

Child Injury Data Collection at Whakatane Hospital's Emergency Department

An Overview 1998-2003

Eastern Bay of Plenty Child Injury Prevention Trust

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Summary

Unintentional Injury is a leading cause of death and hospital admission for children in New Zealand.

Injuries affecting children attending the Whakatane ED over the last five years have been recorded and reported. (Limitations of data prior to these years have largely prevented reliable comparisons except for some types of injury surveyed in the 1982-6).

- Attendance at the Emergency Department for injury in childhood has increased to over 2000 presentations yearly, a rate of 14,500 per 100,000 children. This is 20% more than in the 1980s.
- **Fatalities** have decreased over twenty years with no recent cases from *cyclists* or *drowning*.
- Admissions for **poisoning** have also fallen
- **Cycle injuries** have become more frequent with increasing numbers seen and fractures from this cause have averaged 32 a year in the last five years, with 44 in the last year, compared to 15 a year in the early 1980s. Head injuries have, however, relatively reduced with an absence of serious or fatal cases.
- **Motor vehicle accidents** continue to be the main cause of fatalities including three children killed as passengers and two as pedestrians. The total number of cases presenting has increased.
- **Motorcycle and All Terrain Vehicle** injuries are showing a marked increase over the last five years from 21 to over 50 per year.
- **Burns and scalds** continue to cause concern with an increase in hot surface burns, but the rate of tap water burns has fallen from the 1980s. However, there was one recent death from tap water. This is a preventable injury.

- **Playground injuries** are particularly associated with climbing equipment, with upper limb fractures very common. Rates are similar to the New Zealand average despite vigorous local initiatives.
- **Horse riding** accounts for over 50 injuries each year, including a number of preschoolers.
- **Trampolines** are associated with an average of 54 injuries a year, which appears to be a steady rate.
- **Skateboard** injuries increased dramatically in the years 1996-8 but have since been fairly steady until this year when they fell from over 50 yearly to 29. It is too early to know if this is a trend.

Recommendations

Strategic

- The District Health Board should develop a ***robust system for child injury prevention*** by region and community that is adequately funded for advocacy, prevention programs in health education, legislation, and adoption of safe practices and products.
- The Child Injury Prevention Trust to reconvene if such a system is adopted.
- ***Collection and analysis of Whakatane ED data should continue*** to detect trends in childhood injury and to enable focussed and effective prevention strategies.

Specific

- A detailed report to be compiled on the changing pattern of ***cycle injuries***
- Pacific Health to work with other agencies in the reduction of ***motor vehicle accidents*** involving children.
- Further analysis and ongoing monitoring of ***motor cycle and ATV injuries*** and consideration of a campaign to reduce these in association with other agencies (eg Federated Farmers).
- Continue efforts to reduce ***tapwater temperatures***.
- More detailed information to be gleaned on injuries sustained in ***playgrounds*** and from ***horse riding***.

Background

Unintentional injury to children is a common part of normal life. Some injuries are inevitable as part of the experience of exploration of the individual's environment and capabilities, but many, including most of the more serious and fatal injuries occur because 'we live in an adult world designed for adults by adults'. New Zealand has poor record of deaths and serious morbidity in children, and injury is the commonest cause of post-infantile child death – some 17 per 100,000 person years(1). Injury is also the second most important cause of hospitalisation (MOH) (2). Much of this is avoidable. For every serious event there are many moderate and a very large number of minor injuries. These are important not only because they cause a huge burden of suffering and medical expense but also because they can inform us of the ways in which such events occur and give us opportunities to place preventative strategies in place.

Initiatives in Whakatane commenced in 1982 with an initial review of unintentional injuries to children occurring in the Eastern Bay of Plenty presenting to the Emergency Dept at Whakatane Hospital. This was instigated by the paediatrician Dr Chris Moyes and Community Coordinator Ron Tustin with the support of nursing staff, and was followed by a five year prospective survey of specific areas of particular concern – *road traffic accidents, burns and scalds, and drowning*. Data was collected manually from records.

Subsequent use of this data supported programs to reduce head injuries in cyclists by a vigorous local branch of the movement to adopt universal use of cycle helmets, political lobbying for fencing of swimming pools, and educational campaigns around avoidance of scalds, especially by reducing hot water temperatures. Some significant success was achieved but the lack of finance or personnel limited the scope of initiatives and data collection could not be maintained.

The ACC was interested in the local initiative and eventually supported the appointment of an injury prevention coordinator whose activities were under the guidance of an Eastern Bay of Plenty Injury Prevention Trust, which was established in 1992. The philosophy of the Trust has been that data collection

should be an important role and that this would help the Trust to determine priorities for prevention initiatives. Unfortunately ACC changed their focus away from prevention after the initial period, leaving the Trust without funding. In recent years the Trust has been funded by Toi Te Ora, the Health Promotion arm of the Bay of Plenty Public Health Service. **However, relative isolation of the coordinator and a very slim budget have made the Trust's work difficult to maintain and the position has now been left vacant until a more robust and coordinated system within the District Health Board can be established.**

Targeting of data collection

Strategies for prevention of childhood injury require information to determine: -

- *epidemiology* especially demography and location of injury to determine preventative strategy
- *mechanism* to decide on points in causation which may be preventable

For example, brain injuries from cycle accidents can be prevented by lowering *number* of accidents (e.g. by discouraging young riders on road); *seriousness* of accidents (e.g. by separation of traffic using cycle lanes so most injuries are from falls only); or *minimising consequences* (e.g. by use of cycle helmets). Haddon's matrix is an example of a tool for considering possible interventions.

Most injury statistics collected (e.g. by ACC) do not attempt to answer these questions and until required by contract it is unrealistic to expect ED staff to reliably obtain sufficient detail on all injuries. We have therefore targeted areas that were of special interest because of *potential serious consequences, frequency, possible preventative strategies, or areas in which we were pursuing prevention*. In 1982-6 these were *road traffic accidents, burns and scalds, and drowning*.

In more recent years we have concentrated on *cycle injuries, burns and scalds, and playground injuries*. We have also tried caregiver questionnaires to get more detail, but these have not been well used. Probably such surveys should be confined to small areas of interest at any time to obtain sufficient enthusiasm

from ED staff and more detailed reports probably require a retrospective telephone survey by the injury coordinator to fill in gaps.

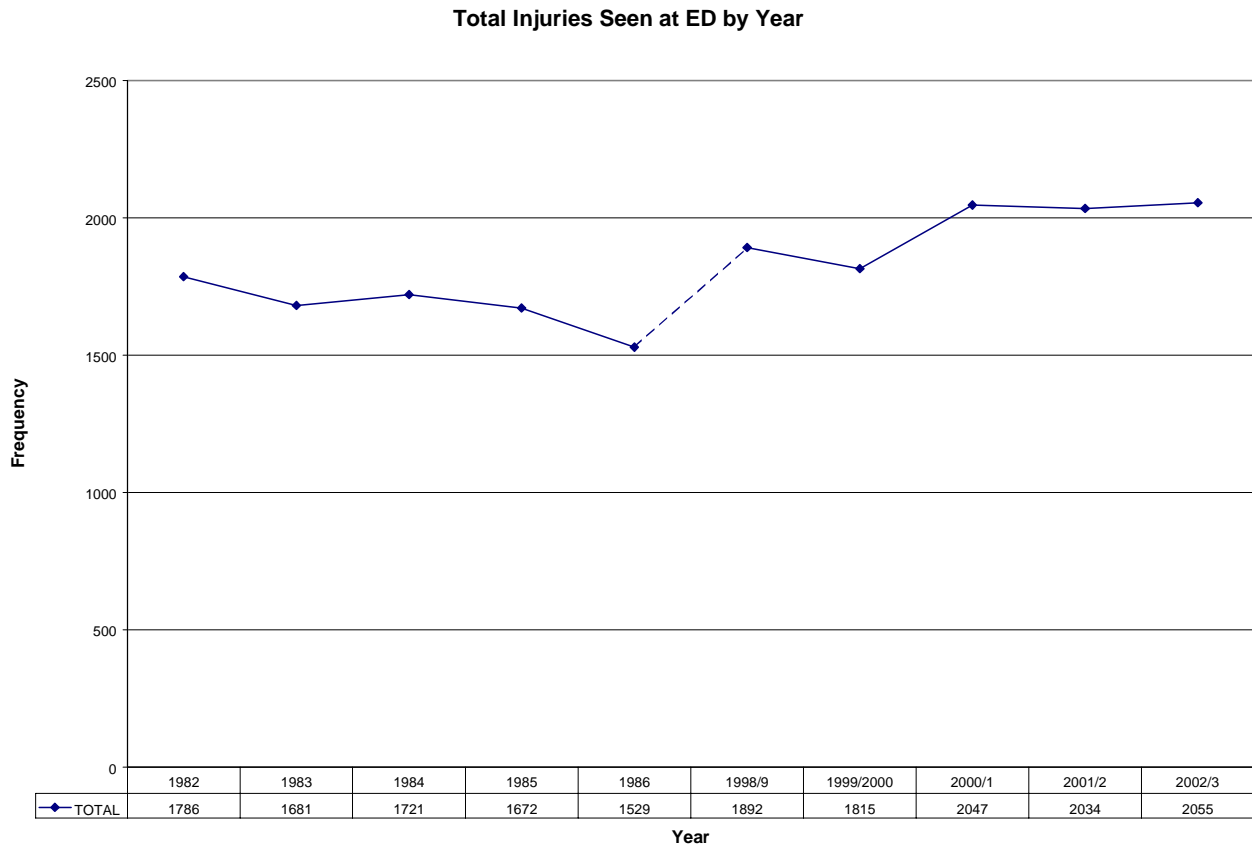
Future directions

It is clear that collection of detailed data is the resource that can subsequently lead to appropriately targetted actions. However, **it is apparent that for a serious effort to reduce major injuries to our children there will need to be a prioritisation at DHB level at least with a structure and properly resourced networks and pathways of action.** Should this eventuate the Trust would be keen to participate as a community partner.

