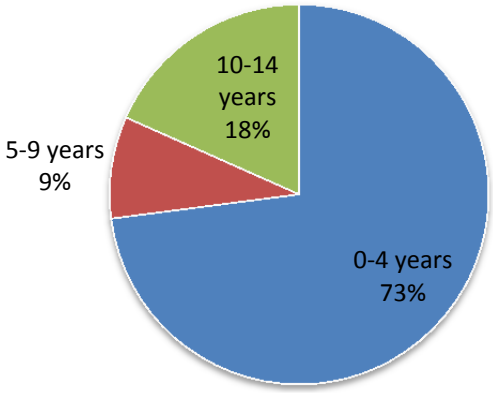
Data source: Injury Prevention Research Unit, University of Otago.

Analysis by Safekids Aotearoa.

- Around two-thirds (65%) of all unintentional injury deaths for tamariki Māori occurred in the home.
- Nearly three out of four unintentional injury deaths (73%) were to children aged 0 to 4 years. (See Figure 4)
- Tamariki Māori aged 0 to 4 years accounted for nine out of ten (92%) unintentional injury deaths in the home.
- Leading causes of deaths for tamariki Maori in the 0 to 4 age group: Suffocation (79%), pedestrian (non-traffic) (9%) and drowning (6%). See Figure 5 [2]

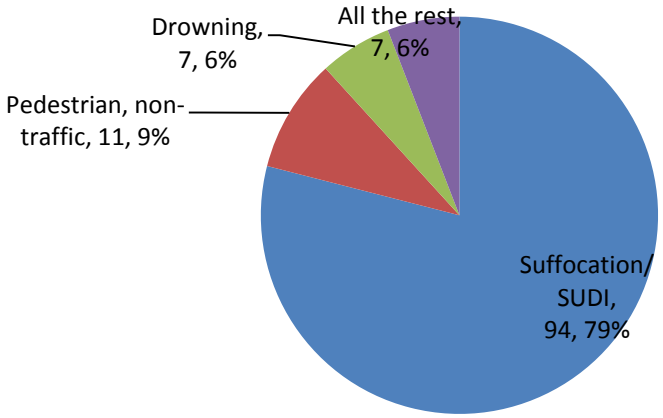
- The three leading causes of unintentional death for tamariki Māori are suffocation (50.5%; rate=8.8 per 100,000), motor vehicle traffic crash injuries (21.4%; rate=3.7 per 100,000) and drowning (9.7%).

Figure 4: Child unintentional injury deaths by age group, Māori, 2008-2012. [2]



Data source: Injury Prevention Research Unit, University of Otago. Analysis by Safekids Aotearoa.

Figure 5: Leading causes of child unintentional injury deaths, Māori, aged 0 to 4 years, 2008-2012 [2]



Data source: Injury Prevention Research Unit, University of Otago. Analysis by Safekids Aotearoa.

Table 2: Leading causes of child unintentional deaths, Māori, aged 0 to 14 years, 2008-2012. [2]

External Cause	Total	Average per year	Rate per 100,000	Percentage
Suffocation	99	20	8.8	50.5%
Motor Vehicle Traffic	42	8	3.7	21.4%
Drowning	19	4	+	9.7%
Pedestrian, *non-traffic	11	2	+	5.6%
Poisoning	8	2	+	4.1%
All the rest	17	3	+	8.7%
Totals	196	39		100%

Note: (+) Rates are not calculated for fewer than 5 events. Data source: Injury Prevention Research Unit, University of Otago. Analysis by Safekids Aotearoa.

**Includes driveway runover cases*

Suffocation (including SUDI)

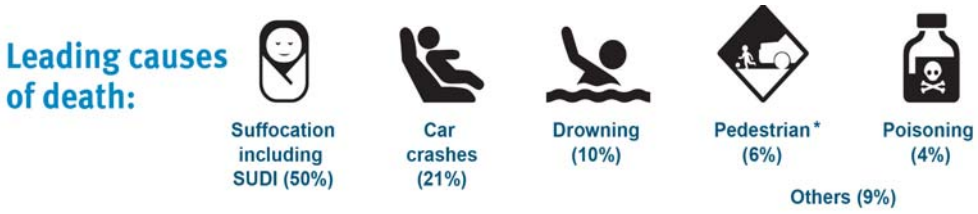
At least nine out of ten suffocation deaths (92%) occurred in children aged one year or under. The common cause of suffocation in this age group was due to accidental suffocation and strangulation in bed by things such as bed linen, mother's body rolling onto baby or a pillow (95%) and Sudden Unexpected Death in Infancy (SUDI). [2]

