



Public Health  
England



# Reducing unintentional injuries in and around the home among children under five years

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# Executive summary

Unintentional injuries<sup>a</sup> in and around the home are a leading cause of preventable death for children under five years and are a major cause of ill health and serious disability. The reduction of unintentional injuries in childhood remains an important public health priority.

In 2014 Public Health England, with the Royal Society for the Prevention of Accidents and the Child Accident Prevention Trust, published a five year trend analysis of these injuries and deaths in England<sup>1</sup>. The report highlighted the scale of this public health issue, and the steps local areas can take to reduce casualty rates. The resources have been used extensively by local authorities, and we have taken the opportunity to refresh the original analysis with the most recently available admissions data from 2012/13 – 2016/17 and deaths data from 2012 to 2016.

Our analysis of the five years of data shows that each year an average of 55 children under the age of five died due to an unintentional injury, 370,000 children attended accident and emergency (A&E) and 40,000 children were admitted to hospital as an emergency.

This document sets out three action areas for local authorities and their partners that aim to reduce the numbers of children injured and killed. It also describes four steps local partnerships can take to build robust injury prevention strategies.

This approach is informed by the evidence base and a new analysis of data, which we are making available alongside this report. It builds on what local authorities are already doing to keep children safer and healthier.

The Chief Medical Officer has made a powerful economic case for preventing unintentional injuries<sup>2</sup>. The majority of unintentional injuries are preventable. A recent programme of evaluation demonstrated a significant association with modifiable risk factors for falls from furniture and on stairs, poisoning and scalds in children aged 0-4 year, with evidence of the effectiveness of home safety interventions, including economic evaluations<sup>3</sup>.

There remains a need for more information about the wider costs and benefits of injury prevention. This will help local areas prioritise investments and is an issue which PHE will continue to work on with leading experts and organisations. Injury prevention can be low cost and there is a large return on investment for young children in terms of preventable years of life lost and disability adjusted life years.

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<sup>a</sup> For definitions refer to the World Health Organization at <http://whqlibdoc.who.int/publications/2001/9241591331.pdf>

The paper identifies unintentional injuries as a major health inequality. There is a persistent social gradient for unintentional injuries<sup>4 5 6</sup>. Our analysis shows that the emergency hospital admission rate for unintentional injuries among the under-fives is 38% higher for children from the most deprived areas compared with children from the least deprived, and previous research indicates that for some injury types this inequality may be much larger<sup>7</sup>.

Health inequalities can be tackled via anti-poverty strategies, by targeting deprived areas, and engaging with local communities and families via proportionate universalism as advocated in the Marmot review of health inequalities in England<sup>8</sup>.

Research has shown what works in preventing unintentional injuries and the National Institute for Health and Care Excellence (NICE) has produced evidence-based guidelines<sup>9</sup>  
<sup>10 11</sup>.

There are three key action areas.

### 1. Providing leadership and mobilising existing services prevents injuries

Reducing unintentional injuries requires a whole system approach to address key determinants. Directors of public health and directors of children's services, together with local Clinical Commissioning Groups, members of health and wellbeing boards and Sustainability and Transformation Partnerships (STP), (or Accountable Care Systems where they are in place), are in an ideal position to provide strategic leadership for injury prevention through focused planning, coordination of services and commissioning to support a collaborative approach with effective allocation of resources<sup>12</sup>.

Preventing unintentional injuries cuts across a range of stakeholders working with children and their families; much can be achieved by mobilising existing services to develop a local child unintentional injury strategy that builds on strengths and develops capacity. Broader partnership working across the public, social enterprise, private, voluntary and community (VCS) sectors is essential, bringing together a very wide range of services including health, education, social care, housing and fire and rescue. Establishing a multi-agency child unintentional injury group and identifying a lead professional to coordinate this work is likely to improve implementation<sup>13</sup>. NICE PH29 makes recommendations on ways to improve effective coordination of services.

### 2. The early years workforce has a central role in helping to reduce unintentional injuries

Preventing unintentional injuries requires a whole system approach that maximises the contribution of all staff working with the under-fives and their families. Evidence suggests that training all staff to develop confidence and competence in reducing unintentional injuries is

important<sup>14</sup>. With appropriate training and supervision, voluntary and community organisations will also be able to focus more explicitly on injury prevention in their work with families.

Health visitors provide a universal service to all families and there is a strong economic case for preventing unintentional injuries by incorporating developmentally specific safety advice into universal child health contacts; this could also include contacts following injuries where appropriate. Health visitors have a national framework on which local services can build. **The health visiting 4-5-6 model<sup>15</sup>** sets out four levels of service from community action to complex needs, five universal health reviews for all children and six high impact areas where health visitors have the greatest impact on child and family health and wellbeing. The Early Years High Impact Area 5<sup>16</sup> sets out the key contribution of health visitors to manage minor illness and reduce accidents to improve outcomes for all children.