Chris Moyes

Chairman Eastern Bay Child Injury Prevention Trust, 2003

Total Injury Count



(Note that data was not collected or not with sufficient detail in the intervening years. With earlier data the year starts on January 1st, with later data on July 1st.)

The total new injuries attending the Whakatane Emergency Department (ED) under the age of fifteen years averaged 1,680 attendances per year in 1982-6. This has grown to 1,969 in 1998-2003, an increase of 17%. The age specific population of the Eastern Bay of Plenty in the 1986 and 2001 census were 13,900 and 13,600 respectively, a decrease of 2%. This means the rate of attendance has risen rather than the population, from about 12,000 per 100,000 children per annum to about 14,500 per 100,000 children per annum; an increase of about 20%. It is more likely that this reflects increasing use of the ED than a

greater risk of injury, particularly as Kawerau and Opotiki doctors no longer provide out of hours services.

Fatalities

In the period 1982-6 there were 14 childhood deaths from unintentional injury, which has reduced to 7 deaths in the period 1998-2003, a rate of *10 per 100,000 per year*, not significantly different to the national average.

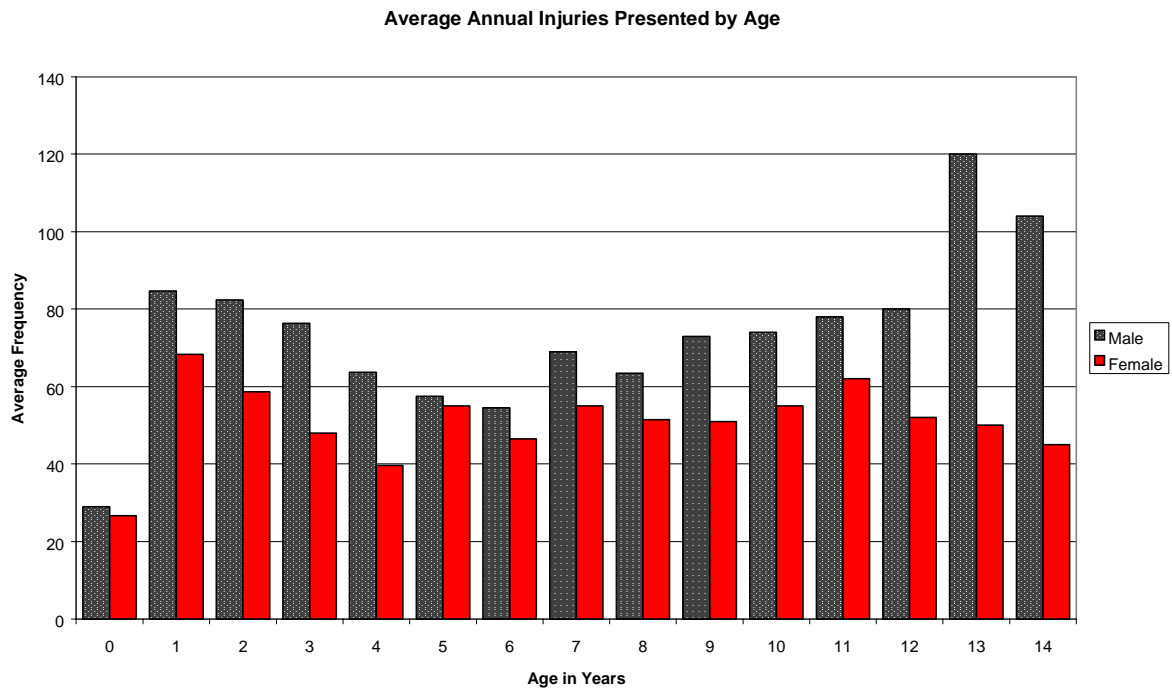
5 deaths in the earlier period were from *drowning* but none in recent years. Following the introduction of pool fencing laws drowning of pre-schoolers in private pools has ceased to be a major problem in this area.

Motor Vehicle Accidents are still the leading cause of death in the population under the age of fifteen years. In the period 1982-6 four of the fatalities were *cyclists* who had collided with a motor vehicle, but in the period 1998-2003 no cyclists died. In the intervening period not only had cycle helmets become required by law but younger children were actively discouraged from cycling to school. In 1982-6 only one *child car passenger* died compared to three in 1998-2003; this cannot be called a trend due to the very small numbers but corresponds to an increase in the number of car crashes involving children presenting to ED, which may be indicative of increasing traffic.

In the period 1998-2003 one child died after incurring *severe scalds* and one was *electrocuted*. The scalded child was a toddler who suffered severe injury from bath water that was too hot and died from complications.

Demographics

Age - Gender



Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	1,653 (15,327)	1,736 (14,062)	2,485 (21,239)	5,874 (16,865)
Female (Per 100,000 per year)	1,216 (11,852)	1,301 (11,035)	1,446 (12,853)	3,963 (11,901)
TOTAL (Per 100,000 per year)	2,869 (13,633)	3,037 (12,583)	3,931 (17,129)	9,837 (14,439)

Overall 60% of injuries were incurred by boys over the five year period; 58% under the age of five years, 57% aged 5-9, and 63% aged 10-14 years. Boys are

apparently more injury prone from birth though how much this is nature and how much nurture is a matter of conjecture. Kypri et al. (2) reported that 61% of children hospitalised with injuries in New Zealand were male.

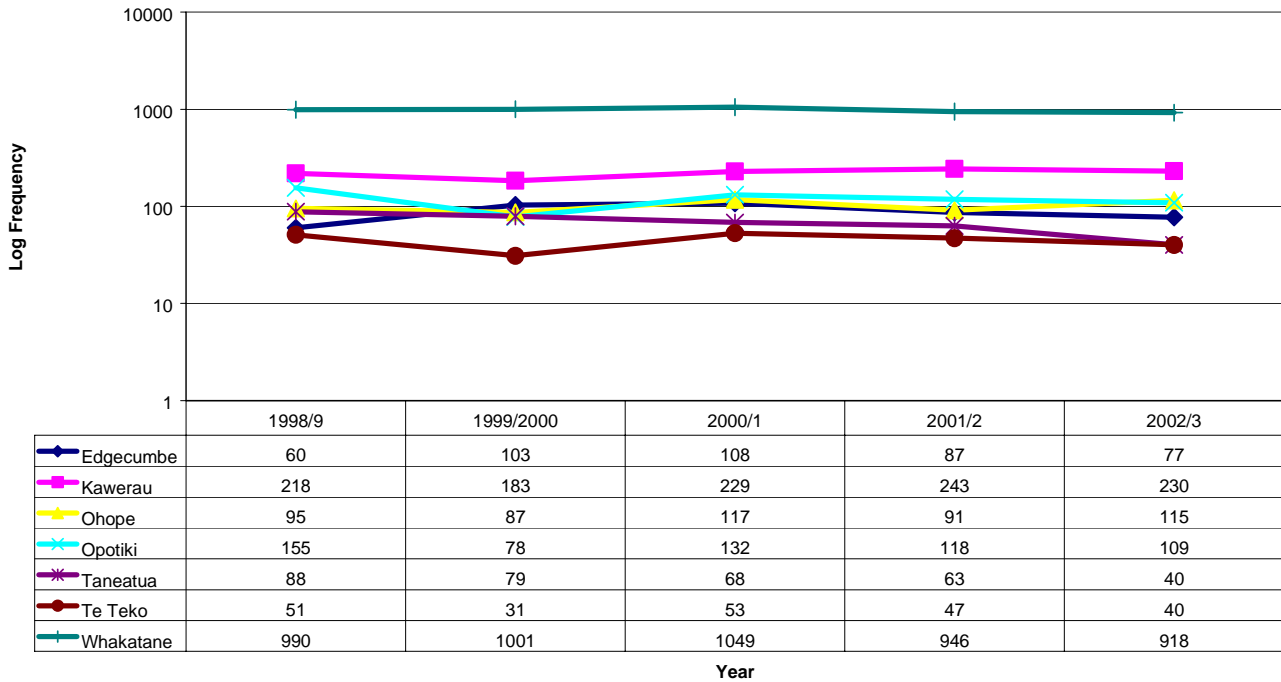
Although the total number of injuries is higher in 5-9 than 0-4 year olds the injury rate is lower as the younger age group is smaller due to a falling birth rate.

There is an early peak age for injuries of about 1 year of age when children first become mobile and are exploring the world without any knowledge of what is safe or not.

There is a second peak for boys entering adolescence who enjoy more and more risky pastimes like skateboarding, mountain biking and motorcross - the danger being part of the appeal for many of them.

