

BUILDING SAFER COMMUNITIES

National Strategic Assessment for Unintentional Harm:

A picture of unintentional harm in Scotland

April 2017

*Phase 2:
Unintentional
Harm*

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1. EXECUTIVE SUMMARY

This work is part of Phase 2 of Building Safer Communities (BSC), one strand of the justice change programme that contributes to the Justice Strategy. Building Safer Communities works collaboratively with local and national partners to help communities make best use of their existing strengths and uses the latest in improvement methodologies to drive change.

The vision is of a flourishing, optimistic Scotland in which resilient individuals, families and communities live safe from crime, disorder, danger and harm.

The aims are to reduce the number of victims of crime (Phase 1) and to reduce the number of victims of unintentional harm (Phase 2) which has been defined as “Predictable and Preventable Unintentional Physical and Psychological Harm”.

Who is this for?

This strategic assessment aims to provide a picture of unintentional harm in Scotland and has informed the selection of priorities for Phase 2 of Building Safer Communities. It can also be used as a resource of information on unintentional harm in Scotland for policy makers and local practitioners. This document is a more technical document than the other resources produced to support Phase 2 BSC (see below for more details) and is the piece of evidence that helped inform the priorities for Phase 2. It does not contain recommendations – only findings and analysis as its primary purpose is to be the evidence base to inform the selection of priorities; recommendations can be found within the Summary document and thematic briefing papers.

All supporting documents relating to Building Safer Communities Phase 2: National Strategic Assessment Unintentional Harm are available on the BSC website here: <http://www.bsc.scot/publications.html>

The Issue

From a global perspective, children are protected against unintentional harm, within the United Nations Convention on the Rights of the Child (UNCRC) which, under Article 24, section (e) is included: *To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the **prevention of accidents**;*

Within Scotland, although there is no similarly explicit mention of ‘prevention of accidents or unintentional harm’ there is provision within the The Children and Young People (Scotland) Act 2014 for this. It focuses on Getting it Right for Every Child (GIRFEC) and its eight indicators (SHANARRI), including S for Safe: that children should be protected from harm at home¹.

¹Scottish Government Introduction to GIRFEC. Available at <http://www.gov.scot/Topics/People/Young-People/gettingitright>

Within Scotland's National Performance Framework (NPF) lies the vision for a successful country. The five Strategic Objectives to gaining this success include that we are 'Healthier' and 'Safer and Stronger' – two areas where a reduction in unintentional harm will contribute to Scotland's success. There are clear links to several of the supporting 16 national outcomes included in the NPF as follows:

- We live longer and healthier lives
- Our children have the best start in life and are ready to succeed
- We have improved the life chances for children, young people and families at risk
- We live our lives free from crime, disorder and danger
- We live in well-designed sustainable places where we are able to access the amenities and services we need
- We have strong, resilient and supportive communities where people take responsibility for their own actions and how they affect others
- Our people are able to maintain their independence as they get older and are able to access appropriate support when they need it.

Though there is currently no single indicator associated with unintentional harm, there are some related indicators such as 'Reducing deaths on Scotland's roads', 'Reduce emergency admissions to hospital' and 'Improve mental well-being' which are important in measuring improvements in the number of Scotland's people affected by injuries that could have been prevented. The latter quite clearly includes, under 'what will influence this indicator', the need to work in partnership with local and national government as well as health boards to *reduce accidents and improve safety in the home*. There are also a number of other indicators which may impact upon or be impacted by any work taken forward by Building Safer Communities Phase 2, for example, 'Increase the proportion of journeys to work made by public or active transport', 'Improve people's perceptions of their neighbourhood' or 'Reduce children's deprivation'.

Physical unintentional harm kills about 14,000 people per annum across the UK; they are the principal preventable cause of death up to the age of 39 and are the main cause of death for children post-infancy. Unintentional harm accounts for 2% of deaths but **11%** of all years of life lost in the working age population from all causes (19% of all years of life lost in the working age population from preventable causes); more than alcohol-related disease, cardiovascular disease, assault, drug and alcohol misuse, infections and diabetes². Up to the age of 60, physical unintentional harm is the leading cause of Preventable Years of Life Lost (PrYLL), accounting for 23% of these PrYLL. Physical unintentional harm is the leading cause of PrYLL until age 75 when it drops to 2nd behind cancer.

For a largely preventable issue, unintentional harm in Scotland is a large burden on the population in terms of death and serious injury but also the number of years lost to disability, time off work, not to mention the emotional impact on those injured and their family and friends. For public services it can also be a burden in terms of unscheduled care costs, volunteer risk and time (for example rescue organisations), and reduce the amount of time that can be dedicated to prevention. Various reports including one by the Chief Medical Officer (UK) present a powerful economic case for injury prevention. Extrapolating from UK

² Presentation by Tom Mullarkey RoSPA CEO (March 2015) using data from Alliance and Royal College of Emergency Medicine presentation. Available at <http://slideplayer.com/slide/10869435/>

figures, the costs to the NHS in Scotland amount to at least £200 million per year (of which £40 million relate to children)³.

From strategic assessment it became clear that there is a compelling narrative that arises when unintentional harm is looked at in any depth:

- The sheer numbers compared to other community safety themes: deaths per year (16 to 18 times the number of homicide victims annually) and one of the leading causes of death for children; 55,547⁵ emergency hospital admissions annually (1 in 10 adult emergency hospital admissions and 1 in 8 child emergency hospital admissions are due to unintentional harm) and at least half a million incidents per year.
- There is a potential for unintentional harm to be an increasing burden in Scotland – older people are over-represented in deaths and injuries from unintentional causes and the projected rise in this population bracket – 80% increase in the over 75s between 2012 and 2037 - in the coming years means demographics are not favourable for physical unintentional harm rates, falls in particular.
- Notwithstanding the sometimes devastating impact on people's lives – social, emotional and physical – unintentional harm can be extremely costly⁴: A single fatality can cost from £1.4m (fire fatality) to £1.6m (fatality within the home) to £1.9m (fatality on the road). A serious injury can cost anywhere from £45.5k (incidents within the home) to £214k (incident on the road). Even a minor injury can cost anywhere from £200 treated at a GP up to £8k treated at a hospital. A minor injury sustained in a road transport collision can cost anything up to £21.5k.
- With a few exceptions (deaths from road traffic collisions and to a lesser extent fire/flame), there has been little improvement in death or physical harm rates over time – from 1995 to 2014 deaths have all been between roughly 1,250 and 1,400; in 2006/07 there were 54,393 emergency hospital admissions and 55,547 in 2015-16⁵.

Despite this, however, much unintentional harm is preventable through a variety of mechanisms and the limited improvement in death and injury rates (with the exception of the areas mentioned above) present broad scope for improvements – road traffic collision fatalities and fire fatalities are excellent examples of the potential for improvements both of which have focused on longer-term national preventative strategies. Making unintentional harm a core theme of a prominent Scottish Government programme on top of the commitment to the creation of the strategic assessment are commendable first steps to tackling the issue of unintentional harm in Scotland and in time will hopefully be supported by

³ Costs from a letter written by Professor David Stone, PEACH Unit (specialist paediatrics unit) historically part of NHS Greater Glasgow and Clyde. Available on request.

⁴ These figures include the costs to public services e.g. NHS, Local Authority, Police and Fire & Rescue Service but also to the economy in terms of lost working hours/days/years.

⁵ NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2016* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2017-03-07/2017-03-07-UI-Report.pdf>

activity nationally and locally with resources devoted to this important community safety and public health issue.

Priorities

This document contains detailed analysis of a number of aspects of unintentional harm, however a number of themes became prominent during the strategic assessment process and a partnership priority-setting event held in November 2015 and are recommended as priority areas for Phase 2 of Building Safer Communities:

Recommended Priorities

1. The Under-Fives
2. Older People
3. Deprivation
4. Strategic Data Gathering, Analysis and Sharing
5. Bridging the Gap between Strategy and Delivery

2. Bridging the Gap between Strategy and Delivery
4. Strategic Data Gathering, Analysis and Sharing

The strategic assessment process also explored 'what works' in preventing unintentional harm which is included as Appendix 1 and the Royal Society for the Prevention of Accidents (RoSPA) in Scotland were funded to research existing practise for home safety in Scotland (Appendix 2).

Moving Forward

Many publications make it clear that in addition to specific projects or programmes there are some core themes and approaches that are a necessity to make wholesale change to unintentional harm:

- ✓ **Leadership** for unintentional harm prevention; particularly within the public health sector of statutory agencies such as health boards and central and local government. While absolute safety is unattainable, there is a legal and moral duty of care to citizens, especially those who are highly vulnerable. A discussion on whether Building Safer Communities Phase 2 wishes to focus on all unintentional harm (from minor right up to fatal incidents) or whether to focus on only the most severe unintentional harm would be beneficial in setting the future direction of the programme.

- ✓ **Partnership working** and an integrated safety strategy. The World Health Organisation has repeatedly called for this and there is some evidence that those countries and agencies adopting these strategies have achieved greater progress in promoting safety. The priority-setting process, in addition to the strategic assessment data analysis makes it very clear that all policies and organisations that deal with themes like inequality, poverty and deprivation, children and young people, older people and public health in addition to local community planning and community safety plans and public health strategies should all make explicit reference to unintentional harm at some point.
- ✓ **Enhancing capacity and infrastructure** for injury prevention is a key part of this – specialist skills and training are required – in addition to other resources: data from UK Clinical Research Collaboration quoted by Nicholl showed that injury contributes 6.6% of UK Disability Adjusted Life Years (DALYs)⁵ yet receives only 0.3% of health research funding in 2004-05; a 22-fold discrepancy.
- ✓ **Injury surveillance** including basic information about the injury sustained and demographic information (i.e. age, gender etc.) but also information about the injury mechanism, where it occurred and what the individual was doing at the time of the incident can all be used to develop and target approaches to preventing unintentional harm.
- ✓ **Interventions** including community-led work which focuses on altering behaviour; education; promoting environmental change within the community; or passing and enforcing legislation, seek to change social norms about acceptable safety behaviours. This works for some issues but less is known about the effectiveness for other themes or communities. A combination of interventions – targeted and more general – are likely to be most effective at preventing unintentional harm.
 - **Targeting** physical prevention mechanisms and education to priority populations and geographical areas – this links to the importance of robust injury surveillance being used to inform these interventions.
 - **Technology and legislation.** The wider environment – physical, social and emotional – is crucial to the generation or avoidance of injury risk and much of this is controlled only through technology and legislation.

1.1 Prevention of Physical Unintentional Harm in Scotland

⁵ One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability. Source: World Health Organisation available at http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/

Incidents that result in physical unintentional harm are not random events. They are predictable and avoidable, some argue more so than many other causes of death and ill health. To illustrate this point, a study of deaths as a result of unintentional physical harm in the United States estimated that a third of all childhood injury deaths could be avoided if interventions of known efficacy were implemented across the country. Doing something similar in detail for the UK hasn't been undertaken, but it seems reasonable that there could be parallels to the US study. This demonstrates the importance of understanding and implementing what works to prevent unintentional harm.

There has been some focus on the issue of unintentional harm historically (see Figure 1) and there is some good work underway in Scotland to tackle unintentional harm (see Figure 2), however this hasn't received consistent momentum or been given a consistently prominent position across partners or within central or local government. There has been a welcome focus on particular issues such as road safety and falls prevention and some positive partnership work but nothing similar in terms of the drive and focus for *all* aspects of unintentional harm up from the late 1990s up until the launch of Building Safer Communities in 2014. On a number of occasions unintentional harm – or aspects thereof – have been championed as a priority issue but never translated into activity in the way many campaigners hoped.

Despite the work highlighted in Figures 1 and 2, the strategic assessment process identified a number of gaps including a lack of overarching policy, strategy or governance arrangements for unintentional harm, (this includes unintentional harm as a whole issue but extends to particular themes like home safety, child safety, primary prevention for falls) and the lack of prominence unintentional harm nationally and locally (with a few exceptions) for this issue. The opportunity for Building Safer Communities is to turn the focus on unintentional harm into activity, complete with performance measures to measure progress.

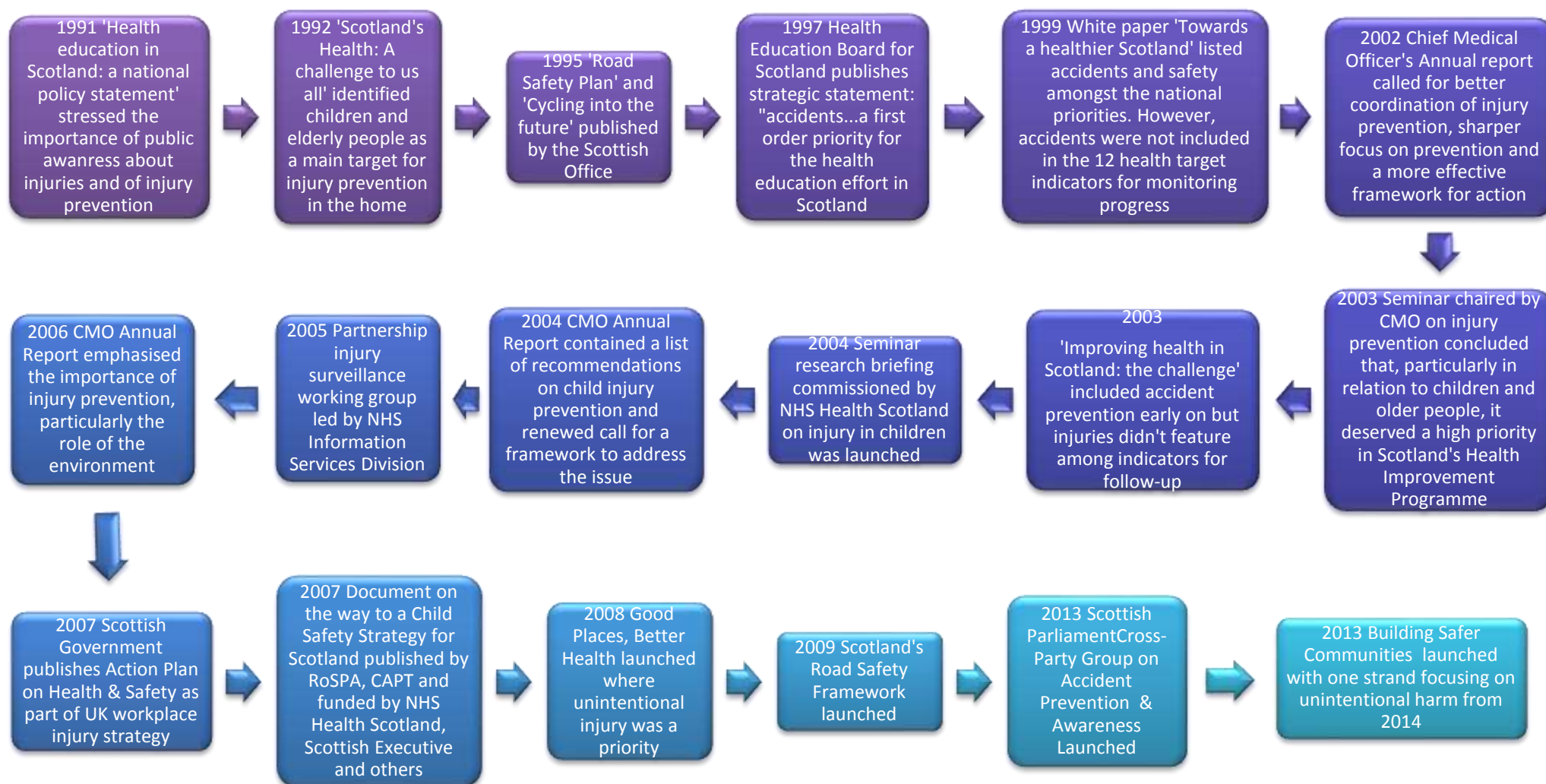


Figure 1 Timeline of National Physical Unintentional Harm Prevention Efforts in Scotland

Locally	National organisations	Existing National Partnership Work
<ul style="list-style-type: none"> • A priority for some Community Planning Partnerships (CPPs) and Community Safety Partnerships (CSPs) • Work undertaken locally in joint safety training for fire and rescue officers and other healthcare workers • Projects such as peer-led safety advice for older people, care and repair schemes, community intelligence-led work on water safety, community rescue resources, home safety checks, home safety equipment scheme (see Appendix for more examples) 	<ul style="list-style-type: none"> • Child safety work by Child Accident Prevention Trust (CAPT) and Royal Society for the Prevention of Accidents (RoSPA) • RoSPA's work on home safety, road safety, occupational safety and other aspects of unintentional harm prevention • Scottish Fire and Rescue Service's <i>Strategic Plan 2013-16</i> • Home Safety Scotland • Electrical Safety First – Scotland • Safety policy leads group within Scottish Government • Health and Safety Executive 	<ul style="list-style-type: none"> • NHS Scotland's <i>Management & Prevention of Falls in the Community</i> • Scotland's <i>Road Safety Framework</i> • Visitor safety in countryside working group • Drowning prevention strategy through Water Safety Scotland (WSS) • The Joint Improvement Team's <i>Active & Healthy Ageing strategy</i> • Falls prevention strategy • Cross-party group on accident prevention and safety awareness • Equal opportunities committee inquiry into loneliness and isolation

Figure 2 Existing Physical Unintentional Harm Prevention Work, Scotland

The findings from the evidence base developed for Phase 2 do not seek to detract from this work, or replicate it but instead it aims to create the first evidence base of its kind for unintentional harm in Scotland and from this develop and coordinate evidence-based preventative approaches for tackling unintentional harm, encourage local partnerships to prioritise this area and seek to influence the embedding of unintentional harm as a consideration across a number of policy areas.

1.2 Recommended Priorities

In order to identify a range of priorities and recommendations to support a coordinated approach to tackling unintentional harm in Scotland, following the development of the Strategic Assessment an event was held in November 2015 with a range of key stakeholders representing both the public and third sectors. As part of the workshop participants were asked to think about the evidence in the presentation which summarised the strategic assessment, as well as their own experience, and suggest the three main priorities for BSC Phase 2. Although participants expressed their ideas in different ways, five main priorities emerged:

1. Areas of increased deprivation
2. The under-fives
3. The over-65s
4. Strategic data gathering, analysis and sharing
5. Bridging the gap between strategy and delivery

More information can be found in the main body of the document (Section 4); however Sections 1.2.1 to 1.2.6 give a flavour of the key facts for each of the priority areas and illustrate the reasoning behind their selection as priority areas of focus for Phase 2 of Building Safer Communities.

Other important themes that arose from the analysis were home safety (which accounts for a third of all unintentional harm in Scotland⁶) and falls (which accounts for 42% of accidental deaths in Scotland, 64% of emergency hospital admissions in adults over 15 years and 47.8% in children under 15 years and 62% of A&E attendances for an unintentional injury⁷). However as most unintentional harm in the home and most falls occur in the very young and the very old it was felt these were already covered by the selection of the under-fives and over-65s as priorities for BSC Phase 2.

⁶ Data including the Scottish Health Survey, Emergency hospital admissions and A&E attendance all support this assertion.

⁷ NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2016* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2017-03-07/2017-03-07-UI-Report.pdf>

1.2.1 Priority 1: Life Stage - Children and young people

Children and young people, particularly the under-fives in Scotland are disproportionately affected by unintentional harm. Home safety is particularly important in this life stage - between 70% and 85% of all unintentional harm to under-fives occur in the home.

Around 8% of deaths in those under the age of 15 is the result of unintentional harm and this rises to 40% when deaths linked to the neo-natal period are removed⁷ - and is becoming a more important cause of death in children as other causes of death decline⁸. In addition to deaths, a large number of children and adolescents each year are affected by non-fatal injury – around 140,000 incidents each year and over 7,500 emergency hospital admissions.

In the UK, physical unintentional harm mortality (though not necessarily incidence) has declined over the past 20 years for reasons that are not entirely clear. Declining mortality may reflect improved trauma care and survival rather than declining incidence, although specific injury prevention measures are assumed to have contributed somewhat to this trend.

Despite this, from the European Child Safety Alliance report cards published in 2012, child and adolescent injury death rates (0-19 years of age) in Scotland for males and females still remain 1.8 and 1.2 times higher, respectively, than rates in the Netherlands, one of the safest countries in Europe. Numbers of incidents and disabilities for young people show a similar picture. From the same report Scotland was assessed as performing well on particular aspects of child and adolescent safety (particularly road safety issues) and poorly on others (home safety including falls, poisonings, burns and scalds, choking/strangulation and drowning are mentioned specifically); though it recognises that progress of child injury prevention may be limited due to current levels of legislative powers.

⁷ Calculated using data from National Records for Scotland (NRS) Vital events publications 2014 available at <http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/accidental-deaths>

⁸ Healthcare Quality Improvement Partnership (2013) *Overview of child deaths in the four UK countries* Child Health Reviews – UK Clinical Outcome Review Programme [http://www.rcpch.ac.uk/system/files/protected/page/CHRUUK_Module%20A%20low%20res%20\(2\).pdf](http://www.rcpch.ac.uk/system/files/protected/page/CHRUUK_Module%20A%20low%20res%20(2).pdf)

The wider costs of a serious home accident for a child aged under five has been estimated at £33,200. But while NHS costs tend to be highlighted, there are 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. The lifetime costs for a three-year-old child who suffers a severe TBI totals £4.89m. Notwithstanding the emotional impact and physical pain there are also wider impacts on the family - for example, a toddler's severe bathwater scald can require painful skin grafts into early adulthood which disrupt schooling and add to family stress.

