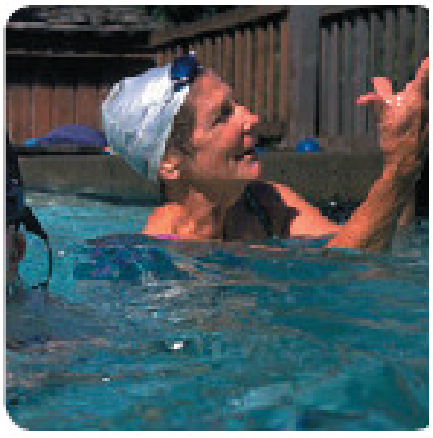
Illawarra/Shoalhaven
Child Injury Profile
1999 - 2006



HEALTHY CITIES Shoalhaven

HEALTHY CITIES ILLAWARRA INC.

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CONTENTS

NOTE: The focus of this report is **unintentional** child injuries. Data in this report may include cases of intentional child injury due to abuse, violence or neglect, however the incidence of intentional child injuries was not specifically researched as part of this report.

INTRODUCTION

Healthy Cities Illawarra has a long history of developing and supporting community based child safety initiatives after establishing the Illawarra Child Injury Prevention Task Force in 1989. An ongoing challenge for this task force was access to unintentional child injury statistics from the local network of hospitals for the development of prevention initiatives targeting relevant local child injury issues.

In late 2006, Healthy Cities Illawarra was successful in obtaining a funding grant from the Australian Government Department of Health and Ageing, enabling it to establish a regional child safety project known as the Child Safety Advocate Project (CSAP) – Illawarra and Shoalhaven. The project was implemented over 14 months, commencing in April 2007 and concluding in June 2008.

A key goal of the project was to develop a child injury profile for the region based on data sourced from the hospitals across the Illawarra and Shoalhaven. This profile aims to help identify the local child injury issues of greatest importance, as well as the age groups and communities most affected by these issues. The profile also aims to inform the local community and the network of child and family service providers of which child injury issues are most prevalent in our region. Another important goal of this profile is to act as a catalyst for the development of localised, evidence-based child injury prevention initiatives.

Summary

Generally, the child injury death and hospitalisation rates for the Wollongong, Shellharbour, Kiama and Shoalhaven Local Government Areas (LGA's) are similar to Australian and NSW rates.

For children aged 0 – 14 years, motor vehicle accidents were the major cause of child injury death across the four combined LGA's and falls were the leading cause of child injury hospitalisation.

Poisoning, and burns and scalds were the leading causes of injury hospitalisation within the four combined LGA's for the under 5 year age group, however the burns and scalds rate for the 0 – 1 year age group was significantly lower than the NSW rate for burns and scalds.

Pedestrian/cycle injury was the second leading cause of hospitalisation for the 5 – 9 and 10 – 14 year age groups. The hospitalisation rate for the Wollongong and Shellharbour LGA's was significantly higher than the NSW hospitalisation rate for pedestrian/cycle injuries. Further investigation to determine the factors contributing to the higher than state average pedestrian/cycle injuries is needed to determine and prioritise possible local preventive interventions.

Consultations with local child and family service providers conducted in the Illawarra and Shoalhaven during the course of the Child Safety Advocate Project, identified a range of child injury issues of concern. The data within this report has confirmed the significance of many of the issues identified locally.

Issues identified by service providers included unsafe home environments; cutting and piercing as a result of household/backyard rubbish; finger jams in doors; falls from furniture, stairs, baby walkers and slippery surfaces at home; complacency with the storage of household chemicals, medication and alcohol; motor bikes being ridden by young children; unsafe use of child restraints and bicycle helmets not being worn.

It is hoped that this report will provide a reference point for local communities and service providers working with parents and carers across the Illawarra and Shoalhaven, to further investigate child injury issues and develop preventive interventions.

Background

Child injury is a significant public health issue in Australia. Injury is the leading cause of death in Australian children aged 1 – 14 years, accounting for almost half of all deaths in this age group. More children die from injuries than from cancer, asthma and infectious diseases combined.

For every child who dies from injury, many more are admitted to hospital for treatment, and even more children are treated in emergency departments. Injuries can have lasting effects, such as disability and disfigurement, which can impair a child's development and future wellbeing and have significant effects on a child's family (AIHW 2005). The estimated cost of child injury in Australia is 1.5 billion dollars annually.

Factors, such as sex and socioeconomic background, affect a child's risk of injury at all developmental stages. For most types of childhood injury, boys are at a higher risk of injury than girls. Children from low socioeconomic backgrounds and Indigenous Australian children have a higher risk of injury and death from injury than other Australian children.

Risk factors that have been associated with child injury include single and step parent family, low maternal education level, young maternal age at birth, low standard housing, large family size, and parental drug or alcohol abuse (AIHW 2005).

In NSW, the unintentional injury death rate for children from the most disadvantaged areas is approximately 1.9 times that for children from the least disadvantaged areas (Hayen 2005).

Childhood mortality and morbidity as a result of injury are preventable and can be effectively reduced through the implementation of prevention strategies. An understanding of the extent and causes of child injury is important for the planning and implementation of prevention programs.

The purpose of this report is to provide an overview of the frequency of unintentional child injury cases requiring medical treatment from the South Eastern Sydney and Illawarra Area Health Service. Unfortunately, it was not possible for this report, to fully determine the context or the causes of the child injury cases due to data base limitations, small numbers of cases and the time frame of datasets. The information provided in the report is intended to support local service providers to identify local child injury issues, especially those requiring further investigation.

Method

All data pertaining to the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's has been obtained from 'A review of child injury in the Illawarra: February 2008', analysed and compiled by Jennifer Duncombe and Darren Mayne, Directorate of Population Health, Planning and Performance, South Eastern Sydney and Illawarra Area Health Service (SESIAHS). A copy of the report will be available on the SESIAHS website from June 2008. (http://www.sesiahs.health.nsw.gov.au/publications/index.asp)

The mortality data used in the report is for the five year period from 1 January 1999 to 31 December 2004. The hospitalisation data is for the 5 year period from 1 July 2000 to 30 June 2005 and the Emergency Department Data Collection - Wollongong, Shellharbour and Shoalhaven Hospitals, is for one year only from 1 January to 31 December 2006. As Kiama Hospital does not have an

emergency department, no ED presentation data was available for this report (Duncombe & Mayne 2008).

The primary purpose of hospitalisation and emergency department data collection is not for injury prevention monitoring and as such, the data analysis is significantly limited in the information it can provide on the circumstances surrounding the causes of child injury.

Data in the report are presented as counts, percentages and age-specific events per 1,000 population. Counts are the number of observed events (i.e. deaths, hospitalisations). To preserve the privacy of patients, results are presented in summary form, with numbers less than 5 excluded from tables.

Percentages are the number of observed events divided by a given population denominator (e.g. total number of child deaths) and multiplied by 100. Age-specific event rates are the number of events per 1,000 children aged 0 – 14 years and are obtained by dividing the number of observed events for an age group by the total population for that age group and multiplying the result by 1,000 (Duncombe & Mayne 2008).

ILLAWARRA and SHOALHAVEN DATA SNAPSHOT

From 1999-2006, for children aged 0 – 14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, as a result of injury there was a yearly average of:

4 deaths (January 1999 - December 2004)
1149 hospital admissions (July 2000 – June 2005)
4827 Emergency Department presentations (January – December 2006)

Source: Duncombe & Mayne 2008

Further to this, the data does not include children treated by a General Practitioner or treated at home as the result of an unintentional injury.

Child Injury Deaths

Approximately 4 deaths per year for children 0 – 14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of injury *Source: Duncombe & Mayne 2008*

There were 26 injury related deaths among children aged 0 – 14 years living in the combined Wollongong, Shellharbour, Kiama and Shoalhaven LGA's during the period January 1999- December 2004. Injury deaths accounted for 13.9% of all childhood deaths for this area during the study period. This rate is consistent with the NSW rate.

Motor vehicle accidents were the major cause of death accounting for almost half of these child injury deaths (46.2%). (Duncombe & Mayne 2008)

Child Injury Resulting in Hospital Admission

Approximately 1149 hospital admissions per year for children 0 – 14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of injury

Source: Duncombe & Mayne 2008

There was a total of 5743 hospital admissions as a result of an injury for children aged 0 -14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's during the period July 2000 - June 2005. (Wollongong: 2914; Shellharbour: 1127; Kiama: 322; Shoalhaven: 1380).