Geography

Usage of the Whakatane ED by Town



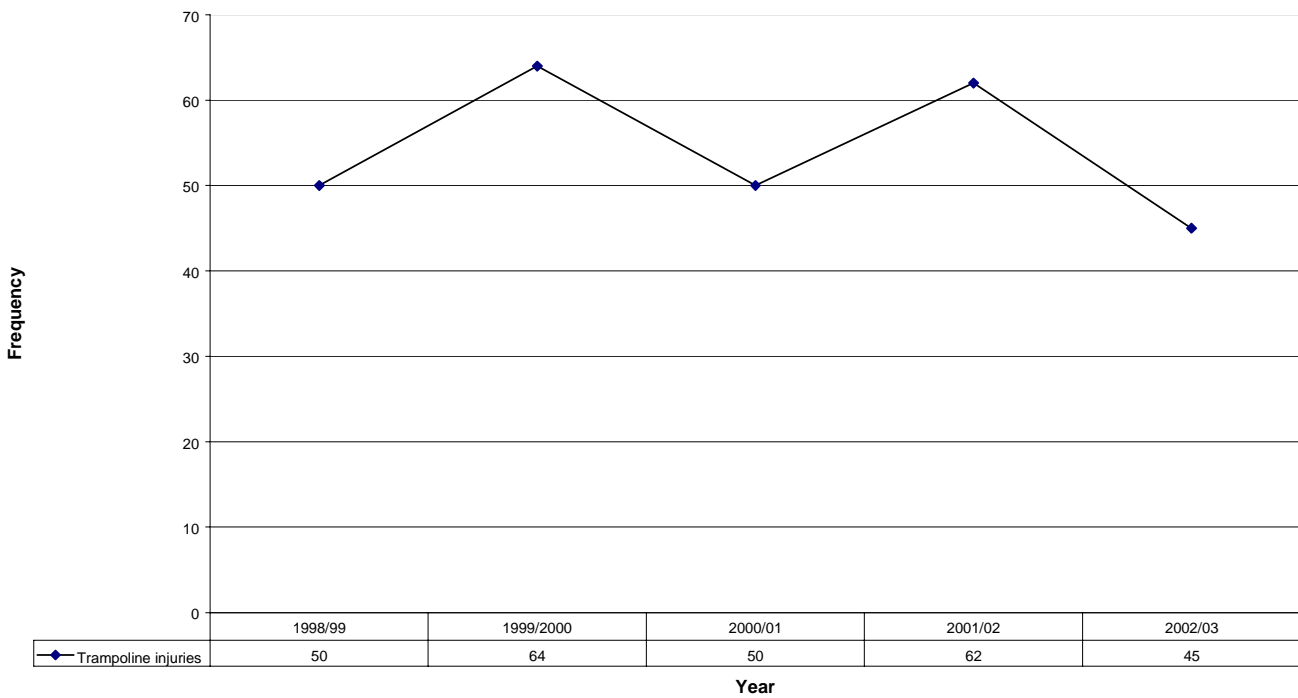
Town	Total Injuries 1998-2003	Injuries per 100,000 per year
Edgecumbe	435	18,125
Kawerau	1,103	10,087
Ohope	505	18,498
Opotiki	592	9,642
Taneatua	338	26,202
Te Teko	222	19,733
Whakatane	4,904	27,177

In the period between the last two census counts 1996-2001 the population distribution of Whakatane District changed. The town's population grew slightly, whilst that of the rural area shrank. The increase in the population of Whakatane town's population under 15 was under 1% but the number of children from the

town presenting at ED decreased in the past couple of years. Unfortunately Kawerau's population under 15 dropped 15% in the same period without a corresponding drop in attendances, possibly because of loss of out of hours general practice cover. Taneatua suffered the largest drop in population and had a corresponding fall in presentations, but overall had a high rate of attendance. Ohope has had the highest growth in child population and has a corresponding rise in the average annual number of presentations to Whakatane ED, but rates are less than Whakatane town. Given the distance of Kawerau and Opotiki and the medical services available within those towns it is not surprising they have a lower presentation rate. That Whakatane has the highest presentation rate is also not surprising given the ED is within easy distance of anywhere in the town. Edgecumbe and Te Teko are similar despite Te Teko lacking a GP practice and having a lower socio-economic rating.

Trampolines

Trampoline Injuries 1998-2003



Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	39 (362)	66 (535)	33 (282)	138 (396)
Female (Per 100,000 per year)	33 (322)	68 (577)	32 (284)	133 (399)
TOTAL (Per 100,000 per year)	72 (342)	134 (555)	65 (283)	271 (398)

As can be seen injuries from trampolines have been fairly consistent over the last five years (no data is available from the 1980's) and differences could well be

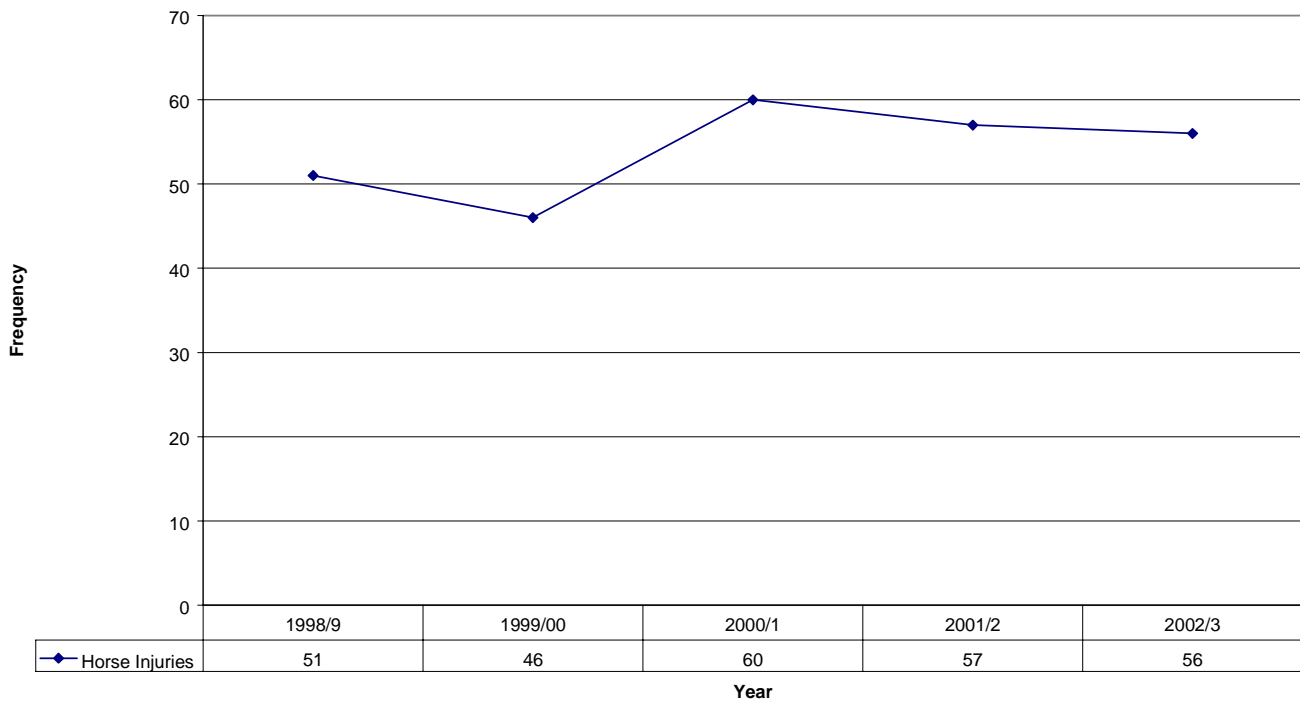
part of natural variation ($P>0.025$). The availability of cheap trampolines has made them more common in back gardens. Injuries would be prevented and others lessened in severity if trampolines were partially dug in so the mat would not be so high off the ground. Injuries caused by more than one child being on the trampoline at the same time and lacerations from the springs are even more easily avoidable, although a recent survey in Waitakere City suggests that failure to use safety pads over the edges is still common.

Trampolines are clearly popular with both sexes and more used by 5-9 year olds, who are more likely to be engaged in unstructured and unsupervised play. A staggering 27% of injuries are to under fives who shouldn't be on such a dangerous toy. Some workers have even suggested children under fifteen should be banned from trampolines!(3).

Chalmers et al.(4) noted an increasing rate of hospitalisation from trampoline injuries in the 1980s, mostly from upper limb trauma, and 80% had fallen onto the surrounding surface. However, the rates were only a tiny fraction of those we describe. This may be from much increased usage of trampolines or from inadequate data to identify such injuries in the earlier report.

Horses

Horse Injuries 1998-2003



Horse injuries are common in this largely rural area. Children should be wearing helmets as horses can travel quickly over rough terrain and the distance from saddle to ground is usually further than from a bike seat to the ground.

Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	12 (111)	36 (292)	93 (795)	141 (405)
Female (Per 100,000 per year)	10 (97)	38 (322)	81 (720)	129 (387)
TOTAL (Per 100,000 per year)	22 (105)	74 (307)	174 (758)	270 (396)

Clearly as children get older their parents are more likely to allow them to go horse riding hence the increased number of injuries with age. However 8% of injuries were to pre-schoolers who should not be on horses, though it is an iconic picture of the rural scene to have several small children on a horse!

Over the past five years of the children that presented with horse related injuries 16% had a head injury of some sort and 47% had a fracture. 29% of horse related injuries were hospitalised ($115/100,000/yr$). In the last ten years one child died from a head injury after falling from a horse.