Injury prevention for all children and young people is important, however the under-fives were singled out as injury rates in this group are higher than in the other children – emergency hospital admission discharge rate of 1,274 per 100,000 population compared to 951 per 1000,000 for 5-9s and 10-14s – and it is the top cause of death after the neo-natal period. Almost all injuries sustained are in the home and they are also at higher risk of a wider range of injuries than other age groups including falls (accounting for around 47.8% of all child emergency hospital admissions for physical unintentional harm), choking and asphyxiation, drowning and scalds. Arguably they also require the most protection and advocacy compared to other age groups due to the inherently vulnerable nature of the very young.

There is a clear correlation between the developmental stage of children and the injuries they sustain. Findings therefore highlight the importance of designing injury prevention

CHILD PHYSICAL UNINTENTIONAL HARM

Most injuries to pre-school children occur at home (e.g. falls, burns and scalds), while school age children are injured on the roads or at play. After infancy, boys are at a higher risk than girls. There is a strong correlation between injury risk and social deprivation in general and with dysfunctional parenting in particular, possibly mediated through child behavioural problems. Lone carer families, particularly those with multiple young children also have a strong correlation with injury risk.

Children who suffer repeated injuries are often labelled “accident prone”, a concept that is highly problematic. Some children may be at higher risk because of poor neuromuscular co-ordination or other physiological factors, or due to a boisterous or hyperactive personality, or through their constant exposure to a hazardous physical environment.

There is a correlation between children and young people scoring highly on SDQ (strengths and difficulties questionnaire linked to mental wellbeing) and the likelihood of them being injured unintentionally.

The imbalance between someone's ability to perceive risks/hazards and their skill/ability at a task is a particular risk -for the parents of young children they often underestimate the child's physical ability (e.g. reaching or climbing) and overestimate the child's ability to perceive risks/hazards (e.g. the danger of climbing on something high or hot drinks).

The gender gap in injury risk is far from consistent across age groups and causal categories and may be declining over time in some countries. The reasons for both the gender difference and its variation are obscure. Assumptions about greater risk-taking behaviour in boys may be plausible but are based on minimal research evidence. Differences in boys' and girls' physical and cognitive development, spatial abilities and motor coordination may be at least as important as their attitude to risk. Varying exposure to environmental hazards is also likely to be a key factor.

Risk-taking behaviour has been identified as a leading determinant of injury among adolescents (Pickett et al., 2005). Indeed, the high prevalence of adolescent injury confirms its importance as a health problem (Pickett et al., 2005). Supportive social climates are thought to protect adolescents from engaging in certain risk-taking behaviours (e.g. drunkenness, non-use of seatbelt, drug use), and hence the occurrence of some forms of injury (Pickett et al., 2006).

interventions that are appropriate for specific stages of development in children (see sidebar⁹).

Risky play has many benefits and minor bumps and scrapes are an inevitable part of growing up, and cannot be prevented, but serious injury is potentially avoidable through the implementation of evidence-based preventative measures.

1.2.2 Priority 2: Life Stage - Older people

Older people in Scotland, particularly the over 75s and 85s but not excluding those over 65 years, are disproportionately affected by unintentional harm. Home safety is particularly important for this age group as 1 in 2 physical unintentional harm incidents occurs in the home. There is projected to be an increase in Scotland's population of older people¹⁰; an age group disproportionately affected by unintentional harm and most likely to be hospitalised and die as a result of unintentional harm.

Older people have higher death and serious injury rates than any other age group:

- 12.3 deaths per 100,000 population in the under 75s and 160.4 deaths per 100,000 population in those aged over 75 in 2014¹¹
- The emergency hospital admission discharge rate is just over 1000 per 1000 population for over 15s doubling to 2,440 per 1000 population in the over 65s and almost 4,000 per 1000 population in the over 75s in year ending 31 March 2015¹²

Over 87% of physical unintentional harm emergency hospital admissions for older people over 75 are as the result of a fall and even a 'minor' fall can have a lasting impact - around 1% of falls (6,000 per year) result in hip fracture and the acute management of hip fracture alone costs NHS Scotland in excess of £73 million each year¹³. 20% of older people who sustain a hip fracture die within six months; approximately half will never be 'functional' walkers again¹⁴.

⁹ MacInnes, K and Stone, DH (2008) *Stages of development and injury: An epidemiological survey of young children presenting to an emergency department* BMC Public Health

¹⁰ National Records of Scotland (NRS) (2013) *Population Projection of Scotland (2012-based)* <http://www.nrscotland.gov.uk/files/statistics/population-projections/2012-based/2012-pop-proj-publication.pdf> accessed 21.08.2015.

¹¹ National Records of Scotland (NRS) (2015) *Accidental deaths 2014* <http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/accidental-deaths>

¹² NHS Information Services Division (ISD) (2016) *Unintentional Injuries Year-ending 31 March 2015* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2016-03-08/2016-03-08-UI-Summary.pdf>

¹³ *Up and About or Falling Short A report of the findings of a mapping of services for falls prevention and management and fracture prevention in older people in Scotland.* The National Falls Programme in association with WorksOut 2012 <http://www.gov.scot/Resource/0039/00393638.pdf>

¹⁴ *Up and About or Falling Short A report of the findings of a mapping of services for falls prevention and management and fracture prevention in older people in Scotland.* The National Falls Programme in association with WorksOut 2012 <http://www.gov.scot/Resource/0039/00393638.pdf>

Similar to the under-fives, over 90% of injuries to this age group occur within the home and they are also at risk of burns and scalds as well as falls¹⁵.

Unintentional psychological harm is also higher in this older age group - mental wellbeing falls to the lowest mean score among those over 75 years of age in Scotland. From various academic sources it is estimated that around 10% of UK residents aged over 65 years of age are lonely most or all of the time with many more at risk of loneliness¹⁶. Amongst the older old, those aged over 80 years, rates of self-reported loneliness climb steeply to approximately 50%¹⁷. Studies have found that, aside from age, several other factors are associated with loneliness. These include living alone, never being married, widowhood, support network type, poor health, cognitive impairment or poor mental health. These factors are common and often overlap in older age, giving a rationale to provide particular support to those going through the changes and transitions of growing older that might lead to loneliness.

The links between loneliness and poor health are well established. In their recent review of the evidence on loneliness and social isolation, the Social Care Institute for Excellence highlighted that being lonely has a significant and lasting effect on individuals' health. It is associated with higher blood pressure and depression¹⁸, and leads to higher rates of mortality¹⁹ – comparable to those associated with smoking and alcohol consumption. It is also linked to higher incidence of dementia²⁰.

1.2.3 Priority 3: Deprivation and Family Structure

People from areas of increased deprivation in Scotland are disproportionately affected by unintentional harm.

Unintentional harm happens in all communities to all groups of people; however people within more deprived communities are more likely to experience unintentional harm – particularly more serious unintentional harm (i.e. emergency hospital admissions and death) than those within less deprived communities. This is shown for dwelling fires, emergency hospital admissions, mortality, loneliness and social isolation and road traffic collision injuries, loneliness and mental well-being; and is backed up by a significant body of

¹⁵

From information provided in NHS ISD *Unintentional Injuries* publications available at <http://www.isdscotland.org/Health-Topics/Emergency-Care/Unintentional-Injuries/>

¹⁶ Bolton, M (2012) *Loneliness the state we're in* Age UK Oxfordshire available at <http://www.ageuk.org.uk/brandpartnerglobal/oxfordshirevpp/documents/loneliness%20the%20state%20we%20are%20in%20-%20report%202013.pdf> and Victor, CR & Yang, K (2012) *The prevalence of loneliness among adults: A case study of the United Kingdom* Journal of Psychology

¹⁷ Age UK (2010) *Loneliness and isolation evidence review*, London: Age UK

¹⁸ Luanaigh C and Lawlor BA (2008) *Loneliness and the health of older people*, International Journal of Geriatric Psychiatry

¹⁹ Steptoe A, Shankar A, Demakakos P et al (2013) *Social isolation, loneliness and all-cause mortality in older men and woman (PDF)*, PNAS

²⁰ Fratiglioni L, Wang HX, Ericsson K et al (2000) *Influence of social network on occurrence of dementia: A community-based longitudinal study*, Lancet

academic study too. It is not, however, shown within the Scottish Health Survey (SHeS) for self-reported prevalence – this could be due to differences in data analysis or could be because people in more deprived areas experience only more severe unintentional harm compared to people in less deprived areas.

Deprivation is not the only factor of this type: academic research has also identified that household structure is important (with more unintentional harm in households headed by a single adult) in addition to other factors that contribute to family ‘stress’ which include households with one parent/carer and multiple young children.

Some of the higher prevalence in more deprived areas could be due to:

- Lower incomes (which is one measure of deprivation) could mean safety equipment is prohibitively expensive.
- Other factors which contribute to family stress and chaotic lifestyles and which are linked to certain aspects of unintentional injuries e.g. drug and alcohol misuse are higher within deprived areas.
- Poorer health within more deprived areas could mean falls and other incidents in older people are a) more prevalent or b) result in more serious injury when they occur due to poorer overall health²¹.

The Child Accident Prevention Trust also highlights the following as potential reasons for this deprivation gradient²² in child unintentional harm specifically:

- Overcrowded homes – children from overcrowded homes are three times more likely to be injured (cited)
- Lack of a garden in which children can play:
- In 2014, 62% of those who lived in the top 20% most deprived areas lived within a 5 minute walk of their local green space compared to 71% of those who lived in the 20% least deprived areas.
- Greater exposure to through-roads and roads without parking
- Higher parental smoking rates – poorer parents are more likely to smoke, smoking is a major cause of house fires, and households with smokers are less likely to have working smoke alarms (cited)
- Lack of accessible information – disadvantaged parents are six times more likely to have serious literacy problems; parents who are long-term unemployed, young parents and parents from deprived black and minority ethnic communities are over-represented among those with poor literacy (cited). One child home safety leaflet

²¹ Audit Commission Scotland (2012) *Health Inequalities in Scotland* http://www.audit-scotland.gov.uk/docs/health/2012/nr_121213_health_inequalities.pdf

²² Child Accident Prevention Trust (2013) *Inequalities and Deprivation* briefing. Original sources available at <http://www.makingthelink.net/topic-briefings/inequalities-and-deprivation>

distributed in Scotland has a reading age of 13-15 years – the average adult reading age in Scotland is 11 years old²³ and this is often lower in more deprived areas.

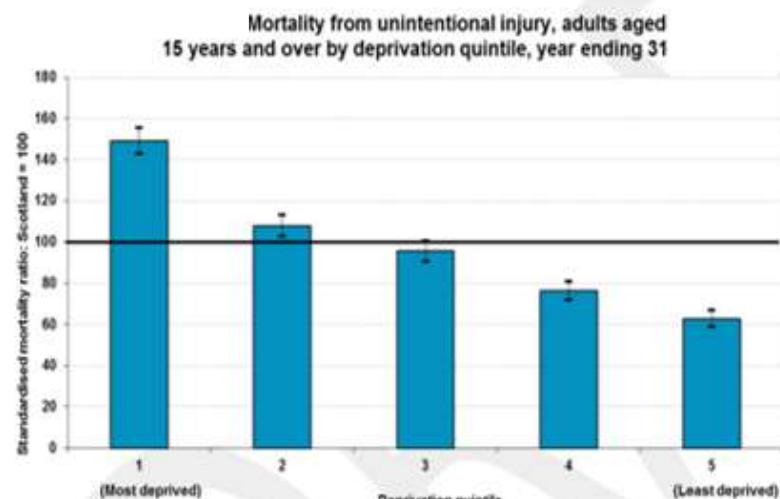
- Parental understanding of child development, with deprived parents more likely to be taken by surprise by the next stage of their child's development.
- There are also links to family type – teenage parents may need more support to keep their babies safe – and family size – disadvantaged parents with larger families may struggle to control their children's behavior.

Some commentators have also highlighted how recent spending cutbacks in local authorities may have an effect on accidental injuries among low-income children. The removal of speed camera funding, for example, can put low-income children at particular risk of road traffic accidents (cited).

There are clear links between well connected and cohesive communities and lower levels of isolation and loneliness; this could be an important approach to addressing issues of psychological unintentional harm in older people.

²³ Scottish Health Council Participation toolkit
http://www.scottishhealthcouncil.org/patient_public_participation/participation_toolkit/written_information.aspx#.VuQNj_bKmE

More exploration of the reasons for this would be a step forward in understanding unintentional harm and aid in the development of preventative interventions.



Source: National Records of Scotland, Scottish Index of Multiple Deprivation (SIMD) 2012

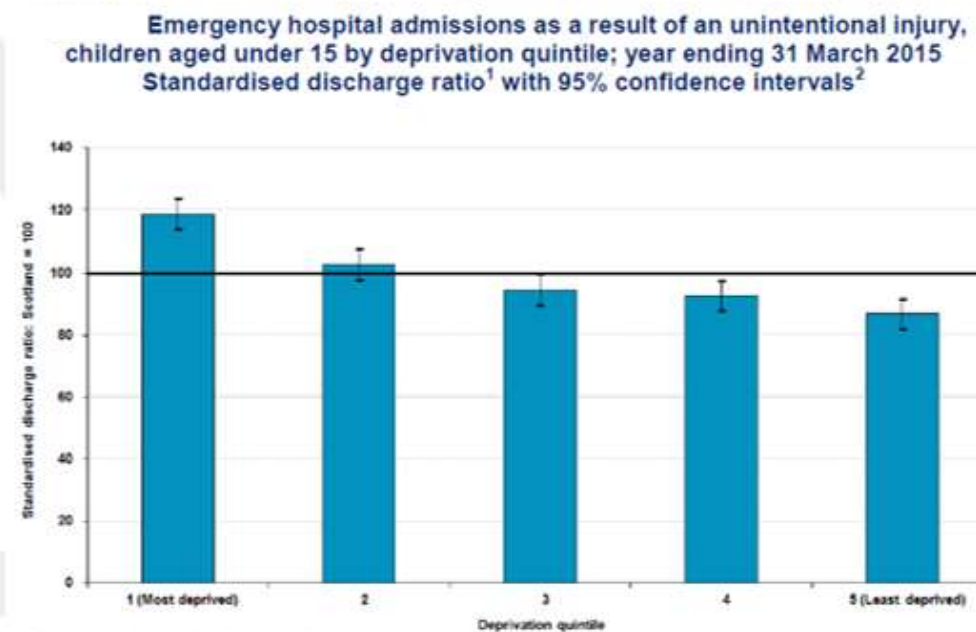
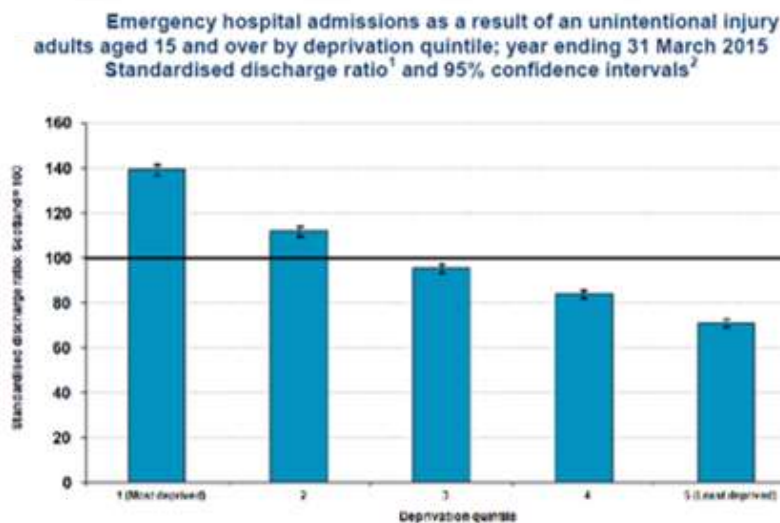


Figure 3 Charts showing the Relationship between Unintentional Harm and Deprivation

Figure 3 shows that children and adults in the most deprived areas are more likely than children and adults in the least deprived areas to have an emergency admission to hospital as a result of physical unintentional harm - in 2014/15 children in the most deprived areas had a standardised discharge ratio approximately 19% higher than the Scottish average (in 2013/14 this was 27%). For adults, this was nearly 40% higher than the Scottish average (in 2013/14 this was 39%).

Taking into account the age and sex breakdown of the population compared to Scotland there were more deaths from physical unintentional harm incidents in deprived areas than less deprived areas (the standardised mortality ratio in 2014 was 49% higher in the most deprived area and 37% lower in the least deprived area compared to the Scottish average).

From the Growing Up in Scotland survey, 26% of those living in the most deprived areas of Scotland experienced an accident, compared with 17% in the least deprived areas (based on Scottish Index of Multiple Deprivation (SIMD) quintiles)²⁴. Children living in deprived areas were also more likely than those living in more affluent areas to experience two or more unintentional harm incidents requiring treatment during their first four years.

'Family adversity' (an index combining eight measures of disadvantage including poverty and maternal depression) is significantly associated with children experiencing three or more physical unintentional harm incidents requiring medical attention during their first five years. However, no significant relationship between parenting styles and parent-child relationships and accidents/ injuries was identified in this study²⁵.

From the Scottish Health Survey 2009/2011 the incident location and deprivation have no notable differences. No research has been conducted into the reasons for health survey data showing no 'deprivation effect' where a lot of other data does, but it could be due to the health survey covering all injury severities and data from Information Services Division (ISD) covering the more severe injuries. There are also some differences in the composition of statistics (for example age standardisation where ISD statistics control for the different age profiles in each deprivation category) between the two data sources which could account for the differences. From all the data examined as part of the strategic assessment the health survey data was the only one which did not show a correlation between unintentional harm and deprivation.

People within deprived communities are also more likely to experience for dwelling fires and road traffic collision injuries.

²⁴ NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2015* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2016-03-08/2016-03-08-UI-Report.pdf>

²⁵ Bromley, C & Cunningham-Burley, S (2010) *Growing Up in Scotland: Health inequalities in the early years* Edinburgh: Scottish Government <http://www.gov.scot/resource/doc/310476/0097973.pdf>

²⁵ Parkes, A & Wight, D (2011) *Growing Up in Scotland: Parenting and children's health* Edinburgh: Scottish Government <http://www.gov.scot/Resource/Doc/350041/0117150.pdf>

- In the main there are higher numbers of road traffic collisions within more deprived areas²⁶. Additionally, people from more deprived areas are more likely to be injured in a road traffic collision (irrespective of where the collision occurs). As a result engineering measures that modify the physical and traffic environment are useful where accidents occur, but wider policy measures in the places where the casualties come from should also be implemented.
- Accidental dwelling fires are more prevalent in more deprived areas – the accidental dwelling fire rate in the 15% most deprived areas of Scotland is over double the rate seen in areas that are not within the 15% most deprived areas.

Psychological unintentional harm

Adult mental well-being

Inequalities in mental health and well-being in adults were most common by deprivation, 44 out of 50 indicators (88%) – though not for the amount of social contact people experience. Both measures of mental wellbeing (overall mental wellbeing and life satisfaction) showed a negative linear relationship with deprivation in that they were lowest in the most deprived quintile and increased stepwise to the least deprived quintile.

Community

Community measures including volunteering, involvement in local community, whether people felt they were able to influence local decisions, the social support people felt they had, general trust, neighbourhood trust, feelings of safety in their neighbourhood and home were all lowest in the most deprived areas and highest in the least deprived areas. A similar pattern was seen for neighbourhood satisfaction, access to an escape facility out with the home/garden, access to green space and good house condition increased stepwise from the most to the least deprived quintiles.

There are clear links between well connected and cohesive communities and lower levels of isolation and loneliness; this could be an important approach to addressing issues of psychological unintentional harm in more deprived areas.

Children and young people mental well-being

Inequalities by area deprivation were common across both mental wellbeing (and mental health problems). Children and young people living in more deprived areas had poorer mental health and well-being outcomes than those living in less deprived areas. This was observed for all but two indicators, 'common mental health problems' and 'alcohol dependency'.

All three reportable indicators of mental wellbeing (mental wellbeing assessed by the Warwick Edinburgh Mental Well-Being Scale WEMWBS, life satisfaction and pro-social

²⁶ Green J, Muir H and Maher M (2011) *Child Pedestrian casualties and deprivation* Accident analysis and prevention 43 (2011) <http://www.sciencedirect.com/science/article/pii/S0001457510002952>

behaviour) decreased with increasing deprivation (i.e. lower WEMWBS, life satisfaction and pro-social behaviour in the more deprived areas) across all age groups.

Prevention and Inequality

Prevention strategies that involve the enforcement of legislation across all boundaries and environments improve the safety of the whole population equally, however the European Child Safety Alliance in their 2012 child safety report cards²⁷ highlight that in situations where laws and regulations do not apply retrospectively this can increase inequality: for example, a requirement for thermostatic mixing valves that only applies to new or refurbished buildings could increase inequalities if the most at risk families are the least likely to live in buildings impacted by the requirement. Giving consideration to the impact 'blanket' legislation or policies may have on particular groups or locations (e.g. rural/urban etc.) is important in ensuring well-intended interventions does not disadvantage any group. In addition, as highlighted in the recommendations in sections 1.2 and 7 in this summary report, there is the need to develop targeted recommendations to particular at risk groups (e.g. the 0-5s and their parents/carers, the over 65s and people living in more deprived areas).