### **3. Focusing on five kinds of injuries for the under-fives to tackle the leading, preventable causes of death and serious harm**

Five causes account for 90% of unintentional injury hospital admissions for this age group and are a significant cause of preventable death and serious long-term harm - these are choking, suffocation and strangulation; falls; poisoning; burns and scalds; and drowning; therefore taking action in these areas would make a significant difference. Local injury and other data will provide important local context, but the national data on deaths and injuries provides a powerful call to action.

# Introduction

Unintentional injuries in and around home are a major cause of preventable death and disability among children under five years in England. An average of 55 children died each year between 2012 and 2016.<sup>b</sup> Unintentional injuries result in an estimated 370,000 visits to A&E departments<sup>c</sup> and approximately 40,000 emergency hospital admissions<sup>c</sup> among children of this age each year. In England these injuries account for 7% of deaths of the children aged 1 to 4 years<sup>b</sup>.

The majority of these injuries are preventable. This document explains the scale and nature of the problem, including the frequencies and rates of deaths and injuries, and the significance of deprivation. It also covers the costs to families and health and social care services and presents the priorities for action, highlighting the main risks to children and the ways that local authorities and their partners can achieve change, building on what they do currently.

The most obvious reason for reducing these injuries is the benefits to children and their families. The personal costs of an injury can be devastating. For example, a young child's severe bathwater scald will require years of painful skin grafts. A fall at home can result in permanent brain damage. The injuries can have major effects on education, employment, emotional wellbeing and family relationships<sup>17</sup>. In addition, injuries also impact psychologically on those caring for children<sup>18</sup>.

Whilst the cost of a severe injury in childhood (e.g. severe head injury or bath water scald) can be large, because less severe injuries occur much more frequently these also incur substantial costs for the economy.

Research shows that the average NHS **short-term** cost of a hospital admission for  $\geq 2$  days for a burn, poisoning or fall in the under-fives (the 3 most common causes of hospital admissions in this age group) ranges from £2500–3000, the NHS cost of an admission for  $\leq 1$  day from £700–£1000 and for an emergency department attendance without admission from £100–£180. These do not include costs for NHS or social care for longer term follow-up of more severely injured children, and will therefore underestimate the true costs of these injuries<sup>19</sup>.

Parents also face substantial costs when their children are injured: the short term costs to parents for children admitted for 2 or more days ranges from £100-£400; for those admitted for  $\leq 1$  day from £40-£200 and for those attending emergency departments without admission from £20-£70<sup>20</sup> and the wider costs of a serious home accident for a child aged 0 to 4 years has been estimated at £33,200<sup>21</sup>.

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<sup>b</sup> Office for National Statistics. Crown copyright reserved.

<sup>c</sup> Hospital Episode Statistics (HES). Copyright © 2017. Re-used with the permission of NHS Digital. All rights reserved.

But there are also significant costs to local authorities and to society as a whole. For example, a traumatic brain injury (TBI) to a child under five from a serious fall may result in acquired disabilities which lead to high education and social care costs as well as loss of earnings to families and benefit costs to the state. The approximate lifetime costs for a three-year-old child who suffers a severe TBI is £4.89m.

Injury reductions can be achieved at low cost with good evidence that some falls, poisonings and scalds may be prevented by incorporating specific safety advice into universal child health contacts, providing home safety assessments and providing and fitting home safety equipment, including interventions to reduce accidental dwelling fires<sup>22</sup>. Local authorities can strengthen their existing work by prioritising the issue and mobilising existing programmes and services through leadership, co-ordination and training. NICE guidance PH29 and PH30 (2010) and the evidence update (NICE, 2013) offer a valuable framework for shaping the work.

## Main findings from the five-year study

A study was conducted looking at deaths and hospital admission data over a five-year period to identify trends that will help determine prevention interventions likely to have the greatest impact. Headline findings are presented in this document and the full analysis can be found in the accompanying data and information pack.

Between 2012 and 2016, 273 children aged under five years died from unintentional injuries. The death rate for unintentional injuries among children aged 0 to 4 years over this period was 1.60 per 100,000 population (previously 1.90 between 2008 to 2012).

Unintentional injuries in and around the home are a leading preventable cause of death for children under five years and accounted for 7% of all deaths of all children aged 1 to 4 years in 2015<sup>23, d</sup>.

Between 2012-13 and 2016-17 there were an estimated 370,000 visits to A&E departments<sup>c</sup> and approximately 40,000 emergency hospital admissions each year for under-fives following unintentional injuries.<sup>f</sup>

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<sup>d</sup> Office for National Statistics. Crown copyright reserved.

<sup>f</sup> The numbers for the different accident types in this section all relate to the five-year periods covered in Figure 1.

Children under five years account for a disproportionately high number of hospital admissions and as a result in many local authorities there will be a case for action on early years within wider unintentional injury prevention strategies.

To support this work it is necessary to first understand the types of injuries young children experience and why, and second to be clear on which injuries cause most hospital admissions and which cause most deaths.