Injury accounted for 9.5% (10.8% male, 7.8% female) of all hospitalisations for children across the study region (Wollongong 9.1%, Shellharbour 9.7%, Shoalhaven 9.7%, and Kiama 11.84%). These rates were similar to the average NSW rates.

However, rates for pedestrian/cycle injury for the Wollongong and Shellharbour LGA's were significantly higher than the NSW average and warrant further investigation.

Almost two thirds of children admitted to hospital as a result of an injury were males (64%: 3680), and thirty six percent were females (36%: 2063).

Falls were the most common cause of hospital admission for both male and female children accounting for 44% of all injury admissions. There were 2515 admissions for falls in children aged 0-14 years during the 5 year study period (Appendix 1).

Other major causes of injury admissions for male children within the combined study area were:

struck by or against (9.3% of injury admissions); pedestrian/pedal cycle injuries (8.9%); unspecified factors (8.6%), and motor vehicle transport (7.7%) (Appendix 1).

Other major causes of injury admissions for female children within the combined study area were: unspecified factors (6.6% of injury admissions); struck by or against (5.4%) and motor vehicle transport (4.7%) (Appendix 1).

The home was the most common place for injury to occur, however schools and other sporting and recreational places were also common places for 5 – 14 year olds to sustain an injury requiring hospitalisation. Of those children hospitalised for injury, 69% of 0 - 1 year olds were injured at home and 56% of 1 – 4 years were injured at home (Appendix 2).

Emergency Department Presentations

4827 emergency department presentations in a one year period (Jan – Dec 2006) for children aged 0 – 14 years at Wollongong, Shellharbour and Shoalhaven Hospitals' Emergency Departments as a result of injury *Source: Duncombe & Mayne 2008*

From January - December 2006 there were 4827 injury presentations by children aged 0 – 14 years at Wollongong, Shellharbour & Shoalhaven Emergency Departments. Of these presentations, 1826 were by children aged 10 – 14 years (38%), 1306 (27%) by 5-9 year olds and 1695 (35%) were by children aged 0 – 4 years.

The most common diagnosis for children presenting as a result of an injury was for an open wound or amputation (1406 children: 29%); followed by fracture of body part (980: 20%); dislocation, sprain, strain of body part (707: 15%); superficial injury, contusion or crushing injury of body part (669:14%); and head injury, with or without concussion (461:10%).

Open wound or amputation was the most common diagnosis for the 0 - 4 and 5 - 9 year age groups and fracture of a body part was the most common diagnosis for the 10 - 14 year age group.

Table 1 shows the top 3 diagnoses for each age group. It is interesting to note the change in diagnosis from open wound to fractures and dislocation with the increase in age.

Table 1: Top 3 injury presentations at Wollongong, Shellharbour and Shoalhaven Emergency Departments in 2006. (Duncombe & Mayne 2008)

0-4yr olds	5-9yr olds	10-14yr olds	Total: 0-14 yr olds
Open wound or amputation (595: 35%)	Open wound or amputation (416: 32%)	Fracture of body part (519: 29%)	Open wound or amputation (1406: 29%)
Superficial injury, contusion or crushing injury of body part (239: 14%)	Fracture of body part (312: 24%)	Dislocation, sprain, strain of body part (409: 22%)	Fracture of body part (980: 20%)
Head injury, with or without concussion (226: 13%)	Superficial injury, contusion or crushing injury of body part (206: 16%)	Open wound or amputation (395: 22%)	Dislocation, sprain, strain of body part (707: 15%)

COMMON CAUSES OF CHILD INJURY ACROSS THE ILLAWARRA AND SHOALHAVEN

The following section provides an overview of the main causes of child injury hospital admissions for children living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's , as well as presentations to Wollongong, Shellharbour and Shoalhaven Hospitals' Emergency Departments.

The emergency department data collection system was not designed for injury prevention monitoring therefore a significant limitation of the data is that it is classified according to injury diagnosis and does not describe the cause of the injury or the circumstances at the time of the injury. It is therefore not possible to determine the number of presentations to emergency departments for falls, pedestrian/cycle injuries, motor vehicle accidents, drownings and other common causes of child injury since these are not diagnosis categories. However, the number of emergency department presentations for poisoning and burns and scalds can be reported as these are nominated diagnosis categories.

Hospitalisation data does categorise injury by cause and it is possible to analyse information on the circumstances surrounding the injury, however the scope of this report was to identify child injury patterns across age groups and across the region. As the local data is limited in providing information on the context of the causes of child injury, a summary of available literature review findings are included.

FALLS

Approximately 503 hospital admissions each year for children aged 0- 14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of a fall

Source: Duncombe & Mayne 2008.

Similar to national rates, falls were the most common cause of hospital admission for injury in children in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA. There were 2515 children hospitalised during the 5 year study period (July 2000 – June 2005) as a result of a fall. Of these children, 1546 (61%) were male and 969 (39%) were female. Slips, trips, stumbles and collisions were the most common cause of falls requiring hospital admission, accounting for almost one third of falls admissions (30%: 757) (Duncombe & Mayne 2008).

Falls among children of all ages are very common and although they are rarely life threatening, many require medical treatment and a notable number result in serious injury. The circumstances surrounding a fall and the resulting injury are associated with children's age, physical, cognitive and social development, and the changing environment and products they are exposed to. The home environment is the most common location for child fall injuries, however as children get older, schools, sporting and recreation venues become an increasingly more common location for fall injury (Berry 2007).

Falls in the 0 – 1 year age group

During the study period there was an average of 12 hospital admissions each year for children aged 0-1 year in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of a fall.

During the 5 year study period there was a total of 61 fall related hospital admissions for children aged less than one year. Falling from one level to another was the cause of almost half these falls (49%: 30 admissions). Falls involving furniture was also a common cause of injury requiring hospital admission (34%: 21 admissions) (Duncombe & Mayne 2008). (Appendix 3)

Children under the age of 12 months rapidly develop new skills. Falls often occur when infants are left unattended and their parents/carers are unaware they can roll. Infants overbalance easily because they are top heavy as the size and weight of their head is not in proportion to the rest of their body. They are also less likely to break a fall by using their hands.

Australian studies have found:

- The most common injuries sustained by infants (<1 year) as a result of a fall were intracranial injury. Consequently the head and the face were the most frequently injured part of the body. The next most common part of the body injured was the upper limb and shoulder region (Ashby 2000).

- The 10 most common causes of falls requiring Emergency Department treatment were: conventional bed; pram/stroller/carriage; table/bench/counter; change table; step/stairs; high chair; sofa/ lounge/couch; conventional chair/stool/seat; bouncer/rocker; and baby walker. Injury from baby walkers, high chairs and strollers were the three nursery furniture products most frequently associated with hospital admissions (Ashby 2000).

1 – 4 year age group

During the study period there was an average of 112 hospital admissions each year for children aged 1-4 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of a fall.

During the 5 year study period there was a total of 563 hospital admissions for children aged 1 – 4 years as result of a fall. Similar to the younger age group, falls from one level to another was the most common cause of these falls (27%: 153 admissions). Slips, trips, stumbles and collisions (23.3%:131 admissions); falls involving furniture (20%:118 admissions) and falls involving playground equipment (20%:116 admissions) were also common causes of falls requiring hospital admission (Duncombe & Mayne 2008).

Based on the data available, it is not possible to determine how many of the child injury presentations to Wollongong, Shellharbour and Shoalhaven Emergency Departments are the result of a fall. During 2006 at Wollongong, Shellharbour and Shoalhaven Emergency Departments, open wound was the most common injury diagnosis for the 0 – 4 year age group with 595 presentations. Superficial injury, contusion or crushing injury of body part (239 presentations) and head injury, with or without concussion (226 presentations) were the next most common injury diagnosis for the 0 – 4 year age group (Table 1) (Duncombe 2008).

Australian studies have found:

- Open wounds are the most common type of fall injury for the 1 – 4 year age group and the face and head, followed by the upper limb and shoulder are the most common parts of the body to be injured (Ashby 2000).
- The furniture commonly associated with falls in the 1-4 year age group is beds, tables, change tables, chairs, high chairs, cots and strollers (Steenkamp 2001).

5 – 9 year age group

During the study period there was an average of 196 hospital admissions each year for children aged 5-9 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of a fall.