The same report²⁸ highlights that countries who are further ahead in addressing inequalities in child injuries are those who have analysed the issue to better understand the risks and then adopt actions that address the specific risks. The National Strategic Assessment for Unintentional Harm taken the first step to better understand the issues but following this up with actions that address these specific risks will be key to affecting change.

1.2.4 Priority 4: Strategic data gathering, analysis and sharing

This was identified as a priority issue by participants of the event in November 2015 and an important next step in moving Phase 2 of BSC forward.

This strategic assessment has made a significant step in bringing together all the existing data and knowledge on unintentional harm in Scotland and allowed Building Safer Communities to identify priority issues. There are, however, a number of gaps which, when filled, will complete this picture. These include:

- Further research to investigate the mechanism of unintentional harm, its risk factors and protective factors.
- Improving recording of unintentional harm and linking data sets at a national level – particularly A&E attendance - will assist to provide a clearer picture.
- The need for more on understanding the psychological component of unintentional harm.

²⁷ European Child Safety Alliance (2012) *Child safety report card for Scotland* <http://www.childsafetyeurope.org/reportcards/info/scotland-report-card.pdf>

²⁸ European Child Safety Alliance (2012) *Child safety report card for Scotland* <http://www.childsafetyeurope.org/reportcards/info/scotland-report-card.pdf>

- More exploration of the reasons for differences in unintentional harm between the most and least deprived communities.
- Understanding what works in preventing unintentional harm and why and adapt these principles.
- Understanding the influence of a cohesive community on unintentional harm.
- A discussion on the scope of poisoning within Building Safer Communities – the most logical approach, would be to focus on all poisonings in specific age groups – for example all poisonings in children and young people and older people – and poisonings from certain substances only in the other age groups.
- Develop local assessments and/or mapping to help inform the picture of unintentional harm at a community level.

1.2.5 Priority 5: Bridging the gap between strategy and delivery

This was identified as a priority issue by participants of the event in November 2015 and an important next step in moving Phase 2 of BSC forward.

The evidence from the Strategic Assessment has identified areas for initial prioritisation of national activity but some serious thought needs to be given to how this is turned into strategy and delivery nationally and locally?

Some early discussions have indicated that there is a need for clear national policy, targets, statement of intent or statutory levers to focus multi-agency issues onto unintentional harm. Supporting the creation of local assessments at a Community Planning Partnership and lower level will aid the prioritisation of this issue locally.

2. METHOD AND BACKGROUND

In November 2013, the BSC (Building Safer Communities) Programme Board agreed that the Programme should take a wider view and consider unintentional harm / injury as part of its work. Following some initial research and consultation in spring 2014; there was a development day in August 2014 with professionals working on unintentional harm in Scotland to develop a definition of unintentional harm and identify some initial areas of focus. From this a steering group with champions for Home safety, Road safety, Outdoor safety and Data & intelligence was created.

Undertaking a strategic assessment to better understand the causal factors and patterns of Unintentional Harm in Scotland was proposed and Hannah Dickson was seconded from the Scottish Community Safety Network for ten months from April to October 2015 and June to September 2016 to undertake this piece of work.

The Strategic Assessment for unintentional harm (Phase 2 of Building Safer Communities) was commissioned to recommend, through robust analysis, scanning and risk assessment, areas of focus and priority for Phase 2 of Building Safer Communities.

This piece of work looks at community safety across a range of areas including in the home, on the road, fire and outdoor safety - water, mountain rescue and outdoor events - and contributing factors such as deprivation, loneliness and isolation. The assessment provides a basis for further engagement with key stakeholders to help build the picture of activity already underway across the country, to help build the links across prevention programmes and to identify any areas for further activity.

The work is being overseen by an Executive Group, chaired by the Scottish Fire and Rescue Service with membership from key stakeholders including CoSLA, Health, the Third Sector, the Scottish Community Safety Network, Scottish Fire and Rescue Service, Police Scotland, University of Edinburgh, and ROSPA.

A programme of engagement and dissemination is presently being developed and agreed with the Steering Group. It is our aim that this work will be published in Spring 2017 and will, among other things, inform the development of Local Outcome Improvement Plans.

2.1 *The Strategic Assessment Process*²⁹

Evidence-based strategic planning uses robust evidence to set shared, outcome-based priorities and allows partnerships to deliver services based on need, evidence of what works and strive to tackle the root cause of the problem. It also highlights information and service delivery gaps and ways to fill them.

The process also involves a degree of forecasting (referred to as 'horizon scanning'), looking at local and national issues and assessing the impact these may have on the partnership. Strategic decision makers can use these to assess and minimise risk to the partnership, and seize opportunities.

Wider benefits are enhanced partnership working and analysis for individual partners as well as the partnership. There is also potential to link with budgetary planning and identify opportunities for prevention.

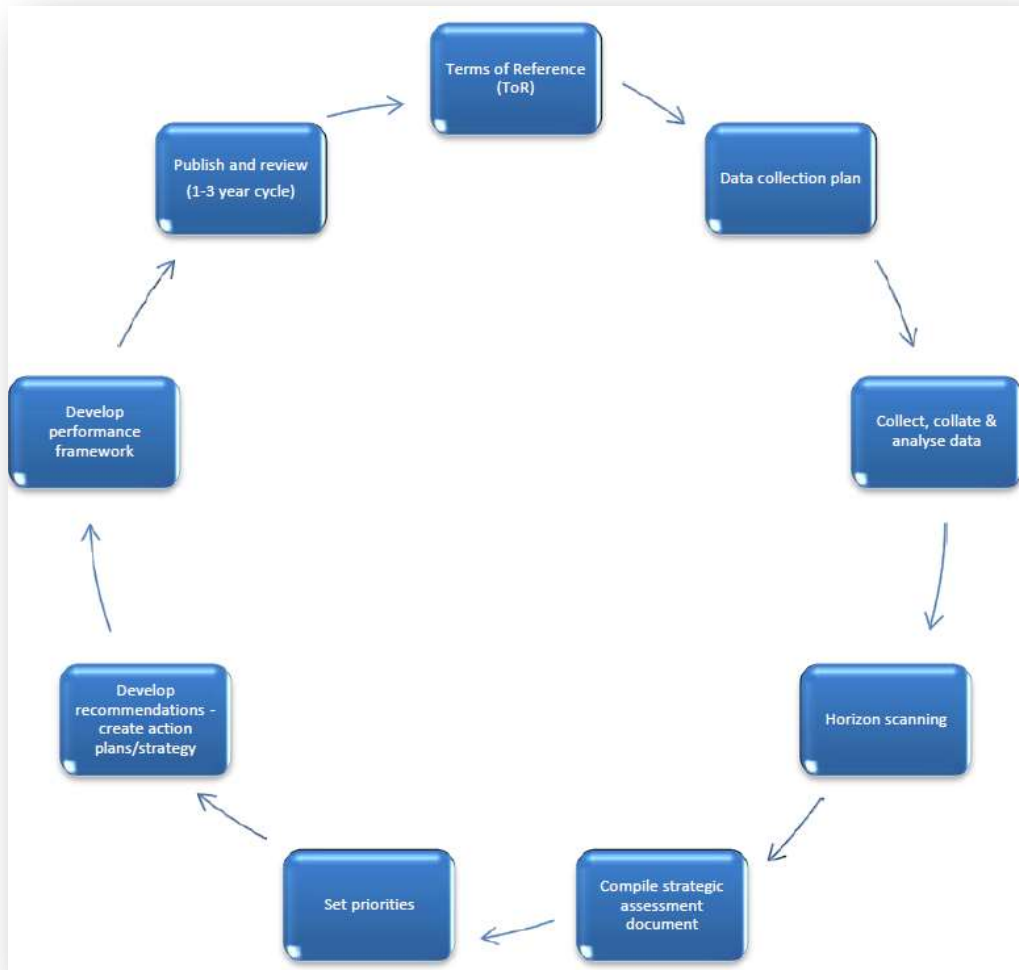
The partnership strategic assessment we recognise today originated as one of the four intelligence products that make up the UK policing business model the NIM (National Intelligence Model). Strategic assessments have been standard practice in UK police forces for around ten years now and have been used consistently by the majority of Community Safety Partnerships (CSPs) in Scotland and the rest of the UK.

In essence, this is a process which undertakes the following steps (see Figure 4) to allow partnerships to develop outcome-based priorities and subsequent resolutions to tackle these issues.

²⁹ Scottish Community Safety Network *Introduction to evidence-based strategic planning* <http://www.safercommunitiesscotland.org/wp-content/uploads/Introduction-to-evidence-based-strategic-planning-eLearning-SCSN-2013.pdf> accessed July 2016

2.2 Compiling the Evidence

Figure 4 Strategic Assessment Cycle



Unintentional harm was defined as “predictable and preventable physical and psychological unintentional harm” and the scope of this strategic assessment included home safety, falls, sports injury, outdoor safety (water safety, mountain safety), road safety and workplace safety; mental well-being, loneliness and social isolation and **excluded** areas that *could*, by some, be considered unintentional harm such as mental health issues, suicide and self-harm, substance misuse (including drug, alcohol and tobacco use), medical conditions such as obesity, diabetes and dementia and intentional injury such as assaults. The exclusion of the latter was largely due to the fact that they are all well-established policy areas and/or receive high profile partnership focus and therefore it was assessed that the other aspects of unintentional harm receive comparatively less focus and are not (all) well-established policy areas despite deserving to be so.

Key partners have been involved in the data collection and analysis process including Scottish Ambulance Service, NHS Information Services Division (ISD), NHS A&E (where available) and National Records Scotland (NRS) about mortality, hospitalisations and emergency admissions.

Surveys including Scottish Health Survey, Scottish Household Survey and Health Behaviour in School-aged children Survey, Transport surveys; Transport Scotland published data, SFRS data, forestry commission data, Maritime & Coastguard Agency data, Health & Safety Executive and Mountain Rescue Scotland have been used.

Other data includes academic research papers and discussions with key partners including RoSPA, Transport Research Institute, Emeritus professors and doctors with specific interest in this field and Local Authorities who focus on unintentional harm. Case studies and research into 'what works' has been conducted – see Appendices 1 and 2 - in addition to identifying some of the key issues.

Where available five years' worth of data and basic information including the following was requested from partners:

- The number and rate of incidents
- Mechanism of injury – for example was it a slip, trip or fall or a drowning or choking?
- Nature of injury sustained - for example the severity of injury or which body part was injured and how e.g. fracture, head injury
- Geographical information - for example whether it occurred in a home, outdoor, educational setting and Local Authority, postcode, eastings and northings, deprivation status
- Demographic information - for example age of injured party, gender
- Contributory factors (where available) - for example alcohol, speed or distraction (in the case of road safety), cooking or smoking (in the case of fire safety)

This data was then analysed by data source – i.e. mortality, emergency hospital admissions, A&E

attendance and survey data - in order to cover all severities of unintentional harm (Figure 5)



Figure 5 Types of Data Analysed for the Strategic Assessment

The data, plus research from academic

journals, specific partners and 'what works' publications was then analysed thematically i.e. home safety, transport safety, outdoor and water safety, workplace safety and psychological unintentional harm.

3. HORIZON SCANNING

Horizon scanning is an important part of the strategic assessment process and consists of a systematic examination of information to identify long-term potential threats, risks, emerging issues and opportunities, allowing for better preparedness and the incorporation of mitigation and exploitation into the policy making process. Timescales have not permitted as formal a horizon scanning process as normal and it is recommended that a more formal process is adopted at some point.

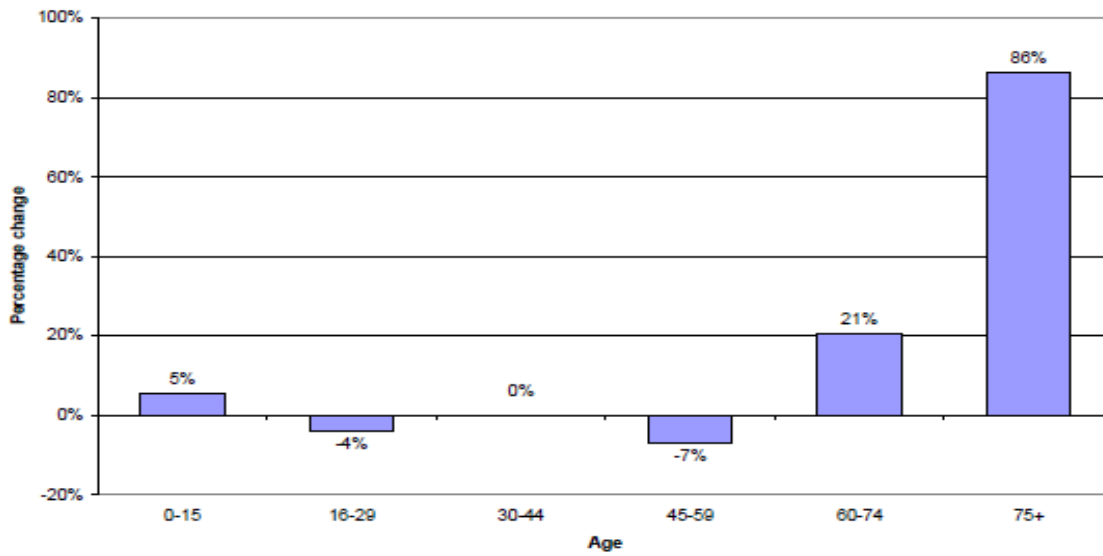


Figure 6 The Projected Percentage Change in Scotland's Population by Age Group 2012-2037 (NRS population projections)

3.1 Population Change and Unintentional Harm

There is projected to be an increase in Scotland's population of older people³⁰; an age group disproportionately affected by unintentional harm and most likely to be hospitalised and die as a result of an unintentional harm.

³⁰ National Records of Scotland (NRS) (2013) *Population Projection of Scotland (2012-based)* <http://www.nrscotland.gov.uk/files/statistics/population-projections/2012-based/2012-pop-proj-publication.pdf> accessed 21.08.2015.

Scotland's population is projected to increase by 9% between 2012 and 2037; however this increase is not spread evenly across all age groups of the population. As Figure 6 shows, the population aged under 60 is projected to remain fairly constant with a small decrease in the 45-59 age group and a small increase in the number of the 0-15 age group whilst the number of older people is projected to increase significantly especially the over-75 age group. 2012 base is 1,248,000 (1.25 million) over-65s rising to 1,489,000 (1.49 million) in 2022 and 1,779,000 (1.78 million) in 2037.

Between 2012 and 2037, the number of children (those aged 0-15) is projected to increase by 5% from 0.91 to 0.96 million. Figure 6 shows that most of this increase is due to children in the 5-11 age group who are projected to increase from 383,000 in 2012 to 424,000 in 2037 (an increase of 11%). This may change the profile of unintentional harm slightly as injuries resulting from transport collisions frequently affect this group.

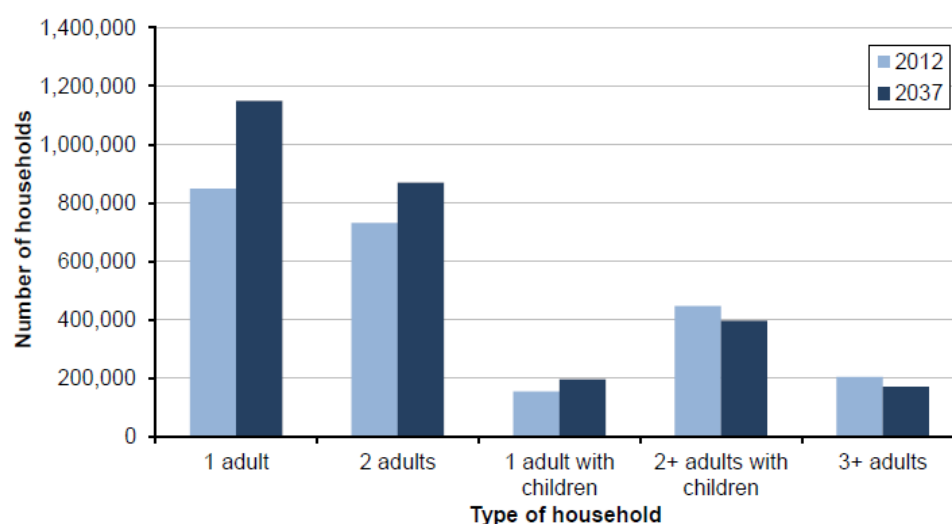


Figure 7 The Projected Number of Households in Scotland by Household Type, 2012 and 2037

The number of households broken down by the age group of the head of household is shown in Figure 7. The largest increases are for those headed by someone aged 65 or over. By 2037, there are projected to be 966,600 households headed by someone in this age group, an increase of 54% from 2012. This is mainly because Scotland's population is ageing. The latest population projections show that the number of people aged 65 or over will increase by 59% by 2037. The increases in household numbers are even more striking when focussing on those aged 85 or over. The number of households headed by someone in this age group is projected to more than double from 77,400 to just over 200,000.³¹ This age group and household structure are most at risk of unintentional harm – particularly falls in the home – and increases can be anticipated in these over time unless preventative measures are taken.

³¹ National Records of Scotland (NRS) (2014) *Household Projections for Scotland 2012-based* <http://www.gro-scotland.gov.uk/files/statistics/household-projections/2012-based/2012-house-proj-publication.pdf> accessed 21.08.2015.

4. PHYSICAL UNINTENTIONAL HARM

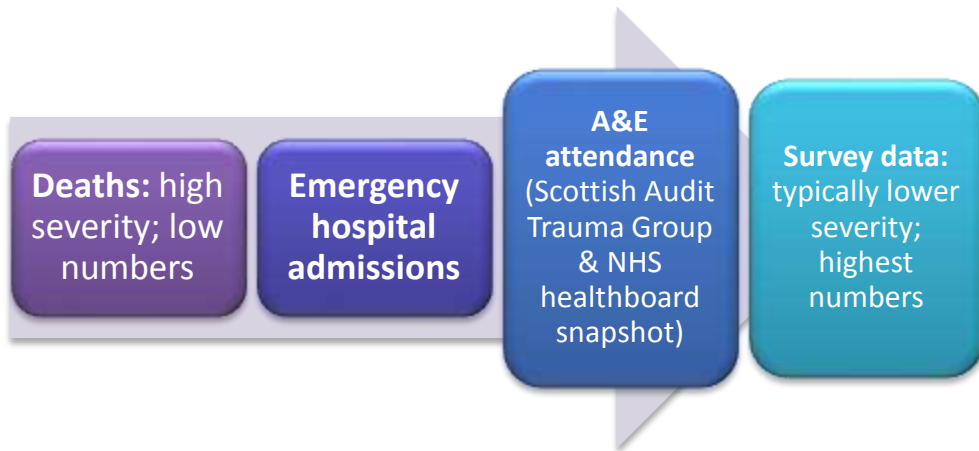
Unintentional harm has different profiles – some incidents are often fatal, such as choking and strangulation and drowning. Others, such as burns and scalds, result in hospitalisation and sometimes serious long-term acquired disability, but rarely death.

This picture changes depending on the age group too – poisoning, choking and strangulation often tend to affect young children disproportionately (albeit in comparatively small numbers), as do scalds; whereas falls affect the older age groups and in the elderly are often fatal. Conversely falls in children and young people are typically non-fatal. Home safety is particularly important for the very young and very old (and particularly falls within the home for the latter age group). As children grow up, road/transport safety and incidents within an educational setting and within the workplace and other public spaces at working age become increasingly important.

This assessment analyses data and information on unintentional harm in three ways:

- 1. By data source: there are a variety of sources of unintentional harm data (see below) which capture all unintentional harm (as much as it is possible to). These are usually from healthcare providers or surveys and for this document cover deaths, emergency hospital admissions, A&E attendance and prevalence of unintentional harm within the general population. This section should be of particular use for those with a general interest in unintentional harm.*

ANALYSIS BY DATA SOURCE



2. *By theme:* There are different types of unintentional harm depending on what activity was being undertaken at the time of the incident e.g. sports unintentional harm or mountain rescue or where it occurs e.g. workplace safety, home safety, road safety. This section should be of particular use for those with an interest in specific types of unintentional harm.
3. *By geography and demography:* Unintentional harm varies across particular places (geography) and populations (demography) and this section looks at the variation in the amount and type of unintentional harm between particular age groups and places in Scotland. This section should be of particular use for those working at a regional, local authority or more local level or with an interest in these areas.

This report refers to data from NHS Information Services Division (ISD) unintentional Injuries annual reports over two years – the year ending March 2015 and year ending March 2016. Please refer to footnotes for references.

For the first time in the ISD Unintentional Injuries report published on 7 March 2017 new interactive visual content can be found in the Unintentional Injuries Dashboard. Information is presented over time, by age group, cause of injury and gender. Further information can be found at:

<http://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2017-03-07/visualisation.asp>

In order to continue producing information that best meets the needs of its customers ISD are considering a number of further changes to the publication including:

- Releasing more interactive visual content.
- Releasing open data. This is likely to be in aggregated format rather than individual records to avoid disclosure issues.

- Reducing the length of the report by removing content which stakeholders no longer find useful.