Unintentional injuries for the under-fives tend to happen in and around the home. They are linked to a number of factors including:

- child development
- the physical environment in the home
- the knowledge and behaviour of parents and other carers (including literacy)<sup>24</sup>
- overcrowding and homelessness
- the availability of safety equipment
- new consumer products in the home

Accident types have different profiles – some are often fatal, such as choking, strangulation and drowning. Others, such as burns and scalds, result in hospitalisation and sometimes serious long-term acquired disability, but rarely death.

Figure 1 shows the causes of emergency hospital admissions and deaths for the under-fives following unintentional injuries over the five-year period 2012/13 to 2016/17 with the number for each.

**Figure 1. The main causes of emergency hospital admissions and deaths for under-fives following unintentional injuries in and around the home**

<b>Hospital admissions - 2012/13 - 2016/17</b>	
Falls	90372
Exposure to inanimate mechanical forces	40788
Accidental poisoning by and exposure to noxious substances	25591
Accidental exposure to other and unspecified factors	16800
Contact with heat and hot substances	12983
Exposure to animate mechanical forces	7346
Other accidental threats to breathing	2159
Overexertion, travel and privation	730
Exposure to smoke, fire and flames	485
Accidental drowning and submersion	483
Exposure to electric current, radiation and extreme ambient air temperature and pressure	162
Contact with venomous animals and plants	143
Exposure to forces of nature	123

<b>Deaths - 2012 - 2016</b>	
Choking, suffocation, strangulation	137
Drowning	56
Struck by objects	23
Smoke, fire, flames	16
Accidental exposure to other and unspecified factors	16
Falls	14
Poisoning	6
Heat and hot substances	3
Struck by persons or animals	2

## Choosing priorities

The injury and mortality data in figure 1 indicates that local authorities could achieve significant improvements through targeting the reduction of five causes of unintentional injuries among the under-fives. This grouping includes the most severe and preventable<sup>e</sup> injuries, including those that result in high death rates and the largest number of emergency hospital admissions. Each has its own profile and characteristics:

### 1. Choking, suffocation and strangulation

These injuries result in the highest number of deaths for the under-fives over the five year period (137)<sup>f</sup> with injuries categorized in the following groups:

- **inhalation of food and vomit** – a leading cause of deaths (45 over the 5 year period). There are low numbers of admissions but these tend to be longer than average. The injuries primarily affect children under the age of two
- **suffocation and strangulation** – 41 children died from this cause in bed over the five year period. A further 32 deaths occurred due to hanging or strangulation elsewhere. Looped blind cords and nappy sacks are a major hazard

### 2. Falls

Injuries from falls lead to the most injury-related admissions for under-fives over the recent five year period (90,372). They are also the fifth most common cause of death for this age group (14); this represents a reduction from the third most common cause of death in the previous 5 year period analyzed (n=16). Even a fall from a high chair can have serious consequences including brain damage. There are four broad groups:

- **falls from furniture** lead to the bulk of hospital admissions (23,873) but few deaths.
- **falls on and from stairs and steps** continue to be a leading cause of hospital admissions for the under-fives (11,084). Deaths are very rare, with no reported deaths in this five year period.
- **falls from/out of buildings**, such as from windows or balconies, have led to five deaths in the past five years

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<sup>e</sup> Note: Our analysis identified that unintentional injuries caused by children being struck by objects and people/animals (collisions/ dog bites) result in high numbers of hospital admissions, however most are harder to prevent than the injury types we have prioritised.

### 3. Poisoning

The two main risks are medicines and household chemicals. Whilst these do not often result in fatality, these injuries lead to very high numbers of short hospital admissions for children under five and peak when the child is age two for medicines.

- **medicines** are the cause of almost 70% of poisoning admissions
- **household chemicals** account for over 20% of the admissions

Concerns have been raised recently about the dangers of nicotine poisoning from electronic cigarettes<sup>25</sup>.

### 4. Burns and scalds

The fourth highest cause of hospital admissions for under-fives. Whilst deaths are rare (3 deaths) burns and scalds admissions tend to be longer than other unintentional injuries. These injuries are expensive to treat and serious burns and scalds are disfiguring and disabling for young children. They come from five main sources:

- **scalds from hot drinks** lead to moderate numbers of admissions (5,260), though with longer than average hospitalisations. Admissions peak for children aged one year
- **contact with hot household appliances** cover a range of hazards. In recent years the number of children being treated for burns from hair straighteners has doubled. They now account for up to one in ten burns injuries to children<sup>26</sup>
- **contact with other hot fluids**, including water heated on a stove remains a serious hazard
- burns from hot heating appliances, including radiators and pipes
- **bath water scalds** lead to relatively low numbers of admissions. Deaths are rare but the injuries can be severe. Admissions peak when children are about a year old. They tend to result in a higher proportion of long hospital stays. Bath water scalds are very expensive injuries to treat

### 5. Drowning

The lethal nature of drowning (56 deaths over the recent 5 year period) means the rate of deaths is very high in comparison to emergency hospital admissions (9 admissions for every death); this represents a small reduction on the previous 5 years' data which reported 62 deaths. For the under-fives the main risk is the bath (19), although the circumstances surrounding over a third of deaths caused by drowning and submersion are unspecified.