During the 5 year study period there was a total of 979 hospital admissions for children aged 5 – 9 years as result of a fall. Falls involving playground equipment were the most common cause of these falls with 287 admissions (29%) over the 5 year study period. Slips, trips, stumbles and collisions were

the next most frequent cause with 240 hospitalisations (25%); followed by other falls from the one level responsible for 178 admissions (18.2%) (Duncombe & Mayne 2008).

It is not possible from Wollongong, Shellharbour and Shoalhaven Emergency Department data to determine how many injury presentations by 5 – 9 year olds were caused by a fall. During 2006 at Wollongong, Shellharbour and Shoalhaven Hospital Emergency Departments there were 416 open wound presentations (32% of injury presentations for 5 – 9 year age group); 312 fracture presentations (24%), most frequently fractures of the radius or ulna and 206 superficial injury, contusion or crushing injury presentations (16%) (Table 1) (Duncombe 2008).

Victorian research found fractures of the forearm/wrist and to a lesser extent the elbow, were the most frequent diagnosis for fall injury for the 5 - 9 year age group presenting to Victorian Emergency Departments. Open wounds of the face and sprains/strains of the ankle, wrist, elbow or forearm were the next most commonly recorded injuries following a fall (Ashby 2000).

Australian studies (Cassell 2007) have found:

- The home is still a major location for fall related injury for the 5 – 9 year age group, however, school playgrounds and other places of recreation accounted for an increasing proportion of fall injuries. This trend is the same for 5 – 9 year olds living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's (Appendix 2).

- The 5 – 9 year age group has the highest hospitalisation rate for playground fall related injuries and more commonly has falls from heights caused by physically challenging activities such as climbing. The physical development of 5 – 9 year olds, including increased ability to use upper limbs to break a fall, may help to reduce head and face injuries, but results in an increase in upper limb injuries, particularly forearm and wrist fractures and to a lesser extent the elbow.

- The top 10 causes of fall injuries for 5 – 9 year olds at Victorian Emergency Departments were falls from: bicycles; monkey bars; trampolines; trees; in-line roller skates; slides; bunk beds; flying fox apparatus; swings; step/stairs.

10 – 14 year age group

During the study period there was an average of 182 hospital admissions each year for children aged 10-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of a fall.

During the 5 year study period, there was a total of 912 hospital admissions for children aged 10 – 14 years as result of a fall. Slips, trips, stumbles and collisions were the most common causes of these falls resulting in 380 hospitalisations (42%) during the 5 year study period. Falling on the same level was the next most common cause of falls requiring hospital admission with 206 admissions (22.6%) (Duncombe & Mayne 2008).

These rates are consistent with national rates where falls on the same level due to collision or pushing (often while playing sport,) followed by falls involving bicycles, ice-skates, skis, roller skates or skate boards, are common causes of falls for this age group (Ashby 2000; Berry 2007).

It is not possible from Wollongong, Shellharbour and Shoalhaven Emergency Department data to determine how many injury presentations were caused by a fall. At Wollongong, Shellharbour and Shoalhaven Hospital Emergency Departments during 2006, fracture was the most common injury diagnosis for the 10 – 14 year age group with 519 presentations (28%). The next most common diagnosis was dislocations, sprains and strains (409 presentations: 22%); followed by open wound

(395 presentations: 21%) (Table 1) (Duncombe & Mayne 2008). The most common fracture was to the radius or ulna which is consistent with Victorian data.

Victorian research found for 10-14 year olds, fractures followed by sprains or strains were the most common fall injury diagnosis presenting to Victorian Emergency Departments and the upper limb and shoulder region were the most commonly injured body part. Fractures were most commonly of the forearm/wrist, with fractures of the radius and ulna making up half of all fractures for this age group. (Ashby 2000; Steenkamp 2001)

Australian studies have found:

- The home is still a major place for a fall to occur, however schools, places of sport and recreation, and roads and streets are also common places of fall injury for the 10-14 year age group (Berry 2007). This trend is the same for 5-9 year olds living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's (Appendix 2).

- By the time children reach the age of 14 they have developed many physical skills and often attempt risk taking behaviour involved speed, tricks and complicated manoeuvres. Consequently the circumstances of falls for the 10-14 year age group differ from the younger groups. Falls in this age group are most frequently associated with recreational activities (Steenkamp 2001).

- The top 10 causes for fall injury presentations for 10 – 14 year olds at Victorian Emergency Departments were bicycles; inline/roller skates; football; basketball; horse riding; skateboarding; motor/trail/dirt bike riding; netball; stairs/steps; trees (Ashby 2000).

POISONING

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during the period 2000/01-2004/05 and in 2006, there was an average of:

38 hospital admissions as a result of poisoning
103 presentations to Emergency Departments as a result of poisoning
2nd leading cause of hospital admissions for children 0 – 4 years *Source: Duncombe & Mayne 2008*

There were a total of 192 hospital admissions for children aged 0-14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of poisoning during the 5 year study period. Males accounted for 114 of these admissions (59%) and females accounted for 78 admissions (41%). These rates are similar to NSW rates (Duncombe & Mayne 2008).

Poisoning was the second top cause of injury hospitalisation for children aged 1-4 years across the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's and was the third most common cause of hospitalisation for children aged <1 yr. There were 136 hospital admissions (71%) for the 1-4 year age group and 13 for the <1 year age group during the 5 year study period (Duncombe & Mayne 2008).

There were more than 103 emergency department presentations by 0-14 year olds at Wollongong, Shellharbour and Shoalhaven Hospital Emergency Departments as a result of poisoning during 2006. The majority of these presentations (72%) were for children aged 0-4 years (Duncombe & Mayne 2008).

The incidence of childhood poisoning is of concern. Each year in Australia, approximately 4,700 children require hospitalisation as a result of poisoning and even though death rates have decreased

with the introduction of child-resistant closures, hospitalisation rates have remained high. Childhood poisoning prevention has been identified as a national injury prevention priority. (Cripps 2006; Centre for Community Child Health 2006)

Australian Studies have found:

- Hospitalisation rates do not reflect the full extent of the problem of childhood poisoning, as not all episodes of poisoning require hospital admission. Poisoning by many household chemicals involves low risk substances, however some substances such as caustic cleaners, oven cleaners, automatic dishwasher detergents, other acid and alkali corrosives, pesticides and naphthalene (moth balls) pose a serious risk to health (Cripps 2006).

- Rates of poisoning are highest in children less than 5 years of age and exposure to poisoning substances appears to be associated with stages of development. In the first nine months of an infant's life, most poisonings occurred as a result of medication incorrectly administered by parents or caregivers. The most common circumstances are mistaken doses or the wrong medication is given. Eucalyptus and other vaporising oils are frequently mistaken for oral medication and misreading the decimal point is a common cause of overdose. (Cripps 2006)

- As infants develop and become more mobile, their opportunities for exposure to poisonous substances increase. For children aged 9-12 months, most poisonings occurs when a child accesses an open bottle of medication or cleaning agent, finds a loose tablet or ingests poisonous plant material. Poisoning by non-pharmaceutical substances such as cleaning agents, pesticides and petroleum substances is most common in children aged one. Two years of age is the most common age for poisoning by pharmaceutical substances. Paracetamol was the most common pharmaceutical poisoning in one and two year old children. Other pharmaceutical substances responsible for hospitalisation of 0-4 year olds as a result of poisoning include benzodiazepines, vitamins and iron compounds. (Cripps 2006; Centre for Community Child Health 2006)

- The great majority of poisoning related hospitalisations are brief, involve no procedures and end with discharge home. Over the counter medication and non-pharmaceutical substance poisoning result in more telephone enquiries and emergency department attendances than for prescription medication, however more case of poisoning by prescription medication required hospital admission (Cripps 2006).

- Non-pharmaceutical poisonings account for approximately 62% of poisonings presentations to Queensland Hospital Emergency Departments in children less than 5 years. A quarter of poisonings in this age group were due to common household cleaners such as soap detergents, bleach and other caustic substances, rat poison, essential oils and petrol related products (Scott 2005).

- The most common place for poisoning to occur in young children is in the home or adjacent grounds and often the parent or care giver is present in the immediate area at the time of the incident (Cripps 2006). The child is usually left unsupervised for a period of less than five minutes. In the majority of cases the poisoning substance was not in its normal storage place and was either in use or had just been purchased and not put away. Parents were more likely to store medicines safely than cleaning products, and cleaning products were most often stored unsafely in the kitchen (Ozanne-Smith 2001).