4.1 MORTALITY³²

A change in coding for ‘accidental deaths’ (from here on referred to as ‘deaths as a result of physical unintentional harm’) occurred in 2011 in line with the World Health Organisation’s changes: deaths which were previously classed as ‘mental and behavioural disorders’ (“acute intoxication” and “alcohol intoxication”) were re-classified as ‘accidental deaths’ (from here on referred to as ‘deaths as a result of physical unintentional harm’) from 2011 onwards. For the purposes of this report we will use figures on the old basis – the new figures are predominantly deaths from controlled substance intoxication for known drug misusers and alcohol intoxication and already captured within the drug-related and alcohol-related death statistics and policy areas.

NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2015* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2016-03-08/2016-03-08-UI-Report.pdf>

NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2016* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2017-03-07/2017-03-07-UI-Report.pdf>

³² From ISD Unintentional injuries & deaths data and NRS ‘accidental deaths’ data (<http://www.gro-scotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/accidental-deaths/main-points> accessed 13.10.2015)

Key Findings

There were 1,750 deaths as a result of physical unintentional harm registered in Scotland in 2014, 86 (5%) more than in the previous year.

Unintentional harm is the commonest cause of death for those under 45 years of age and third most common in those under 55 years of age (after cancer and diseases of the circulatory system).

The most common cause of physical unintentional harm deaths in 2014 were:

- Falls (739 deaths, or 42% of the total number of physical unintentional harm deaths)
- Transport accidents caused 222 deaths (13%)
- Poisoning by and exposure to noxious substances (140 deaths or 10%).

The nature of deaths from physical unintentional harm changes with age.

Introduction

From the 2014 data on age-standardised death rates (per 100,000 population) for Scotland, deaths from physical unintentional harm rank sixth overall (after 'other', cancer, circulatory disease/conditions, respiratory disease/conditions and cerebrovascular disease) with a five year average of 27.1 deaths per 100,000 population. It is the commonest cause of death for those under 45 years of age and third most common in those under 55 years of age (after cancer and diseases of the circulatory system)³³. This is a 22% decrease from 1994 to 2014 and 19% decrease from 2004 to 2014. For males this five year average is 34.4 deaths per 100,000 for females 21 deaths per 100,000. For under 75s the same rate is 12.3 deaths per 100,000 population which demonstrates the burden of deaths from accidents for the older age groups. For males under 75 years the rate is 18 deaths per 100,000 population and for females, 6.9 deaths per 100,000.

A report³⁴ looking at child deaths found increased rates of death due to physical unintentional harm in Scotland, Wales, and Northern Ireland compared with England, particularly among older boys and this disparity is widening: rates of death have declined more rapidly in England than in the other three countries.

There were 1,750 deaths as a result of physical unintentional harm registered in Scotland in 2014, 86 (5%) more than in the previous year. These figures are based on the new coding rules that apply in Scotland with effect from 2011 (refer to the below). It is estimated that only **1,320 of these deaths would have been counted as physical unintentional harm deaths under the old coding rules: 40 (3%) more than the corresponding estimate for 2013.**

³³ Scottish Trauma Audit Group (2015) *Audit of Trauma Management in Scotland 2015; Reporting on 2013-2014* <http://www.stag.scot.nhs.uk/docs/STAG-Trauma-Report-2015-web.pdf?4>

³⁴ Healthcare Quality Improvement Partnership (2013) *Overview of child deaths in the four UK countries* Child Health Reviews – UK Clinical Outcome Review Programme [http://www.rcpch.ac.uk/system/files/protected/page/CHRUUK_Module%20A%20low%20res%20\(2\).pdf](http://www.rcpch.ac.uk/system/files/protected/page/CHRUUK_Module%20A%20low%20res%20(2).pdf)

Using the figures on the **old basis** (see Figure 9), the most common cause of physical unintentional harm deaths in 2014 were:

- Falls (739 deaths, or 42% of the total number of physical unintentional harm deaths)
- Transport accidents caused 222 deaths (13%)
- Poisoning by and exposure to noxious substances (140 deaths or 10%³⁵).

Each of the other causes that were identified, such as 'exposure to smoke, fire and flames' (22 deaths), 'drowning or submersion' (25 deaths) and 'other threats to breathing' (51 deaths - e.g. as a result of choking on food), accounted for only a small percentage of the total number of physical unintentional harm deaths. For 87 physical unintentional harm deaths (5%), National Records of Scotland (NRS) was told about the type of injury but not how it had occurred.

³⁵ Under the new coding rules this is 33% of all deaths or 570 deaths

Change over time

The number of physical unintentional harm deaths in Scotland fell steadily until the mid-1990s (Figure 8). Since then, the overall total has not changed much: the figures for 1995 to 2014 (using the 'old basis' estimates for 2011 onwards), have all been between roughly 1,250 and 1,400 (the actual range being from 1,247, in 2012, to 1,390, in 2004).

Throughout that period, the 5-year moving annual average has not varied much, remaining between 1,286 and 1,360, and almost all the year-to-year fluctuations in the numbers have been within the likely range of statistical variability.

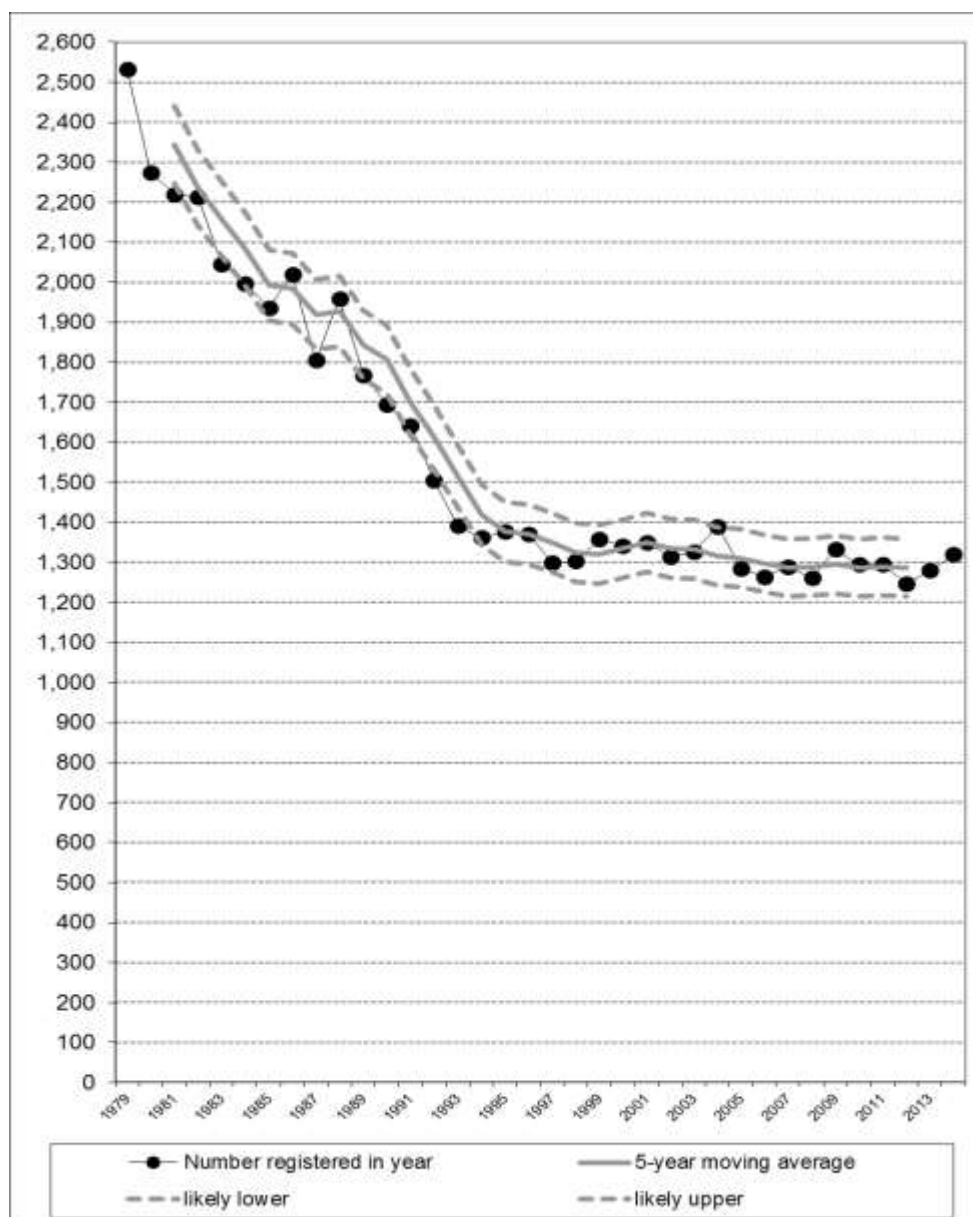


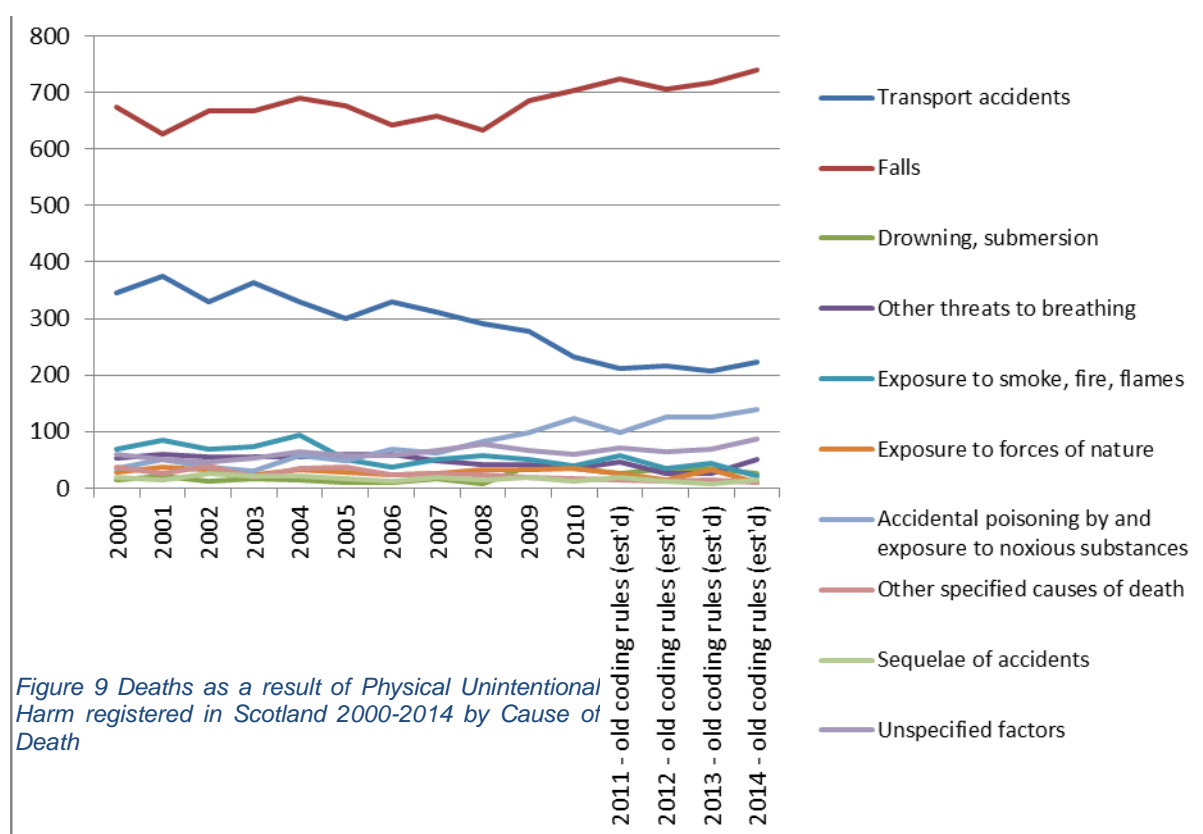
Figure 8 Deaths as a Result of Physical Unintentional Harm ("Accidental deaths") registered in Scotland, 1979 to 2014, with five-year moving annual average and showing the likely range of values around the moving annual average

Although the annual total number of physical unintentional harm deaths has not varied much since the mid-1990s (Figure 8), there have been marked changes in the numbers of deaths from some causes (see Figure 9).

Using 5-year moving annual averages:

- Deaths from transport accidents have fallen in recent years (from an annual average of 348 in 2000-2004 to an annual average of 218 in 2010-2014)
- Deaths from exposure to smoke, fire and flames have declined (from an annual average of 78 in 2000-2004 to an annual average of 39 in 2010-2014)

However there has been a marked increase in “accidental poisoning deaths” (from an annual average of 42 in 2000-2004 to an annual average of 123 in 2010-2014, using the ‘old basis’ figures for 2011 onwards).



The number of deaths from falls remained broadly around the same level for much of the period: the first seven values of its 5-year moving annual average showed very little change (all were between 659 and 669) followed by a fairly gradual increase (the latest four values of the 5-year moving average being 681, 690, 707 and 718).

Demographics

Just over half of deaths as a result of physical unintentional harm are in men – this proportion has remained broadly consistent over time since 1979 at around 51-59% (54% in 2014).

The number of physical unintentional harm deaths of a particular age may vary from year to year, but the 5-year moving annual averages (using the figures on the old basis for 2011

	Age group					
Cause of Injury	15-24	25-44	45-64	65-74	75 and over	15 and over
Death rate per 100,000 population						
Total rate	12.6	28.4	23.4	28.7	160.4	36.9
Land Transport rate	6.6	3.2	3.1	4.0	6.6	4.1
Poisoning rate	3.9	20.8	11.6	3.3	2.1	11.4
Falls rate	0.4	1.1	3.6	11.1	138.5	16.0
Struck by, against rate	-	0.1	-	-	-	0.0
Crushing rate	-	-	0.1	-	-	0.0
Scalds	-	-	0.1	0.2	-	0.0
Accidental Exposure rate	-	0.5	1.4	4.2	4.7	1.6
Other Causes rate	1.6	2.8	3.6	5.9	8.5	3.8

Figure 10 Death Rate (deaths per 100,000 population) as a Result of Physical Unintentional Harm by Age Group and Cause in 2014

onwards) for most of the different age-groups have not changed greatly in recent years (of course, most have fallen considerably over the longer-term):

- 46% of deaths are in the over-80 age group (588 deaths)
- 413 deaths were over 85 years of age.
- From then, deaths decrease with decreasing age.

Although there are low *numbers* of deaths as a result of physical unintentional harm in children and young people compared to older people; as a *percentage of all child deaths* that happen, physical unintentional harm is a significant cause. For under 15s 1.8 in 100,000 deaths in Scotland are as a result of physical unintentional harm (1.7 deaths per 100k population in the under-fives, 1.8 in 5-9 year olds and 1.1 in 10-14 year olds). The rate of falls is higher in under-fives and the rate of land transport incidents in those over five. For adults the rates are as follows (Figure 10):

The nature of deaths from physical unintentional harm changes with age – this is valuable when creating profiles of unintentional harm (Figure 11):

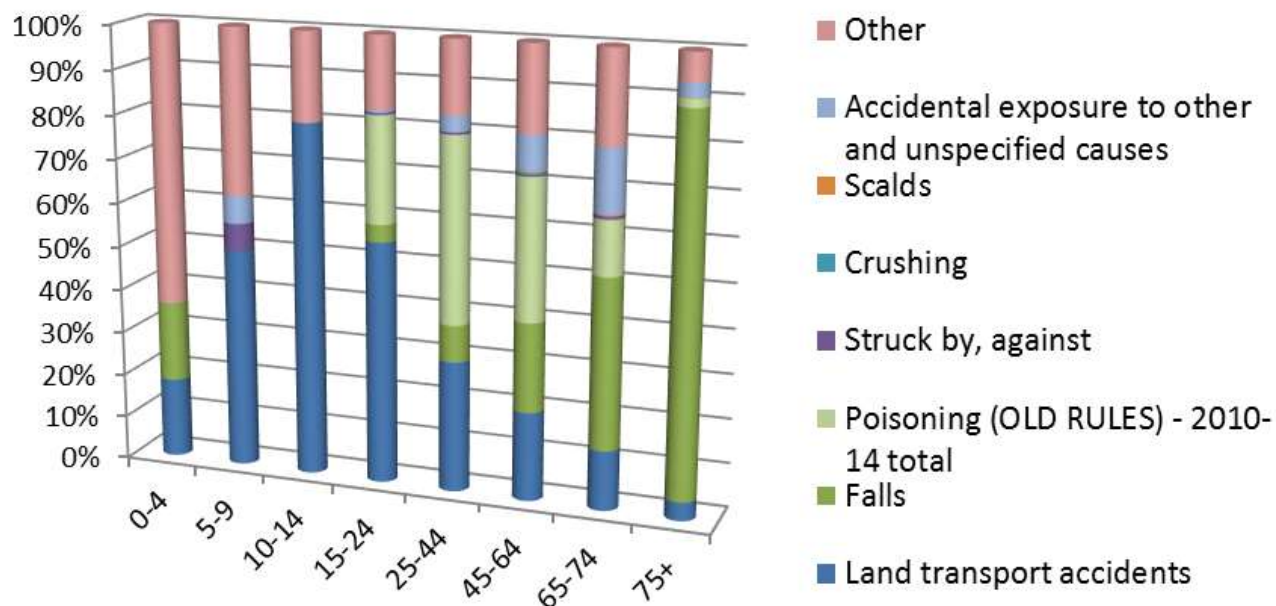


Figure 11 Deaths as a Result of Physical Unintentional Harm in Scotland by Cause and Age Group (ISD 2011 to 2013 and NRS 2010-2014 for Poisoning)

Using data on deaths from accidental poisoning from 2000-14, only a small number of substances average over one death per year; the graph and the ranking below highlights the most frequently occurring substances (Figures 12 and 13). Some of these are controlled substances (taken on prescription – antidepressants or sedatives feature on a number of occasions - or illegally) and some are not – notably alcohol, paracetamol, asbestos and carbon monoxide.

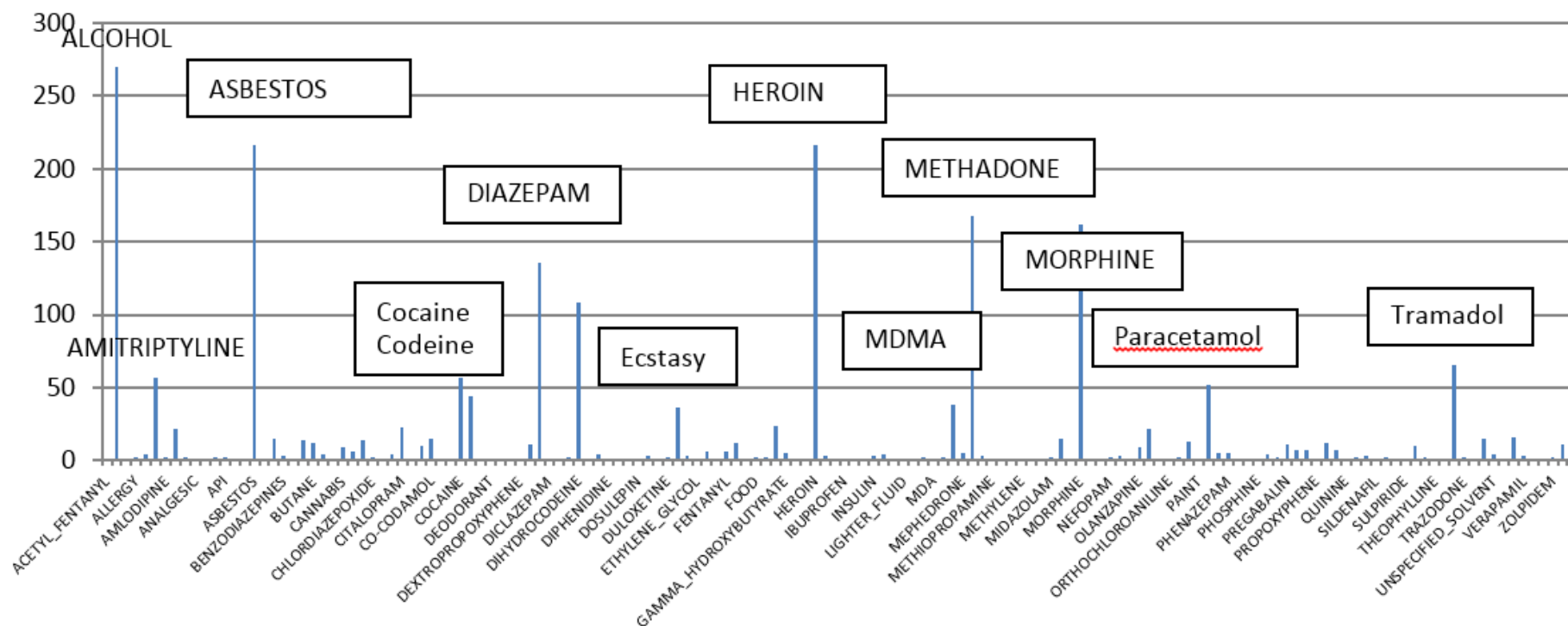


Figure 12 Physical Unintentional Harm (“Accidental Deaths”) as a Result of Poisoning Registered in Scotland 2000-14 by Substance (NRS)

Using five year averages from 2000-14, deaths as a result of physical unintentional harm due to alcohol, methadone, dihydrocodeine and codeine, tramadol and morphine have all increased. Paracetamol deaths have also increased although have a lower starting point than some other substances. Due to the high numbers of substances it is difficult to tease out any further trends.

