



# Early years and unintentional injuries in Wales

*Prevalence, causes, costs and prevention*



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**Early years and unintentional injuries in Wales: Prevalence, causes, costs and prevention**  
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## Key messages

Injuries are common among Welsh children with some 133,000 attending emergency departments each year and just under 3,000 hospital admissions.

Mortality and morbidity rates for childhood injuries are higher in Wales than the rest of the UK.

Unintentional injuries in children aged 0-4 years attending or admitted to hospital in Wales each year incur a direct medical cost of over £6.5m. These are direct costs for acute care only and do not account for specialised treatment, on-going or long-term medical or social care.

Unintentional injuries are around twice as common in children from the most deprived communities.

The numbers attending emergency departments are increasing but the causes behind this are not well understood, in part due to poor coding of Emergency Department data. Improvements in the coding of emergency department data, with the introduction of the Joint Action on Monitoring Injuries in Europe (JAMIE) Minimum Data Set, should further our understanding of the scale and underlying causes and help with targeting and prevention of injuries.

There is considerable evidence for many short and long term adverse consequences of unintentional injury, including psychological and behavioural problems and poorer school performance for those worst injured.

There are a number of evidence based guideline produced by expert bodies on the prevention of childhood injuries that, if implemented in full, would reduce the incidence and consequence of injuries, including those in the home (parenting and safety equipment) and on the road (slower speeds, safe routes to school, etc).

In relation to injuries in the home, the location of most injuries in this age group, parenting interventions appear promising. Further research is needed into the development of low cost, but effective parenting interventions.

## 1. Introduction

In Wales, as in the rest of the UK, unintentional injuries are a major public health issue. They are a leading cause of fatal, serious and disabling injuries for children and are well documented as the leading cause of health inequity. Child deaths from house fires is the largest of all documented health inequalities with children from less affluent families being 37 times more likely to die in a house fire<sup>1</sup>.

When compared to other UK nations, Wales has the highest injury death rate for children<sup>2</sup>. Wales also compares relatively poorly with other European countries. In a 2012 European assessment of 31 countries, Wales was ranked 23<sup>rd</sup> in efforts to prevent unintentional injuries, with England rated as 8<sup>th</sup> and Scotland 11<sup>th</sup> <sup>3</sup>.

The impacts of unintentional injuries are far reaching and place a significant social and economic burden on children, their families, the wider population and the services in Wales. Welsh Government has recognised this significant impact and in *Our Healthy Future*, made the reduction of accidents and injuries one of their ten priorities for action. This is further supported through their early years and childcare plan, *Building a Brighter Future* (2013).

This report focuses specifically on unintentional injuries in children under the age of 5 years (the early years). Children within this age group are the most likely to attend an Emergency Department (ED) as the result of an unintentional injury. For all children under the age of 5 years attending ED for any reason, 43% attend as a result of an unintentional injury. These injuries most commonly occur in the home environment.

Whilst the majority of these incidents result in relatively short term consequences, there still remain a significant number of children who experience long-term impact or disability. Injuries can result in a variety of physical; cognitive; emotional and behavioural problems as well as poorer educational attainment<sup>4,5</sup>. This report will therefore focus on those incidents that most commonly cause fatal, serious and disabling injuries for children in their early years.

Throughout this report, the terms unintentional injuries and injuries are used rather than 'accidents'. This reflects the evidence that most injuries and their causes are both predictable and preventable.

The report identifies differences in gender, with males having a significantly higher risk of injury. There is also a significantly higher risk of injury for children living in the most deprived fifth of the population.

The focus of this report is unintentional injuries in young children under the age of 5 years. This report considers available information on the causes and burden of injuries and provides a range of information including; an overview of the issues, who is most at risk and which preventive measures are effective in the reduction of injuries.

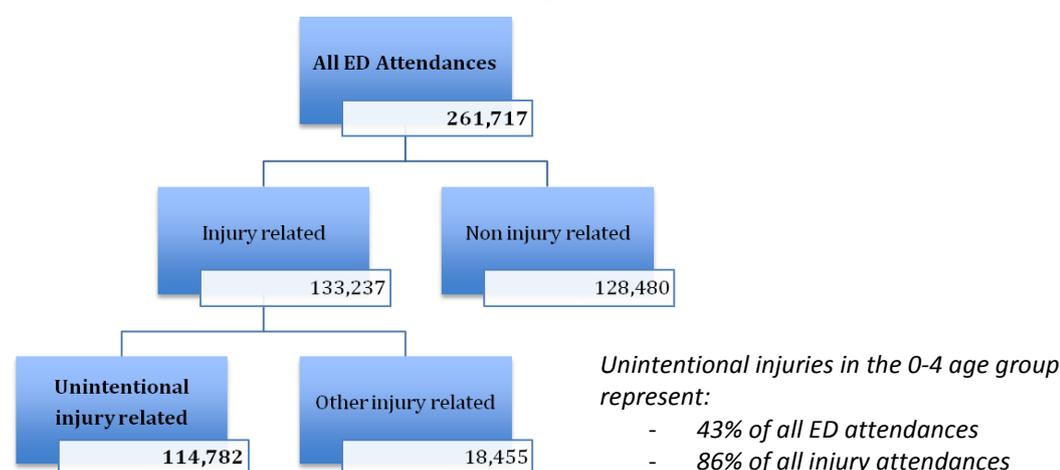
## 2. Prevalence of unintentional injuries

A number of data sources were used in the compilation of this report, including emergency department, hospital admission and mortality data for Wales and emergency department data from across Europe.

### 2.1 ED attendances and hospital admissions

Over a period of four years (2010-2013 inclusive), a total of 261,717 children aged 0-4 years attended ED in Wales (figure 1). Of these, 114,782 were coded as being caused by unintentional events.

**Figure 1.** Total number of ED attendances in children aged 0-4 years. Wales (2010-2013)



Source: (EDDS) Emergency Department Data Set

It is of note that over 28% of ED attendances in this age group are coded as not known or left blank (figure 2). It is therefore likely that unintentional injuries are higher in number than reported.

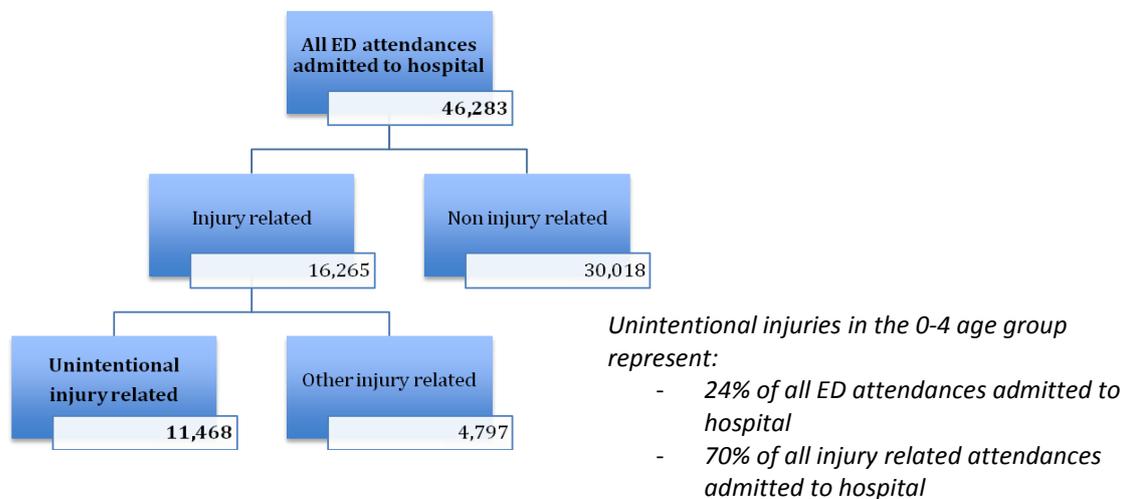
**Figure 2.** % of ED attendances, by coded categories in children aged 0-4 years. Wales (2010-2013)

Unintentional injury	43.86%
Assault	1.06%
Deliberate self harm	0.03%
Not known – injury	5.16%
Not given – injury	0.80%
Non-trauma	24.92%
Dead on arrival	0.00%
Not known	21.23%
Blank	2.93%

Source: (EDDS) Emergency Department Data Set

Whilst the number of ED attendances has increased over the last 4 years (2010-2013, Figure 4), this is most likely due to an increase in the number of ED departments submitting data, as it is only since April 2012 that all hospitals providing emergency care facilities in Wales have submitted data. Although a slight reduction in unintentional injury ED attendances and a slight increase in hospital admissions are observed between 2012-2013, these may be the result of changes in data coding, or an increase in the tendency to attend ED (attendance rates are increasing) rather than a real change in the number of unintentional injuries. Therefore, until ED data quality is improved, the following results should be interpreted with caution.