BURNS and SCALDS

For children aged 0 – 14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during the period 2000/01-2004/05 and in 2006 there was an average of:

28 hospital admissions as a result of a burn or scald
142 presentations to Emergency Departments as a result of a burn or scald
3rd leading cause of hospital admissions for children 0-4yrs *Source: Duncombe & Mayne 2008*

There were 140 hospital admissions for burns and scalds for children aged 0-14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA during the 5 year period 2000/01-2004/05. Of these admissions, 73 (52%) were for males and 67 (48%) were for females. The hospitalisation rate for male children 0-4 years is slightly lower than the NSW rate, however the hospitalisation rate for female children 0-4 years is consistent with NSW rate (Duncombe & Mayne 2008).

Burns and scalds was the third leading cause of hospitalisation for children 1-4 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA during the 5 year study period. More than two thirds (69%) of the hospital admissions for burns and scalds were for children aged 1-4 years (97 admissions) (Appendix 1).

During 2006 there were 142 emergency department presentations for burns and scalds at Wollongong, Shellharbour and Shoalhaven Emergency Departments. Similar to hospital admission rates, the majority of these presentations were for children aged 0-4 years (63%: 90 presentations). There were 25 presentations for 5-9 year olds (18%) and 27 for 10-14 year olds (19%) (Duncombe & Mayne 2008).

Australian studies have found:

- Burns and scalds are the among the most devastating injuries a child can sustain, resulting in considerable pain and often resulting in long term physical and psychological complications. Children with burns and scalds are more likely to need a longer stay in hospital than other child home injury cases except dog bites (Boufous 2005).

- The majority of burn related hospital admissions for children occur from 7 months to 2 years of age. It is at this stage of development that children become mobile and can manipulate objects, yet they lack awareness of the hazardous nature of hot substances and are less likely to respond quickly to a situation (Harrison 2006).

- For the 0-4 year age group, the home is the most common place for burn/scald injuries to occur, and almost half of all burns occur in the kitchen/eating areas. The most common parts of the body injured by burns and scalds are the trunk, head and neck, shoulder and upper limbs (Cassell 2004; Boufous 2005).

- Contact with hot drinks, foods, fats and cooking oils is the most common cause of hospital admissions for burns and scald injury in Australia, for children aged 0-4 years. The next most common cause of admission is other hot fluids (boiling water from stoves or kettles), followed by hot household appliances (stoves/ovens/grillers/toasters/BBQs/irons) and hot heating appliances (radiators), hot pipes and hot tap water (Cassell 2004).

- Scalds due to hot beverages are the only types of burns in young children that are not declining. The most common situation surrounding this cause of a scald/burn injury is the child grabbing,

spilling or overturning a container of hot fluid onto themselves or pulling down a container of hot fluid from elevated surfaces, such as a stove or table (Harrison 2006).

- Even though scalds from hot tap water are not as common as scalds from other causes, they are one of the most serious types of scald because they often occur in the bath where large surface areas of the child's body are exposed for relatively long periods before the child is removed. It takes less than 2-5 seconds of contact with hot water at a temperature of 60-65^{o}C to cause full thickness burns in which the entire dermis is destroyed in young children (Boufous 2005).

- Controlled outdoor fires, electrical burns from power points or electrical cables (often from either sticking objects into the power point or chewing on an electrical cable) and friction burns from a child either falling on or catching their hand on a moving exercise treadmill are also causes of emergency department presentations. During 2001- 2004 there were still a small number of cases of burns as a result of nightwear catching alight, even though legislation to ban flammable nightwear was introduced in 1993. Ignition of flammable substances such as kerosene and petrol is a common cause of burns in older children and adolescents.(Cassell 2004; Barker 2005; Boufous 2005; Harrison 2006)

- The Children's Hospital Westmead has identified scalds from hot noodles and friction burns from exercise treadmills as two increasingly common causes of burns and scalds. Prompt and correctly administered first aid can reduce the severity of a burn or scald. A study at The Children's Hospital Westmead found that less than 25% of children had received appropriate first aid for burns/scalds prior to presentation at hospital. (Harrison 2006)

- The rate of hospitalisation for burns and scalds for indigenous children is almost 4 times higher than for non-indigenous children (Helps 2006).

DROWNING

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

3 - 4 hospital admissions as a result of drowning *Source: Duncombe & Mayne 2008*

There were 19 hospital admissions for children aged 0-14 years from the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of drowning during the 5 year study period. The majority of children admitted (74%) were males (Duncombe & Mayne 2008).

Australian studies have found:

- The bathtub is the most common site of death by drowning for children younger than one year (Berry 2007).

- The most commonly cited circumstance was an interruption to supervision such as answering the telephone or door bell. Another common circumstance was leaving the infant in the care of a sibling (Berry 2007).

- Swimming pools were the most common setting for drowning and near drowning in children aged 1-14 years, occurring at the child's usual place of residence or while visiting the pool's owners (Berry 2007). In the majority of cases the adult supervising the child was unaware the child was near the pool and thought they were safe in the house. Toddlers who gained access to a

fenced pool usually did so through a gate that was propped open or didn't shut automatically, or used a chair or other structure to climb over the fence. A Queensland review of toddler drowning deaths, pre and post pool fencing legislation has estimated pool fencing has saved the lives of at least seven toddlers each year in Queensland since 1992 (Cunningham 2002).

- Other locations associated with childhood drowning and near drowning include dams and ponds, rivers, creeks and rural water hazards. Young children have also drowned in containers such as buckets and rubbish bins (Cunningham 2002).

- A Victorian review of drowning and near drowning cases found Cardio Pulmonary Resuscitation (CPR) was not routinely performed on children immediately after they were found. The performance of CPR can favourably influence the outcome of an immersion incident (VISS 1990).

PEDESTRIAN / CYCLE

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

83 - 84 hospital admissions as a result of pedestrian/cycle injuries *Source: Duncombe & Mayne 2008*

During the 5 year period there were 419 hospital admissions for children aged 0 – 14 years living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of pedestrian/cycle injuries. Of these admissions, 326 were for males (78%) and 93 for females (22%) (Duncombe & Mayne 2008).

The pedestrian/cycle injury admission rate for children living in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's is significantly higher than the NSW rate. For boys aged 5 – 9 years pedestrian/cycle admissions account for 9% of injury admissions, where as the NSW rate for boys 5 – 9 years is 6.3%. There were 135 admissions as a result of pedestrian/cycle injuries for children aged 5 – 9 years (32%) during the 5 year study period (Duncombe & Mayne 2008).

For boys 10 – 14 years, the admission rate for pedestrian/cycle injury during the 5 year study period was 12.1% whereas the NSW rate was 8.9%. There were 257 admissions for children aged 10-14 years (61%) during this period. Combining boys and girl's rates, for the 5-9 year age group, the combined study area rate is 7.3% and the NSW rate is less than 4.2%. The combined area rate for males and females in the 10-14 year age group is 10.8% and the NSW rate is less than 4.4% (Duncombe & Mayne 2008).

Pedestrian/cycle injury is the 2nd leading cause of injury admission for the combined study group for children aged 5-9 and 10-14 years where as it is not in the top 5 causes of injury admission in NSW for children in these age groups (Duncombe & Mayne 2008).

Due to the limitations of the available data it is not possible to separate the pedestrian and pedal cycle injury rates. It is also not possible to determine the number of emergency department presentations as a result of child pedestrian/cycle injuries.

Australian studies have found:

Bicycle injury

- Bicycle riding is the 2nd top sport and recreation activity most associated with Victorian hospital emergency department presentations. More than half of the presentations & admissions were for children were aged 10-14 years and one third were for children aged 5-9 years. The majority of injuries were caused by falls (Cassell 2007).

- Fracture was the most common injury received followed by open wound and superficial injury. Upper extremity (forearm and wrist) followed by head/neck/face (open wounds and intracranial injuries), and lower extremities (lower leg and ankle) were the most common part of the body injured (Cassell 2007).

- A 1999 Cochrane Review found helmets provide a 63-88% reduction in the risk of head, brain and severe brain injury for all ages (Cassell 2007). The review found that during the 15 year period in Victoria from 1990-2005, there was a significant decrease of 70% for bicycling brain injury hospital admissions, yet no significant decrease in fracture admissions (the most common bicycling injury), indicating that helmet wearing has had a major beneficial effect on reducing head injuries.