Car crashes

Motor vehicle traffic crashes were most common amongst tamariki Māori aged 0 to 4 years (36%) and 10 to 14 years (43%). [2]

Drowning

Around eight out of ten drowning-related deaths (79%) occurred in children aged 0 to 4 years. For young children, drownings were most common in the home, mainly in baths or swimming pools (47%). [2]



Good practice interventions

Fall-related injury

While childhood falls are often viewed as part of growing up, they can cause serious injury and in some cases are fatal. Prevention strategies to reduce child fall-related injuries and fatalities need to consider the age of the child and the setting in which they live and play.

Evidence at a glance:

- Playground equipment height and surface standards and compliance – *very good evidence.*
- Reducing exposure to falls from within buildings and homes e.g. through stair guards – *good evidence.*
- Personal protective equipment such as a helmet for use with skateboards, skates, skiing or scooters – *the evidence is promising.*
- Reduce use of baby walkers – *good evidence.*
- Reduce the opportunity to fall from cots, beds and bunks – *some evidence supports this approach.* [3]

Struck by or against somebody or an object; and prevention of cutting and/or piercing injury

Severe and fatal injuries happen when children fall through glass windows or doors that are not fitted with safety glass. Children also receive severe foot or leg injuries after being run over by lawn mowers. Injury prevention opportunities include ensuring the effective removal of broken glass from public spaces; encouraging children to wear footwear; the increased use of safety glass in windows and doors; increased awareness of the dangers of equipment such as lawn mowers and kitchen equipment; and keeping fences and playgrounds in good repair.

Evidence at a glance:

- Safety glass – *good evidence.*
- Home visiting programmes – *promising evidence.* [3]

Natural/ environmental injury [6]

Responsible dog ownership (including separating young children from dogs, avoiding high-risk dogs and neutering), regulatory enforcement, standardised monitoring of bites and teaching children how to approach a dog have been suggested as prevention strategies. The efficacy of these approaches is uncertain but promising.

Evidence at a glance:

- Educating families on neutering male dogs and avoiding choosing unsafe breeds as pets – *evidence is uncertain.*
- Educating children on how to interact with pet dogs – *evidence is uncertain.* [3]

Poisoning

Prevention strategies tend to focus on effective barriers between children and poisonous substances, in particular through the use of safe storage (high and locked cupboards, child-resistant packaging and child-resistant closures on bottles of medicine, cleaners and chemicals).

Child resistant closures, however, are not child-proof. It is also recommended that poisons, cleaning products and medications are stored in their original packaging, and never placed in food or drink containers. They should be safely disposed of after use.

Evidence at a glance:

- Use of child-resistant packaging – *good evidence.*
- Protection from toxic substances through storage, transport etc. – *good evidence.*
- National Poisons Centre for expert information – *good evidence.*
- Storing toxic substances in original packaging – *some evidence.* [3]

Cyclist injury (non-traffic) [5]

Evidence at a glance:

- Cycle helmets – *very good evidence.*
- Increased visibility through visibility aids such as bio-motion detectors (that detect cyclists and alert cars that a cyclist is present, covering the blind spots in cars) – *promising evidence.*
- Cycleways and pathways – *promising evidence.*
- Area-wide traffic calming – *promising evidence.*
- Training children to be safe on the roads – *precaution, mixed evidence.* [3]

Suffocation (including SUDI)

Evidence at a glance:

- Design, construction, materials for cots, folding cots, high chairs to minimise entrapment and to have baby's head in safe position for breathing – *some evidence.*
- Toys for < 3-year-olds not to have small parts that can be pulled or broken off - *some evidence.*

- Wahakura, Pepi pods (specially designed baby beds for safe sleeping) – *promising evidence.*
- Health promotion messages – *promising evidence but the messages need testing and consistency.* [3]

Child pedestrian safety

Walking allows children and young people to learn about their environment, improve their fitness and explore their surroundings. Child pedestrian injuries can be severe and fatal. In general, safety can be improved by separating children from motor vehicles, using traffic calming measures to reduce the speed of motor vehicles and making children more visible to drivers.