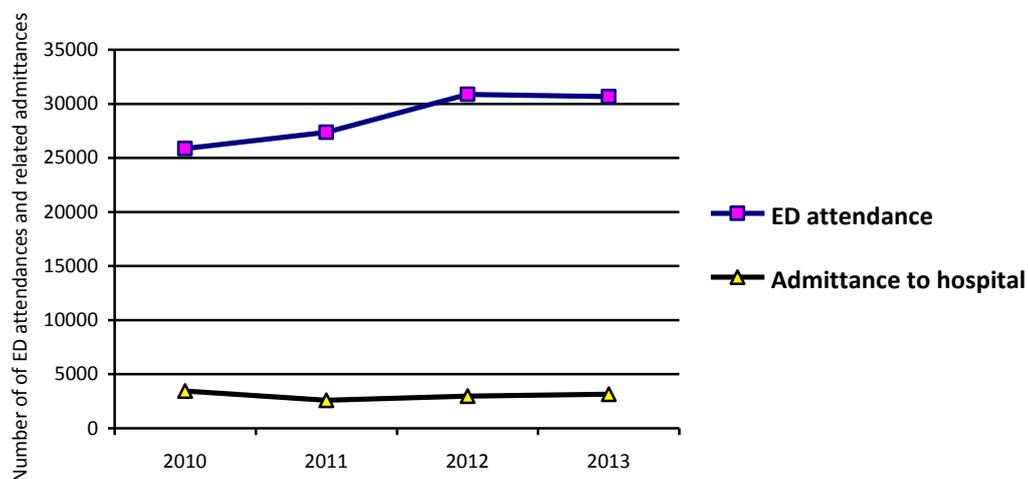
**Figure 3.** Total number of ED attendances admitted to hospital in children aged 0-4 years. Wales (2010-2013)



Source: Hospital attendance field in EDDS and PEDW

During this period, the average length of stay for hospital admissions as a result of unintentional injury was 2.12 days. The maximum length of stay was 119 days. The percentage of children who attended emergency departments and were subsequently admitted were, on average; 13.38% (2010), 9.50% (2011), 9.60% (2012) and 10.25% (2013).

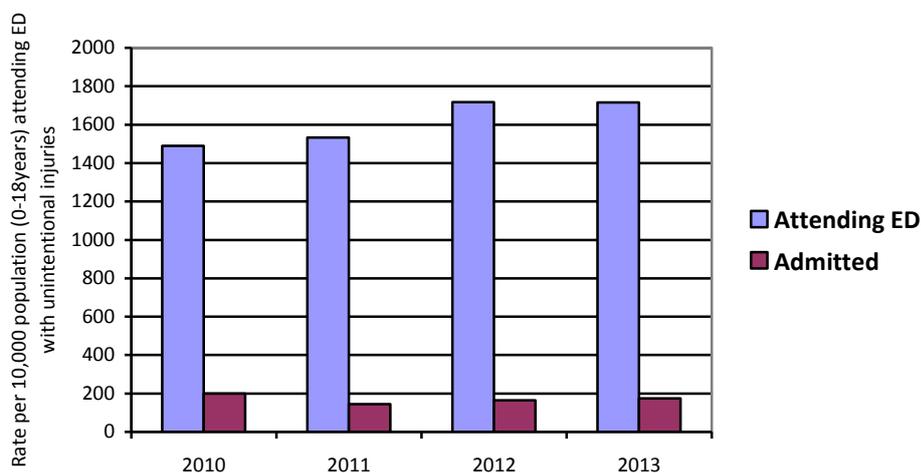
**Figure 4.** Number of ED attendances and related admissions for unintentional injury per year for children aged 0-4 years, Wales (2010-2013)



Source: (EDDS) Emergency Department Data Set and PEDW (Patient Episode Database Wales) 2010-2013

Figure 5 illustrates the rate per 10,000 population attending ED with unintentional injuries and subsequently admitted to hospital between 2010-2013.

**Figure 5.** Average rate of ED attendances for children (0-4 years) for unintentional injuries, rate per 10,000 population, Wales (2010-2013)



Source: CAPIC, using EDDS 2010-2013

## 2.2 Mortality

Unintentional injury deaths in this age group are relatively few in number, but for all children and young people (0-18 years), injury remains one of the leading causes of death. Figure 6 shows the number of unintentional deaths in children (0-4 years). The data are taken from StatsWales<sup>6</sup> and are for a 10 year period (2002-2011). Figures for 2012 onwards were not available at the time of writing this report.

**Figure 6.** Number of unintentional injury related deaths for children aged 0-4 years, by year (2002-2011.)

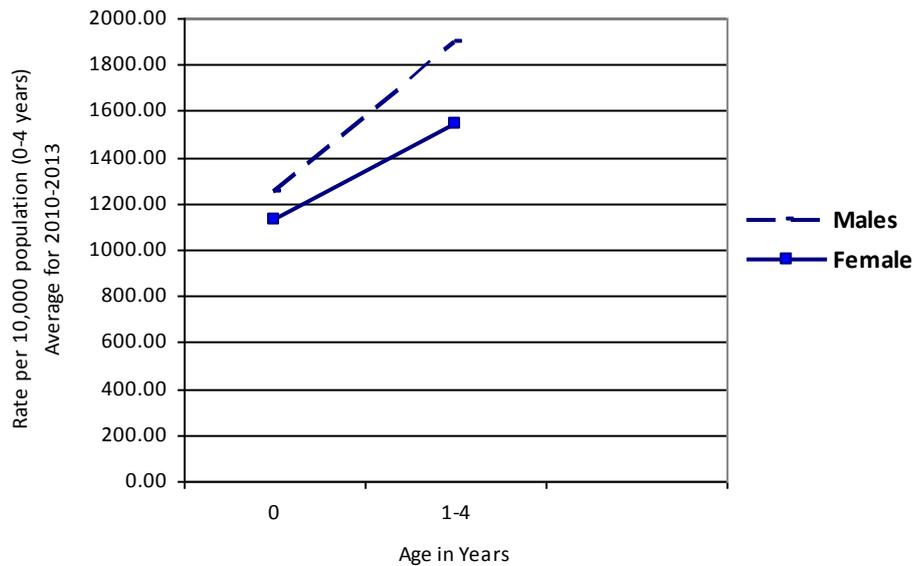
Age	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
0-1	1	2	1	1	0	2	1	3	1	0
1-4	4	2	4	5	2	3	3	4	2	0
<b>Total</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>0</b>

Source: ONS data

### 2.3 Gender

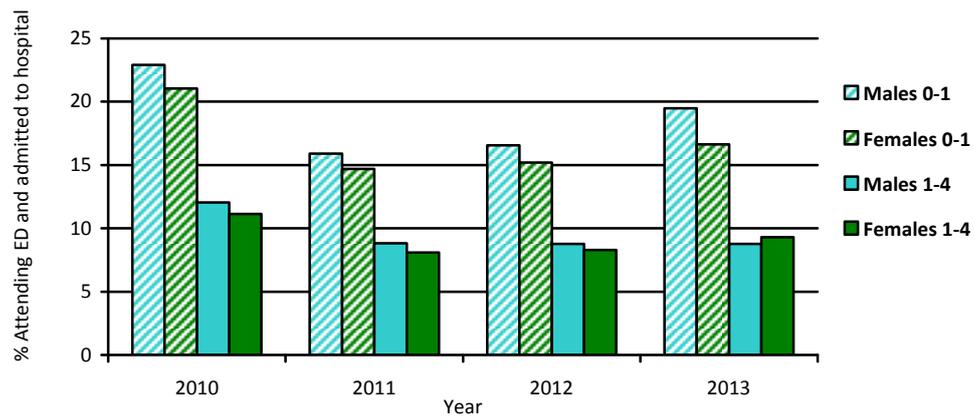
Figure 7 illustrates that males are more likely to attend ED than females. The gender difference is less evident in the very early years (0-1 year), but significantly increases with age. This finding is consistent with gender trends across European countries.

**Figure 7.** Unintentional injury attendance in ED, ages 0-4 years, Wales. Average rate per 10,000 population by gender and age group (average for 2010-2013).



Source: CAPIC, using EDDS

**Figure 8:** % of 0-1 years and 1-4 years attending ED and admitted to hospital by gender, Wales (2010-2013)



Source: CAPIC, using EDDS

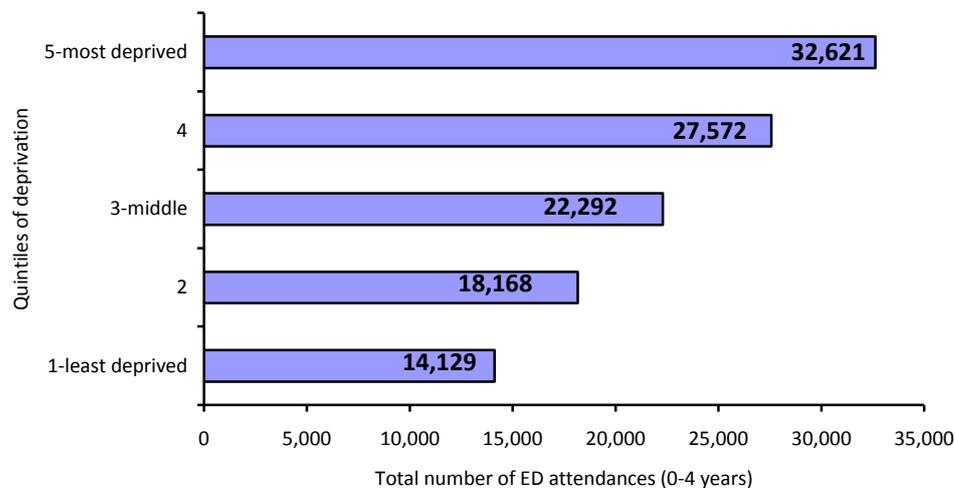
## 2.4 Deprivation

Correlations between deprivation and an increase in unintentional injuries have been well documented and the data gathered for this report, support this finding. For certain types of injuries, such as domestic fires, children from least affluent households are 37 times more likely to die from an unintentional injury<sup>1</sup>.