Substance	2000-14 Annual average
Alcohol	19.3
Asbestos	15.4
Heroin	15.4
Methadone	12.0
Morphine	11.6
Diazepam	9.7
Dihydrocodeine	7.7
Tramadol	4.7
Amitriptyline	4.1
Cocaine	4.1
Paracetamol	3.7
Codeine	3.1
Mdma	2.7
Ecstasy	2.6
Gabapentin	1.7
Citalopram	1.6
Amphetamine	1.6
Opiate	1.6
Venlafaxine	1.1
Benzodiazepine	1.1
Co-codamol	1.1
Mirtazapine	1.1
Buprenorphine	1.0
Carbon monoxide	1.0

By using the old WHO coding standards many of the poisonings which are actually drug-related deaths have been removed; however from the graphs and tables above it is clear that many of the substances involved in these deaths, whilst not necessarily related to longer-term misuse, remain as a result of controlled or illegal substances which are covered in other policy areas.

Focusing on particular substances (for example asbestos, liquid nicotine, ingredients in liquid detergent capsules and other detergents) or focusing on all poisonings in specific age groups – for example all poisonings in children & young people and older people – and poisonings from certain substances only in the other age groups. The latter approach would involve combining information on deaths and injuries from poisoning.

Figure 13 Physical Unintentional Harm (“Accidental Deaths”) as a Result of Poisoning Registered in Scotland 2000-14 Ranked by Substance (NRS)

4.2 INJURY

Data in this section comes from emergency hospital admissions, summary information from A&E attendance in Scotland, detailed information on A&E attendance from one health board area and the Scottish Ambulance Service.

Key Findings

Injuries resulting from physical unintentional harm incidents accounted for approximately 1 in 8 emergency hospital admissions for children and 1 in 10 for adults in Scotland in 2015/16.

There were 55,547 emergency admissions to hospital in Scotland as a result of a physical unintentional harm incident in 2015/16 (7418 children under 15 years and 4,8129 in adults over 15 years).

In 2015/16 there were 24,453 emergency admissions to hospital as a result of a physical unintentional harm incident in those aged 65 and over, with 84% of these admissions being the result of a fall.

Children and adults in the most deprived areas are more likely than those in the least deprived areas to have an emergency admission to hospital for a physical unintentional harm incident.

In Scotland, for children aged under 15 years, nearly half (47%) of the emergency admissions to hospital for physical unintentional harm in 2014/15 were the result of a fall.

4.2.1 Emergency Hospital Admissions³⁶

Injuries resulting from physical unintentional harm incidents accounted for approximately 1 in 8 emergency hospital admissions for children and 1 in 10 for adults in Scotland in 2015/16. This has been fairly consistent over the past few years.

There were 55,547 emergency admissions to hospital in Scotland as a result of a physical unintentional harm incident in 2015/16 (7,418 children under 15 years and 48,129 in adults over 15 years), with little fluctuation in the past ten years with 53,048 emergency admissions in 2005/06. In 2015/16 there were 24,453 emergency admissions to hospital as a result of a physical unintentional harm incident in those aged 65 and over, with 20,629 of these admissions being the result of a fall.

³⁶ All data in this section is from NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2016* <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2017-03-07/2017-03-07-UI-Report.pdf> and

NHS Information Services Division (ISD) (2016) *Unintentional Injuries publication year ending 31 March 2015*. <https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2016-03-08/2016-03-08-UI-Report.pdf> and <http://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/data-tables.asp?id=1611#1611>

Children and adults in the most deprived areas are more likely than those in the least deprived areas to have an emergency admission to hospital for a physical unintentional harm incident. In 2015/16 children in the most deprived areas had a standardised discharge ratio approximately 21% higher than the Scottish average. For adults, this was nearly 41% higher than the Scottish average.

Rates

Figure 14 shows the European Age Standardised Rate (EASR) for emergency hospital admissions as a result of physical unintentional harm in children for years ending 31 March 2006 to 2015. Although the rate has increased over the last two years the general trend over the last ten years has been decreasing for both males and females. Note, however that these figures need to be considered in conjunction with the survey data and A&E attendance data (where available) as there are a number of factors which influence A&E admissions for example admission policies between hospitals, temporal (time-based) factors and medical advances over time; so the apparent drop in child admissions should be taken with a degree of caution.

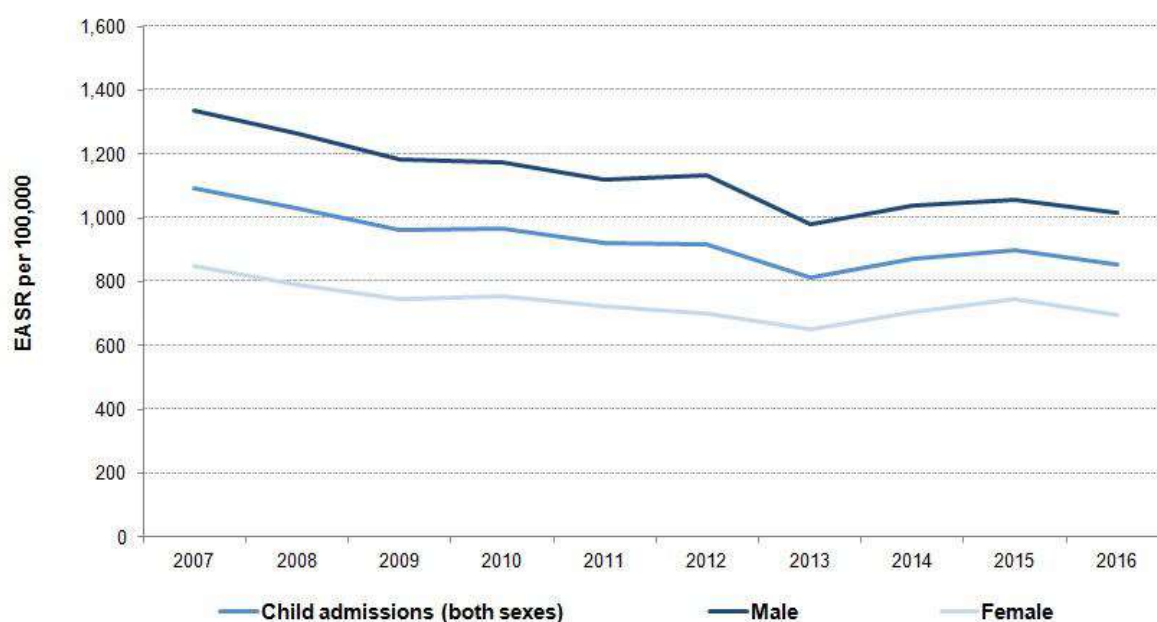


Figure 14 Emergency hospital admissions as a result of an unintentional injury; rates for children aged under 15, by gender, year ending 31 March 2007-2016

Figure 15 shows the European Age Standardised Rate (EASR) for emergency hospital admissions as a result of physical unintentional harm in adults for years ending 31 March 2006 to 2015. The rate for males has been gradually decreasing since a peak of 1,295.7 per 100,000 population in 2009. The rate for females has been more consistent over recent years although the general trend over the last ten years shows a slight increase.

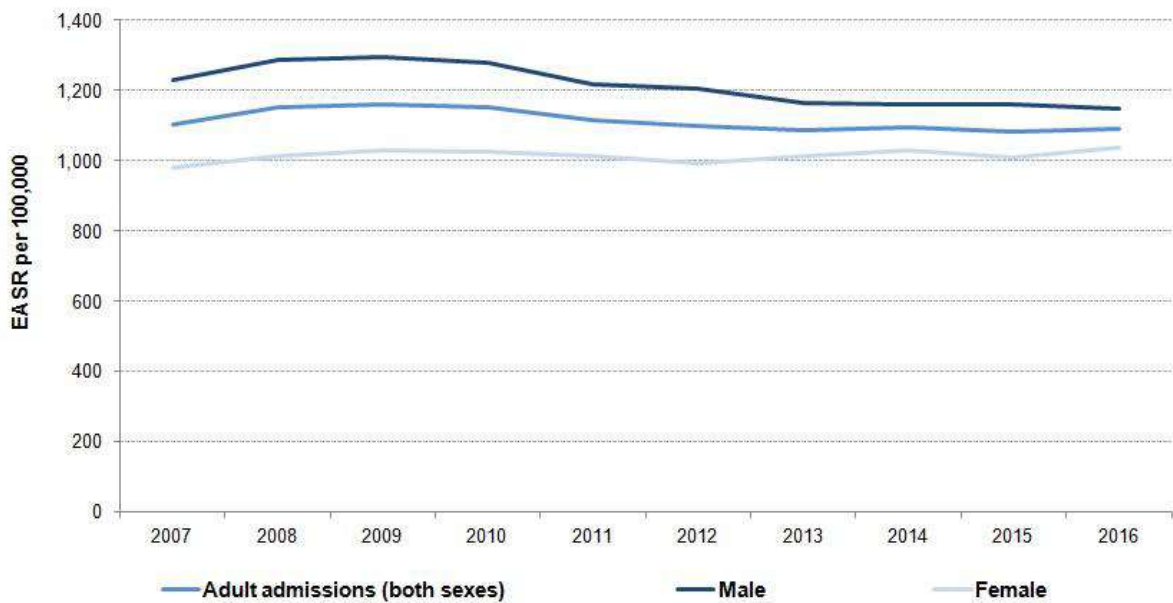


Figure 15 Emergency Hospital Admissions as a Result of Physical Unintentional Harm; for Adults (over 15) by Gender, Year Ending 31 March 2007-2016

Age and Gender

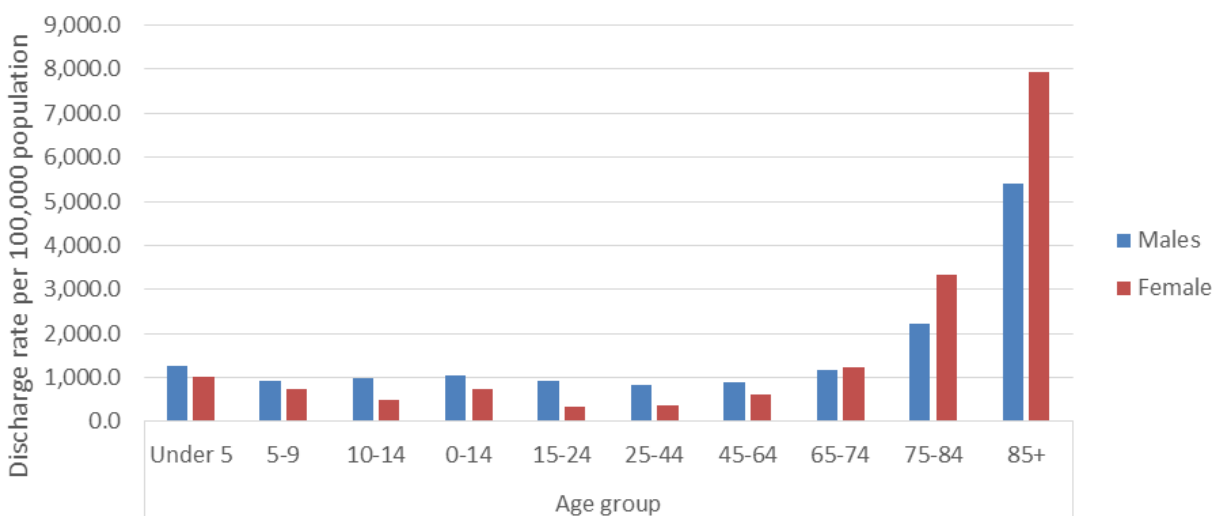


Figure 16 Emergency Hospital Admissions as a Result of A Physical Unintentional Harm Incident, by Age Group and Gender, Year Ender 31 March 2015

Figure 16 shows admission rates per 100,000 population. The rate of emergency hospital admissions per 100,000 population for males aged under 15 years was 1,062.2 compared to 751.8 for females in 2014/15. In all age groups under 15 years, males were more likely than females to be admitted to hospital as a result of physical unintentional harm.

The rate of emergency hospital admissions per 100,000 population for males aged 15 years and over in 2014/15 was 1,065.0 for males compared to 1,025.4 for females. Figure 16 shows admission rates per 100,000 population. Between the ages of 15-64, men were more

likely than women to be admitted to hospital due to physical unintentional harm. However, this pattern reversed in the age groups 65-74, 75-84 and over-85s where women were more likely to be admitted due to physical unintentional harm.

Injury type and nature

In Scotland, for children aged under 15 years, nearly half (47%) of the emergency admissions to hospital for physical unintentional harm in 2014/15 were the result of a fall.

Falls were the most common cause of emergency hospital admissions for unintentional physical harm in adults, accounting for 64% of this type of admission to hospitals. This varied across age groups accounting for just over 28% of relevant admissions in the 15-24 age group compared to just under 87% in the 75 and over age group.

Falls aside, points of note in relation to the injury profiles for the different age groups (see Figure 17) are that:

- Poisonings feature prevalently in the under-fives and barely at all in the other age groups (19% compared to 2% of all unintentional harm incidents)
- Road traffic and struck against or crush become more prevalent as children grow up.

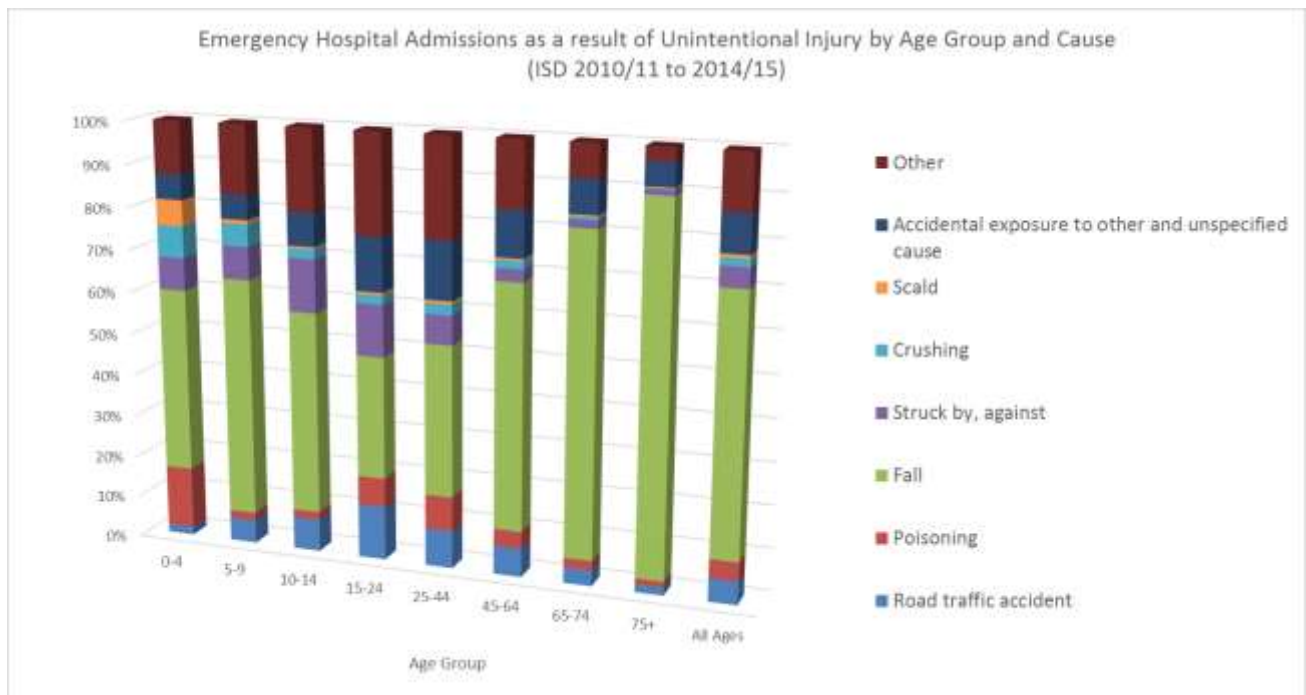


Figure 17 Emergency Hospital Admissions as a Result of Physical Unintentional Harm ("Unintentional Injury") 2010/11-2014/15 by Cause of Injury and Age Group (Information Services Division)

Key Points:

- Falls** account for the largest proportion of physical unintentional harm in all age groups, but are particularly high in the over-65s and over-75s, and also in the 5-9 and under-five age groups. Crushing and struck by/against are noteworthy in children and young people (under-15s) and struck by/against in the 15-24 age group. More detail on what these incidents actually involve would be of great benefit to designing preventative approaches.
- Poisonings** are highest in the under-fives and the 15-44 age groups, and even then they account for a small proportion of physical unintentional harm in these groups. In toddlers poisoning tends to be unintentional but as a result of them consuming prescribed drugs (see Figure 18) – methadone gets a particular mention in publications³⁷; but tranquilizers or sleeping and anti-anxiety medication are noted too. Deaths and severe side effects are rare in comparison to adults but the incidents are still occurring and result in preventable harm to children. Two models have shown that maternal psychiatric distress increased poisoning risk (likely to be linked to medication being present within the household) and others identified the following variables as risk factors: more distant maternal supervision during risk taking activities and medicinal substances stored in more accessible locations³⁸. Household products, specifically liquid detergent capsules (ingestion and skin and eye damage) and liquid nicotine have all risen in prominence lately in the media but are less prominent in the UK literature; though household substances feature heavily in analysis from other countries³⁹. For the older age groups there is a varied picture with substances from paracetamol, prescription medication such as benzodiazepines to accidental overdoses of illegal drugs involved. More work into specific substances for specific age groups would be beneficial.

Poisoning Emergency hospital admissions year ending 31 March 2015 (NHS Information Services Division)	Discharge rate per 100,000 population	
	Under-Fives	All Ages
Total	241.2	93.4
Poisoning by non-opioid analgesics, anti-pyretics and anti-rheumatics	57.5	22.8
Toxic effect of other and unspecified substances	27.4	9.6

³⁷ Schmertmann M, et al. (2013) *Risk factors for unintentional poisoning in children aged 1-3 years in NSW Australia: a case-control study*. BMC Paediatrics May 24 2014 and <http://edition.cnn.com/2016/05/16/health/poisoning-deaths-and-injury-uk-teenagers-and-toddlers/> for more detail. Accessed July 2016.

³⁸ Schmertmann M, et al. (2013) *Risk factors for unintentional poisoning in children aged 1-3 years in NSW Australia: a case-control study*. BMC Paediatrics May 24 2014 and <http://edition.cnn.com/2016/05/16/health/poisoning-deaths-and-injury-uk-teenagers-and-toddlers/> for more detail. Accessed July 2016.

³⁹ Presgrave R, Camacho L and Villas Boas M (2008) *A profile of unintentional poisoning caused by household cleaning products, disinfectants and pesticides* Reports in Public Health <http://www.scielo.br/pdf/csp/v24n12/19.pdf> accessed July 2016.

Toxic effect of soaps and detergents	26.3	9.3
Poison by agents mainly acting on smooth/skeletal muscles and respiratory system	14.4	5.2
Poisoning by psychotropic drugs, not elsewhere classified	12.7	4.9
Toxic effect of organic solvents	13.3	4.8
Poisoning by topical agents affecting skin/mucus membrane, and by eye, ear nose & throat and dental drugs	12.3	4.6
Poisoning by primarily systemic and haematological agents	11.0	4.1
Poisoning by antiepileptic, sedative-hypnotic and anti-parkinsonism drugs	8.2	4.0
Poisoning by drugs primarily affecting the autonomic nervous system	7.5	3.0
Other	50.6	21.1

Figure 18 Substances Responsible for Emergency Hospital Admissions for Poisoning in Scotland Year Ending 31 March 2015 (ISD) – A Comparison of Under-Fives and All Ages

- **Road traffic collisions** are highest in the 15-24 age group; but noteworthy in the also in the 10-14 age groups (mainly pedestrian/cyclist) injuries and 25-44 age group.
- **Scalds** only really feature in the under-five age group to any notable degree with a discharge rate of 65 per 100k population compared to 25.8 per 100k for all children. The over 75 age groups have a higher discharge rate than for all age adults: 10.2 per 100k population compared to five per 100k population (see Figure 19) but still lower than that of the under-fives.

Scald Emergency hospital admissions year ending 31 March 2015	Discharge rate per 100,000 population	
	Under-Fives	All Ages
Total	65.0	25.8
Burn And Corrosion Of Trunk	17.8	7.2
Burn And Corrosion Of Head And Neck	15.1	5.4
Burn And Corrosion Of Wrist And Hand	8.9	3.8
Burn And Corrosion Of Shoulder And Upper Limb, Except Wrist And Hand	7.9	2.9
Burn And Corrosion Of Ankle And Foot	6.8	2.9

Figure 19 Location of Injury Sustained as a Result of Scalds in Scotland Year Ending 31 March 2015 (ISD) – A Comparison of Under-fives and All Ages

- **‘Other’** accounts for around 10-25% of physical unintentional harm – highest in all but the over 65 age group.

Fractures and head injuries were the most common main diagnoses for adults who had an emergency hospital admission as a result of a physical unintentional harm incident.