Evidence at a glance:

- Area-wide traffic calming techniques – *promising evidence.*
- The reduction of speed limits in residential areas and school zones, and its enforcement – *good evidence.*
- Vehicle modifications such as reversing mirrors and cameras – *good evidence.*
- Separating driveways from gardens and play areas – *good evidence.*
- Training children to be safe on the roads – *the evidence is mixed.*
- Community awareness initiatives – *promising evidence.* [3]

Cyclist safety

Evidence at a glance:

- Cycle helmets – *very good evidence.*
- Increased visibility through visibility aids such as bio-motion detectors (that detect cyclists and alert cars that a cyclist is present, covering the blind spots in cars) – *promising evidence.*
- Cycleways and pathways – *promising evidence.*
- Area-wide traffic calming – *promising evidence.*
- Training children to be safe on the roads – *precaution, mixed evidence.* [3]

Passenger (occupant) safety

There has, however, been an overall decline in road crash fatalities, which is in line with the experience of other Western countries. A combination of safer cars, safer roads and roadsides, speeds, road use, infrastructure and roadside improvements (signage, median barriers, rumble strips), more effective enforcement, the use of child restraints, targeted education campaigns, improved vehicle crashworthiness and crash avoidance technology, to some extent better trauma care are likely to have contributed to this.

Evidence at a glance:

- The correct use of child restraints – *very good evidence.*
- The correct use of booster seats – *very good evidence.*
- The implementation and enforcement of alcohol limits for drivers – *good evidence.*
- Traffic calming techniques – *promising evidence*. [3]

Drowning

Childhood drowning tends to be silent and fast. The locations in which children drown reflect their developmental activity and the environments in which they spend time. The speed at which children drown suggests that the active supervision of children

around water is an important strategy. Isolation fencing reduces the risk of young children drowning in domestic swimming pools and spa pools.

Evidence at a glance:

- Personal flotation devices in boats – *good evidence.*
- Child-proof perimeter or isolation fencing for domestic swimming pools (including spas) – *very good evidence.*
- Swimming training – *fair evidence.*
- Supervision – *quite good evidence.* [3]

References:

1. Statistics New Zealand, www.stats.govt.nz

2. Data source: Injury Prevention Research Unit, University of Otago, accessed 2016

3. Safekids Aotearoa. (2015). *Child unintentional deaths and injuries in New Zealand, and prevention strategies*. Auckland, NZ: Safekids Aotearoa.

4. ICD 10 External Causes of Accidental Injury Codes - Accidental Poisoning by and Exposure to Noxious Substances (X40-X49)

X41 Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified. This includes antidepressants, barbiturates, hydantoin derivatives, iminostilbenes, methaqualone compounds, neuroleptics, psychostimulants, succinimides and oxazolidinediones, tranquillizers.

X44 Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances. Includes agents primarily acting on smooth and skeletal muscles and the respiratory system, anaesthetics (general)(local), antiinfectives, drugs affecting the: *cardiovascular system and gastrointestinal system, hormones and synthetic substitutes, systemic and haematological agents, systemic antibiotics and other antiinfectives, therapeutic gases, topical preparations, vaccines, water-balance agents and drugs affecting mineral and uric acid metabolism.

X49 Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances. This includes corrosive aromatics, acids and caustic alkalis, glues and adhesives, metals including fumes and vapours, paints and dyes, plant foods and fertilisers, poisoning NOS, poisonous foodstuffs and poisonous plants, soaps and detergents. Excludes: contact with venomous animals and plants (X20-X29).

5. Definitions related to transport accidents:

(d) A *non-traffic* accident is any vehicle accident that occurs entirely in any place other than a public highway.

International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)-WHO Version for; 2016, Chapter XX External causes of morbidity and mortality (V01-Y98), Accidents (V01-X59), Transport accidents (V01-V99) http://apps.who.int/classifications/icd10/browse/2016/en#/V01-V99

6. Natural/Environmental injury definition - Injuries from natural and environmental factors, e.g. excessive heat, excessive cold, hunger, neglect, venomous animals and plants, other injury caused by animals, lightning, cataclysmic storms, floods, earth surface movements, or other and unspecified environmental cause. http://apps.who.int/classifications/icd10/browse/2016/en