The World Health Organization (WHO) commented on the strong relationship between social class and injuries<sup>7</sup>. Risks factors identified include greater exposure to overcrowding, hazardous environments, lack of safety equipment, sole parenthood, unemployment, young maternal age and low maternal education. It has been shown that injury produces the greatest of all inequalities in health.

Figure 9 illustrates the difference in ED attendances for unintentional injuries across the quintiles of deprivation. These are based on dividing the lower super output areas in Wales (nearly 2000 small areas) into five equal groups based on ranking of the Wales Index of Multiple Deprivation.

**Figure 9.** Total number of unintentional injury ED attendances by quintile of deprivation in children aged 0-4 years in Wales between 2010-2013.



Source: EDDS, CAPIC

Children living in the most deprived and next most deprived quintiles (4 and 5) accounted for over 52% of all unintentional injury ED attendances, compared to children living in the least deprived and next least deprived quintiles (1 and 2), who accounted for 27% of injuries. Similar injury inequalities exist in all of the other UK nations.

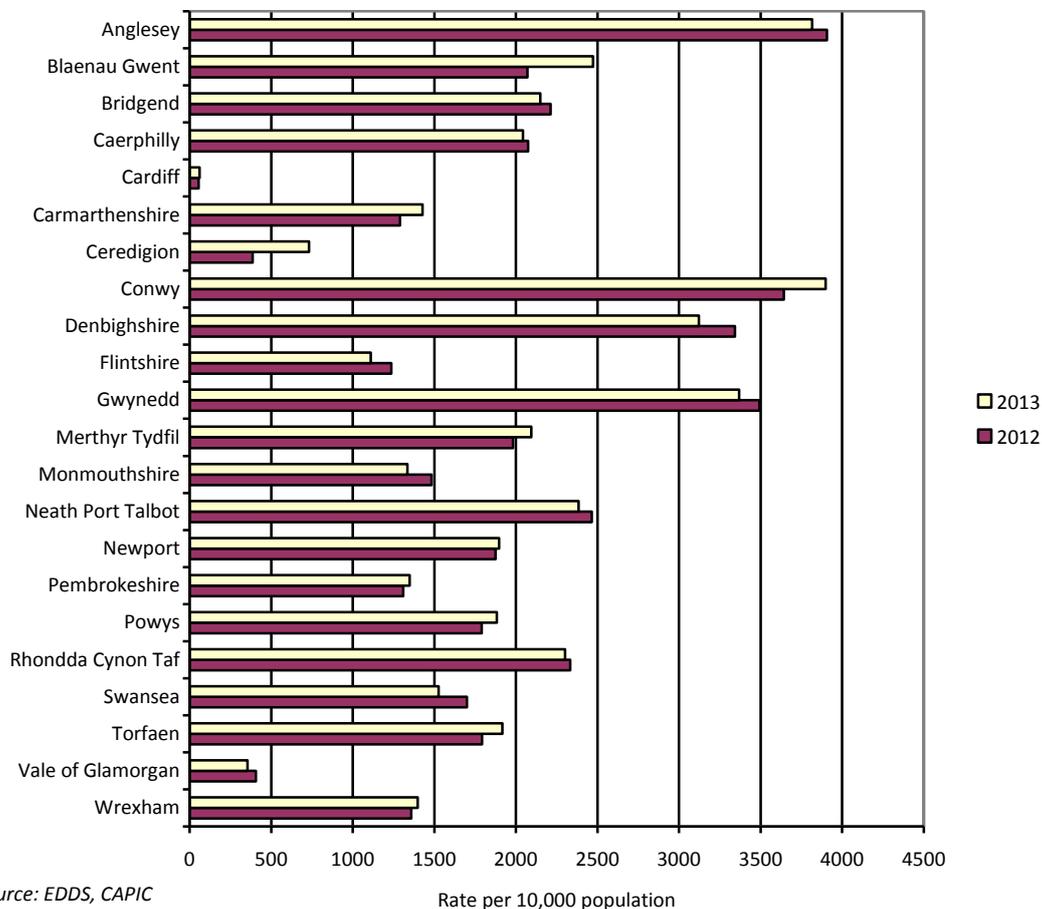
## 2.5 Local Authority areas

Figure 10 shows unintentional injury population rates per 10,000 for each Local Authority for 2012 and 2013, using EDDS (Emergency Department Dataset). EDDS should be a complete record of all emergency department activity in NHS Wales hospitals. Major (24-hour, consultant led) Emergency Departments began submitting information from April 2009 and all other hospitals providing emergency care facilities have been submitting data since April 2012. Whilst these data should represent 100% of the attendances, not all units were able to submit data from 1<sup>st</sup> April 2009. The earlier time periods may not be complete, therefore Figure 10 only includes data for 2012 and 2013.

It is important to note that variations between local authorities may be related to differing quality and volume of data collected in ED in these areas. It should also be noted that the low rates in Cardiff and Vale of Glamorgan are due to known data coding issues, whereby the majority of ED attendances have been coded as 'not known' and are therefore not included. We are working to address this issue.

Figure 10 is not necessarily a true representation of ED injury attendance rates in each local authority area. Data incompleteness remains a major issue in Wales. The following section (2.6) of this report summarises the current issues and briefly describes the ongoing work to improve data quality and completeness.

**Figure 10.** ED attendances by local authority area, rate per 10,000 population, 2012 and 2013



## **2.6 Current injury data issues**

Injury data in Wales remains a major issue, although the number of missing/unspecified values that are submitted to AWISS (All Wales Injury Surveillance System) through the nationally mandated Emergency Department Data Set (EDDS) have fallen year on year.

One of the main causes is the complexity of current data collection systems in operation in ED across Wales. The high number of data fields and numerous responses to choose from make data entry an extremely complicated and time consuming task for ED reception staff. This inevitably results in certain data fields being ignored or effectively made void by the entry of 'unknown' values.

In an attempt to improve ED data collection systems, AWISS and CAPIC staff, in partnership with other European organisations, have devised a new ED data collection system. This system is part of the EU funded project Joint Action on Monitoring Injuries in Europe (JAMIE). This simplified JAMIE Minimum Level Dataset (MDS) contains only the most important and valuable injury prevention variables and codes. It is anticipated that by simplifying the data collection process, data quality and completeness will improve, thus enabling more accurate enumerations of injuries in the home, at leisure, at work, on the road or as a result of falls, sports injuries, burns or scalds (reflecting the main focus of prevention strategies across the world).

These newly developed data collection screens have not yet been formally introduced into ED in Wales. However, they are included in the specification for a new all-Wales ED software system. This system, designed in Wales, is now being implemented across Europe.

AWISS and CAPIC staff have been working with ED staff from Morriston Hospital, Swansea on an enhanced injury surveillance project. This project aims to improve the collection of 'free text' records in ED. It is hoped that this project will enable algorithms to be developed which can populate missing values in data fields, ultimately improving the quality, completeness and utility of ED data.

Access to good quality and complete data is a particular issue for local injury prevention initiatives who need to identify local need and evaluate preventive measures. The Secure Anonymised Information Linkage (SAIL), in conjunction with AWISS offers the potential to support initiatives and their evaluation, whilst protecting the privacy of individuals<sup>8</sup>. For further information about the quality and availability of injury data in Wales, please contact Samantha Turner ( [s.turner@swansea.ac.uk](mailto:s.turner@swansea.ac.uk) ).

### 3. Mechanisms of unintentional injury

For children in the early years, their greatest risk of an unintentional injury occurs within the home, rather than on the road or in outdoor environments. The following section provides an overview of the injury mechanisms for children aged 0-4 years using available data.

Whilst this report endeavours to use Welsh data wherever possible, detailed data on the causes of unintentional injury are not complete in Wales. This is due to inadequacies in the current emergency department computer systems and poor data input, as referred to in the previous section, 2.6.

Figure 11 shows mechanisms of unintentional injuries for 0-4 year olds in Wales. However, it is important to note the significantly high percentage of 'unspecified' and 'blank' fields in this data. These fields account for over 54% of the data.

**Figure 11.** % of unintentional injury ED attendances by mechanism in children aged 0-4 years, Wales (2010-2013).

Mechanism of injury	%
Fall / slip / trip	21.54%
Blunt force/blow from person/animal/machine	2.88%
Crushing injury	0.51%
Cut with sharp object	0.42%
Inhaled foreign object	0.36%
Drowning/near drowning	0.00%
Asphyxiating (external mechanical threat to breathing)	0.03%
Poisoning	0.53%
Burning / scalding	1.33%
Other	16.63%
Non applicable – non injury *	0.28%
Unspecified	38.81%
Blank	16.47%

Source: EDDS: 2010-2013

\* These figures do represent unintentional injuries, but have been incorrectly coded.

As the data in figure 11 cannot reflect the full picture of the causes of unintentional injuries in Wales, this report draws on available data from other European countries.

The following information has been gathered from analyses of the JAMIE (Joint Action on Monitoring Injuries in Europe) dataset, made available by Swansea University staff who also act as the clearing house for European ED data.

JAMIE was a European joint action programme based on improving Europe's Injury Data Base (IDB) emergency department surveillance system for injury prevention. Some 14 countries contributed data (Austria, Cyprus, Czech Republic, Germany, Denmark, Greece, Italy, Latvia, Malta, Netherlands, Romania, Sweden, Slovenia, Turkey).