Fractures (particularly forearm) and head injuries were the most common main diagnoses among children under 15 years who were admitted to hospital an injury resulting from physical unintentional harm. Some of this is a reflection of the types of injuries that will result in a hospital admission rather than the nature of the injuries sustained as a result of physical unintentional harm – data on the types of injuries that occur overall (i.e. not necessarily result in a hospital admission) is unfortunately unavailable from A&E attendance data but is available from the Scottish Health Survey (see Page 25-26).

Fractures (particularly femurs in over-75 age group) and head injuries were the most common main diagnoses for adults who had an emergency hospital admission as a result of a physical unintentional harm incident, but some this is a reflection of the types of injuries that will result in a hospital admission rather than the nature of the injuries sustained as a result of unintentional harm.

The Scottish Health Survey data is covered in more depth in section 5.3.1 but, as predicted, the injuries sustained show a slightly different picture to emergency hospital admissions as they are not limited to the more serious injuries: Most injuries sustained by adults were strains/twists, bruising/pinching and tenderness/swelling (averaging 33%) followed by fractures (21%). A combination of the aforementioned is not uncommon. Broken bones become more common with increasing age (and if you're in the 25-34 age group) with strains/twists more common in the younger age groups. For children and young people cuts/bruises and swellings are seen in around one in every three injuries, 18% resulted in broken bones and 16% in a strain/twist. Burns/scalds and poisonings are much more common in the 0-3 group than any other whilst broken bones are more common in the 12-15 age group compared to the others.

Although emergency hospital admission data is helpful to analyse as part of the jigsaw puzzle of unintentional harm in Scotland, it is a smaller part – and arguably a snapshot of only the more serious injuries - of a much larger number of unintentional harm incidents that are occurring – the Scottish health board's A&E data indicates that only around 10% of attendances at A&E go on to be admitted as an inpatient. There is, therefore, great value in analysing A&E attendance data to understand a bit more of this jigsaw puzzle.

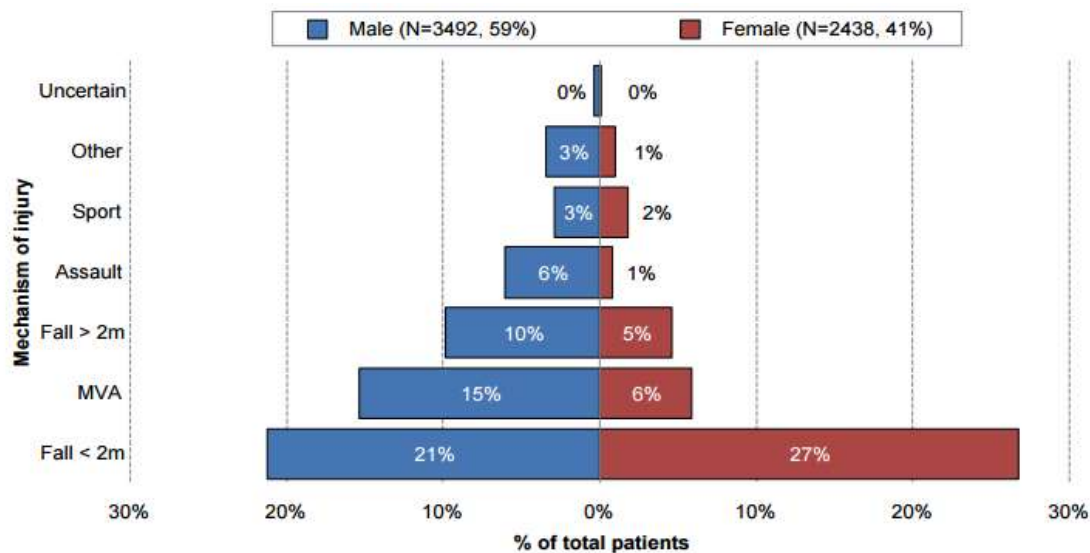
4.2.2 Scottish Trauma Audit Group

The Scottish Trauma Audit Group (STAG) is a national audit within the Scottish Healthcare Audits programme at the Information Services Division of NHS National Services Scotland. The publication of the 2015 STAG annual report, reporting on 2013 and 2014 data, presents detailed information of the patient journeys of 5930 trauma patients (a total of 19 out of 32 hospitals with an Emergency Department submitted data to STAG in 2013-2014.) that had passed through the Scottish Healthcare System.

The data includes trauma patients with injuries that are both unintentional and intentional (e.g. assault), and by their nature these trauma patients cover the more extreme end of the injury scale (even the "minor" group of patients within this group have to have been injured severely enough to spend a minimum of three days in hospital or have died as a consequence of their injuries). As such a summary of this data is included for completeness

sitting between the Emergency hospital admission data and Mortality data (though there will clearly be some duplicates in this as a proportion of the patients covered by STAG die – 6% of those die in hospital).

The majority of trauma patients (56%) were in hospital for more than one week and 30% of patients require more than two weeks of in-patient hospital care. 89% of all trauma patients arrived by the Scottish Ambulance Service (SAS) with 4% arriving by air ambulance⁴⁰.



MVA: Motor vehicle accident.

Other: mechanisms of injury such as deliberate self harm, contact with a moving object (not MVA) and accidents involving machinery.

Figure 20 Percentage of Male and Female Patients by Mechanism of Injury in Scotland (STAG 2013-14)

The proportion of trauma patients sub-divided by mechanism of injury remained relatively constant over the two years (see Figure 20). As with all the other data sources falls – particularly those from heights less than 2m - continue to account for the greatest proportion of incidents (3,701 patients or 62%); followed by motor vehicle accidents (this is unsurprising given the nature of motor vehicle accidents – although there are not high numbers, they tend to be the more severe end of the scale in terms of trauma and injury).

Mechanism of injury	Male	Female	Total
Other	202	61	263 (4%)
Sport	169	112	281 (5%)
Fall over 2m	581	276	857 (14%)
Motor vehicle accident	907	350	1,257 (21%)
Fall under 2m	1,257	1,587	2,844 (48%)

Figure 21 Number of Male and Female Patients by Mechanism of Injury in Scotland (STAG 2013-14)

⁴⁰ Scottish Trauma Audit Group (2015) *Audit of Trauma Management in Scotland 2015; Reporting on 2013-2014* <http://www.stag.scot.nhs.uk/docs/STAG-Trauma-Report-2015-web.pdf?4>

There was a statistical difference in the mechanism of injury for males and females with males more likely to have an injury following assault, falls of more than two metres and 'motor vehicle accidents', and females more likely to be injured following a low fall. See Figure 21.

Consistently, alcohol continues to be associated with 33% of major trauma patients and 25% of all trauma patients. Please note again that this includes individuals that have been intentionally injured as well as unintentionally.

4.2.3 Scottish Ambulance Service

Based on the NHS health board snapshot, emergency or GP ambulances were the mode of arrival at A&E for 18% of all physical unintentional harm attendances – just over 6,500 per year within the example health board. Using the Scottish Health Survey (SHeS) results 11% of all those who had sustained an injury as a result of unintentional harm in the past 12 months were treated by ambulance staff.

Time constraints and the quantity of data have meant that although the Scottish Ambulance Service (SAS) shared five years' worth of data, only a year's snapshot (2014-15) has been thoroughly analysed for this document. Scotland-wide data for the following incident classifications have been included as there is no single 'unintentional harm' code in SAS incident recording systems:

- *Animal bites*
- *Burns/Explosion/Blast*
- *CO/Fire alarm*
- *Drowning*
- *Electrocution/Lightning*
- *Falls*
- *Inhalation/HazchemTraffic/Transport collision*

A number of categories, including 'traumatic injuries', 'eye injuries', 'haemorrhage/laceration' and 'stab/gun/penetrating' have been excluded because, although there will be some unintentional harm incidents within there, there will be a significant number of intentional injuries or those relating to medical conditions and cloud the picture – more data or a further sub-classification for each of these would be required to sort the unintentional harm from the rest.

Most people tend to make their own way to A&E for an injury resulting from unintentional harm and the SAS data will be a small subset of all unintentional harm and probably only the more serious incidents – this should be borne in mind when reading the following analysis.

Over the course of 2014/15 in Scotland the SAS were called to 77,556 likely unintentional harm incidents.

Similar to other data sources, Falls account for the highest proportion of likely unintentional harm incidents that SAS get called to – 80% over the course of the year. A further 15% are traffic/transport collisions with the remaining categories accounting for very little of the

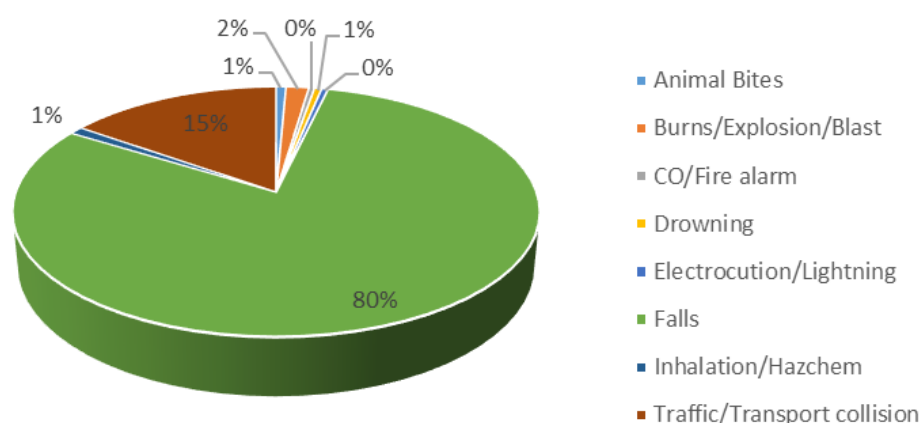


Figure 22 Incidents of Physical Unintentional Harm Reported to Scottish Ambulance Service 2014-15 by Incident Type

overall total (300-500 calls per category in total over the course of the year). Almost 1 in 10 emergency calls SAS receive is a fall – 71,087 out of a total number of calls 740,631 in 2014-15⁴¹. See Figure 22.

The ranked sub-classification for the two most prevalent incident types are included (Figures 23 and 24) to give a little more information about the nature of these – most falls are recent, though there are more than two calls a day about non-recent falls too; and there is a roughly equal split between ‘dangerous area’ falls and non-dangerous area and no injury falls. There are also almost three calls per day in Scotland regarding ‘long falls’.

Sub-classification - Falls	Total
Falls, Possibly Dangerous Area	24977
Falls, Not dangerous proximal body area	13458
Falls, Non dangerous distal body area	7769
Falls, Public assistance (no injuries, no priority symptoms)	6877
Falls, Unknown Problem, other codes n/a	4531
Falls, Non-recent (over 6hrs) injuries except distal body area (without priority symptoms)	1914
Falls, Non-recent (over 6hrs) injuries to distal body area (without priority symptoms)	1300
Falls, Long fall	1072

Figure 23 Type of Falls (Ranked in Descending Order) Reported to Scottish Ambulance Service in 2014-15

The top ranked sub-classification for traffic/transport collisions is quite general – ‘injuries’ followed by ‘no injuries’. Vehicle vs pedestrian incidents are the most common type of high

⁴¹ Scottish Ambulance Service (2015) *Annual Report 2014-15* Scottish Trauma Audit Group (2015) *Audit of Trauma Management in Scotland 2015; Reporting on 2013-2014* <http://www.stag.scot.nhs.uk/docs/STAG-Trauma-Report-2015-web.pdf?4>

mechanism incident with an average of two per day in Scotland in 2014-15. When all high mechanism incidents are grouped, they rank second – with over six per day on average across the year. Multiple response incidents (270 in 2014-15) and collisions where people are trapped (270 in 2014-15) are also notable in the overall rank.

Sub-classification – Traffic/transport collision	Total
Traffic/Transport Accident, Injuries	5172
Traffic/Transport Accident, no injuries (confirmed)	1595
Traffic/Transport Accident, High mechanism, vehicle vs. pedestrian	775
Traffic/Transport Accident, 1st party caller with injury to not dangerous proximal body area	734

Figure 24 Type of Traffic/Transport Collision (Ranked in Descending Order) Reported to Scottish Ambulance Service in 2014-15

In terms of crude numbers of incidents, the over 75s and 45-64 age groups account for a high number of incidents (Figure 25).

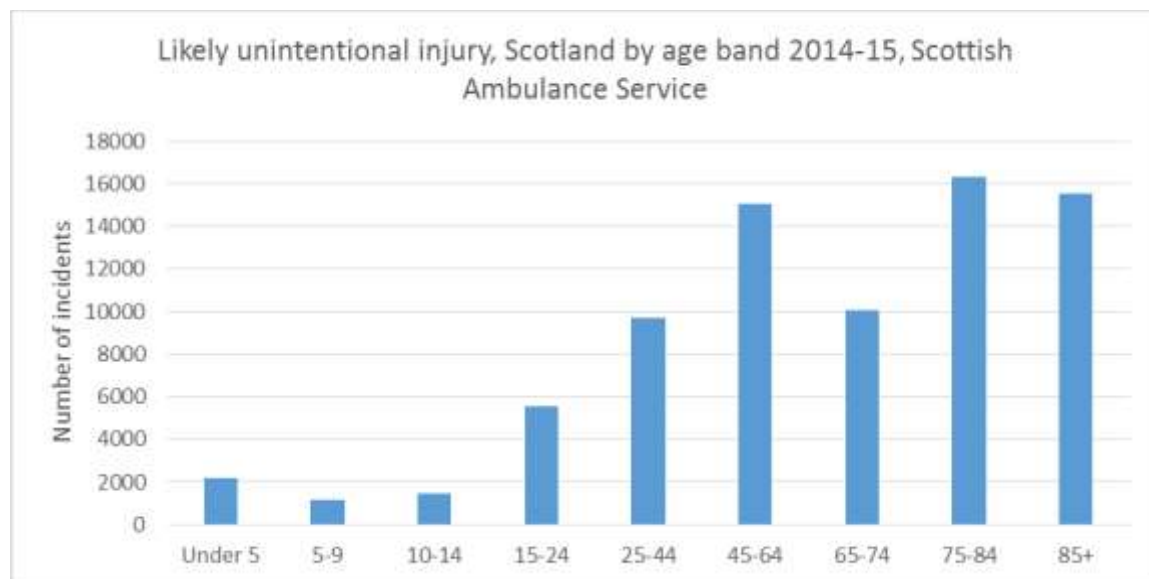


Figure 25 Number of Physical Unintentional Harm Incidents Reported to Scottish Ambulance Service 2014-15 by Age Group

Analysing the type of unintentional harm incidents by age band as a proportion – as shown in Figure 26 - shows a similar picture to all other data sources:

- Falls dominate each age group, particularly in the very young and the elderly.
- Burns only really feature in the under-fives to any degree
- Traffic/transport collisions increase with increasing age before peaking in the 15-24 and 25-44 age groups and dropping off again.

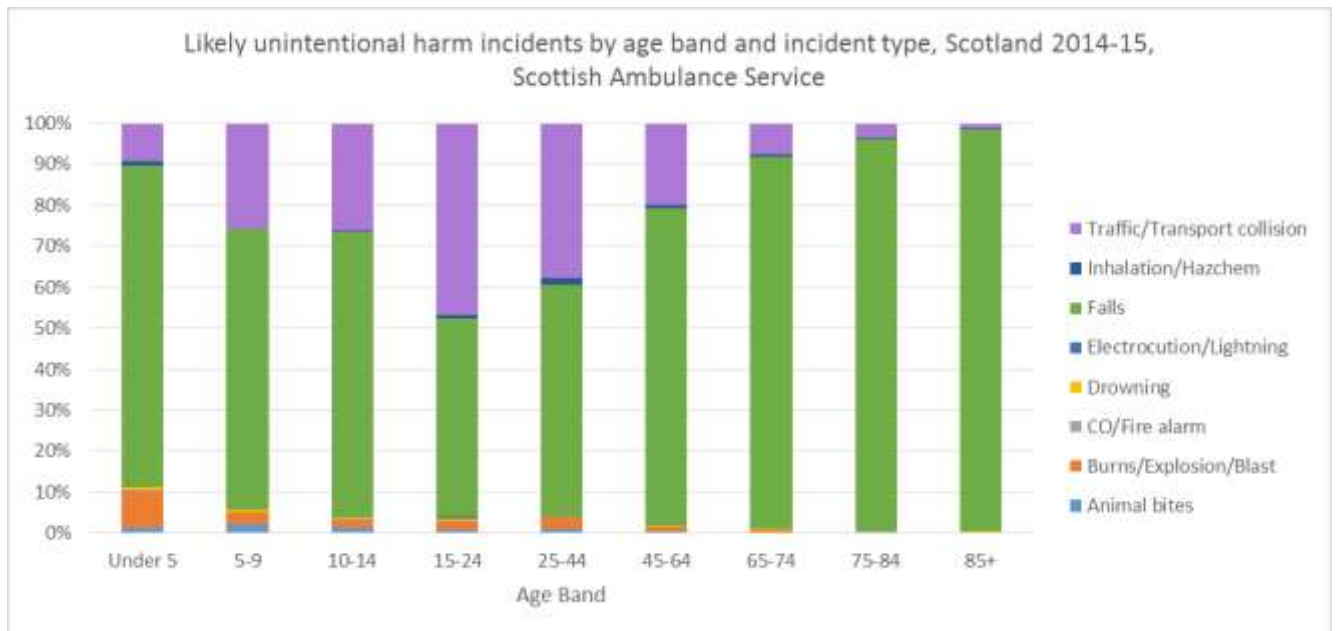


Figure 26 Type of Physical Unintentional Harm Incidents Reported to Scottish Ambulance Service (2014-15) by Age Band

Gender is slightly different to the other Scottish data – females are slightly over-represented 53% compared to 47%; some of this is likely to be as a result of the sheer volume of fall calls where elderly females are consistently over-represented in incidents – Figure 27 supports this explanation. Males are over-represented in all other age groups. According to incident type males are a notably higher proportion of traffic/transport collisions and females are a notably higher proportion of falls; all other categories are more of a 50/50 split.

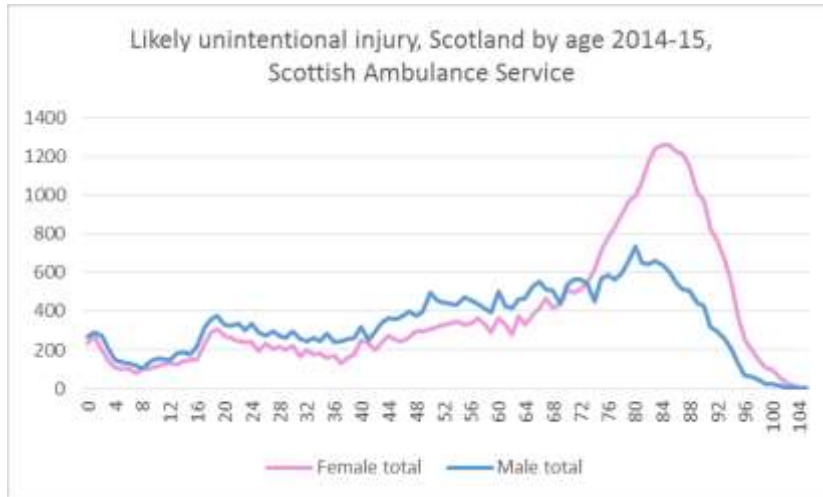


Figure 27 Number of Physical Unintentional Harm Incidents Reported to Scottish Ambulance Service 2014-15 by Gender and Age

In terms of injuries sustained and outcomes after contact with SAS; almost 73% of people

Conveyed To Hospital Y/N		Conveyed To Hospital Y/N	
Category	% Yes	Age band	% Yes
Animal Bites	73.8	Under 5	74.3
Burns/Explosion/Blast	68.6	5-9	76.0
CO/Fire alarm	36.1	10-14	78.9
Drowning	70.1	15-24	75.0
Electrocution/Lightning	70.6	25-44	73.9
Falls	73.9	45-64	74.9
Inhalation/Hazchem	46.1	65-74	71.3
Traffic/Transport collision	68.6	75-84	71.8
Grand total	72.8	85+	71.5
		All	73.0

Figure 28 Percentage of People Conveyed to Hospital Following a Physical Unintentional Injury by Category and Age Band (as reported to Scottish Ambulance Service in 2014-15)

are conveyed to hospital; this is higher for animal bites and fall incidents, but lower for all other categories (much lower for CO/Fire alarm and Inhalation/Hazchem) as Figure 28 shows. The conveyance to hospital rate is similar across all age groups but slightly elevated in the under 15s (particularly 5-14 age groups). This is likely to reflect the severity of different incident types.

Some of the markers on the incident recording system are not well used for the likely unintentional harm incidents; however the alcohol marker shows that alcohol is suspect to be involved in almost 7% of likely unintentional harm incidents with animal bite, drowning and falls more likely to involve alcohol than other types. See Figure 29.