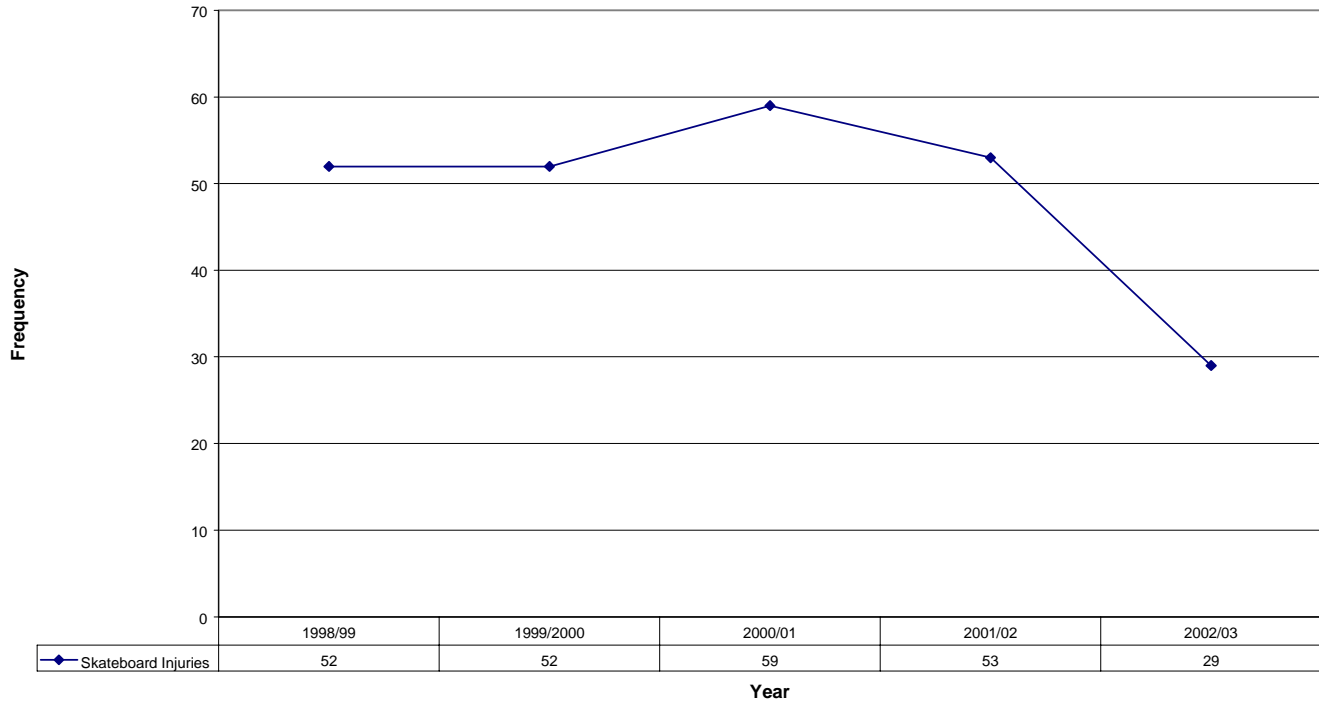
About seven injuries a year (13%) are due to a horse kicking, biting, standing on or knocking over a child.

Buckley et al. reported a hospitalisation rate for all ages of 23.7 per $100,000$ per year in 1987 from falls off horses (5)– our much higher rate is presumably a reflection of the rural population.

Further work could analyse associated behaviour, use of helmets, and multiple riders.

Skateboards

Skateboard Injuries 1998-2003



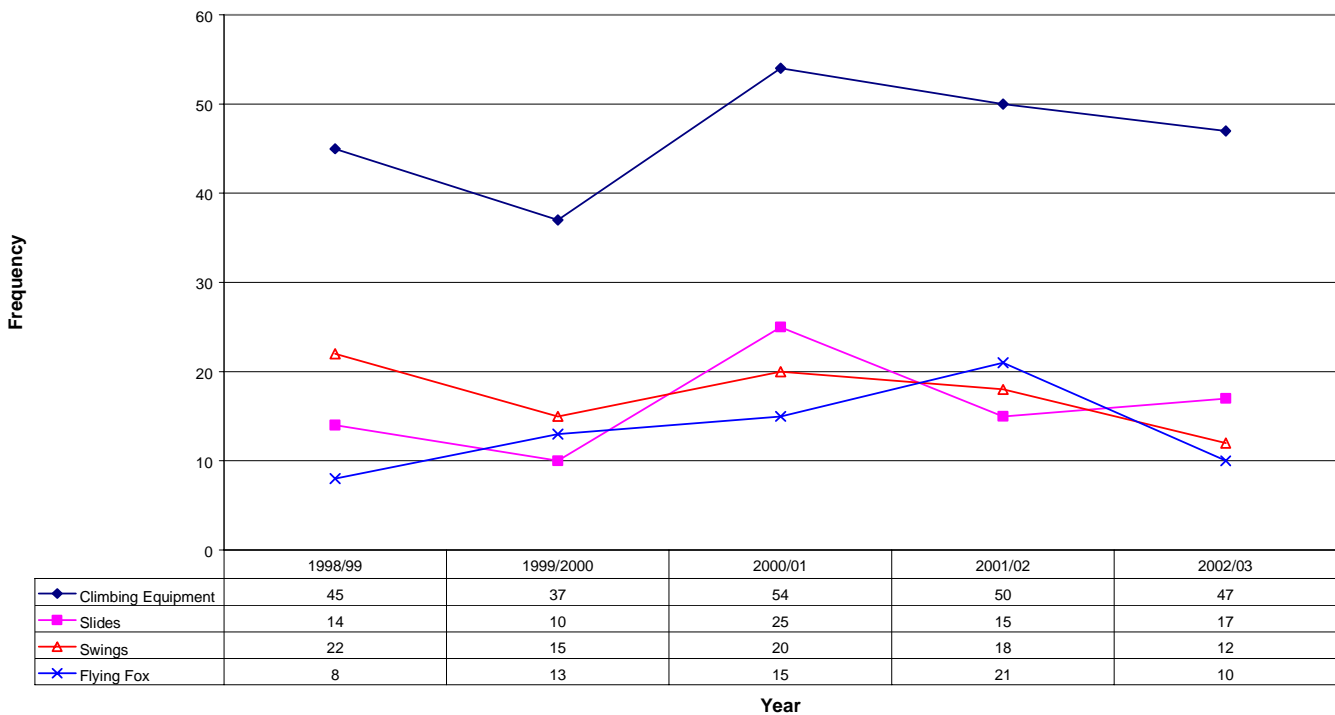
Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	6 (56)	32 (259)	173 (1,479)	211 (606)
Female (Per 100,000 per year)	2 (19)	11 (93)	21 (187)	34 (102)
TOTAL (Per 100,000 per year)	8 (38)	43 (178)	194 (845)	245 (360)

Skateboard injuries increased rapidly in the years preceding this analysis from 15 in 1996-7 to 52 in 1998-9. A local skateboard ramp was opened in 1997.

There seems to be some recent decline in the number of skateboard injuries, although it will require a few more years to see whether this trend will be maintained, the last year being the only significantly different one ($P < 0.001$). Skateboard injuries could be greatly reduced if proper padding and helmets were worn; however the risk seems to be part of the appeal to participants. Boys age 10-14 years of age make up more than 70% of the skateboard injuries overall. Clearly a more popular pastime for boys anyway, with older boys there is the attraction of looking cool as well as having fun doing more and more risky tricks.