Further information on JAMIE can be found at:

[http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwAssets/D5FC1077E7DC33FCC1257C120038002B/\\$file/Flyer%20JAMIE\\_October%202013.pdf](http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwAssets/D5FC1077E7DC33FCC1257C120038002B/$file/Flyer%20JAMIE_October%202013.pdf)

All JAMIE data are taken from the EU Injury Database (IDB), using the Full Data Set (FDS) dictionary; *European Association for Injury Prevention (Eurosafe) (2013). IDN-JAMIE Full Data Set (IDB-FDS) Data Dictionary, Version 1.3. November 2013, Amsterdam: Eurosafe.* Further information is available at: [http://ec.europa.eu/health/data\\_collection/databases/idb/](http://ec.europa.eu/health/data_collection/databases/idb/)

Figures 12 and 13 show that falls account for the majority of injuries in the early years age group (64% aged 0-1 years, 52% aged 1-4 years).

**Figure 12:** Top 10 mechanisms of unintentional injury for children aged 0-1 years attending ED in 14 European countries (2010-2012)

Mechanism of unintentional injury (0-1)	% of all unintentional injuries	% of all injuries
Falling from height (less than 1 metre)	24.37%	23.93%
Falling from unspecified height	19.09%	18.74%
Falling from height (more than 1 metre)	6.41%	6.30%
Contact with moving object	4.55%	4.47%
Falling/stumbling by tripping on same level	4.10%	4.02%
Contact with hot liquid	4.06%	3.99%
Other falling on same level	4.05%	3.97%
Unspecified falling	3.71%	3.64%
Contact with static object	3.16%	3.10%
Falling on stairs/steps	2.61%	2.56%

Source: JAMIE (IDB-FDS) 2010-2012

**Figure 13:** Top 10 mechanisms of unintentional injury for children aged 1-4 years attending ED in 14 European (2010-2012)

<b>Mechanism of unintentional injury (1-4)</b>	<b>% of all unintentional injuries</b>	<b>% of all injuries</b>
Falling from unspecified height	12.25%	12.12%
Falling from a height (less than 1 metre)	9.91%	9.80%
Falling on same level	9.56%	9.46%
Other falling on same level	7.48%	7.40%
Contact with moving object	7.25%	7.17%
Unspecified falling	5.96%	5.90%
Pinching/crushing between objects	5.36%	5.31%
Falling from a height (1 metre or more)	5.21%	5.16%
Contact with static object	4.90%	4.85%
Falling on stairs/steps	2.45%	2.43%

Source: JAMIE (IDB-FDS) 2010-2012

Welsh Government has mandated the collection of the JAMIE Minimum Data Set through emergency departments in Wales. This is included in the specification of the new emergency department computer system being introduced in 2015. Whilst it does not include the level of detail in the Full Data Set, it will be a tremendous asset in helping to understand the causes and locations of injuries and in the targeting and evaluation of preventive efforts.

## 4. Impact of unintentional injuries

The impacts of unintentional injuries are far reaching and place a significant social and economic burden on children, their families, the wider population and the services in Wales. The impacts vary greatly, depending on factors such as the age of the child, severity, extent and location of injuries.

Injuries can result in a wide variety of adverse outcomes, including reduced physical abilities, an increase in the likelihood of being bullied or socially excluded<sup>9</sup>, and an adverse effect of educational attainment<sup>4</sup>. A recent report on head injuries in children, *Heads Up* (McFarlane et al 2015), quoted studies that show head injuries are more common than was previously thought and can result in numerous physical, cognitive, emotional and behavioural problems. The report also cited a particular Glasgow based study where it was shown that one year after hospital discharge some 47% patients had some form of restriction to their lifestyle<sup>10</sup>.

This burden is not only borne by the children themselves, but also their parents and wider family. Emotional and psychological consequences are often overlooked. Kassam-Adams et al identified that in the first month after their child's injury, 12 % of parents had acute stress disorder (ASD) and a further 25% had partial ASD. Their study also found that 6 months after the injury 15% of parents still suffered from full or partial post traumatic stress disorder (PTSD)<sup>11</sup>.

Injuries can happen to all children and overall around one in six young Welsh children attend an ED with an injury every year. However as identified earlier in this report, those living in areas of deprivation and disadvantage have a significantly increased risk of injury with rates about twice as high. For these children and their families, the impact is likely to be greater. For example, it is well documented that children growing up in disadvantage are more likely to experience lower levels of educational attainment<sup>12</sup> and this may be further compounded if they suffer a head injury. Gabbe et al concluded that children who experience a head injury were only half as likely to achieve the expected level at Key Stage 1 assessment around the age of seven<sup>4</sup>.

The financial impact of injuries will also weigh more heavily on those living in disadvantaged communities. The financial burden of travelling to hospital for visits, additional treatments and taking time off work to care for an injured child, even in the short-term, can be very considerable for families living on an already limited budget.

## 5. Financial burden of unintentional injuries

As well as the emotional and physical impact of injuries to children and their families, there is an enormous financial burden on health and social care services and society as a whole.

Direct medical costs of care borne by the NHS are cited from a Department of Health report (England, 2012/13) as an average of £114 per patient attending ED and £1,161 per in-patient admission<sup>13</sup>. Based on the average number of unintentional injuries (age 0-4 years) attending or admitted to hospital in Wales each year (2010-2013), this has a direct medical cost of over £3.2m for ED attendances and around £3.3m for hospital admissions, a total of over £6.5m for children aged 0-4 years alone. These are direct costs for acute care only and do not account for specialised treatment, on-going or long-term medical or social care.

**Figure 14.** Average number of unintentional injuries in children (aged 0-4 years) attending ED and admitted to hospital in Wales each year and associated direct medical costs. Average number based on data over a 4 year period (2010-2013).

<b>Average number of unintentional injuries in children aged 0-4 yrs in Wales per annum</b>		<b>Average direct medical costs</b>
Unintentional injuries attending ED	28,695	<b>£3,271,230</b>
Unintentional injuries admitted to hospital	2,867	<b>£3,328,587</b>
<b>Total direct medical cost of unintentional injuries, aged 0-4 years</b>		<b>£6,599,817</b>

For a greater understanding of the longer term financial burden, figures 15 and 16 give examples of specific injury types and their longer term costs. The examples given are for severe traumatic brain injury and scalds from hot drinks.

### 5.1 Costs associated with severe traumatic brain injury

The Meningitis Research Foundation has detailed the lifelong medical, educational and social costs involved in caring for and supporting a three year old child experiencing severe neurological damage. The Child Accident Prevention Trust, on their website *Making the link*, show these costs in detail and state that although the brain injury detailed is caused by meningitis rather than trauma, the treatment, rehabilitation and long-term needs are comparable to those required by a severe traumatic brain injury<sup>14</sup>.

**Figure 15.** An indication of the lifelong medical, educational and social costs for one child who suffers a severe traumatic brain injury at age three

Category of costs	Description	Approx. lifelong cost
Medical	Acute care (including PICU and rehabilitation), outpatient appointments, community health services, general health problems, special equipment to aid mobility, communication and day-to-day activities	£268,000
Educational	Additional cost of attending special education needs (SEN) schools, transport to and from schools, SEN statements	£238,000
Direct social costs	Social care assessments, direct payments for home care workers, grants for adaptations, residential respite breaks, residential care from the age of 40	£1.19m
Missed employment	Missed employment opportunities for the child and the parent who gives up work to be a full-time carer	£1.73m
Cost to government in lost tax revenue	Lost income tax revenue for parent and child	£346,000
Cost to government in benefits	Transfer payments including Disability Living Allowance, Carers' Allowance and child tax credits	£1.12m
<b>Total cost of lifelong care and support</b>		<b>£4.89m</b>

Source: Making the link website, Child Accident Prevention Trust and Counting the cost: a severe case of bacterial meningitis, The Meningitis Research Foundation 2011

## 5.2 Costs associated with bath water scald injuries

The following medical costs associated with bath water scald injuries have been calculated by the British Burns Association. Figure 16 shows medical costs only and does not account for social costs, missed employment or lost revenue.

**Figure 16.** An indication of medical costs associated with bath water scald injuries.

Category of scald	Description	Average cost
Category 'A'	Serious scald injury requiring treatment in a specialist burns unit	£41,134
Category 'B'	Very serious scald injury (3/4 of Category 'B' scalds require intensive care nursing, with an average stay of 40 days)	£172,821

Source: British Burns Association

## 6. Prevention of unintentional injuries

The prevention of unintentional injuries requires a sustained and systematic approach both nationally and locally. The National Institute for Health and Clinical Excellence (NICE), the World Health Organization (WHO) and the European Child Safety Alliance (ECSA) have each identified a number of measures that must be in place to effectively reduce injuries. They recognise that different sectors have a role to play, but that each should be committed and fully supportive of the other. A number of the recommendations shown in this section are not specifically aimed at the early years age group, but rather the prevention of injuries for all children and young people (0-18 years). However, they still remain relevant for injury prevention in children aged 0-4 years.

The first section of this report identifies necessary actions to support injury prevention at a national level. These are recommendations made by WHO, ECSA and the *Burden of Injury in Wales Report*, Public Health Wales and CAPIC (2012). Section 6.2 provides detailed information of the recommendations made by NICE in their public health guidance for unintentional injury prevention (PH 29, 30).

Subsequent sections of this report, 7.1-7.4, detail preventive measures for specific causes of injuries. These causes have been identified as priorities for action by WHO, ECSA and NICE and are fully supported by injury prevention bodies across the UK and further afield.

### 6.1 National injury prevention

The World Health Organization Europe identified the need for countries to implement a sustained and systematic approach to unintentional injury prevention. They have identified specific national policies, infrastructures and actions that should be in place in order to effectively reduce the number of injuries in children and young people<sup>15</sup>.

Table 1 summarises these actions and the rationale for their implementation.