## Other hazards

Other causes of unintentional injury, for example, exposure to smoke, fire and flames result in a high proportion of deaths among the under-fives although a relatively low level of emergency hospital admissions. Understanding local 'other causes' can help focus local action. Furthermore, hazards change, especially as new products such as hair straighteners or liquid detergent capsules emerge, and the risks will vary according to the developmental age of the child<sup>27</sup>. Recently, concerns have been raised about harm caused by swallowing powerful button batteries<sup>28</sup> and the dangers of cot bumpers and sleeping pods<sup>29</sup>.

## Data issues

There are weaknesses in the data available, with the recording of the cause of hospital admissions unknown in some cases for this age group. Also, little is known nationally about unintentional injuries that do not result in hospital admissions but are treated in other health care settings or at home. To improve data quality, NHS Digital is developing a new process to publish Hospital Episodes Statistics (HES) significantly sooner for improved analysis, planning and patient care; this will include changes to the system and processes used to collate and code data for all admissions, outpatient appointments and A&E attendances at NHS hospitals in England.<sup>30</sup>

There are geographic differences in the rates of unintentional injuries between (and within) local authorities. Even when local authorities have child injury rates that are similar to those for England, this may mask significant inequalities between smaller geographical areas (e.g. districts, wards) within local authorities which need addressing. In planning approaches to reduction in preventable injuries, local authorities will need to consider not only the overall child injury rate but also the extent of inequalities in child injury rates across smaller geographical areas when deciding what child injury prevention actions are required.

The national data, gathered over a five-year period, provides key information for local authorities especially in respect of action on the main 5 causes of unintentional injuries.

Local knowledge will supplement this picture, including information from child death overview panels and serious case reviews<sup>31</sup> but because these numbers are likely to be very small it is important not to base priorities on local data alone.

## Links with deprivation and gender

There is a persistent social gradient for unintentional injuries<sup>32</sup>. Our analysis shows that the emergency hospital admission rate for unintentional injuries among the under-fives is 38% higher for children from the most deprived areas compared with children from the least deprived. Emergency hospital admissions for injuries among the most deprived children under five in 2016/17 were close to 1,300 per 100,000. For the least deprived children the rates were under 1,000 per 100,000, which represents a slight narrowing of the gap between

the least and most deprived children since the previous five year period<sup>g</sup>. This will not be uniform across England however and will vary in local areas.

Previous research indicates that for some injury types this inequality may be much larger<sup>33</sup>. For example, children living in the most disadvantaged areas have a 50% higher risk of being burned, scalded or poisoned resulting in primary or secondary care attendance than those in the most advantaged areas<sup>34</sup>. Boys have higher rates of death and hospital admissions. Between 2012/13 and 2016/17 55% of admissions were for boys and 45% for girls.<sup>h</sup> For deaths, the difference by sex is: 64:36.

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# Costs: the economic case for prevention

The majority of unintentional injuries are preventable and disproportionately affect children living in socioeconomic disadvantage. Preventing unintentional injuries among young children has significant long term benefits for individuals, families and society.

Financial constraints mean that it is essential to target resources where they will make the most impact. Focusing on the most severe and preventable injuries and reducing inequalities in child injury should therefore be a priority with interventions aimed at addressing modifiable risk factors (for example falls from furniture and on stairs, poisoning and scalds). There is good evidence for the effectiveness and economic evaluation of home safety interventions.

Calculating the costs of unintentional injuries and making the economic case for prevention is a complex process. The Chief Medical Officer's report identifies barriers that can limit action but also presents a powerful economic case for injury prevention<sup>35</sup>.

Above all, the personal costs of an injury can be devastating with significant lasting physical and emotional effects which impact on learning, employment opportunities and family relationships. For example, a young child's severe bathwater scald can require painful skin grafts into early adulthood which disrupt schooling and add to family stress.

The financial costs are also high. The short-term average healthcare cost of an individual injury (all types) is £2,494<sup>36</sup> and the wider costs of a serious home accident for a child aged 0 to 4 has been estimated at £33,200<sup>37</sup>.