Pedestrian injury

- The most common cause of pedestrian injury for the 1-4 year age group is low speed run-overs, usually occurring in driveways, and for the 5-14 year age group, the most common cause is being hit on a road.(Henderson 2000)

- After drowning and motor vehicle passenger deaths, low speed run-overs are the most frequent cause of death due to injury amongst Queensland children aged 1-4 years (Hockey 2003).

- During 1996–2001, there were 66 reported cases of driveway deaths of children in Australia. The majority of incidents occurred in the driveway or garage of the child's own home and the driver was unaware the child was near the car, believing they were inside the house, in another part of the yard or being supervised by another adult. Sundays and late afternoons were the most common times for fatalities to occur and children under 3 years of age were most at risk (Henderson 2000).

- Indigenous children are overrepresented in driveway injury relative to their proportion of the population (ASTB 2006).

- Separating play areas and restricting access to driveways by erecting fencing and barriers and the use of object vicinity ultrasonic warning devices for vehicles are all mechanisms which prevent driveway deaths and injuries.

- Each year, about 25 to 30 children of primary school age (those aged 5-12 years) are killed whilst pedestrians on Australian roads. A further 600 to 700 are admitted to hospital (ASTB 1996). The majority of pedestrian deaths in primary school age children occur in the three to four hours between the end of school and sunset. The most common type of action by the child leading to pedestrian injuries is dashing across a road, mid way along residential streets near their home and dashing across intersections. (Henderson 2000)

MOTOR VEHICLE TRANSPORT

(Includes injuries received as a driver or passenger of a motor vehicle or motorcycle)

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

75-76 hospital admissions as a result of a motor vehicle transport injury
Source: Duncombe & Mayne 2008

During the 5 year study period within the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's there were 379 motor vehicle transport injury hospital admissions for children aged 0-14 years. Two hundred and eighty two of these admissions (74%) were for males and 97 (26%) were for females (Duncombe & Mayne 2008).

Overall, the combined Illawarra/Shoalhaven rates of motor vehicle transport injury are consistent with the NSW rates, however, the hospitalisation rate for males aged 0-14 yrs within the Shellharbour LGA (11.1%) was higher than the NSW rate (8.1%).

Within the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, the 10-14 year age group was most commonly admitted to hospital as a result of motor vehicle transport injury (57%) and it was the 5th leading cause of hospitalisation for this age group. During the study period, there were 216 admissions for children aged 10-14 years as a result of motor vehicle transport injury. Of these admissions, 117 were for males and 39 were for females (Duncombe & Mayne 2008).

The 5-9 year age group accounted for 30% of all child motor vehicle transport hospitalisations. During the study period there were 114 hospital admissions for children in this age group. Seventy seven admissions were for males and 37 were for females.

Motor vehicle transport was the 4th leading cause of injury hospital admission for the 5-9 year age group. There were 49 hospital admissions for children aged 0-4 years as a result of motor vehicle transport. Twenty eight of these admissions were for males and 21 were for females (Duncombe & Mayne 2008).

Further details on circumstances surrounding motor vehicle transport injuries within the study area were not available for this report.

Australian studies have found:

- "It has been estimated that the number of deaths and injuries serious injuries can be reduced by 70% in children and 50% in adults if appropriate restraints are used (compared to unrestrained individuals). In a NSW study, only 18% of children were correctly restrained in a weight appropriate child restraint." (Krahn 2007)

- The position of a child in a car is also a contributing factor to the outcome of motor vehicle transport injuries with several studies showing the link between more severe injuries and front row seating. A significant number of children under the age of 12 were travelling in the front seat during a motor vehicle crash (Krahn 2007).

- Community awareness of correct child restraint recommendations and procedures is limited. Studies estimate that around 90% of parents intend to restrain their children safely, however they are unaware of current recommendations for the safe use of child restraints (Krahn 2007).

STRUCK BY OR AGAINST

(Includes bumping into or against an object, kicking or stepping on an object, struck or hit by an object in sports without subsequent fall)

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

91 hospital admissions as a result of an injury due to being struck by or against
Source: Duncombe & Mayne 2008

During the 5 year study period there were 456 hospital admissions for children aged 0-14 years from Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of being struck by or against. Of these admissions, 344 were for males (75%) and 112 were for females (25%) (Duncombe & Mayne 2008).

Struck by or against was the 3rd leading cause of injury admission for males from the 1-4 and 10-14 year age groups and the 4th leading cause for males aged 5-9 years within the combined study area during the study period. Fifty five percent of admissions were for children aged 10-14 years (250 admissions). There were 104 hospital admissions for children aged 0-4 years (with the majority aged 1-4 years) and there were 102 admissions for children aged 5-9 years (22%) (Duncombe & Mayne 2008).

CUTTING and PIERCING

(Includes objects with pointed, sharp edges, lawn mowers, powered and other hand tools and implements, powered household appliances and implements, knives, needles, arrows, broken glass, edge of stiff paper, nail, thorns splinters, tin can lid)

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

46-47 hospital admissions as a result of cutting and piercing *Source: Duncombe & Mayne 2008*

During the 5 year study period there were 234 hospital admissions for children aged 0-14 years from the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of injury from cutting or piercing. Males accounted for 158 of these admissions (68%) and females accounted for 76 admissions (32%) (Duncombe & Mayne 2008).

From Wollongong, Shellharbour and Shoalhaven Hospitals Emergency Department data, it is not possible to determine how many child injury presentations were caused by cutting and piercing. As an open wound can be caused by a number of other forms of injury such as falls and motor vehicle accidents it is not possible to determine the number of Emergency Department presentations as a result of cutting and piercing.

Victorian studies indicate open wound is the most common diagnosis for cutting and piercing injury and for children, the hand, head, forearm and lower extremities are the most common parts of the body injured (Clark 2002).

Cutting and piercing has been identified as a child injury issue by service providers across the combined Wollongong, Shellharbour, Kiama and Shoalhaven LGA's. Broken glass, tin and backyard

rubbish were reported as causes of cutting and piercing injury. Local service providers have advocated for more council backyard clean up schemes especially in areas where they do not currently exist.

Australian studies (Clark 2002) have found:

- More than 50% of cutting and piercing injuries requiring hospital treatment occurred in the home.
- The leading causes of cutting and piercing hospital-treated injury for children were glass, nails, splinters, tin cans and knives.
- Furniture with sharp edges was also associated with cutting and piercing injuries.

NATURAL/ ENVIRONMENTAL HAZARDS

(Includes exposure to heat, cold, thirst, hunger, venomous plants, animals and insects, dog bites, bites of other animals)

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

43 hospital admissions as a result of injury caused by natural/environmental hazards
Source: Duncombe & Mayne 2008

During the 5 year study period there were 217 hospital admissions for children from the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of injury caused by natural/environmental hazards. Of these admissions, 138 were for males (64%) and 79 were for females (36%) (Duncombe & Mayne 2008).

Natural/environmental factors are the 4th leading cause of injury hospital admissions within the combined study area for girls aged 1-4 years with 46 admissions for this age group during the 5 year study period (Duncombe & Mayne 2008).

For this report it was not possible to determine the exact causes of the 217 hospital admissions as a result of natural/environmental hazards or the number of Emergency Department presentations as a result of natural/environmental hazards. Injuries received as a result of a dog bite have been an area of concern for many years and it is possible that a significant number of the admissions for natural/ environmental hazards will be the result of a dog bite. This is an area for further investigation.

OTHER TRANSPORT

(Includes rail, water and air transport, vehicles being used in recreational or sporting activities and horse riding)

For children aged 0-14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during 2000/01-2004/05 there was an average of:

32 hospital admissions as a result of other transport injury *Source: Duncombe & Mayne 2008*

During the 5 year study period there were 161 hospital admissions for children 0-14 years from the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of other transport injuries. Sixty six of these admissions were for male children (41%) and 95 were for female children (59%) (Duncombe & Mayne 2008).

Other transport was the 5th leading cause of injury hospital admission for females aged 5-9 years with 36 admissions and the 4th leading cause for females aged 10-14years with 51 admissions during the 5 year study period (Duncombe & Mayne 2008).

It has not been possible to further analyse the causes of other transport injuries for the combined study area. Horse riding and motor/trail/mini bike riding, which are classified as "other transport", have been identified as common causes of childhood injury. Horse riding and motor/trail/mini bike riding are common recreational activities in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's and Shoalhaven service providers have identified motor/trail/mini bike riding as an issue of growing concern.