**Table 1:** Recommended injury prevention actions, World Health Organization Europe 2008

Action	Rationale
<b>Provide leadership in integrating the prevention of injury into a comprehensive approach to their health and development</b>	A comprehensive strategy for the health and development of children and adolescents needs to include injury because it is the leading cause of death and disability among children
<b>Develop and implement a policy and plan for preventing injury among children that involves other sectors</b>	Intersectoral activities are essential for successfully preventing injury. Efforts should include sectors of government, nongovernmental organizations, private sector, mass media and the public. A comprehensive policy framework would overcome the fragmented approach to preventing injuries
<b>Implement evidence-based action to prevent and control injuries among children</b>	Key approaches need to include legislation, regulation and enforcement, modifying products and the environment, education and developing skills and emergency health care
<b>Strengthen health systems to address injuries among children</b>	Health system responses need to incorporate both primary prevention and the provision of high-quality trauma care
<b>Build capacity and exchange best practice</b>	Curricula that focus on preventing injury need to be integrated into health professional curricula. Exchanging knowledge by developing partnerships and networks strengthens country capacity
<b>Enhance the quality and quantity of data for preventing injury among children</b>	Good data on mortality, morbidity, exposure, outcomes and costs are needed to provide a foundation on which to develop and monitor policies that promote child safety
<b>Define priorities for and support research and evaluation on the causes, effects, costs and prevention of injury</b>	A research agenda for injuries among children needs to be developed at European and national levels
<b>Raise awareness and target investment for preventing injury among children</b>	Raising awareness about the ability to prevent injury among children is of paramount importance. Health systems need to advocate for safer broad government policy on ensuring safer physical environments
<b>Address inequity in injury among children</b>	The health sector has a key role to play in advocating for just action and can do this by promoting equity in health in all policies and by highlighting injuries as a consequence of social policies. The health sector needs to incorporate the prevention of injury in its provision of universal primary health care and support of community based action

Source: *World report on child injury prevention. World Health Organization. Geneva 2008.*

The actions recommended by WHO in the above table, are also reiterated by the European Child Safety Alliance (ECSA) in their *Child Safety Report Card for Wales 2012*<sup>3</sup>. These recommended actions identify national policy, practice and legislation that would be effective in supporting injury prevention in Wales for children aged 0-4 years (table 2).

**Table 2:** Recommended injury prevention actions for Wales, European Child Safety Alliance 2012

Action	Commentary
<b>Further legislative powers</b>	Welsh Government could enhance child safety by seeking further legislative powers to allow amendment/changes of legislation [UK]
<b>Identification of a ministerial lead for child safety</b>	Identification of a ministerial lead for child safety in Wales would provide a focal point for ministerial departments to enable a coordinated approach across government
<b>Increasing burn/scald prevention</b>	Enhancing the national law requiring a scald preventing maximum temperature for hot water (max. 50°C) in new buildings and refurbishments so that equal protection is offered to children living in existing domestic settings and by adopting and enforcing national regulations that require smoke detectors in all private dwellings (new and existing)
<b>Increasing fall prevention</b>	Enhancing current laws and building regulations related to preventing children from falling out of windows or from balconies or stairs in buildings with more than one storey and by enhancing enforcement of national standards on playground equipment and landing surfaces
<b>Choking/strangulation prevention</b>	Introducing legislation enabling restriction or banning of unsafe products and legislating increased safety through product ban or redesign
<b>Increasing practitioner and public awareness</b>	Increase awareness of child injury risks in the home and effective prevention solutions
<b>Continuing to improve home injury prevention programmes</b>	Improve home injury prevention programmes through practitioner education and effective home safety equipment schemes

Source: *European Child Safety Report Card for Wales 2012, European Child Safety Alliance and Eurosafe*

The final recommendations in this section are taken from the *Burden of Injury in Wales* report, published in 2012 by Public Health Wales NHS Trust, Swansea University and CAPIC. This document comprehensively measured the burden of injuries on the Welsh population and made three major recommendations. These recommendations and corresponding commentary are shown in table 3, page 21.

**Table 3:** Recommendations from the Burden of Injury in Wales 2012 report, Public Health Wales NHS Trust (PHW), Swansea University and CAPIC

Action	Commentary [edited for the purposes of this report]
<b>ED injury data collection needs to be improved. This will require action from policy makers, health board executives and managers, ED staff and the general public</b>	EDs are uniquely placed to support injury prevention and reduce future demand on their own services. Data quality and coding remains poor. Wales has been a key participant in the development of a new European Minimum Data Set and part of the JAMIE project. It is important to see this continue with the implementation of the JAMIE dataset in Wales. To collect this data will require support and action at all levels.
<b>Injury prevention in Wales needs to be more collaborative and cross-sectoral so that there are greater benefits and the burden of injuries on health is reduced more quickly and more effectively</b>	The collection of information on injuries acts as a stimulus for prevention. There are many Welsh Government strategies and programmes which relate to injury prevention, however practitioners in local authorities, health boards and a variety of other agencies and charities struggle to find accurate information on where best to target interventions and to evaluate their effectiveness. Improving the effectiveness of injury prevention is key to reducing the enormous impact of injuries.  A central, ideally Ministerial, point of contact and therefore accountability is needed. In the absence of a Ministerial or Welsh Government role, a suitable appointment is needed to facilitate collaboration and coordination of effort to reduce the burden of injury.
<b>Injury prevention should be recognised as a key public health priority, with greater commitment and capacity to support the implementation of evidence-based injury prevention and control initiatives</b>	The scale of the burden of injuries supports the need for urgent action. Injury prevention needs to be prioritised in a public health context by Welsh Government, Public Health Wales and Health Boards. More indirectly, local authorities and others with an interest in this area need to take action. Focussed discussion about these data, their meaning, the evidence base and planning to implement this is now needed. Action is the key to reducing this burden and further strategy development at local levels is not recommended. To support this, greater effort is now needed, particularly by Welsh Government, to implement the evidence based interventions highlighted by the Child Safety Report Card Wales

Source: *The Burden of Injury in Wales 2012 report. Public Health Wales NHS Trust, Swansea University and CAPIC*

## 6.2 NICE public health guidance

In 2010, NICE produced public health guidance 29, 30 and 31<sup>16, 17</sup>. NICE public health (PH) guidance makes recommendations on the promotion of good health and the prevention of ill health.

This next section looks firstly at the recommendations made in PH29 (table 4), followed by those made within PH30 (table 5). PH29 primarily relates to actions that should be taken by agencies and organisations at both a national and local level and PH30 makes specific, more detailed recommendations regarding implementation of actions.

**Table 4:** Overview of national recommendations to support local action, NICE guidance (PH29)

<b>Recommendation</b>	<b>Who should take action</b>	<b>What action should they take</b>
<b>Incorporating unintentional injury prevention within local and national plans and strategies for children and young people’s health and wellbeing</b> (Recommendation 1)	<ul style="list-style-type: none"> <li>i) Government departments with a responsibility for policy and plans relating to children and young people</li> <li>ii) Local authority children’s services and partnerships</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure local and national plans/strategies include a commitment to preventing UIs. These should aim to prevent injuries among the most vulnerable groups to reduce inequalities in health</li> <li>- Plans/strategies should include the following:                             <ul style="list-style-type: none"> <li>a) Support for cross-departmental and cross-agency working to achieve national and local commitments</li> <li>b) Support for local partnerships, including the voluntary sector and a requirement that they work together</li> <li>c) Information about how partners will collaborate</li> <li>d) Support for data collection and monitoring the outcomes of injury prevention</li> <li>e) Support for the development of workforce capacity, including provision of suitably trained staff and ongoing multi-agency training</li> </ul> </li> <li>- Local authorities should report progress to strategic Partnerships</li> </ul>
<b>Coordinating unintentional injury prevention activities</b> (Recommendation 2)	<ul style="list-style-type: none"> <li>i) Local authority children’s services and partnerships</li> <li>ii) Local highways authorities and their partnerships</li> <li>iii) Other services that may have a remit for injury prevention such as education, environmental health, trading standards</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure there is an injury prevention coordinator in each local authority area, this will help to achieve the local commitments. The coordinator could be someone within the local authority, an NHS organisation or another local partner or the role could be funded by several local partners</li> <li>- Ensure the coordinator:                             <ul style="list-style-type: none"> <li>a) works with local partnerships</li> <li>b) develops a 2-3 year strategy with partners that is integrated into all relevant plans/strategies</li> <li>c) networks at regional and national level with other coordinators</li> <li>d) raises local awareness and acts as a local source of information and advice</li> <li>e) monitors progress made on local commitments and report outcomes to the director of children’s services</li> </ul> </li> <li>- Ensure the coordinator understands the range of preventive measures and is trained and skilled</li> </ul>
<b>Identifying and responding to attendances at ED and minor injuries units (MIU)</b> (Recommendation 3)	<ul style="list-style-type: none"> <li>i) Staff in ED and MIU</li> <li>ii) Local coordinators, safeguarding, health visiting, out of hours health services</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure staff such as health visitors, school nurses and GPs are aware of families which might benefit from injury prevention advice and a home safety assessment</li> <li>- Use local protocols to alert them when a child repeatedly needs attention for UI</li> </ul>
<b>Developing professional standards for injury prevention</b> (Recommendation 4)	<ul style="list-style-type: none"> <li>i) Faculty of Public Health</li> <li>ii) Children’s workforce development</li> <li>iii) Royal colleges, universities and professional bodies</li> <li>iv) Health professions and sector skills councils</li> <li>v) Voluntary sector orgs</li> </ul>	<ul style="list-style-type: none"> <li>- Develop professional standards for unintentional injury prevention, taking into account the different roles and responsibilities of professionals working within and outside the NHS and the views of practitioners</li> <li>- Ensure all relevant organisations incorporate these standards into their professional skills development programmes</li> </ul>