But while initial NHS treatment costs tend to be highlighted, there are significant continuing clinical support costs for services commissioned by Clinical Commissioning Groups and NHS England, alongside costs to local authorities and to society as a whole. For example, a traumatic brain injury (TBI) to a child under five from a serious fall may result in acquired disabilities which lead to high education and social care costs. The lifetime costs for a three-year-old child who suffers a severe TBI totals £4.89m and are summarised in table 1

**Table 1. Approximate lifetime medical, educational and social costs for a child who suffers a severe traumatic brain injury (TBI) at the age of three<sup>38 39</sup>**

Cost category	Description	Lifetime cost
Medical and nursing	Clinical care (including paediatric intensive care and rehabilitation), outpatients, 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 educational needs (SEN) schools, school transport, SEN statements	£238,000
Direct social costs	Social care assessments, direct payments for home care, grants for home and vehicle adaptations, residential respite breaks, residential care (from age 40).	£1.19m
Missed employment	For the child and mother as full-time carer.	£1.73m
Cost to government in lost tax revenue	Lost income tax revenue for parent and child (Note <sup>j</sup> : this calculation is based on lost income for one parent; other parent/ carer costs were not included)	£346,000
Cost to government in benefits	Transfer payments including Disability Living Allowance, Carers' Allowance and child tax credits	£1.12m
Total cost of lifelong care and support		£4.89m

Although these injuries are relatively rare the information highlights the impact on local authority services. Other serious injuries such as severe bathwater scalds which incur individual lifetime medical costs of around £189,000, also generate significant economic costs<sup>40</sup> but the social care costs are not well documented. This is an important gap.

NICE has provided estimates of the cost-benefits of implementing their guidance PH29 and PH30.

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<sup>j</sup> The source only refers to one parent.

# Prevention opportunities

## Providing leadership

The Health and Social Care Act (2012)<sup>41</sup> transferred responsibilities for improving health and reducing health inequalities to local authorities. These responsibilities include a central role in delivering improvements on the Public Health Outcomes Framework indicator 2.7<sup>42</sup> to reduce hospital admissions from unintentional and deliberate injuries for children and young people. As part of the wider transformation of services for under-fives many local authorities have developed a more integrated, systems approach that is essential for reducing unintentional injuries.

Directors of public health and directors of children's services, together with local Clinical Commissioning Groups, members of health and wellbeing boards and Sustainability and Transformation Partnerships (STP), (or Accountable Care Systems where these are in place), are in an ideal position to provide strategic leadership for injury prevention through focused planning, coordination of services and commissioning to support a collaborative approach with effective allocation of resources.

## Mobilising existing services and working in partnership

To impact on childhood accident prevention it is important to optimize the contribution of existing services and programmes in driving reductions in unintentional injuries.

For example, NICE public health guidance PH30 'Preventing unintentional injuries among the under-15s in the home' recommendation five highlights the benefits of integrating safety into professionals' home visits and other relevant interactions and is consistent with the Making Every Contact Count (MECC) approach to reducing health inequalities<sup>43</sup>.

The key is mobilising these services and providing a strong lead to push injury prevention higher up the agenda of respective partners. NICE PH29 makes wider recommendations to improve coordination of unintentional injury prevention activities.

Preventing unintentional injuries for the under-fives also supports the wider aims of cross government work to improve outcomes for children, including the Troubled Families Programme<sup>44</sup>. For some families, unintentional injuries are a result of neglect which is an important aspect of child protection work<sup>45</sup>.

Broader partnership working across the public, private and voluntary and community (VCS) sectors is essential, bringing together a very wide range of services from diverse settings including health, education, local authority children's services such as early help teams, housing, fire services and police. With partners, local authorities have the opportunity to bring together services for children in the early years and to join up 0-19

commissioning across a local area and build on community assets. With key agencies on board, other more focused initiatives such as home safety equipment schemes will have a better chance of being implemented effectively when staff are clear how they operate and have had appropriate training<sup>46</sup>.

A&E departments, GP practices and minor injury units play an important role as they are able to advise families attending for unintentional injuries about future prevention, identify repeated risk and link with safeguarding services where a child is considered to be at risk of significant harm.

## Focusing on what works and addressing inequalities

Health inequalities can be tackled via anti-poverty strategies and by targeting deprived areas. This will include engaging with local communities and families via proportionate universalism as advocated in the Marmot review of health inequalities in England<sup>47</sup>.

An important resource to guide local planning is NICE PH30, which has five recommendations. They include:

- prioritising households at greatest risk
- working in partnership
- co-ordinating delivery
- ensuring families with children at high risk of injury are provided with home safety assessments and advice and referred to safety equipment schemes
- integrating home safety into all home visits

NICE PH29 makes wider recommendations to co-ordinate unintentional injury prevention activities to help achieve the commitments set out in local plans.

Interventions to prevent unintentional injuries have traditionally been considered in terms of the 'three Es': education, enforcement and engineering. This schema is enhanced with a fourth 'E' – empowerment, with the different strands operating well together.

Existing services are currently promoting these approaches and with stronger leadership could be enabled to do so more systematically. For example, education is crucial for policy makers and professionals as well as for parents and carers. Understanding the significance of unintentional injuries and being aware of the interventions that are most effective will enable those in positions of authority to discharge their responsibilities effectively and to make best use of resources.