Australian studies have found:

- Motor/trail/mini bike riding was the 9th and horse riding was the 10th most common recreational activity associated with hospital emergency department presentations in Victoria during the 3 year period 1999-2001. (Cassell 2002).

- Horse riding injury rates are significantly higher for females than males and are more common in 10-14 years age group (Cripps 2000).

- Motorcycle injuries requiring hospital treatment are more common in males aged 10-14 years. The majority of injuries occur off road on farms or at race tracks, mostly as a result of losing control of the bike or hitting obstacles such as rocks. Falls were the next most common cause of motorcycle injury. Upper and lower extremities were the most common part of the body injured & fracture followed by open wound and superficial injury which were the most common injuries treated (Cassell 2007) .

- It is estimated that one third of injuries could have been prevented by wearing appropriate protective gear. Similarly, injuries leading to death were associated with not wearing protective equipment of any kind (Begg 1997). A 2003 Cochrane Review suggested helmets reduce the risk of head injuries by 72% (Cassell 2007).

FOREIGN BODIES

(Inhalation and ingestion of other object causing obstruction of respiratory tract or suffocation eg. object in nose, obstruction of oesophagus, pharynx)

For children aged 0 – 14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during the period 2000/01-2004/05 and in 2006 there was an average of:

35 hospital admissions as a result of injury due to a foreign body
220 Emergency Department presentations as a result of a foreign body

Source: Duncombe & Mayne 2008

Injury due to foreign bodies resulted in 176 hospital admissions for children 0-14 years from the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's during the 5 year study period. Of these

admissions 98 (56%) were for males and 78 (44%) were for females. Ninety six of these admissions were for children aged 0-4 years (57%) (Duncombe & Mayne 2008).

Foreign bodies was the 4th leading cause of injury hospital admissions for children aged <1year and the 5th leading cause for the 1-4 year age group (Duncombe & Mayne 2008).

During 2006, there were 220 presentations at Wollongong, Shellharbour & Shoalhaven Hospital Emergency Departments by children aged 0-14 years as a result of injury due to a foreign body. Of these presentations 129 were for children aged 0-4 years (59%), 60 were for children aged 5-9 years (27%) and 31 were aged 10-14 years (14%) (Duncombe & Mayne 2008).

CRUSHING

(Includes crushing injuries to all parts of the body)

For children aged 0 – 14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during the period 2000/01-2004/05 there was an average of:

20-21 hospital admissions as a result of a crushing injury *Source: Duncombe & Mayne 2008*

During the 5 year study period there were 104 hospital admissions for children aged 0-14 years from Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of crushing injury. Of these admissions, 73 were for male children (70%) and 31 were for female children (30%) (Duncombe & Mayne 2008).

This report does not contain further local analysis on the causes of crushing injuries. However, as finger jams are one cause of crushing injury and local service providers identified finger jams as a common cause of childhood Emergency Department presentations, national studies have been reviewed.

Australian studies have found:

- Car door hand/finger entrapment was responsible for approximately 25% of child finger entrapment injury cases and 40% of these were in the 2-4 year age group. (Cassell 2007).
- For car door injuries, children usually catch themselves when closing the car door rather than on the hinged side of the door. (Krahn et.al. 2007).
- Approximately one third of hand/finger entrapment Emergency Department presentations require hospital admission. (Krahn et.al. 2007).

SELF HARM

For children aged 0 – 14 years in the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's, **each year** during the period 2000/01-2004/05 there was an average of:

12 hospital admissions as a result of self harm *Source: Duncombe & Mayne 2008*

During the 5 year study period, there were 61 hospital admissions for children aged 0-14 years from the Wollongong, Shellharbour, Kiama and Shoalhaven LGA's as a result of self harm. Of these

children, the majority (85%) were females aged 10-14 years. Self harm was the 3rd top cause of injury hospitalisation for females aged 10-14 years.

These rates are similar to NSW rates (Duncombe & Mayne 2008).

Australian studies have found:

- Self poisoning accounts for approximately 84% of all self harm cases (all ages), usually by pharmaceuticals rather than other chemicals. (Berry et.al. 2007)

- The average length of stay in hospital for the 0-14 year age group is 2.4 days. (Berry et.al. 2007)

The number of presentations to Wollongong Hospital Emergency Department as a result of self harm can not be determined since mechanisms for self harm could include poisoning, cutting and piercing, burn/scalds or open wound.