**Table 4 (continued):** Overview of national recommendations to support local action, NICE guidance (PH29)

Recommendation	Who should take action	What action should they take
<b>Funding the development of injury prevention standards and curricula</b> (Recommendation 5)	<ul style="list-style-type: none"> <li>i) Department of Health</li> <li>ii) Department of Education</li> </ul>	<ul style="list-style-type: none"> <li>- Encourage funding for educational establishment and organisations to help them develop standards for competencies in, and courses and modules on unintentional injury prevention</li> <li>- The establishments and organisations involved could include                             <ul style="list-style-type: none"> <li>a) The Faculty of Public Health, Children’s Workforce Development Council, voluntary sector organisations, universities, royal colleges.</li> </ul> </li> </ul>
<b>Providing the wider childcare workforce with access to injury prevention training</b> (Recommendation 6)	<ul style="list-style-type: none"> <li>i) Local authority children’s services and partnerships</li> <li>ii) Injury prevention coordinators</li> <li>iii) Commissioners, managers and practitioners working in health, social care and education services</li> </ul>	<ul style="list-style-type: none"> <li>- Provide access to appropriate education and training in injury prevention for those working with children, young people and their families</li> <li>- Ensure the education and training:                             <ul style="list-style-type: none"> <li>a) supports the wider child health remit</li> <li>b) helps develop an understanding of the importance of preventing injuries and the preventive measures available</li> <li>c) Ensure specialist education is monitored and evaluated</li> </ul> </li> </ul>
<b>Establishing a national injuries surveillance resource</b> (Recommendation 7)	<ul style="list-style-type: none"> <li>i) Association of Public Health Observatories</li> <li>ii) College of Emergency Medicine</li> <li>iii) Government departments including Health, Public Health Service, Education, Transport, Communities and Local Government</li> <li>iv) Office for National Statistics</li> <li>v) The Information Centres for Health and Social Care</li> </ul>	<ul style="list-style-type: none"> <li>- Establish a national injuries surveillance resource covering all populations and injuries, helping to monitor injury risks and preventive measures</li> <li>- The information could be provided by a network of agencies, but there should be one single point of contact or a coordinating agency</li> <li>- Ensure the resource includes local, regional and national injury datasets and data sources. It should include data gathered from ED, walk-in centres, MIU, RIDDOR, Hospital Episode Statistics (HES), coroners reports, ambulance call-outs, Fire and Rescue services, road casualty statistics and the child death review process</li> <li>- The coordinating agency should                             <ul style="list-style-type: none"> <li>a) ensure datasets can be integrated to provide accurate, anonymised statistics on local injuries and their causes</li> <li>b) collate, manage and analyse data, using experienced injury researchers to advise</li> <li>c) Provide a secure and reliable information system for recording and interrogating data</li> <li>d) Monitor the quality of data submissions and datasets and report findings</li> <li>e) Provide government departments with advice on developing standardised injury data collection and coding across datasets</li> <li>f) Disseminate information locally and regionally and provide a readily available, searchable database for authorised users</li> <li>g) Support the Europeans Commission’s work on injury surveillance</li> <li>h) Promote the development of an enhanced national ED dataset, including additional data on events and activities leading to an injury</li> </ul> </li> </ul>

**Table 4 (continued):** Overview of national recommendations to support local action, NICE guidance (PH29)

Recommendation	Who should take action	What action should they take
<b>Gathering high quality injury data from ED</b> (Recommendation 8)	i) Commissioners of health services	<ul style="list-style-type: none"> <li>- Ensure hospital trusts are made aware of the data collection requirements for the universal and mandatory ED dataset</li> <li>- Ensure commissioning contracts for ED and MIU stipulate that all required data are collected</li> <li>- Ensure contracts include financial penalties for failure to meet the requirements of the ED dataset</li> </ul>
<b>Installation and maintenance of permanent safety equipment in social and rented dwellings</b> (Recommendation 9)	i) Local authorities	<ul style="list-style-type: none"> <li>- Consider developing local agreements with housing associations and landlords to ensure permanent home safety equipment is installed and maintained in all social and rented dwellings, prioritising accommodation where children under the age of 5 years are living. Permanent safety equipment includes:               <ul style="list-style-type: none"> <li>a) hard-wired or 10 smoke alarms</li> <li>b) thermostatic mixer valves for baths</li> <li>c) window restrictors</li> <li>d) carbon monoxide alarms</li> </ul> </li> <li>- Publicise any local agreements to install and maintain permanent safety equipment. Provide information about these agreement to the following groups and evaluate their awareness:               <ul style="list-style-type: none"> <li>a) landlords and social housing providers</li> <li>b) practitioners with an injury prevention remit or who have opportunities to help prevent injuries</li> <li>c) practitioners with a role in assessing health and safety in residential properties</li> <li>d) residents in rented and social dwellings</li> </ul> </li> </ul>
<b>Incorporating guidance on home safety assessments within relevant national initiatives</b> (Recommendation 10)	i) Department of Health ii) Department of Education	<ul style="list-style-type: none"> <li>- Ensure national initiatives to improve child health include guidance on delivering home safety assessments and providing safety education to families</li> </ul>
<b>Incorporating home safety assessments and equipment provision within local plans and strategies for children and young people's health and wellbeing</b> (Recommendation 11)	i) Local authority children's services and their partnerships	<ul style="list-style-type: none"> <li>- Ensure home safety assessments and education are incorporated into local plans and strategies. They should be aimed at families with a child under the age of 5 years</li> <li>- Commission local agencies to offer home safety assessments and, where appropriate, supply and install suitable, high quality home safety equipment</li> <li>- Commissions should specify that the assessment, supply and installation of equipment needs to be tailored to meet the household's specific needs and circumstances</li> <li>- Ensure commissions specify that education, advice and information is needed both during the assessment and at the time of equipment installation</li> </ul>

This NICE recommendations shown in the previous section (table 4), identified overarching actions to support national and local injury prevention. The table below (table 5), specifically relates to the prevention of unintentional injuries within the home environment. This is of particular importance for children in the early years age group as the majority of their unintentional injuries occur within the home.

Table 5 provides details of NICE public health guidance 30: Preventing unintentional injuries among under 15s in the home; home safety assessments and providing safety equipment. It should be noted that these recommendations and actions form part of a wider strategic approach to injury prevention and support those made in PH 29, as shown in table 4

**Table 5:** Overview of NICE recommendations for unintentional injury prevention in the home: home safety assessments and providing safety equipment, NICE guidance (PH30)

Recommendation	Who should take action	What action should they take
<b>Prioritising households at greatest risk</b> (Recommendation 1)	<ul style="list-style-type: none"> <li>i) Local authorities children’s services, partnerships, safeguarding boards</li> <li>ii) Local strategic partnerships, local authority health and wellbeing boards and partnerships</li> </ul>	<ul style="list-style-type: none"> <li>- Determine the types of household where children are at greatest risk of injury based on surveys, needs assessment and existing datasets</li> <li>- Prioritise these households for home safety assessments and the supply and installation of home safety equipment. Priority households could include those with children under the age of 5 years, living in rented or overcrowded conditions, families on a low income and/or living in poverty</li> <li>- Provide practitioners who visit children at home with mechanisms for sharing information about households that might need a home safety assessment. This includes health visitors, social workers and GPs.                             <ul style="list-style-type: none"> <li>a) Ensure practitioners adhere to good practice on maintaining confidentiality of personal information</li> </ul> </li> </ul>
<b>Working in partnership</b> (Recommendation 2)	<ul style="list-style-type: none"> <li>i) Strategic planners and leads with responsibility for child health</li> <li>ii) Fire and Rescue services</li> <li>iii) Housing associations</li> <li>iv) Local authorities children’s services, environmental health, injury prevention, housing and home safety</li> <li>v) Children’s centres and Sure Start</li> </ul>	<ul style="list-style-type: none"> <li>- Establish local partnerships with relevant statutory and voluntary organisations. Partners could include:                             <ul style="list-style-type: none"> <li>a) Local community and parent groups</li> <li>b) Organisations employing health and social practitioners who visit children in their homes</li> <li>c) Child care agencies</li> <li>d) Local umbrella organisations for private and social landlords</li> <li>e) Those with a remit to improve the health and wellbeing of children</li> </ul> </li> <li>- Use these partnerships to:                             <ul style="list-style-type: none"> <li>a) collect information on specific households where children may be at greatest risk,</li> <li>b) Help determine and address barriers to creating a safe home</li> <li>c) Get the community involved</li> <li>d) Carry out home safety assessments and supply and install home safety equipment</li> </ul> </li> </ul>

**Table 5 continued:** Overview of NICE recommendations for unintentional injury prevention in the home: home safety assessments and providing safety equipment, NICE guidance (PH30)