Local authority children's services such as early help teams and early years settings are well placed to provide information and support to families around child accident prevention through educational input and family outreach work. Training for staff to further develop confidence and competence in this area is important<sup>48</sup>, alongside support to plan, implement and evaluate effective injury prevention programmes<sup>49</sup>.

With appropriate training and supervision, voluntary and community organisations such as Home-Start are also able to support vulnerable families on injury prevention, given the trusting relationships they develop as part of personalised user-led services<sup>50</sup>.

Educative approaches are often the best ways of addressing issues with parents such as safe sleeping<sup>51</sup>, avoiding scalds from hot drinks and the danger of drowning in a bath. When accident prevention is embedded in existing services there is potential to get across messages from a trusted source. For example, such as when a breastfeeding support volunteer explains about the dangers of holding a hot drink when feeding a baby. Approaches that empower parents and carers can embed home safety behaviours. For example, policies developed by parents at children's centres on where hot drinks can be consumed safely are more likely to be adopted from other parents than policies created by staff alone.

### Home safety engineering:

Education has an important role in tandem with engineering approaches such as the use of home safety equipment. It can be very difficult for low-income families to afford to make their homes safer. Research shows that providing safety education and free or low-cost safety equipment is effective in improving home safety and can reduce inequalities in some home safety practices<sup>52 53 54 55 56</sup>. Enforcement through trading standards and environmental health involves the use of standards, regulations or legislation to enforce safer behaviour, safer environments or safer products to reduce the risk of injury.

Given the evidence of inequality in the distribution of unintentional injuries, significant impact on outcomes will be achieved through targeting of additional preventative interventions to children and young people living in the most deprived areas, including schemes providing and fitting free or low-cost home safety equipment and other safety improvements in the built environment of homes and gardens<sup>57 58</sup>. The implementation of simple low-cost measures in new and existing housing stock can reduce accidents in the home and improve the quality of life. Recommended interventions include fitting blind cord cleats, stair gates and cupboard locks.

Bath water scalds can be severe injuries. Thermostatic mixing valves (TMVs), which reduce the temperature of bathwater to safe levels, are an effective engineering solution to this problem<sup>59</sup>. But initiatives to make the products available to vulnerable families need to reach those who will benefit most in a way that is not stigmatising. Therefore education for professionals on how to do this is essential for achieving take up, as well as for families on the benefits of the offer.

Improvements in home safety engineering offer some protection from injuries, however they only form part of the solution. For example, child-resistant packaging (engineering) alone will not prevent an inquisitive child from swallowing medicines or household chemicals. Appreciating the importance of storing the products safely out of reach, and child supervision, is most likely to be achieved through parental education.

# Four-step plan for local authorities and partnerships

There are several steps that can be taken to prevent unintentional injuries in and around the home. These steps can be co-ordinated by existing bodies such as health and wellbeing boards, local safeguarding children's boards or by specific unintentional injury prevention groups. This approach will also serve as a simple tool to help local authorities review existing plans.

## Step one: where are we now?

- audit the child injury prevention activities/potential of existing services and programmes locally (local authority, NHS, VCS)
- ensure that the joint strategic needs assessment (JSNA) includes information about unintentional injuries
- refer to national data and the five major causes in this guide – they provide a powerful call to action. Use reviews and local data to supplement this information
- explore ways of tackling data weaknesses including seeking PHE help
- identify neighbourhoods that might benefit from a targeted approach
- identify current resource levels (human, financial, 'other') and gaps

## Step two: where do we want to get to?

- identify national and local policy drivers such as the joint health and wellbeing strategy, the child poverty strategy and the public health outcomes framework
- set out local priorities and a local ambition to reduce injuries and inequalities in injury rates to prioritise vulnerable groups.

## Step three: how are we going to get there?

- ensure that a senior manager is designated lead for child injury prevention, and that the development of a local strategy is directed by an appropriate board such as the health and wellbeing board
- review evidence-based guidelines and recommendations, for example NICE guidelines PH29 and PH30
- embed prevention work into existing services and programmes and into commissioning
- ensure there are effective arrangements in place for co-ordinating injury prevention activities – refer to NICE PH29 which recommends establishing a multi-agency prevention group to lead local planning and implementation.

- agree a programme of activities based on evidence of effectiveness. If effective action is already taking place on a particular issue, or within one geographical area, coverage can then be extended
- prioritise the development of action plans for those most directly in touch with the most vulnerable, led by the services themselves working with local people
- identify resources needed and secure funds within an integrated commissioning process or local agreements to improve service pathways and coordination of care.
- ensure that staff have appropriate knowledge and skills
- use a range of methods to ensure effective communication about initiatives
- put in place evaluation and monitoring arrangements, including key performance indicators (KPIs)

#### Step four: How will we know when we have got there?

- monitor and evaluate. Build in evaluation from the outset and monitor how the programme is running; evaluate the eventual outcomes, in terms of changes in measures such as injuries, safety practices, inequalities, knowledge and processes
- consider the effect of the programme on wider areas of health and wellbeing. Look for unintended consequences

# Main data sources

Public Health England has several resources that can give local authorities a snapshot of local priorities and benchmark this against other areas. The Child and Maternal Health Intelligence Network ([www.chimat.org.uk](http://www.chimat.org.uk)) can provide data and evidence on the health and wellbeing of children and young people. The PHE data and knowledge gateway ([datagateway.phe.org.uk](http://datagateway.phe.org.uk)) contains information on a wide range of public health issues, including health inequalities and unintentional injury.