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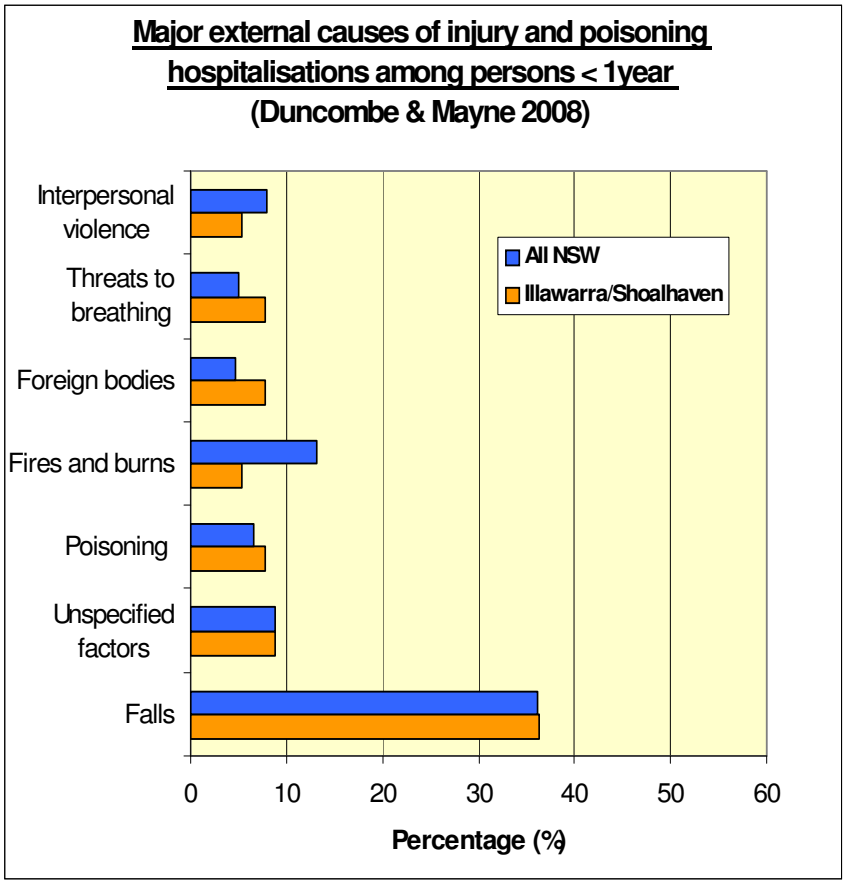
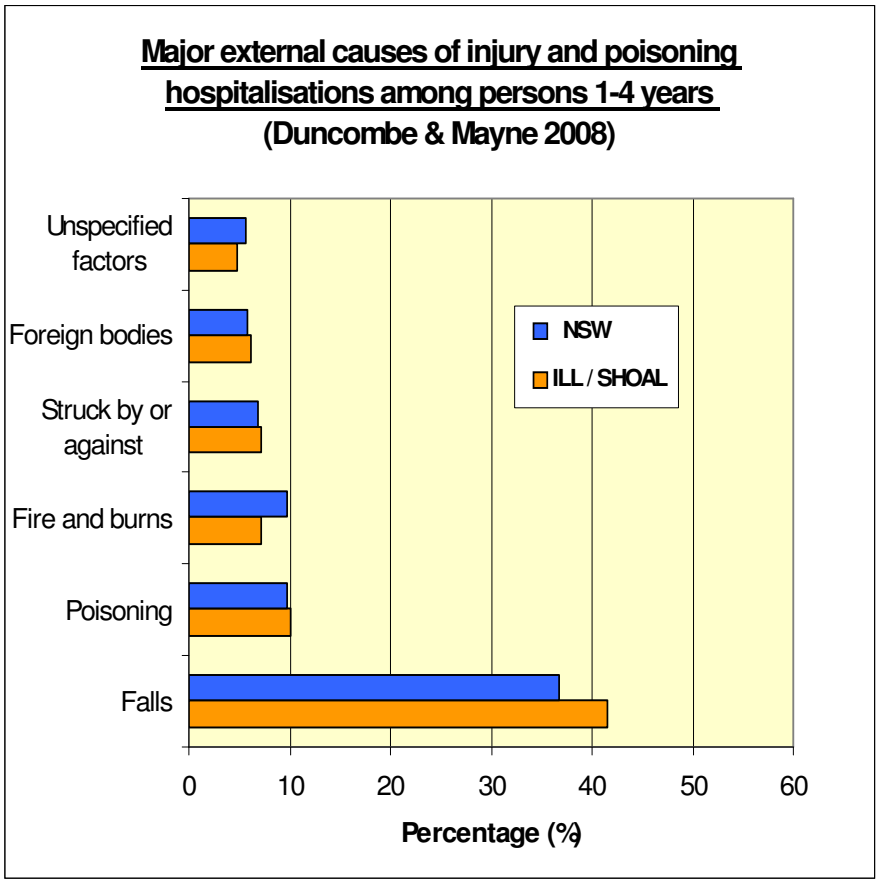
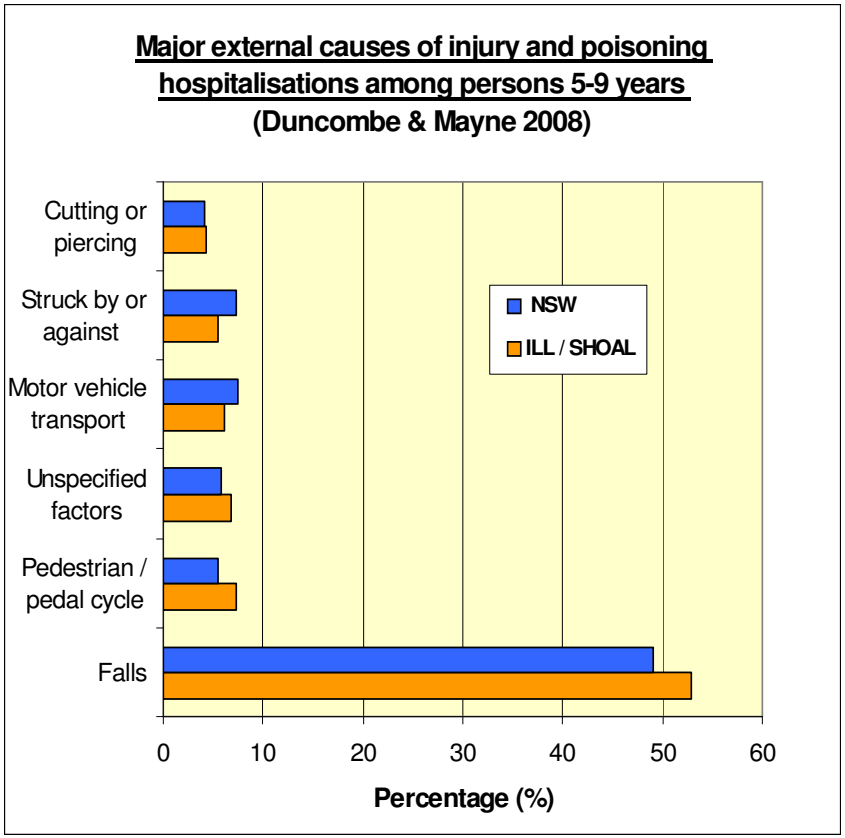
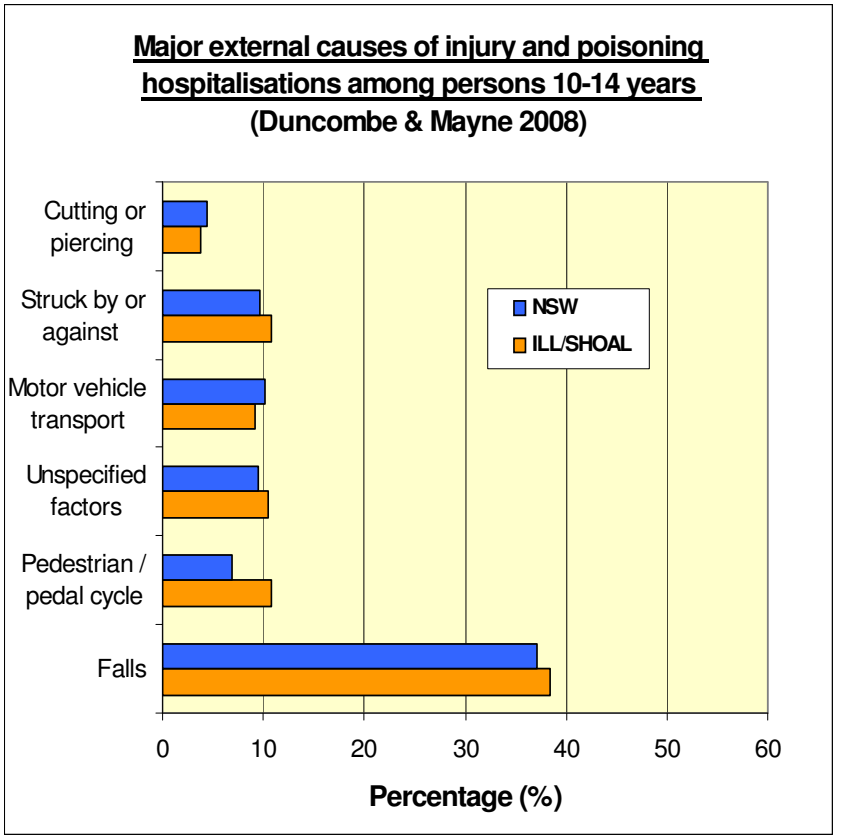
Appendix 1: Top five external causes of injury and poisoning hospitalisations among children aged 0-14 years (Duncombe & Mayne 2008)

Area	Sex	<1 year (n, %)	1-4 years (n, %)	5-9 years (n, %)	10-14 years (n, %)
Study Area	Male	Falls (41, 44.1)	Falls (313, 39.5)	Falls (528, 49.3)	Falls (664, 38.5)
		Unspecified factors (13, 13.4)	Poisoning (82, 10.3)	Pedestrian/pedal cycle (96, 9.0)	Pedestrian/pedal cycle (208, 12.1)
		Foreign bodies (7, 7.5)	Struck by or against (64, 8.1)	Motor vehicle transport (77, 7.2)	Struck by or against (205, 11.9)
		Interpersonal violence (5, 5.4)	Natural/environmental (46, 5.8)	Struck by or against (72, 6.7)	Unspecified factors (191, 11.9)
		Fire and burns (5, 5.4)	Foreign bodies (45, 5.7)	Unspecified factors (69, 6.4)	Motor vehicle transport (177, 10.3)
	Female	Falls (20, 26.7)	Falls (250, 44.5)	Falls (451, 57.7)	Falls (248, 38.5)
		Poisoning (10, 13.3)	Poisoning (54, 9.6)	Unspecified factors (57, 7.3)	Unspecified factors (55, 8.5)
		Threats to breathing (7, 9.3)	Fire and burns (53, 9.4)	Pedestrian/pedal cycle (39, 5.0)	Self harm (52, 8.1)
		Natural/ environmental (6, 8.0)	Foreign bodies (38, 6.8)	Motor vehicle transport (37, 4.7)	Other transport (51, 7.9)
		Foreign bodies (6, 8.0)	Struck by or against (33, 5.9)	Other transport (36, 4.6)	Pedestrian/pedal cycle (49, 7.6)
	Persons	Falls (61, 36.3)	Falls (563, 41.6)	Falls (979, 52.9)	Falls (912, 38.5)
		Unspecified factors (15, 8.9)	Poisoning (136, 10.1)	Pedestrian/pedal cycle (135, 7.3)	Pedestrian/pedal cycle (257, 10.8)
		Poisoning (13, 7.7)	Fire and burns (97, 7.2)	Unspecified factors (126, 6.8)	Struck by or against (250, 10.8)
		Foreign bodies (13, 7.7)	Struck by or against (97, 7.2)	Motor vehicle transport (114, 6.2)	Unspecified factors (246, 10.4)
		Threats to breathing (10, 7.7)	Foreign bodies (83, 6.1)	Struck by or against (102, 5.5)	Motor vehicle transport (216, 9.1)
All NSW	Male	Falls (827, 34.8)	Falls (6461, 36.1)	Falls (9103, 47.0)	Falls (10412, 38.7)
		Fire and burns (355, 14.9)	Fire and burns (1838, 10.3)	Struck by or against (1636, 8.5)	Motor vehicle accident (3000,11.1)
		Unspecified factors (218, 9.2)	Poisoning (1683, 9.4)	Motor vehicle accident (1609, 8.3)	Struck by or against (2892, 10.7)
		Interpersonal violence (184, 7.7)	Struck by or against (1308, 7.3)	Pedestrian/pedal cycle (1223, 6.3)	Unspecified factors (2634, 9.8)
		Poisoning (144, 6.1)	Unspecified factors (1034, 5.8)	Unspecified factors (1105, 5.7)	Pedestrian/pedal cycle (2391, 8.9)
	Female	Falls (736, 37.9)	Falls (4836, 37.6)	Falls (6793, 52.1)	Falls (3854, 33.4)
		Fire and burns (211, 109)	Poisoning (1346, 10.5)	Motor vehicle accident (837, 6.4)	Other transport (1165, 10.1)
		Unspecified factors (167, 8.6)	Fire and burns (1175, 9.1)	Unspecified factors (788, 6.0)	Unspecified factors (1017, 8.8)
		Interpersonal violence (156, 8.0)	Foreign bodies (855, 6.7)	Struck by or against (732, 5.6)	Self harm (925, 8.0)
		Poisoning (135, 7.0)	Struck by or against (819, 6.4)	Cutting or piercing (576, 4.4)	Motor vehicle transport (920, 8.0)
	Persons	Falls (1563, 36.2)	Falls (11297, 36.7)	Falls (15896, 49.0)	Falls (14266, 37.1)
		Fire and burns (566, 13.1)	Poisoning (3029, 9.8)	Motor vehicle accident (2446, 7.5)	Motor vehicle accident (3920, 10.2)
		Unspecified factors (385, 8.9)	Fire and burns (3013, 9.8)	Struck by or against (2368, 7.3)	Struck by or against (3701, 9.6)
		Interpersonal violence (340, 7.9)	Struck by or against (2127, 6.9)	Unspecified factors (1893, 5.8)	Unspecified factors (3651, 9.5)
		Poisoning (279, 6.5)	Unspecified factors (1728, 5.6)	Cutting or piercing (1595, 4.2)	Cutting or piercing (1678, 4.4)