Recommendation	Who should take action	What action should they take
<b>Coordinated delivery</b> (Recommendation 3)	i) Those who carry out home safety assessments and provide home safety equipment	<ul style="list-style-type: none"> <li>- Offer assessments to those households prioritised in recommendations 1 and 2</li> <li>- Ensure the assessment, supply and installation of equipment is tailored to meet the household's specific needs and circumstances</li> <li>- Ensure education, advice and information is given during an assessment and during the supply and installation of equipment. This should include information on how to maintain and check the equipment and the dangers of disabling it.</li> </ul>
<b>Follow-up on home safety assessments and interventions</b> (Recommendation 4)	i) Those who carry out home safety assessments and provide equipment	<ul style="list-style-type: none"> <li>- Prevent duplication of effort by keeping a record of households that have received safety advice or equipment. Ensure the records are accessible to those with a direct or indirect responsibility for preventing injuries</li> <li>- Use the records to identify when maintenance and follow-up are required, to feed into strategic planning and to prioritise future interventions</li> <li>- Contact homes identified as being in need of equipment maintenance checks or follow-ups. Reinforce home safety messages during these visits</li> </ul>
<b>Integrating home safety into other visits</b> (Recommendation 5)	i) Practitioners who visit families with children children. This includes GPs, midwives, health visitors and social workers	<ul style="list-style-type: none"> <li>- Recognise the importance of measures to prevent injuries in the home, particularly those living in disadvantaged communities</li> <li>- Provide child-focused advice and if the family is in agreement, refer them to agencies who can undertake a home safety assessment</li> <li>- Encourage families to conduct their own home safety assessment, using an appropriate tool</li> </ul>

Home safety assessments tools, also known as checklists, are used by a variety of sectors and organisations. The benefits of such tools include:

- Standardisation of home safety checks
- Identification of required equipment through a standardised and fair process
- Personalised advice to families based on the findings of the assessment
- Identification of high injury risk areas, both environmental and behavioural
- Collection and collation of data relating to injuries

Assessment tools differ in their design and content. However, the majority of tools include assessments on the risk of falls from a height, thermal injuries, poisoning and strangulation/suffocation injuries. Examples of two home safety assessment tools are given in Appendices 1a and 1b. The first tool (Appendix 1a) is used in Flying Start areas within the Aneurin Bevan and Hywel Dda health boards. Appendix 1b shows the home safety assessment tool used in Northern Ireland as part of the implementation of their national Home Safety Strategy.

### 6.3 Examples of NICE guidance in practice

The following two examples are taken from the *Making the Link* website, facilitated by the Child Accident Prevention Trust. These examples give a brief overview of how two areas in England are working to implement the NICE recommendations through a partnership approach.

#### **Example 1: Bath and North East Somerset Council and NHS BANES**

- A health development officer is employed by the council, but funded by the NHS, who support frontline practitioners with training and resources to reduce injuries
- Injury prevention is included in the public health commissioning manager's responsibilities

The injury prevention officer delivers injury prevention training sessions for members of the children's workforce. This officer also coordinates a home safety equipment scheme and a multi-agency injury prevention partnership group. The public health commissioning manager focuses on strategic issues and embeds child accident prevention into the early years strategy for the local area. Both of these roles work closely together. For example, where the injury prevention officer highlights a need for better ED data, the commissioning manager can explore how this can be built into contracts held with local hospitals.

#### **Example 2: Cornwall and Isles of Scilly PCT**

- A children's accident prevention coordinator sits on the early identification and intervention sub-group of the LSCB
- A senior commissioning manager for children and maternity public health has lead responsibility of reducing hospital admissions
- A director of public health links into the Health and Wellbeing Board, the LSCB and the Child Death Overview Panel.

The coordinator works with frontline practitioners in hospitals to identify the types of injuries they need to prioritise and develops targeted campaigns and educational projects. The commissioning manager and director of public health champion injury prevention work at a strategic level and within key local structures.

## 7. Prioritising specific injury mechanisms

The following sections of this report address specific types of injuries and their prevention. With the exception of falls, these injuries are not necessarily the most prolific, however they are well documented as the mechanisms with the greatest risk of causing fatal, serious or disabling injuries for children under the age of 5 years.

The preventive measures cited in these sections provide additional detail and support the recommendations made by NICE as previously illustrated in tables 4 and 5.

An overview of the injury mechanisms that should be prioritised are given in table 6. These mechanisms are identified as priorities for action and targeted interventions by the following organisations: WHO, Eurosafe, ECSA, NICE, Public Health England, Children in Wales, Child Accident Prevention Trust (CAPT) and Royal Society for the Prevention of Accidents (RoSPA).

**Table 6:** Unintentional injury mechanisms: priorities for action and targeted interventions.

Injury mechanisms	Priorities for prevention
<b>Falls from a height</b>	<ul style="list-style-type: none"> <li>- Falls on stairs</li> <li>- Falls from windows</li> <li>- Falls from raised surfaces and nursery equipment</li> <li>- Falls from highchairs</li> </ul>
<b>Poisoning</b>	<ul style="list-style-type: none"> <li>- Pharmaceuticals</li> <li>- Household products</li> <li>- Household cleaners and chemicals</li> <li>- Carbon monoxide</li> <li>- Nicotine products</li> </ul>
<b>Thermal injuries (scalds, burns, domestic house fires)</b>	<ul style="list-style-type: none"> <li>- Hot drink scalds</li> <li>- Bath water scalds</li> <li>- Contact burns (irons and hair straighteners)</li> <li>- Domestic house fires</li> </ul>
<b>Choking, suffocation and strangulation</b>	<ul style="list-style-type: none"> <li>- Blind cords</li> <li>- Small parts/items</li> <li>- Nappy sacks</li> <li>- Unsupervised eating (choking)</li> <li>- Bedding and furniture</li> </ul>

The following sections of this report identify specific interventions to target the priorities shown in table 6. These intervention fall into three categories:

- Enforcement (legislation and/or policy/practice implementation)
- Environmental changes
- Education.

## 7.1 Preventing unintentional injuries - Falls

The leading mechanism for injuries in the early years age group is falling from a height, as shown in figures 12 and 13. WHO Europe identified that falls are the leading cause of traumatic brain injury in young children.

In preventing falls, those caused by falling from a height should be a priority area for action. Within the early years age group, particular attention should be given to the following mechanisms:

- Falling on the stairs
- Falling from a window (first storey or above)
- Falling from raised surfaces and nursery/childcare equipment (particularly changing tables and products placed on a raised surface, namely baby recliners/bouncers and car seats)
- Falling from a highchair

WHO identified that falls prevention is reliant on the combination of a number of strategies and evidence based interventions<sup>7</sup>. This is supported by the NICE public health guidance. Table 7 below, includes additional detail on evidence based interventions and supports the recommendations within the NICE guidance.

**Table 7:** Evidence based effective interventions to reduce falls from a height

### Evidence based effective interventions

**Home based social support programmes** for parents to educate them of the dangers and the need to use safety equipment safely and properly

**Provision and installation of safety equipment** such as safety gates, window restrictors and high chair harnesses/straps, prioritising those living in areas of disadvantage or deprivation

**Legislation to amend building codes** for new dwellings to require all steps and staircases to have a rise not exceeding 170mm and a tread depth of at least 250mm, as well as barriers on balconies, stairs and galleries

**A ban** or government support of a European ban **on the use of babywalkers**

**Specific changes to British and European standards** for nursery and childcare products to increase the safety of these items, in particular high chairs, safety gates, window restrictors and babywalkers

**Educational programmes/sessions** for parents to increase the awareness of injury risks and provide supportive advice on necessary behavioural and environmental changes\*

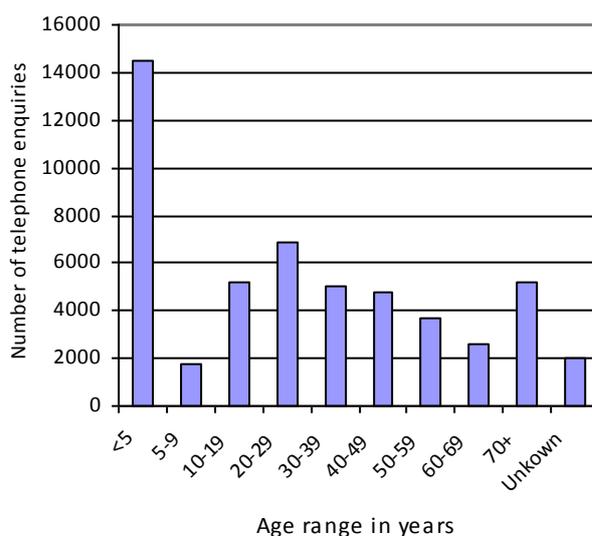
**Modelling good practice** in statutory settings promotes safer behaviour. For example; local policies that promote car seats be placed on the floor and the correct use of highchair harnesses

\* *Children in Wales and Nottingham University et al have developed educational sessions and resources that are freely available to download<sup>18,19</sup>. Both have been designed to enable practitioners to deliver injury prevention advice to parents within group settings. Each of the educational sessions and resources outline key messages and provide practitioners with ideas and examples of prevention activities.*

## 7.2 Preventing unintentional injuries - Poisoning

The National Poisons Information Service\* (NPIS) recognise that children under the age of 5 years experience the highest risk of unintentional poisonings across all age groups, as figure 17 below illustrates.

**Figure 17:** Age of poisoned patients as reported in telephone enquiries to the NPIS in 2013/2014.



Source: NPIS, Annual Report 2013/2014

In their annual report, the NPIS identified that the most commonly ingested items are pharmaceuticals, household products and chemicals<sup>20</sup>. The report also identified a steep increase in the number of enquiries relating to reed diffusers (liquid household air fresheners) and nicotine used in electronic cigarettes.

Preventive measures to reduce poisoning incidents are primarily based on increasing awareness and knowledge of harmful products, both with parents and practitioners. This is paramount, whilst cupboard restrictors are an effective tool to reduce access to poisons, they are not effective without the knowledge of which items should be safely stored away.