Unintentional injury reports for local authorities can be found at [www.chimat.org.uk/earlyyears/injuries](http://www.chimat.org.uk/earlyyears/injuries).

Health and social needs are inherently complex; it is unlikely that there will be a single factor which is responsible for the particular situation in your local area. For this reason, it is important that no single item of information is treated in isolation. Instead the various pieces of data and evidence should be used as pieces of a jigsaw which when linked together provide a picture of the needs of local communities. Admissions data for local hospitals, which forms the basis of the national HES database, is routinely collected and some hospitals have facilities to collect A&E data that can inform prevention activities.

As with all health data and intelligence, it is important to 'sense check' the findings with colleagues and triangulate the data with other sources available locally. All fire and rescue services collect and collate data on the incidents that they attend. Local knowledge will supplement this picture, including information from child death overview panels and serious case reviews<sup>60</sup>, but because these numbers are likely to be very small it is important not to base priorities on local data alone.

The causes of accidental deaths in England and Wales, broken down into age groups, are published annually by the Office for National Statistics.

National data on severe injuries is analysed by the Trauma Audit and Research Network (TARN, [www.tarn.ac.uk](http://www.tarn.ac.uk)) and the UK National Burn Injury Database holds detailed information from burns units (NBID, [ibidb.org/nbid](http://ibidb.org/nbid)).

Even when local authorities have child injury rates that are similar to those for England, this may mask significant inequalities between smaller geographical areas (e.g. districts, wards) within local authorities which need addressing. Local authorities should consider not only the overall child injury rate but also the extent of inequalities in child injury rates across smaller geographical areas when deciding what child injury prevention actions are required.

In any needs assessment or intervention, the views of children and local residents can further enable local authorities to identify the best approaches to preventing injury. Many local organisations use Child Safety Week, which takes place in June each year to engage with mothers, fathers and children of all ages (including the under-fives) in activities that promote injury prevention.

The work elected members undertake with local residents (for example, ward surgeries) can also provide an important level of qualitative information.

## Case studies

The following case studies were provided by our key partners:

The Child Accident Prevention Trust's (CAPT) Making the Link website features several case studies of different local authorities' accident prevention strategies and [activities](#).  
[www.makingthelink.net/case-studies](http://www.makingthelink.net/case-studies)

The Royal Society for the Prevention of Accidents' (RoSPA) website has a specific section on home safety including case studies.

<https://www.rospa.com/rospaweb/docs/advice-services/home-safety/safeathome-casestudies.pdf>

# Resources

## Public Health England (PHE)

Public Health Outcomes Framework data tool

[www.phoutcomes.info](http://www.phoutcomes.info)

Public Health England (2017) Preventing unintentional injuries: A guide for all staff working with children under five years.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/595017/Preventing\\_unintentional\\_injuries\\_guide.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/595017/Preventing_unintentional_injuries_guide.pdf)

Local authority public health teams wishing to access aggregated HES analysis are encouraged to use their local PHE knowledge and intelligence team via

[PHE.enquiries@gov.uk](mailto:PHE.enquiries@gov.uk)

PHE data resources: <https://www.gov.uk/guidance/child-and-maternal-health-data-and-intelligence-a-guide-for-health-professionals>

## British Medical Association (BMA)

Injury Prevention (2001)

[bmaopac.hosted.exlibrisgroup.com/exlibris/aleph/a21\\_1/apache\\_media/SY4CLTVKRE41T4TIH6PER95NXF8BLF.pdf](http://bmaopac.hosted.exlibrisgroup.com/exlibris/aleph/a21_1/apache_media/SY4CLTVKRE41T4TIH6PER95NXF8BLF.pdf)

Growing up in the UK (2013)

[bma.org.uk/working-for-change/improving-and-protecting-health/child-health/growing-up-in-the-uk](http://bma.org.uk/working-for-change/improving-and-protecting-health/child-health/growing-up-in-the-uk)

## The Chief Medical Officer

Annual Report of the Chief Medical Officer 2012

[www.gov.uk/government/publications/chief-medical-officers-annual-report-2012-our-children-deserve-better-prevention-pays](http://www.gov.uk/government/publications/chief-medical-officers-annual-report-2012-our-children-deserve-better-prevention-pays)

## Child Accident Prevention Trust (CAPT)

CAPT has two main websites. The Making the Link site contains information for senior staff and commissioners. The main site is designed for parents, carers and frontline staff.