Alcohol Yes/No	
Incident Description	% Yes
Animal bites	8.2
Burns/Explosion/Blast	3.8
CO/Fire alarm	2.8
Drowning	9.7
Electrocution/Lightning	1.2
Falls	7.7
Inhalation/Hazchem	3.2
Traffic/Transport collision	1.9
Grand total	6.7

Figure 29 Percentage of Physical Unintentional Harm Incidents Reported to Involve Alcohol by Incident Type (as reported to Scottish Ambulance Service 2014-15)

4.3 A&E Attendance: A Health Board's Snapshot

One health board that has good data for A&E attendance for unintentional harm and five years' worth of data⁴² has been analysed to give an idea of the kind of data that could be available post-datamart review. Some of this data (all depersonalised) is already provided to partnership analysts within community safety partnerships to aid with preventative activities and trend analysis. Some local falls prevention projects are also beginning to explore the potential benefits in developing local information sharing protocols to share personal data to aid prevention and early intervention locally and we watch their progress with interest.

On average each year there are at least 38,000 attendances at this health board's A&E departments categorised as "unintentional"⁴³. Please note that the analysis has been conducted on the 188,813 A&E attendances for physical unintentional harm over the five year period – due to the high number of 'not known' / 'uncoded' incidents there may be a number of unintentional harm incidents that cannot be included in the analysis.

78% of attendances are self-referrals who used private/public transport and 18% are emergency attendances (by emergency ambulance/helicopter/emergency ambulance from the GP).

The following graph (Figure 30) shows the A&E attendances by gender and age group as a proportion of people of that age registered with a Community Health Index (CHI) number. As with other data sources (SHeS and emergency admissions) there are higher attendances for the younger and older age groups with particular peaks at 11-16 years (more notably for males) and for the over 85s (attendances begin to increase from 80 years of age onwards and rise quickly with increasing age). Attendance is also high for the 0-10 age group.

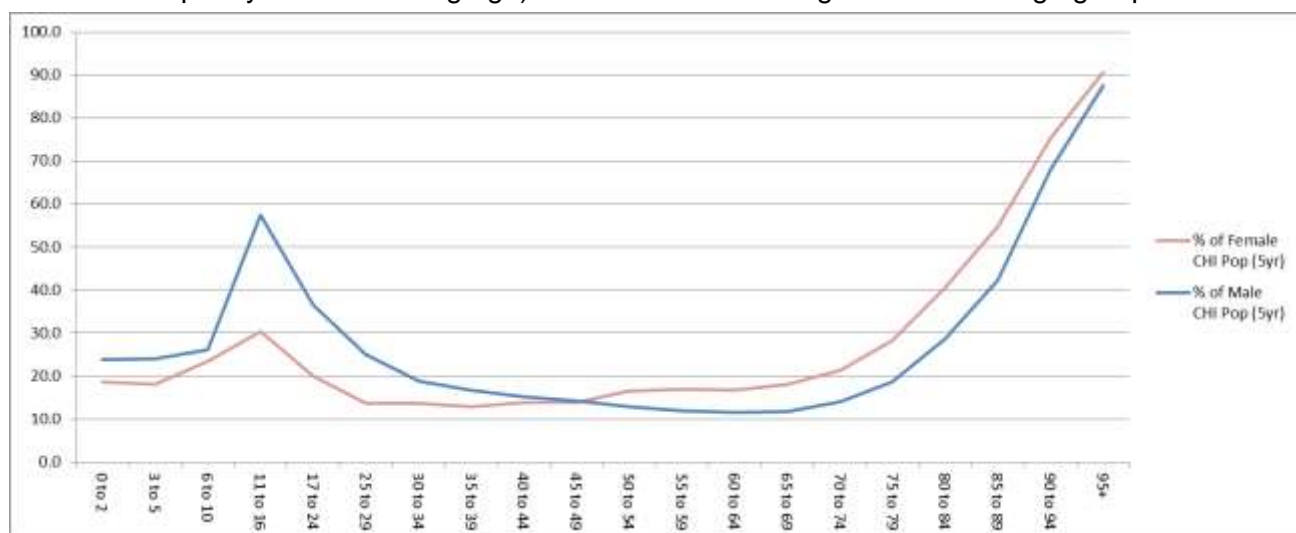


Figure 30 Attendance at One Scottish Healthboard's A&E Departments for Physical Unintentional Harm (2010/11-2014/15) by Gender and Age Group

⁴² From April 2010 to March 2015

⁴³ Note that out of an annual average of 252,911 14.9% are unintentional, 11.1% are intentional/medical and the remaining 74% are Other/not coded.

As with other data, falls and collisions account for a high proportion (65% - averaging around 24,000 per year) of A&E attendances. Sport injuries account for a quarter of all attendances (an average of 9,000 per year) with the road traffic collisions 8% (average of 3,000 attendances annually). Burns and thermal and poisonings account for a small proportion (3% in total just under 1000 burns/thermal injuries and 200 poisonings) but these are concentrated in a much smaller proportion of the population than the other types. See Figure 31.

Although the mechanism remains absent, the triage category (Figure 32) can give some indication of the nature of unintentional harm in terms of severity. Poisonings and road traffic collisions tend to be, overall, more serious than the other incident types.

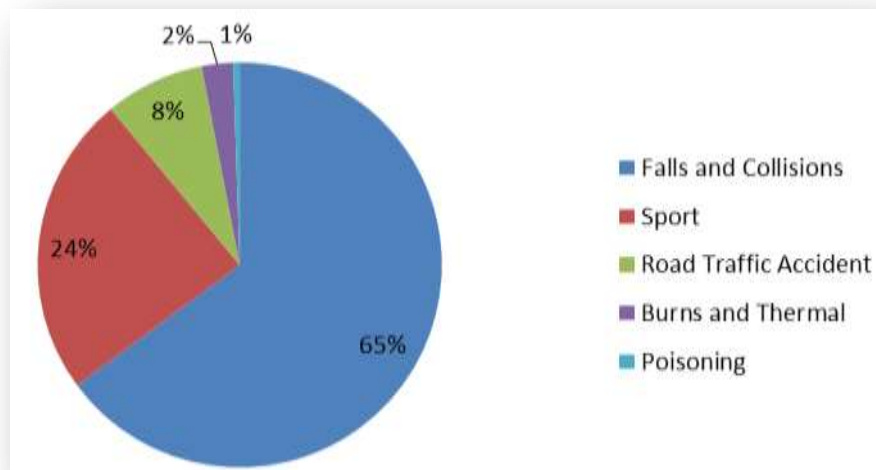


Figure 31 Type of Physical Unintentional Harm Incidents Attending One Scottish Healthboard's A&E Departments (2010/11-2014/15)

- 76% of all physical unintentional harm incidents attending are classed either as 'see and treat' (80,116 or 42%) or 'standard' (63,878 or 34%) triage categories
- 17% are 'urgent' (32,349)
- 2.5% (4,699) 'very urgent'

The profile of this changes with unintentional harm incident type:

- Most falls are either see and treat or standard triage categories (70%), but 22% are either urgent/very urgent. For every fall over 2m there are 16 falls under 2m.
 - Looking at falls by sub-category (over 2m and under 2m have been used since 2014) a third happen within the home, another third in another public place and the remainder are split between a number of locations.
 - Comparing the proportion of over 2m and under 2m falls by location falls from a height tend to happen more within the workplace 9% of falls over 2m happen at work compared to 5% of falls under 2m.
- Most sport injuries are either see and treat or standard triage categories (85%).
- Road traffic injuries vary but overall tend to be more serious than falls or sports injuries.

- Just over half are see and treat or standard; almost 30% are urgent/very urgent and 1,330 (8%) were 'immediate resuscitation'. For comparison the figures for physical unintentional harm overall are 19.5% urgent/very urgent and 1.3% immediate resuscitation. 60% of those attending A&E are vehicle

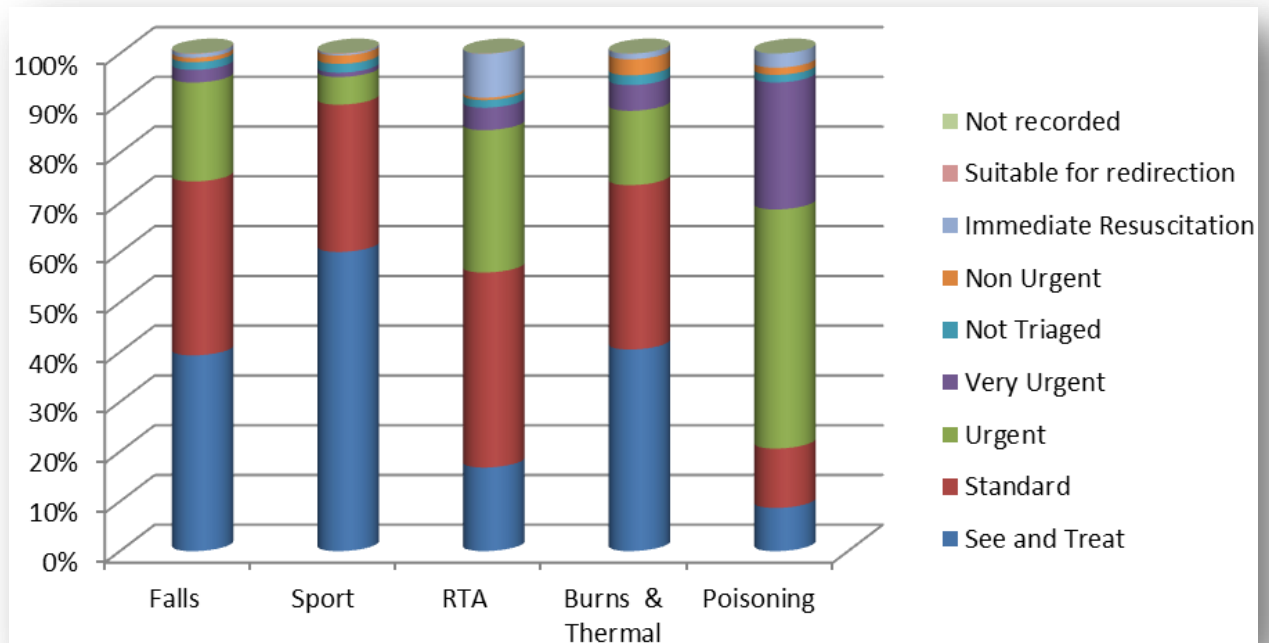


Figure 32 Physical Unintentional Harm Incidents Attending One Scottish Healthboard's A&E Departments by Incident Type and Triage Category (2010/11-2014/15)

occupants, 21% cyclists, 10% pedestrians and 9% motorcyclists.

- Just over 70% of burns/thermals are classed as see and treat or standard, 21% urgent/very urgent.
- Poisonings, although small in number, tend to affect a small proportion of the population (particularly under-fives) and are generally rather serious: 2-3% were 'immediate resuscitation', 25% very urgent and 49% urgent (74% in total for poisonings compared to 19.5% for all physical unintentional harm). Only 20% are 'see and treat' or 'standard' (compared to 76% for physical unintentional harm overall).

More information on the nature of the injury (e.g. bodily location and type of injury fracture/head injury) would be helpful to aid building a picture of unintentional harm, however this is only available for inpatients not for A&E attendance. This may change in due course with the review of the A&E datamart (consultation on-going).

76% of all physical unintentional harm incidents attending this health boards A&E departments are classed either as 'see and treat' (80,116 or 42%) or 'standard' (63,878 or 34%) triage categories. 17% are 'urgent' (32,349) and 2.5% (4,699) 'very urgent'. The profile of this changes with age (Figure 33):

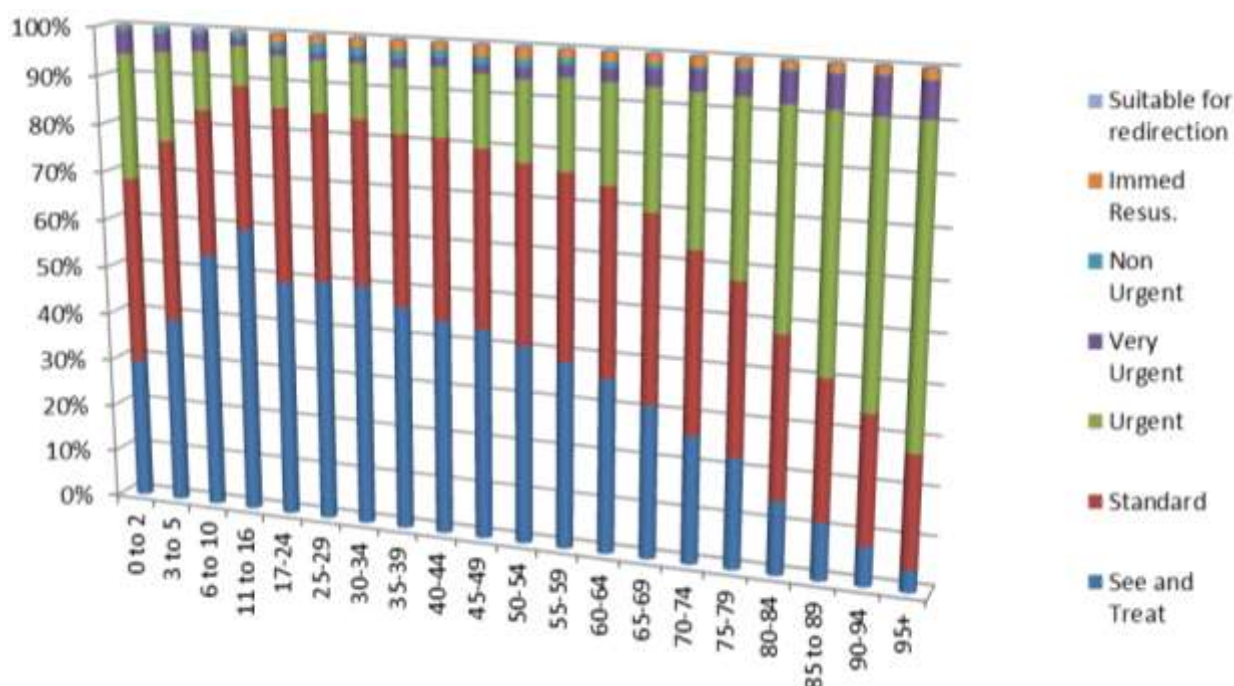


Figure 33 Physical Unintentional Harm Incidents Attending One Scottish Healthboard's A&E Departments by Triage Category and Age Range (2010/11-2014/15)

The very young and the very old are where most 'urgent and very urgent' physical unintentional harm injuries are seen; though clearly all age groups have injuries that fall into these categories. Over five years of data only 1.3% (2,489) attendances have been an 'immediate resuscitation'.

Admittance as an inpatient increases with increasing age – 0.9% for 0-49s, 1.8% for 50-69s, 6% for 70-79s and 26.6% for over-80s.

Demographics

Analysing incident types by age group (Figure 34) gives a more nuanced picture which could assist with developing 'injury profiles' for particular age groups⁴⁴. Even in the absence of specific information about the mechanism of injury and incident the following gives a good base for developing these profiles and developing preventative approaches once Scotland-wide data is available.

⁴⁴ See also the graphs for deaths and emergency hospital admissions by age and cause.

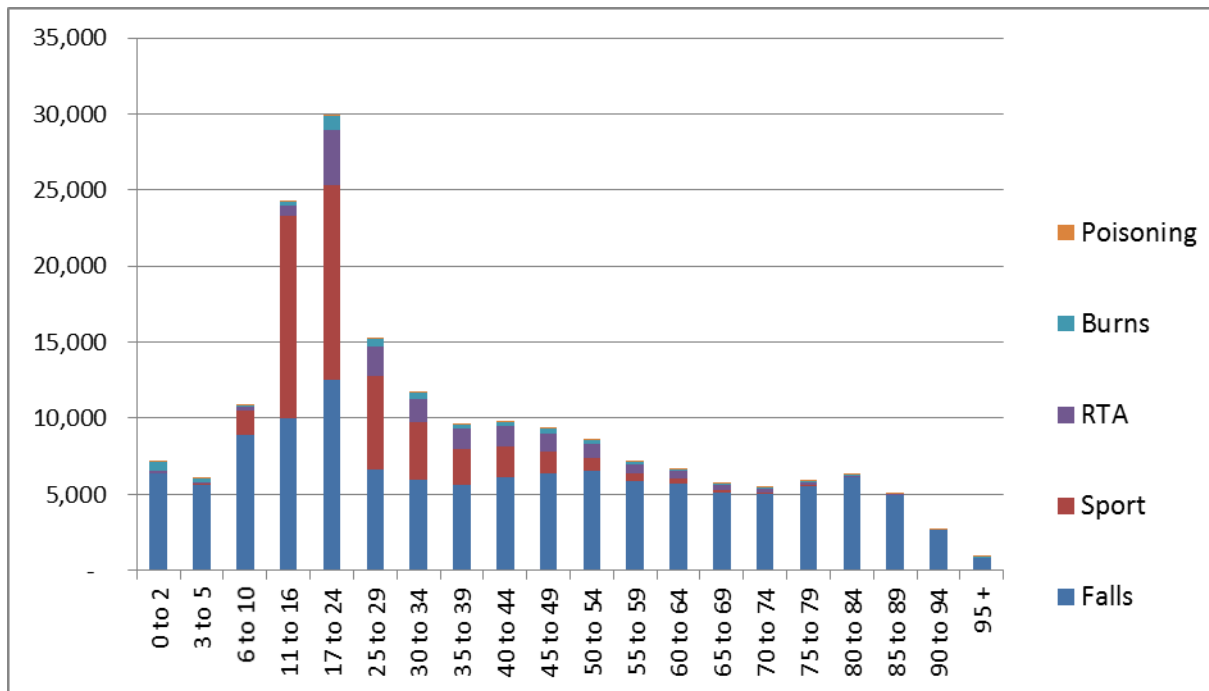


Figure 34 Age range of patients recorded by Type of Incident for Physical Unintentional Harm (One Scottish health board's A&E Departments, April 2010-March 2015)

Key Points:

- Falls are high regardless of age group⁴⁵ – the mechanism of these falls are likely to be different for different age groups so more analysis should be conducted into this. As this kind of data is not yet collected this may require a separate piece of work, for example MSc or PhD student, NHS analysts or local partnership analysts; or other commissioned work. As a proportion of the age populations, falls are high in young people and the over 75/85 age group. The highest number of deaths from falls are in this older age group with comparatively few falls deaths in young people.
- Although attendances as a result of sports injuries account for 24% of all A&E attendances this is only for a narrow age group: 11-24 year olds and to a lesser extent the 25-29 year olds. Sports injuries decrease gradually from 30 years old to 50 years old and are barely perceptible from sixty onwards. More analysis is required into sports injuries but younger people are much more susceptible due to their youth and to a lesser extent due to the higher levels of frequent participation and the types and nature of sport played. Only a very small proportion of these result in serious injury.

The high numbers of falls and sports makes patterns in the other injury types challenging so have been removed (Figure 35):

⁴⁵ Note that these are actual numbers and therefore don't take account of the number of attendances as proportion of the population of these ages – so there are smaller numbers of falls in the over 90s, but as a proportion of the population over 90 they are high (because there is a smaller number of over 90 year olds than other age groups). This graph should take other findings too.

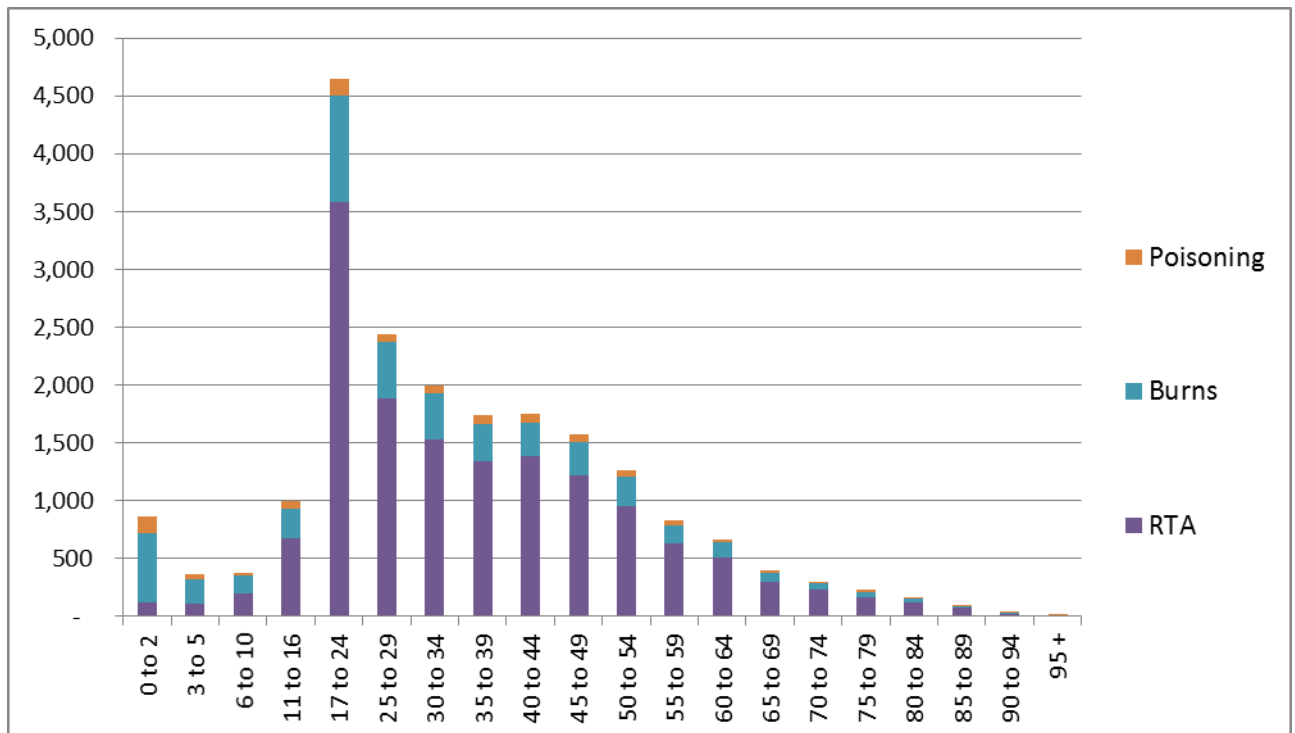


Figure 35 Age range of patients recorded by Type of Incident (excludes falls and sports incidents) for Physical Unintentional Harm (One Scottish health board's A&E Departments, April 2010-March 2015)

- Burns/thermal injuries are highest in the 0-2 age group (mostly from hot drinks but some scalding from taps/baths) and in the 17-24 age group (the nature of these is unclear and would merit more analysis). Burns/thermal injuries are rarely fatal – on average six deaths from fire/flame in this health board per year compared to 950 attendances annually.
- Poisoning numbers are small but concentrated within the 0-2 and 17-24⁴⁶ age groups again.
- Injuries from road traffic accidents/collisions (RTA/RTC) begin to increase from 11-16 years, peak in the 17-24 age group and decrease with increasing age. Fatalities mirror this, and also have a second (albeit lower) peak in the 45-49 age group.