Playgrounds

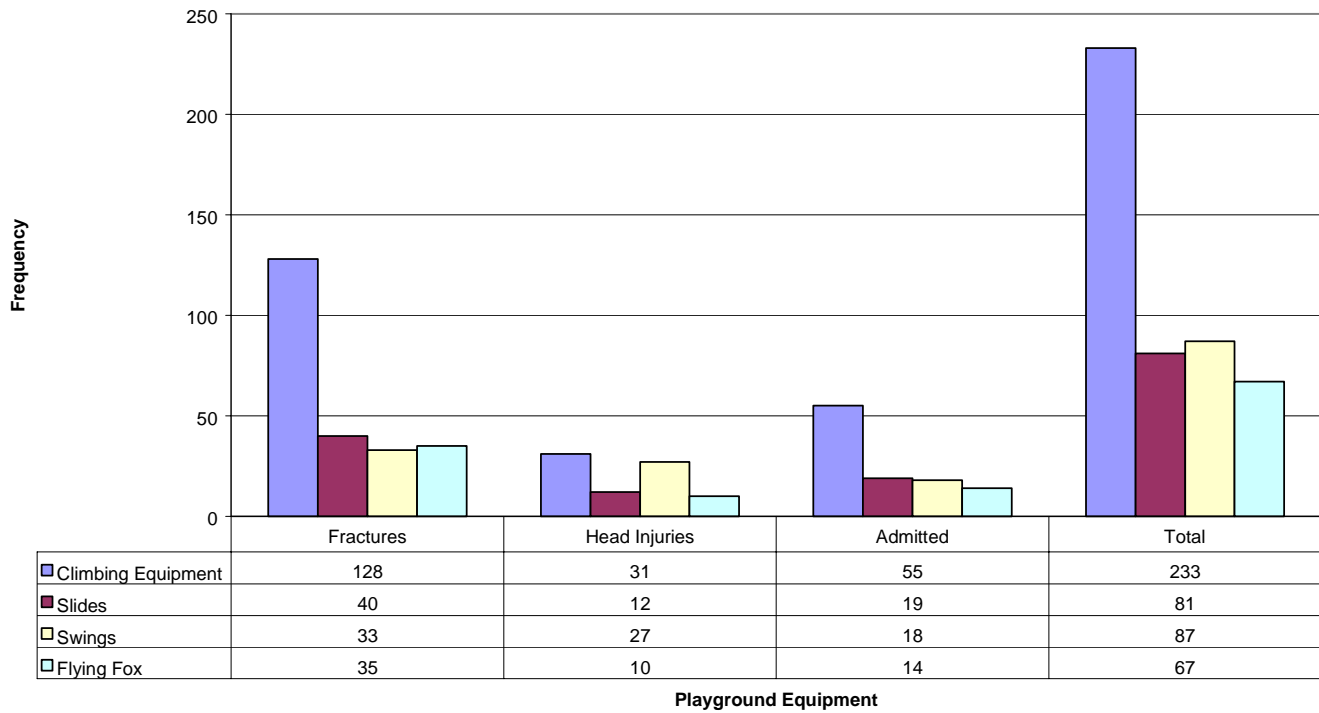
Play Equipment Injuries 1998-2003



Although much of this play equipment that was associated with injury was in a playgrounds that are subject to current safety guidelines, many, such as swings and slides, can be at home where compliance is not enforceable. Major efforts were made locally by the Trust in the late 1990's to ensure that council and school playgrounds complied with safety standards. A draft update of New Zealand Playground Equipment Safety Standards was released in June 2003. The aim of the new rules and guidelines is to reduce the number of serious injuries incurred from playground equipment.

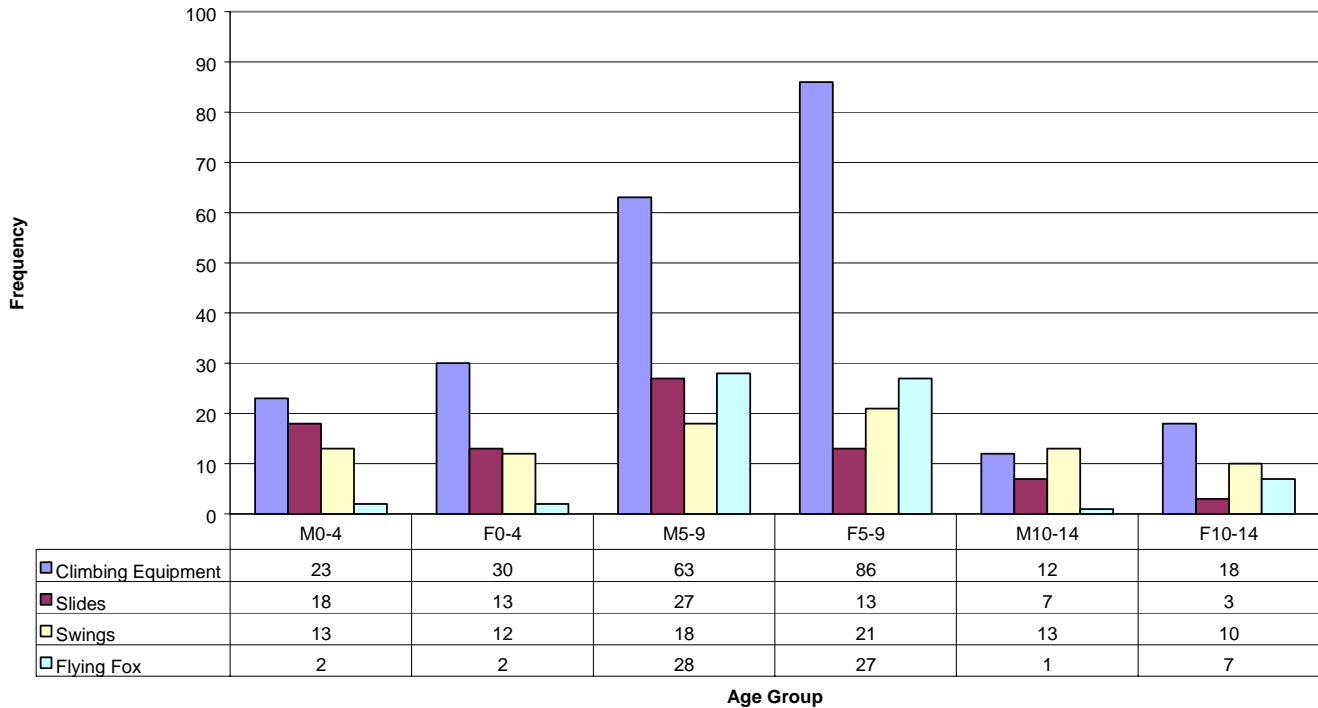
Climbing equipment such as jungle gyms causes more than double the number of injuries than any other type of play equipment.

Injuries by Playground Equipment



There are proportionately more head injuries from *swings* than the other equipment, but fewer fractures, and the hospitalisation rate is similar to the other types of playground equipment.

Playground Equipment Injuries by Age-Gender



Playground equipment injuries are highest in the 5-9 age group: this corresponds to attendance of Primary School, where lunch hours are spent in the playground, with partial supervision. The lower numbers in the 10-14 age group reflects a growing disinterest in playgrounds as children enter puberty and do not wish to engage in childish play.

Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	56 (519)	136 (1,102)	33 (282)	225 (646)
Female (Per 100,000 per year)	57 (556)	147 (1,247)	38 (338)	242 (727)
TOTAL (Per 100,000 per year)	113 (537)	283 (1,173)	71 (309)	467 (685)

Climbing equipment seems more popular with girls and slides with boys. Consequently, girls present with a higher number of injuries from playground equipment.

106 cases were hospitalised in the Eastern Bay of Plenty area giving an average rate of *156 per 100,000 per year* in the last five years, very similar to the 160 nationally reported by Chalmers et al(6), who noted a marked increase in recorded admissions from playground falls over ten years. It is disappointing that the local playground safety initiatives have not resulted in a lower rate than the national average, especially as such initiatives have been demonstrated to reduce injuries in the short term(7).

Future data collection could look more specifically at which playgrounds and items of equipment were associated with recurrent injury, and associated behaviour and supervision.

Motor Vehicles

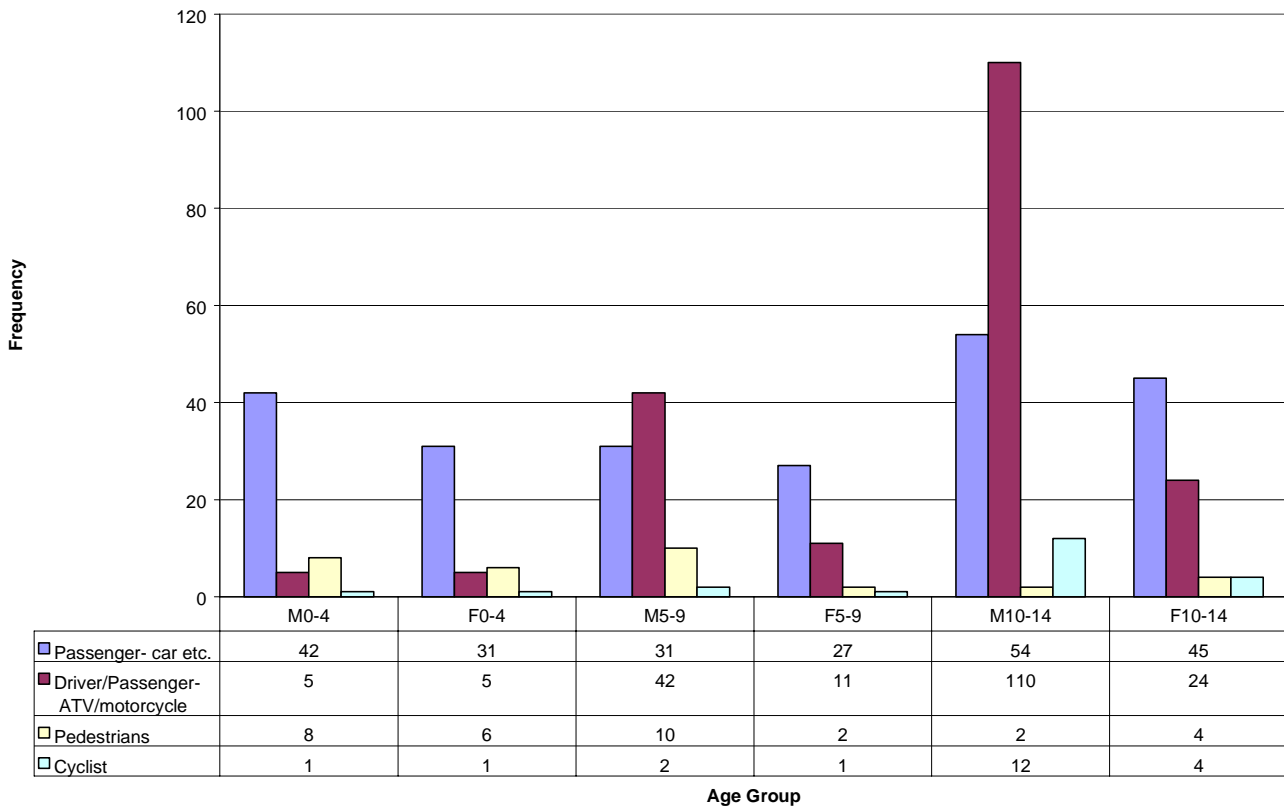
Motor Vehicle Injuries 1998-2003



The number of *motor vehicle passengers* injured has fallen in the past five years, although the number now is significantly higher than the average in the eighties. Given that cars, tyres, roads and driver training have not deteriorated in the intervening period the most likely cause of the higher crash numbers is children travelling a higher number of kilometres in motor vehicles on average per year. In the period 1982-6 one child passenger died as a result of a motor vehicle accident, three have died in the period 1998-2003.