[www.makingthelink.net](http://www.makingthelink.net)

[www.capt.org.uk](http://www.capt.org.uk)

## Department of Health (DH)

Giving all children a healthy start in life

[www.gov.uk/government/policies/giving-all-children-a-healthy-start-in-life](http://www.gov.uk/government/policies/giving-all-children-a-healthy-start-in-life)

## Department for Education (DfE)

Children's services

[www.gov.uk/childrens-services](http://www.gov.uk/childrens-services)

## Local Government Association (LGA)

The LGA works with local authorities, including lead members for children's services to deliver better health and wellbeing outcomes for children and young [people](#).

[www.local.gov.uk/childrens-health](http://www.local.gov.uk/childrens-health)

## National Institute for Health and Care Excellence (NICE)

PH29: Strategies to prevent unintentional injuries among children and young people aged under 15 (2010)

[guidance.nice.org.uk/PH29](http://guidance.nice.org.uk/PH29)

PH30: Preventing unintentional injuries in the home among children and young people aged under 15 (2010)

[guidance.nice.org.uk/PH30](http://guidance.nice.org.uk/PH30)

Preventing unintentional injuries among under-15s. Costing report. Implementing NICE guidance (2010)

[guidance.nice.org.uk/nicemedia/live/13274/51694/51694.pdf](http://guidance.nice.org.uk/nicemedia/live/13274/51694/51694.pdf)

Preventing unintentional injuries among under-15s. Costing template. Implementing NICE guidance. (2010)

[guidance.nice.org.uk/nicemedia/live/13274/51694/51694.pdf](http://guidance.nice.org.uk/nicemedia/live/13274/51694/51694.pdf)

Preventing unintentional injuries among the under-15s. The key facts for local councillors: making the case for investment (2011) [LGID](#).

[www.guidance.nice.org.uk/PH30/Factsheet](http://www.guidance.nice.org.uk/PH30/Factsheet)

Strategies to prevent unintentional injuries among children and young people aged under 15: Evidence Update (2013)

[www.nice.org.uk/nicemedia/live/13272/66798/66798.pdf](http://www.nice.org.uk/nicemedia/live/13272/66798/66798.pdf)

## Royal Society for the Prevention of Accidents (RoSPA)

RoSPA's website includes specific sections on home safety and child [accidents](#).

[www.rospace.com](http://www.rospace.com)

Delivering accident prevention at local level in the new public health system (2013)

[www.rospace.com/about/currentcampaigns/publichealth/delivering-accident-prevention.aspx](http://www.rospace.com/about/currentcampaigns/publichealth/delivering-accident-prevention.aspx)

## University of Nottingham

Keeping children safe at home research programme

Keeping children safe at home: A guide for commissioners of child health services on preventing unintentional injuries among the under fives. 2016

<https://www.nottingham.ac.uk/research/groups/injuryresearch/documents/kcs-guide-for-commissioners.pdf>

Hayes M, Kendrick D, Deave T. Injury Prevention Briefing. Preventing unintentional injuries to the under fives: a guide for practitioners. Available from:

<https://www.nottingham.ac.uk/research/groups/injuryresearch/documents/ipb-2.pdf>

A programme identifying risk factors for injuries, the costs of injuries, effective and cost-effective interventions and effective ways of passing on advice to parents on preventing accidents via children's centres.

[www.nottingham.ac.uk/research/groups/injuryresearch/projects/kcs/index.aspx](http://www.nottingham.ac.uk/research/groups/injuryresearch/projects/kcs/index.aspx)

## World Health Organization (WHO)

World report on child injury prevention (2008)

[www.who.int/violence\\_injury\\_prevention/child/injury/world\\_report/Cover\\_and\\_front\\_matter.pdf?ua=1](http://www.who.int/violence_injury_prevention/child/injury/world_report/Cover_and_front_matter.pdf?ua=1)

European report on child injury prevention (2008)

[www.who.int/violence\\_injury\\_prevention/child/injury/world\\_report/European\\_report.pdf](http://www.who.int/violence_injury_prevention/child/injury/world_report/European_report.pdf)

Injuries and inequities: guidance for addressing inequities in unintentional injuries (2014)

[www.euro.who.int/en/publications/abstracts/injuries-and-inequities.-guidance-for-addressing-inequities-in-unintentional-injuries](http://www.euro.who.int/en/publications/abstracts/injuries-and-inequities.-guidance-for-addressing-inequities-in-unintentional-injuries)

# Methodology

An analysis of the last five years of HES and mortality statistics for England was carried out to identify main issues.

HES data is collected over financial years, with the five-year study period being 2011/12 to 2015/16. The mortality data studied covered the calendar years 2011 to 2015 inclusive. The analysis excluded transport-related admissions and deaths. The initial analysis covered children and young people aged 0-25 years, but the main focus was on children under the age of five.

Further information about the methodology of the analysis and the results can be found in the accompanying resource “Unintentional injuries among children under five years: data and information pack” published with this document.

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