Major external causes of injury and poisoning hospitalisations among persons < 1year
(Duncombe & Mayne 2008)
Interpersonal violence
Threats to breathing
Foreign bodies
Fires and burns
Poisoning
Unspecified factors
Falls
All NSW
Illawarra/Shoalhaven
0
10
20
30
40
50
60
Percentage (%)

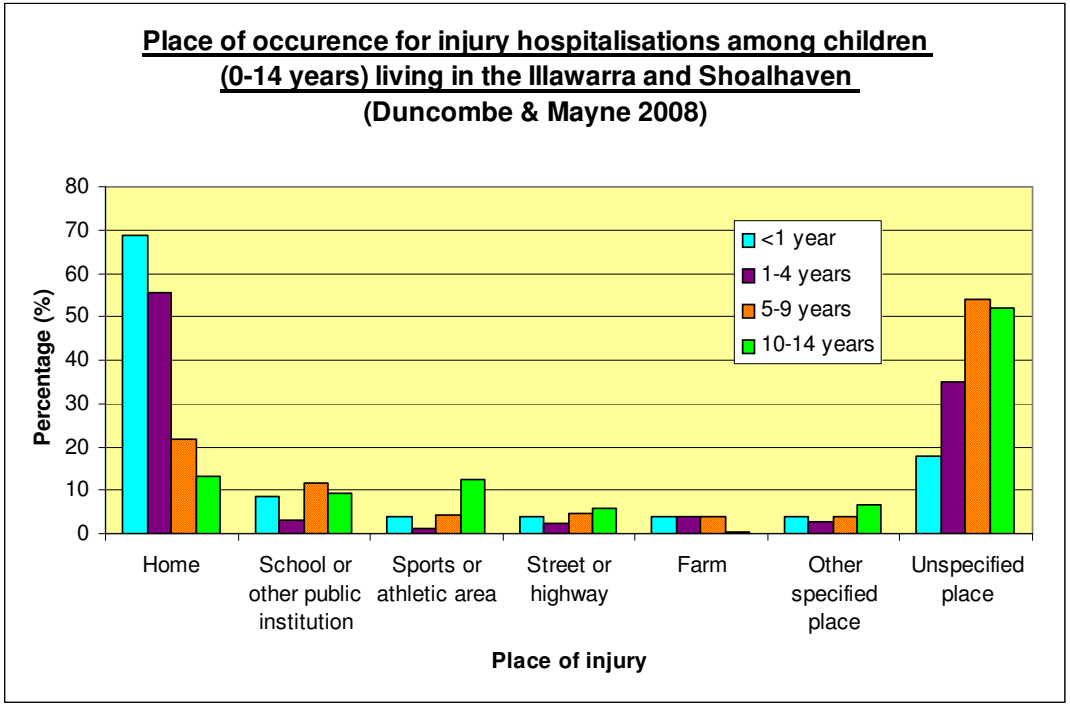

Major external causes of injury and poisoning hospitalisations among persons 1-4 years
(Duncombe & Mayne 2008)
Unspecified factors
Foreign bodies
Struck by or against
Fire and burns
Poisoning
Falls
NSW
ILL / SHOAL
0
10
20
30
40
50
60
Percentage (%)


Major external causes of injury and poisoning hospitalisations among persons 5-9 years
(Duncombe & Mayne 2008)
Cutting or piercing
Struck by or against
Motor vehicle transport
Unspecified factors
Pedestrian / pedal cycle
Falls
NSW
ILL / SHOAL
0
10
20
30
40
50
60
Percentage (%)


Major external causes of injury and poisoning hospitalisations among persons 10-14 years
(Duncombe & Mayne 2008)
Cutting or piercing
Struck by or against
Motor vehicle transport
Unspecified factors
Pedestrian / pedal cycle
Falls
NSW
ILL/SHOAL
0
10
20
30
40
50
60
Percentage (%)

Appendix 2: Place of occurrence for injury hospitalisations among children (0-14 years) living in Shellharbour, Shoalhaven, Kiama and Wollongong LGA's (Duncombe & Mayne 2008)

Place	<1 year N (%)	1-4 years N (%)	5-9 years N (%)	10-14 years N (%)	0-14 years N (%)
Home	113 (68.9)	741 (55.6)	394 (21.6)	309 (13.1)	**1557 (27.4)**
School or other public institution	14 (8.5)	41 (3.1)	210 (11.5)	224 (9.5)	**489 (8.6)**
Sports or athletic area	<5	14 (1.1)	74 (4.1)	292 (12.4)	**381 (6.7)**
Street or highway	<5	31 (2.3)	87 (4.8)	141 (6.0)	**262 (4.6)**
Farm	<5	<5	<5	8 (0.3)	**11 (0.2)**
Other specified place	<5	37 (2.8)	72 (3.9)	156 (6.6)	**269 (4.7)**
Unspecified place	29 (17.7)	468 (35.1)	986 (54.0)	1223 (52.0)	**27.6 (47.7)**



Appendix 3: Causes of hospitalised fall injury among children (0-14 years) living in Shellharbour, Shoalhaven, Kiama and Wollongong LGA's (Duncombe & Mayne 2008)

Place	<1 year N (%)	1-4 years N (%)	5-9 years N (%)	10-14 years N (%)	0-14 years N (%)
Slips, trips, stumbles and collisions	6 (9.8)	131 (23.3)	240 (24.5)	380 (41.6)	**757 (30.1)**
Other falls on the same level	<5	<5	112 (11.4)	206 (22.6)	**321 (12.8)**
Falls involving furniture	21 (34.4)	118 (20.1)	66 (6.7)	37 (4.1)	**242 (9.6)**
Falls involving playground equipment	<5	116 (20.1)	287 (29.3)	83 (9.1)	**486 (19.3)**
Other falls from one level to another	30 (49.2)	153 (27.2)	178 (18.2)	147 (16.1)	**508 (20.2)**
Unspecified falls	<5	42 (7.5)	96 (9.8)	59 (6.5)	**201 (8.0)**