LTSA road crash data for 1998-2002 indicates around 90% of children under 15 are restrained but only around 80% of children under 5. ACC estimates 31% of children under five from lower income areas are unrestrained in cars, and have funded child seats that are distributed through Plunket. Recently a three-year old climbed out of a moving car, emphasizing not only the need for small children to be in securely fastened restraints but also prevented from undoing them.

Motor Vehicle Accidents by Age-Gender



Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	56 (519)	85 (689)	178 (1,521)	319 (916)
Female (Per 100,000 per year)	43 (419)	41 (348)	77 (684)	161 (483)
TOTAL (Per 100,000 per year)	99 (470)	126 (522)	255 (1,111)	480 (705)

The number of *pedestrians* hit by motor vehicles also seems to be rising slowly, although for the past three years the level has been quite close to the 1980's average. Three pedestrians were killed by a vehicle in the period 1982-6 and two from 1998-2003.

The Queensland Injury Surveillance Unit found that between 1994 and 2000 of toddlers killed by being run-over in 60% the vehicle was reversing; 66% of these fatalities occurred at home(8). Although this report related only to fatalities, it is

apparent that children under five are at highest risk of both being hit by a vehicle (44%), and of dying, despite being the least mobile age group. The best solution would be to keep small children from playing in and around the driveway and for adults to hold their hands in the street or car park.

There seems to have been a decline in the number of *cyclists* involved in collisions with motor vehicles over the past five years, which corresponds with noticeable decline in cycle traffic, especially to and from school. This is after a local campaign to reduce the number of young children cycling on roads because of the danger, though nationally hospital admission rates from this cause fell by half during the 1990s. No cyclist under the age of ten has collided with a motor vehicle and presented at Whakatane ED in the past three years, compared to an average of four a year in the period 1982-6; (of the four fatalities in this period one was five and one was seven years old). The campaign to stop younger children riding to school seems to have paid off.

In the 1982-6 period 26 (55%) cyclists incurred head injuries from collision with other vehicles: four died, thirteen others were hospitalised, including one who received permanent brain damage (36%). In the past five years eleven (52%) incurred head injuries in this way but only three needed hospitalisation (14%). Helmets lessen the impact on the head but do not negate it: a blow that would otherwise kill could still be very serious.

The jump in the number of children injured in *All Terrain Vehicle* (ATV, 'quad bikes') and *motorcycle* crashes is of concern; they have gone from about twenty a year to over fifty. These vehicles should not be regarded as children's toys, despite their production in smaller sizes for children, who do not have the strength or skills to handle them. Distributors here feature signage on adult sized ATV's warning that they can be a danger to riders under 16 years of age and warn that passengers should not be carried, but this is clearly an area for concern. Younger children should not be on motorcycles or ATV's: they can kill. There were a particularly alarming number of injuries to boys aged 5-9, obviously

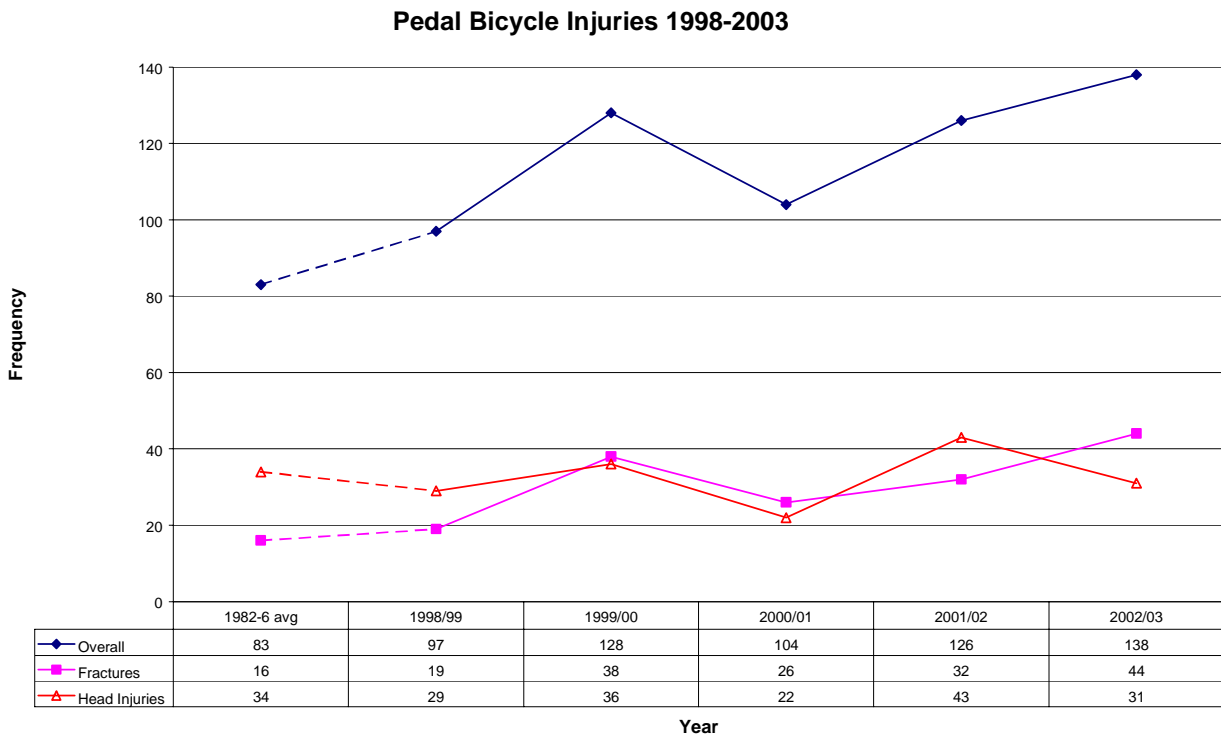
the targetted market for the smaller sized motorbikes. (Apart from the direct danger of rushing around powered by a petrol engine rather than the child's own legs it is not helpful in reducing juvenile obesity!).

A report from the USA also highlights the much higher rates of injury amongst underage users of ATVs(9).

Langley drew attention to the inconsistencies in legislation covering this area(10). He also reported 2004 hospitalisations from motorcycle/ATV crashes on farms over a ten year period up to 1989 for all ages, but 25% were under 15 years(11).

This is an area we should research more closely as well as continuing education efforts to parents especially in rural areas and farms regarding the dangers.

Pedal Bicycles



The number of cycle injuries in the past seven years is noticeably higher than in 1982-6 and over the last five years has continued an upward trend, although this may just be natural variation. Given the fall in collisions with motor vehicles mentioned above it seems the increase corresponds to a higher usage of bicycles off-road, particularly mountain bikes. Mountain biking is riskier because of the uneven, unpaved terrain involved. In the period 1982-6 there were 170 bicycle related injuries to the head out of 415 (41%), whereas in the period 1998-2003 only 161 out of 593 (27%) were head injuries. More importantly, although the proportion of children requiring hospitalisation had dropped from 17% to 15% the proportion admitted because of head injuries had dropped from 12% to 5%. To put it another way 77% of the children requiring hospitalisation following a

bicycle related injury in 1982-6 had a head injury, compared to 35% in 1998-2003.

In the 1982-6 period 26 (55%) cyclists *colliding with a motor vehicle* incurred head injuries: four died, thirteen others were hospitalised, including one who received permanent brain damage (36%). In the past five years eleven (52%) incurred head injuries but only three needed hospitalisation (14%), and none died.

The influence of helmets on head injuries has been positive (12, 13), and would improve further with better compliance by children. LTSA figures suggest about 10% of children cycling on the road do not wear helmets. The drop in head injuries means that fractures have risen from 19% of injuries seen to 27%; with the rise in overall numbers this means more than double the number of fractures were treated (77 to 159).

About eight injuries a year are caused by hands or feet being caught in the spokes, chain or pedals of a bike, this number has not changed since the eighties despite the increased number of injuries overall. This is also due to a change in bicycle usage as fewer bicycles carry passengers (apart from joyriding), as they have changed from a form of transport to a recreation.

Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	73 (677)	120 (972)	213 (1,821)	406 (1,166)
Female (Per 100,000 per year)	35 (341)	68 (577)	81 (720)	184 (553)
TOTAL (Per 100,000 per year)	108 (513)	188 (779)	294 (1,281)	590 (866)

Bicycles are clearly more popular with boys; injuries increase with age, as risk taking becomes greater.