Understanding the emerging or increasing issues of poisonous items is also an essential aspect of preventive education. As the NPIS report illustrates, there are increasing trends in the numbers of children requiring treatment after ingesting reed diffuser liquid and nicotine products.

In 2013, Children in Wales, in partnership with Public Health Wales, issued a briefing for practitioners regarding nicotine poisoning. This briefing provides practitioners with information on the causes and consequences of nicotine poisoning and acts as a resource to aid preventive education (appendix 2)

Table 8 below, provides additional details for interventions to reduce poisoning incidents and supports the recommendations within the NICE guidance.

**Table 8:** Evidence based effective interventions to reduce poisoning

**Evidence based effective interventions**

<b>Home based social support programmes</b> for parents to educate them of the dangers of pharmaceuticals, household products and household cleaners and where to safely store such items
<b>Provision and installation of cupboard restrictors</b> for the safer storage of poisonous items in the kitchen
<b>Promote the use of child resistant closures</b> on medication, household cleaners and chemicals
<b>Educational programmes/sessions</b> for parents to increase the awareness of injury risks and provide supportive advice on necessary behavioural and environmental changes**
<b>Modelling good practice</b> in statutory settings promotes safer behaviour. For example; policies and relevant education about the use of electronic cigarettes around children; ensuring children do not have access to handbags (these regularly contain poisonous items but are not viewed as hazardous); removing portable air fresheners from settings
<b>Promoting and supporting voluntary standards for manufacturers.</b> For example, in 2013, the detergent industry, AISE (International Association of Soaps, Detergents and Maintenance Products) developed a voluntary <i>Product Stewardship Programme</i> for liquid detergent capsules. This has resulted in changes to packages (now opaque) and increased warning information on product packaging.
<b>Provision and installation of carbon monoxide alarms</b> and education on the causes, symptoms and prevention of carbon monoxide poisoning

*\*The National Poisons Information Service (NPIS) is commissioned by Public Health England on behalf of the UK health departments. Their focus is to assist health professionals throughout the NHS to manage poisoned patients.*

*\*\* Children in Wales and Nottingham University et al have developed educational sessions and resources targeting poisoning prevention. These resources are aimed at practitioners and are freely available to download<sup>18,19</sup>.*

### 7.3 Preventing unintentional injuries – Thermal injuries

Research published in 2014 (Kemp et al) identified hot drink scalds and contact burns from hair straighteners and oven hobs as priorities for targeted interventions. The research found that 78% of scald injuries in children aged 0-16 years occurred in the those aged under 5 years<sup>21</sup>. The study of over 1200 children (0-16 years) with unintentional burn/scald injuries found that 58% had scalds, 32% contact burns and 17% were from other causes. Children aged under 5 years accounted for 72% of patients, with prevalence peaking at age 1 year. The commonest scald agent was identified as a hot drink and the commonest mechanism as a pull-down injury (the child reaching and pulling the hot drink over themselves).

Contact burns from portable household items were also identified as a common source of injury and accounted for more contact burns than household appliances. The commonest agent for these injuries was identified as hair straighteners or irons (42%)

The research concluded that prevention is likely to rely upon heightened awareness and behaviour change by carers and that children’s centres, health visitors or family nurse practitioners should address safety education as a matter of routine.

**Table 9:** Evidence based effective interventions to reduce thermal injuries

#### Evidence based effective interventions

**Home based social support programmes** for parents to include: education on the dangers of hot drinks; bath water scalds; contact burns (hair straighteners and irons); domestic fires; and provide effective preventive advice to influence necessary behavioural changes.

**Provision and installation of thermostatic mixing valves (TMVs)** for the prevention of bath scalds. TMVs regulate the temperature of the hot water, ensuring that hot water is delivered at a safer bathing temperature. Building regulations state that it is now a requirement that TMVs are fitted to baths in all new builds. TMVs are only installed in a very small percentage of homes. The installation of TMVs should be promoted to social housing providers and where appropriate, support given to increase installation.

**Educational programmes/sessions** for parents to increase the awareness of thermal injuries and provide supportive advice on necessary behavioural and environmental changes\*

**Modelling good practice** in statutory settings and by statutory sector staff, promotes safer behaviour. For example; policies on hot drink practice during parent and toddler groups\*\*. It should be noted that some settings in Wales have chosen to address the risk of hot drink scalds by providing thermal travel mugs. In an article published in the Burns Journal, Children in Wales and Public Health Wales express concerns over this practice as it promotes the consumption of hot drinks around children and does not address the required behavioural change<sup>22</sup>.

**Continue to promote and support home fire safety checks** targeting those most at risk as identified by the Fire and Rescue Services. Home safety assessments should include the promotion of such checks to households and identify referral mechanisms. The home safety fire checks should continue to include the provision and installation of smoke detectors, education on the causes and prevention of fire and fire escape plans.

\* *Two examples of educational sessions for the prevention of thermal injuries are available on the websites of Children in Wales and Nottingham University<sup>18,19</sup>.*

\*\* *Children in Wales has recently conducted a series of injury prevention educational sessions as part of an unrelated pilot project. These sessions took place during parent and toddler groups, baby massage and breastfeeding groups. All groups were facilitated by health professionals. Of the 9 groups attended, 7 provided hot drinks to parents in the presence of children. An example of how to introduce an effective hot drinks policy in settings is illustrated in appendix 3, The Parents’ Pledge.*

## 7.4 Preventing unintentional injuries – Choking, suffocation and strangulation

The risk of choking is far greater in children under the age of 5 years. Babies and young children have not yet developed the skills or coordination to chew, swallow and breathe. Food items account for the majority of choking incidents in this age group, however, small parts also pose a significant risk. Mechanisms of suffocation and strangulation injuries are variable, but include blind cords, any item that forms a loose loop (for example, drawstring bags, curtain tie-backs), nappy sacks, carrier bags and bedding.

Raising parental awareness is a key component of effective strategies to reduce these types of injuries. It is also important that parents are aware of how silent these types of injuries usually are. Parents mistakenly believe that their child will cry out. This is not the case and serious or fatal injuries can happen very quickly.

**Table 10:** Evidence based effective interventions to reduce choking, suffocation and strangulation injuries

### Evidence based effective interventions

**Home based social support programmes** for parents to educate them of the dangers of choking (including small parts, food items, young children left unsupervised whilst eating) strangulation (including blind cord, chains, curtain ties, cot bumpers) and suffocation (nappy sacks, other plastic bags, duvets, pillows, sofas and bed sharing).

**Provision and installation of cord tidies** (such as cleat hooks, cord winders) to reduce strangulation caused by blind cords. In 2014, the standards relating to blinds changed. Under new regulations, blinds (and their mechanisms) are now safer by design. However, the majority of blinds in homes will not be compliant with these new standards and therefore will still pose a serious risk for children.

**Educational programmes/sessions** for parents to increase the awareness of injury risks and provide supportive advice on necessary behavioural and environmental changes\*

**Modelling good practice** in statutory settings promotes safer behaviour. For example; blind cords: removed or made safe; nappy sacks: removal of or promotion of safe practice; lanyards: ceasing the practice of giving children lanyards to wear to monitor play time/activities; choking: ensuring beads, small parts and other craft items are safely stored when not in supervised use. Setting should also be mindful of crafts that are made by, or are given to children to take home. In the home environment supervision may be less and children may have an increased risk of choking/strangulation.

\* *Nappy sacks: bilingual posters and leaflets are available to download from the Children in Wales website: <http://www.childreninwales.org.uk/resources/accident-prevention/>*  
*Blind cords: bilingual leaflets are available to download at: [http://www.childreninwales.org.uk/wp-content/uploads/2014/03/bbsa\\_mis\\_window\\_blind\\_safety\\_leaflet\\_0711.pdf601.pdf](http://www.childreninwales.org.uk/wp-content/uploads/2014/03/bbsa_mis_window_blind_safety_leaflet_0711.pdf601.pdf)*

**Preventing different types of injuries may require specific interventions. However, as this report has identified, there are common factors that need to be in place regardless of the injury mechanism. These include national and local commitment, parental and professional education, local and national enforcement (through policy, practice and/or legislation) and environmental changes within homes.**

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## 8. Conclusion

Injuries are common among Welsh children with some 133,000 attending emergency departments each year and just under 3,000 hospital admissions.

Mortality and morbidity rates for childhood injuries are higher in Wales than the rest of the UK.

Unintentional injuries in children aged 0-4 years attending or admitted to hospital in Wales each year incur a direct medical cost of over £6.5m. These are direct costs for acute care only and do not account for specialised treatment, on-going or long-term medical or social care.

Unintentional injuries are around twice as common in children from the most deprived communities.

The numbers attending emergency departments are increasing but the causes behind this are not well understood, in part due to poor coding of Emergency Department data. Improvements in the coding of emergency department data, with the introduction of the Joint Action on Monitoring Injuries in Europe (JAMIE) Minimum Data Set, should further our understanding of the scale and underlying causes and help with targeting and prevention of injuries.

There is considerable evidence for many short and long term adverse consequences of unintentional injury, including psychological and behavioural problems and poorer school performance for those worst injured.

There are a number of evidence based guideline produced by expert bodies on the prevention of childhood injuries that, if implemented in full, would reduce the incidence and consequence of injuries, including those in the home (parenting and safety equipment) and on the road (slower speeds, safe routes to school, etc).

In relation to injuries in the home, the location of most injuries in this age group, parenting interventions appear promising. Further research is needed into the development of low cost, but effective parenting interventions.

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