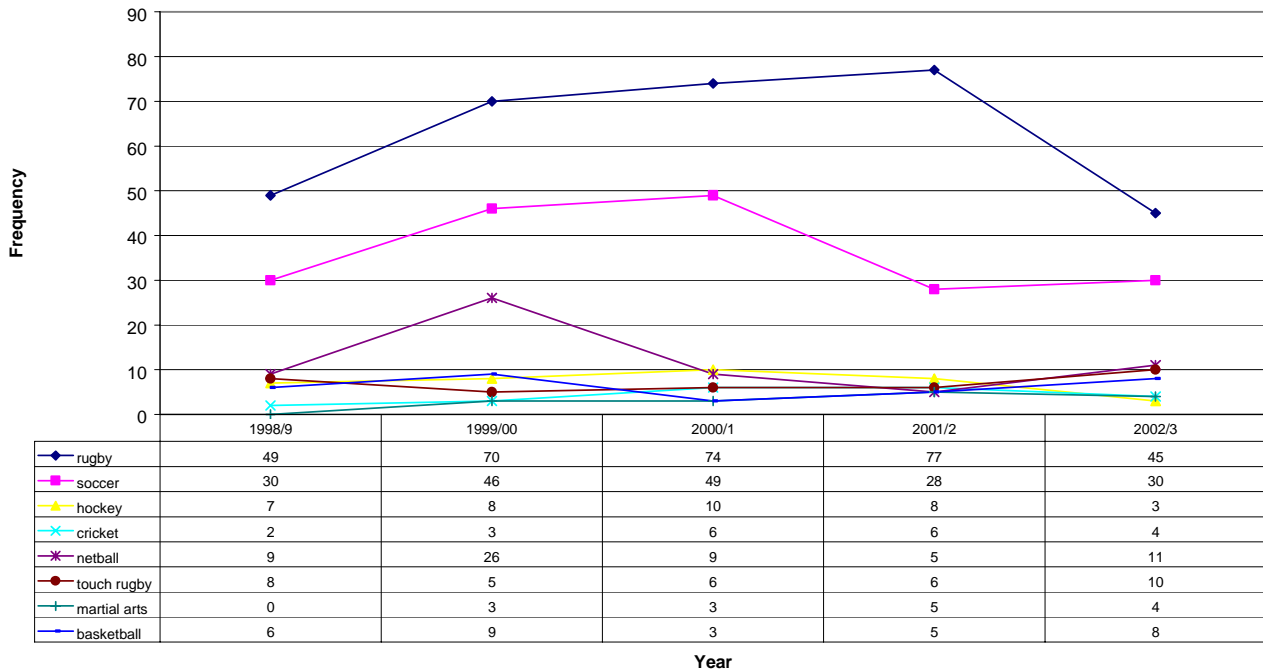
The rate of hospitalisation *per 100,000 per year* is 131, which is much higher than that for any age group under 15 years in the 1998-2000 national hospital

discharge figures, suggesting either a higher rate in this area or that the national figures do not reliably collect all cases.

As we have detailed data from earlier analysis (14) it would seem useful to document the changing patterns of cycle injuries with a published report.

Sports

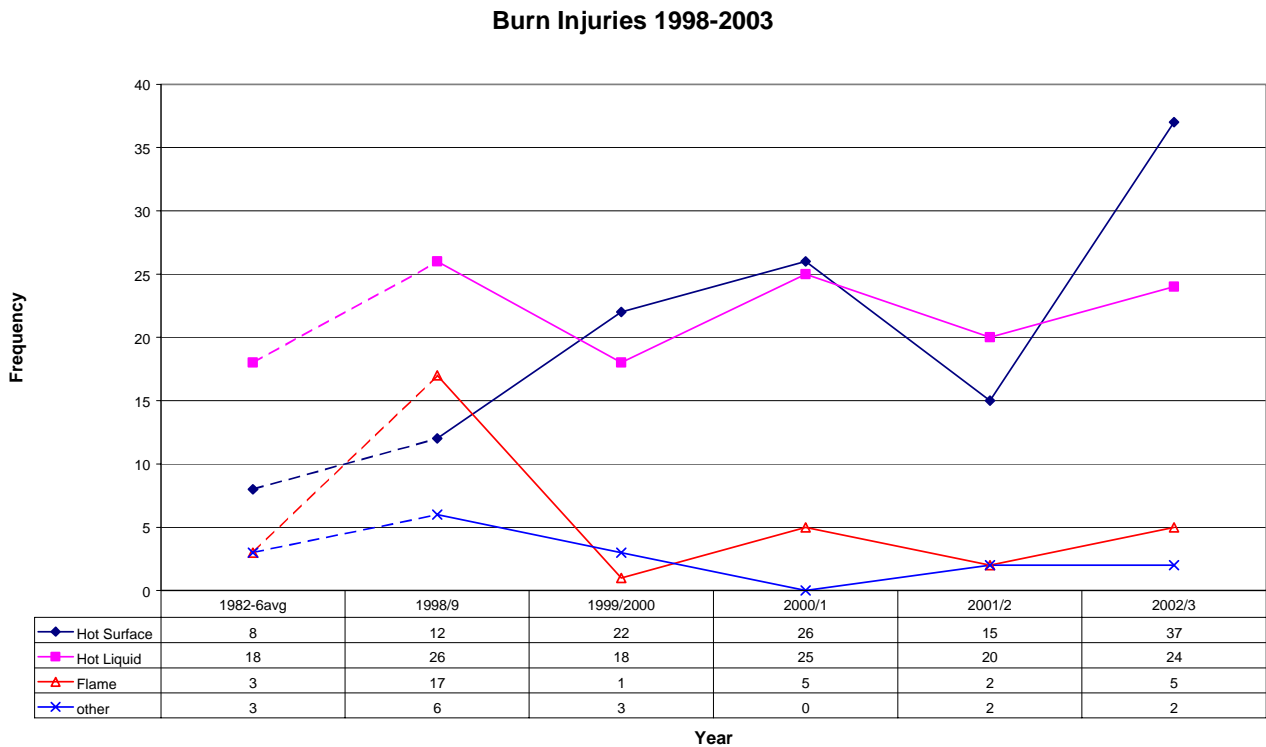
Sporting Injuries 1998-2003



The increase in the number of rugby related injuries in the past few years seems to have peaked, in a similar way to soccer previously, where an increase in injuries has now settled. Participation numbers are the most significant factor influencing on the number of injuries in a sport. For example, soccer is no more dangerous to play than hockey but total injury numbers are much higher. According to SPARC soccer is the most popular sport with children overall, rugby union the most popular with boys, and netball the most popular with girls.

Further analysis would require determining relative numbers of players locally for each sport.

Burns and scalds



Burns and scalds were a focus of concern throughout the study periods because, although the numbers are not large, the consequences for the child can often be severe, and they are very largely preventable.

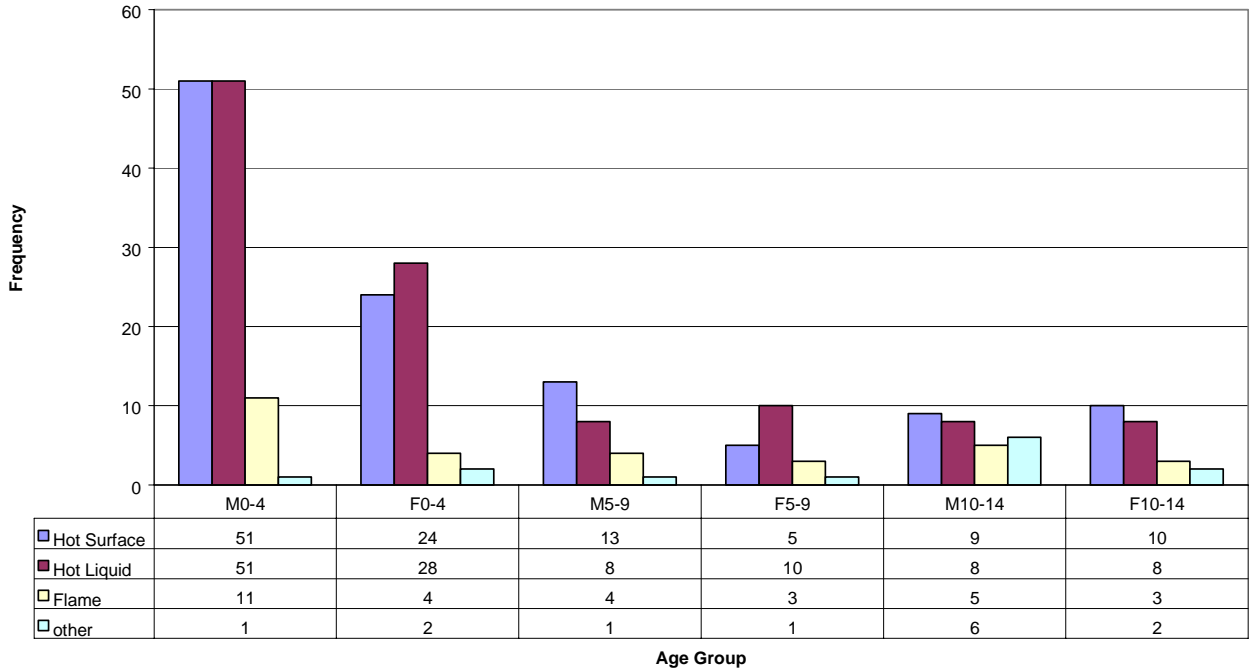
Flame burns have been the cause of four child deaths in the area in the last ten years as well as some cases of serious burns, mainly from unsupervised children playing with matches or lighters. Smoke alarms and child-resistant lighters may help prevent these. Flame burns have also regularly occurred from petrol, and from children falling onto open fires - fireguards are regrettably expensive and rarely purchased. The total number of burns from open flames is similar to the eighties despite the efforts of several agencies to bring these down.

Fireworks have caused injuries but thankfully not very many and most have not been serious.

The increasing number of *burns from hot surfaces* is of concern though it could reflect the increasing use of the ED as many are relatively minor. Hot surfaces are often heaters, ovens and enclosed fires.

The number of *scalds* is fairly consistent but unfortunately higher than in the eighties. The fatality of a child in the last year who fell into a bath of hot water is a tragic reminder that both thermostats on hot water heaters should be below 55 C and cold water added first. The Trust has been involved in a number of initiatives to reduce tap water temperatures, but there have been many obstacles, as described by Clarke(15) and by Jaye(16); however the number of *scalds from tap water* has dropped from an average of 4 per year in the 1980's to 2.75 a year. Most scalds happen around the kitchen: boiling water from pots, kettles and hot drinks. Scalds from hot drinks are a danger people need to be aware of, as they are a less obvious danger to children than the kettle the water came from.

Burn Injuries by Age-Gender

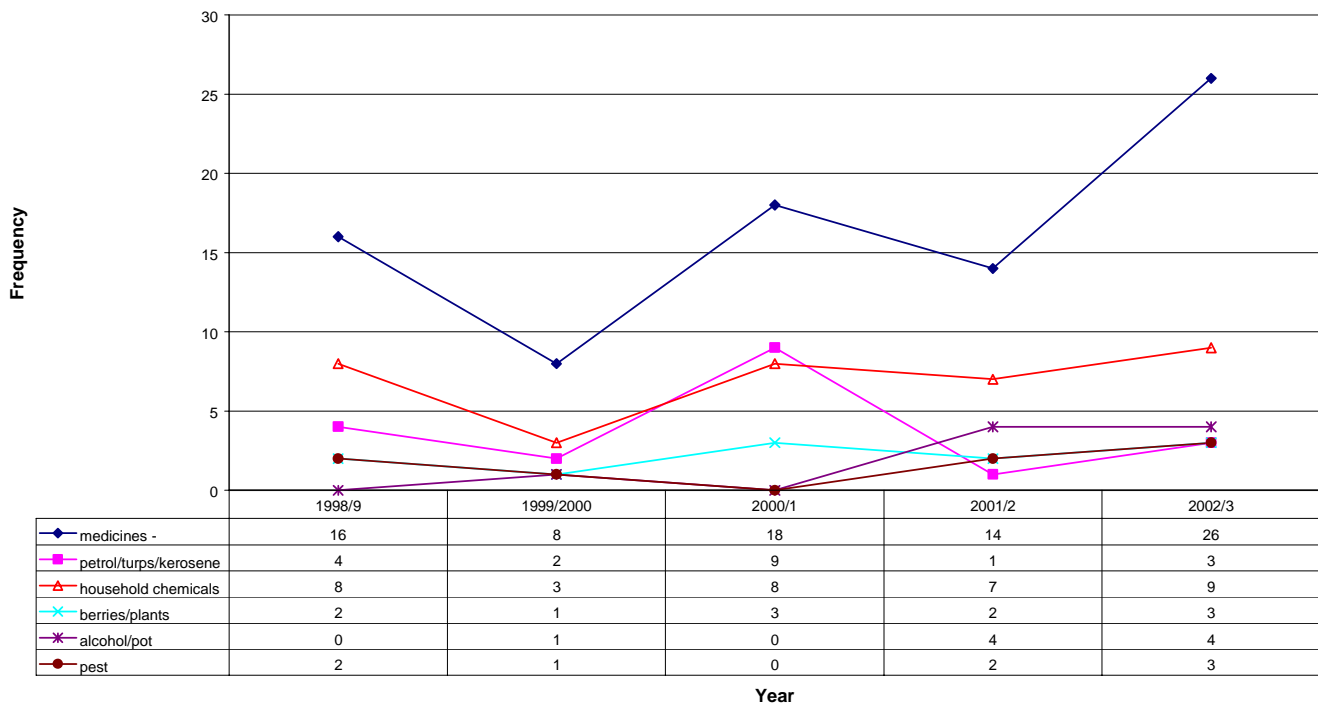


Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	114 (1,057)	26 (211)	28 (239)	168 (482)
Female (Per 100,000 per year)	58 (565)	19 (161)	23 (204)	100 (300)
TOTAL (Per 100,000 per year)	172 (817)	45 (186)	51 (222)	268 (393)

Boys aged 0-4 clearly have the most burn injuries, followed by girls 0-4. This suggests boys are naturally more likely to explore at this young age. *Hot surface burns* and *hot liquid burns* are equally common with pre-schoolers. *Scalds* tend to be more serious, mainly because the child cannot escape the heat source easily.

Poisoning

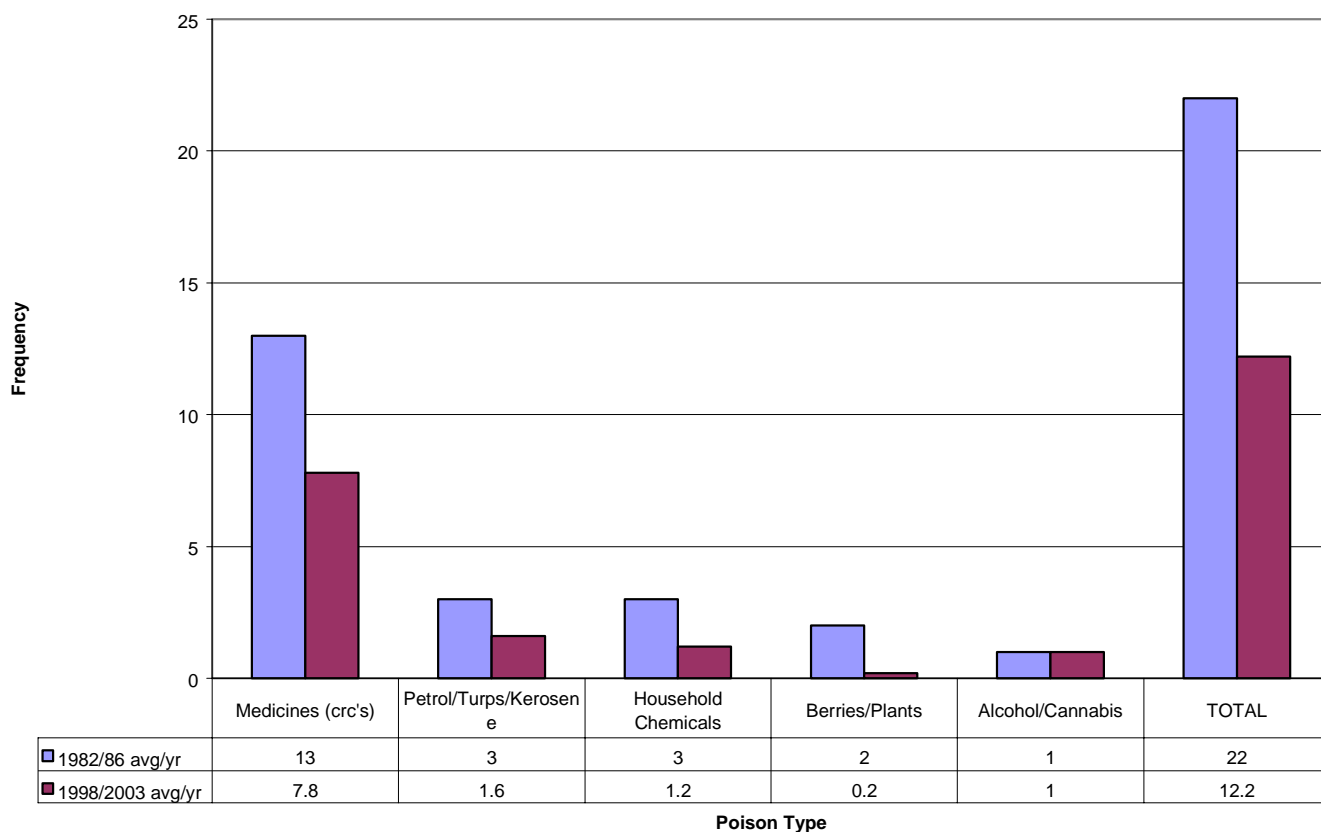
Poison Injuries 1998-2003



Age Group	0-4 years	5-9 years	10-14 years	TOTAL
Male (Per 100,000 per year)	82 (760)	7 (57)	8 (68)	97 (278)
Female (Per 100,000 per year)	57 (556)	5 (42)	11 (98)	73 (219)
TOTAL (Per 100,000 per year)	139 (660)	12 (50)	19 (83)	170 (250)

Boys aged 0-4 clearly have the most poisonings, followed by girls 0-4. This suggests boys are naturally more likely to explore at this young age as there is no gender difference in mouthing behaviour(17).

Poisonings Hospitalised



Although the number of children presenting with exposure to medicines is increasing the admission rates have fallen. The increased usage of child-resistant packaging for medication may have contributed, although the numbers of all types of serious poisoning have lowered in twenty years. However, the average number of paracetamol poisonings per year admitted has not decreased (from 1 a year in the nineteen eighties to 1.6 a year recently). Anti-histamines and psychogenic drug admissions have dropped from two a year of each type to only two overall for the past five years of each type.

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