Location

Unlike emergency hospital *admission* data for Scotland, this health board's A&E *attendance* incident location is good and has improved over time with only 2.9% (five year average) with an unknown/unrecorded location (this was 2.2% in 2014/15).

⁴⁶ Some of this may be unintentional overdose of illegal (or other) drugs and will therefore be of a very different nature to the 0-2 age group.

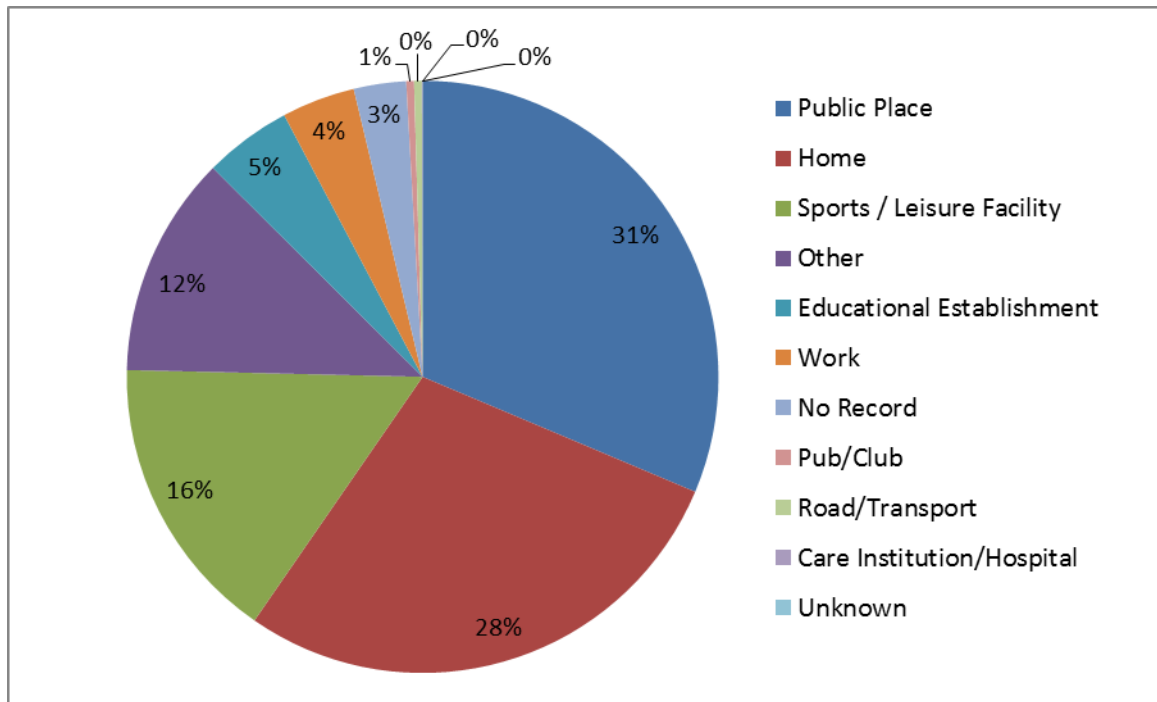


Figure 36 Location of Physical Unintentional Harm Incidents (One Scottish health board's A&E Attendance 2010/11-2014/15)

Most physical unintentional harm takes place in a public place or in the home⁴⁷ (31%, 59,190 and 28%, 53,385, respectively). See Figure 36.

There are very clear patterns that emerge when incident location is analysed across age groups and supports other national research into unintentional harm profiles (Figure 37):

⁴⁷ This includes within the house and also in the garden

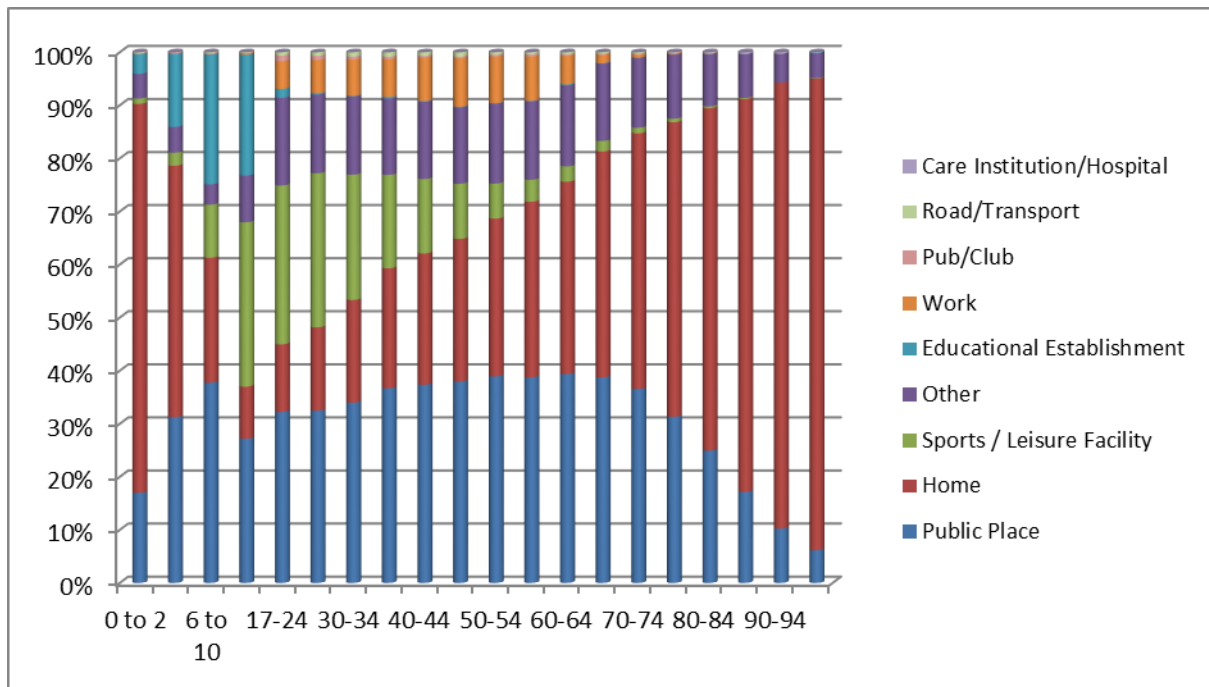


Figure 37 Physical Unintentional Harm Incidents by Age Group and Location of Incident (One Scottish health board's A&E Attendance 2010/11-2014/15)

Physical unintentional harm for the under-fives occurs mainly in the home (although around 10-15% of locations are 'unknown' – these were removed from the graph) and this decreases with increasing age until the septuagenarian age group where home incidents increases rapidly; accounting for almost all unintentional harm in the over 85s. For school-aged children and young people educational establishments, public places and sports/leisure are where physical unintentional harm incidents occur. For the working age groups public places, sports/leisure facilities and work (the latter is only around 10% of all physical unintentional harm that happens to this group) are where physical unintentional harm incidents occur.

Other points of interest

- Overall males tend to have more physical unintentional harm compared to females; but females have more falls and burns/thermal injuries than males and males have vastly more sports injuries than females (this is due to the gulf in participation in particular types of sports between males and females: the ratio for sport/leisure facilities as a location is 1:4 female to male)

Incident Type	% Female	% Male
Falls	56.3	43.7
Sport	20.4	79.6
RTA	42.2	57.8
Burns	57.2	42.8
Poisoning	46.9	53.1
Total	46.5	53.5

Figure 38 Type of Physical Unintentional Harm Incidents Split by Gender (One Scottish Healthboard's A&E Attendance 2010/11-2014/15)

Hour	Falls	Sport	RTA	Burns & Thermal	Poisoning
0-8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22-23					

There are clear temporal (time-based) patterns for A&E attendance for different types of incidents (Figure 39)⁴⁸. There are no strong trends for days of the week or months overall; though sports injuries tend to be higher over the weekend and on Mondays and injuries sustained at work are lower over the weekend. Burns/thermal injuries and poisonings tend to be from 'tea-time' onwards into the evening and sports injuries tend to be mornings-middle of the day and then late afternoons. Attendances for RTAs are from lunchtime onwards until early evening. Attendances for falls are high throughout the day.

Figure 39 Physical Unintentional Harm Incidents by Type and Hour of Attendance at A&E (One Scottish Healthboard's A&E Attendance 2010/11-2014/15)

⁴⁸ Please note this has not been conducted using strict thresholds for red/amber/green and all hours have some incidents within them. This is more for general illustrative purposes. Please note also that this is for A&E attendance not the hour the incident occurred. People may wait some time before attending A&E after an incident has occurred though the red/amber times above are consistently higher over the five years' worth of data.

4.3.1 Other Health Data

Research into other health data has been conducted, for example GP data and NHS24 both of which in theory could be good sources of information on unintentional harm.

- There is a new database called SPIRE for General Practice which could, in time, provide valuable information about unintentional harm although reports on this are unlikely to be a priority.
- There is good data within the Quality and Outcomes Framework for mental health prevalence and prescribing from GP information – this is covered within the section on psychological unintentional harm.
- NHS24 were contacted, however did not feel they had any information on unintentional harm as incidents are coded based on the injury itself and not the cause or reason behind the injury.

4.4 SURVEY DATA⁴⁹

Data in this section is from the Scottish Health Survey, Health Behaviour in School-aged Children survey, Children in Scotland Survey and Growing up in Scotland survey. The wording of the question is about whether they have had an “accident” in the last 12 months.

Key Findings

Homes and gardens are typically where physical unintentional harm incidents occur – almost 1 in 3 events (this rises to more than 1 in 2 for the over-65 age group).

For all children injuries were most likely to arise in the home/garden (42%) or sport/recreation locations (24%) but the profile was different for different age groups: up until the age of seven 70% happened in the home/garden compared to 26% for those over seven.

Alcohol consumption, cannabis use, physical fighting and being bullied are associated with increased prevalence of injury.

Risk behaviour was found to be significantly associated with medically attended injury among adolescents and this relationship was consistent among age, gender and socio-economic groups.

⁴⁹ Taken from Scottish Health Survey (SHeS), Scottish Schools Adolescence Lifestyle and Substance Misuse Survey (SALSUS), Health Behaviour in School-Aged Children (HBSC) survey, Children in Scotland Survey and findings from the Growing Up in Scotland study.

4.4.1 Scottish Health Survey

Based on SHeS survey responses from 1998 onwards, on average 12.6% of Scotland's households report having had an accident (hereafter referred to as 'physical unintentional harm / physical unintentional harm incident' in the last 12 months – equating to around 550,000 physical unintentional harm injuries each year in adults alone (Figure 40). Of those who answered yes to this question – 83% had one injury and 12% had two injuries. There were very few with more than two injuries in the last 12 months.

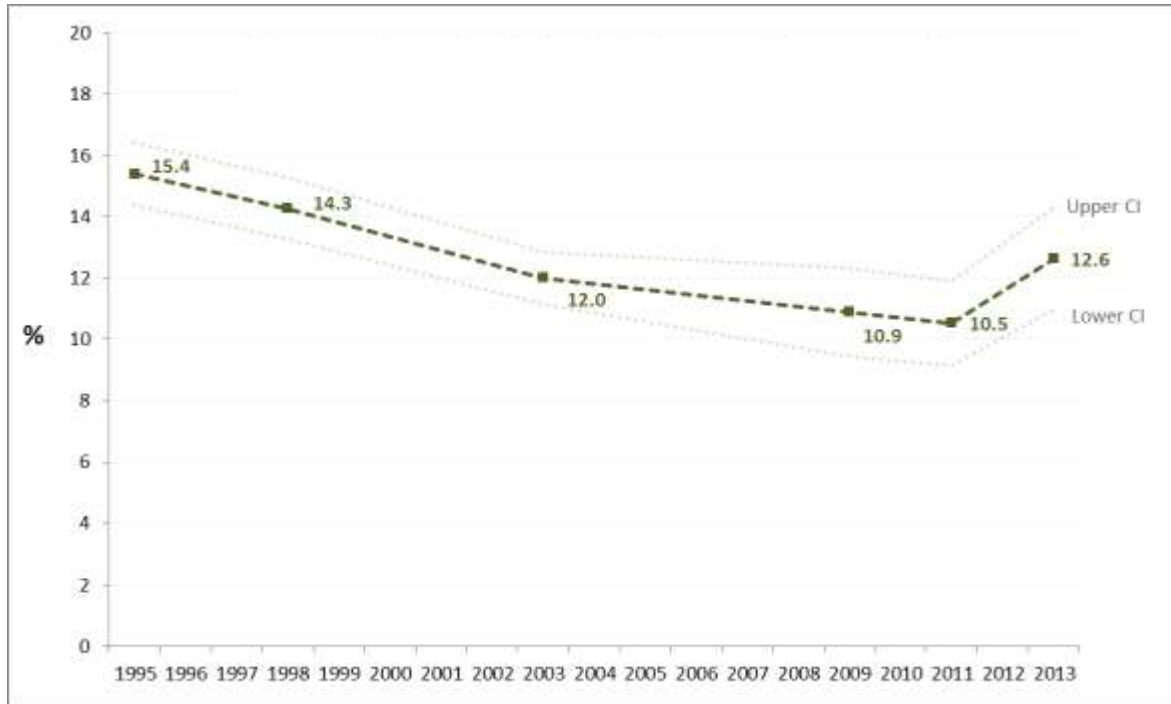


Figure 40 Proportion of Adults (over-16) reporting an Injury as a Result of Physical Unintentional Harm ("an accident") in the Last 12 Months (Scottish Health Survey 1995-2013)

As with the other data sources, homes and gardens are typically where physical unintentional harm incidents occur – almost 1 in 3 events (this rises to more than 1 in 2 for the over-65 age group). Sports/play/recreation areas and office/factory/shop/pub etc. feature more heavily in the 16-34 age group than others (30% compared to 15% at home/in gardens). See Figure 41.



Figure 41 Location of the Physical Unintentional Harm Incident From Scottish Health Survey 2009/2011

Similar to other data, injury as a result of a slip/trip/fall is the most common – around 50% of all incidents. This increases with age – 38% in younger age groups up to 86% in over-75s.

Injuries resulting from sports/recreation are linked to 1 in 5 in the 16-24yrs age group. See Figure 42.

32% of those who had an injury as a result of physical unintentional harm required to take time off work.

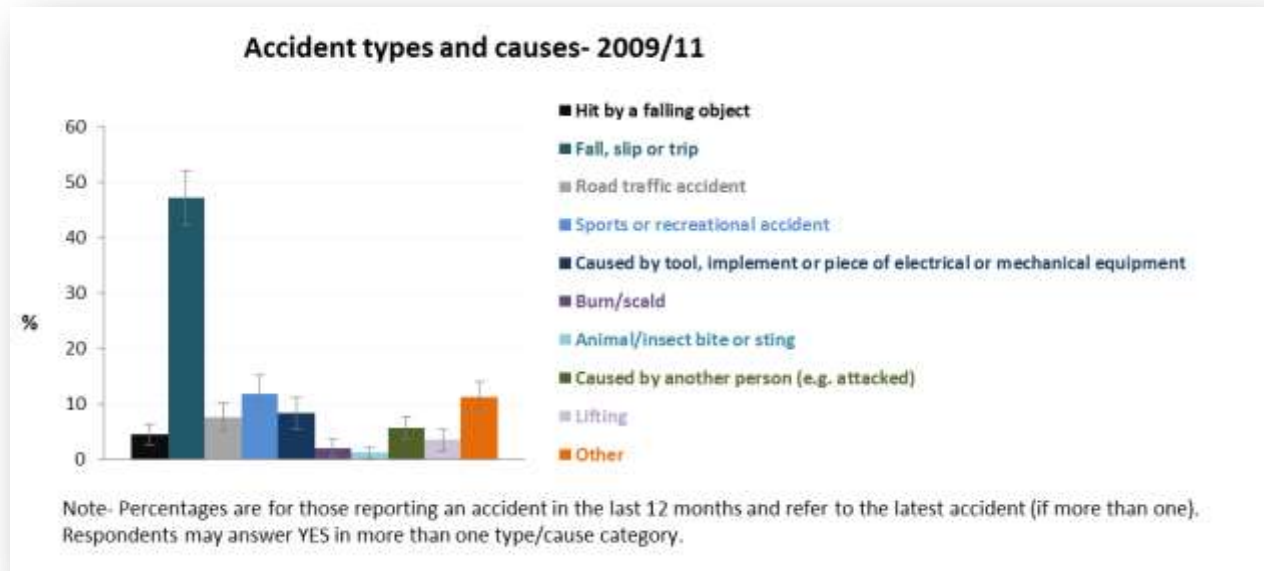


Figure 42 Cause of Physical Unintentional Harm Incidents – Scottish Health Survey 2009/2011

Most injuries were strains/twists, bruising/pinching and tenderness/swelling (averaging 33%) followed by fractures (21%). A combination of the aforementioned is not uncommon. Broken bones become more common with increasing age (and if you're in the 25-34 age group) with strains/twists more common in the younger age groups.

In contrast to almost all other datasets, there is no discernible correlation between unintentional harm as reported in SHeS and deprivation. The exception to this is with ones that happen within the home or garden where incidents increase with increasing deprivation (25% in the least deprived 2012 quintiles to 47% in the most deprived 2012 quintiles).

Injury Pathway (using SHeS data) (Figure 43)

Most unintentional harm incidents resulted in hospital treatment – 63% and over half treatment by a doctor or nurse. Just over 1 in 4 self-treated. This is at odds with some established injury pyramid models which have highest numbers of self-treatment decreasing towards hospitalisation (and fatality) and may therefore require some more detailed analysis.

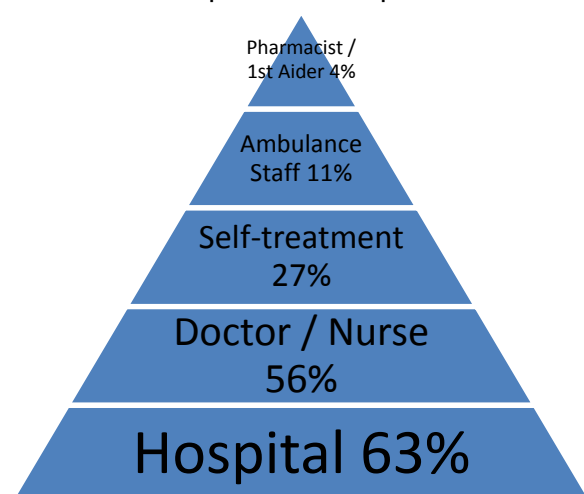


Figure 43 Treatment of Physical Unintentional Harm – Scottish Health Survey 2011

Preventable?

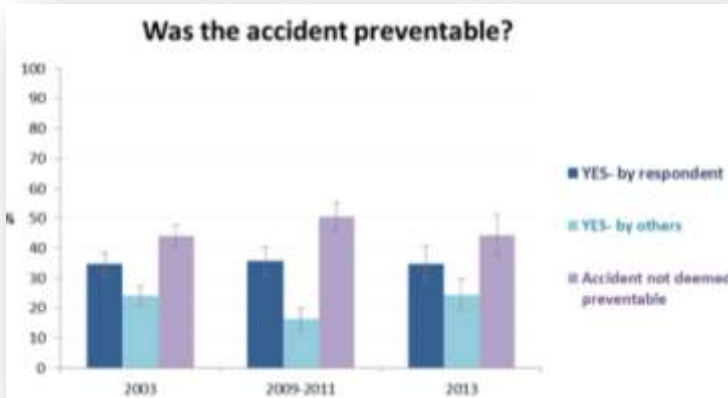


Figure 44 Preventability of Physical Unintentional Harm Incidents (self-assessed) – Scottish Health Survey 2003, 2009-11 and 2013)

felt the incident wasn't preventable by them or others. This varies across age groups (see Figure 45) with 35-54 year old age groups and over-75s more likely to state it was unpreventable. 55-74 year olds were more likely to think they could have prevented the incident and 16-24 year olds more likely to think someone else could have prevented it.

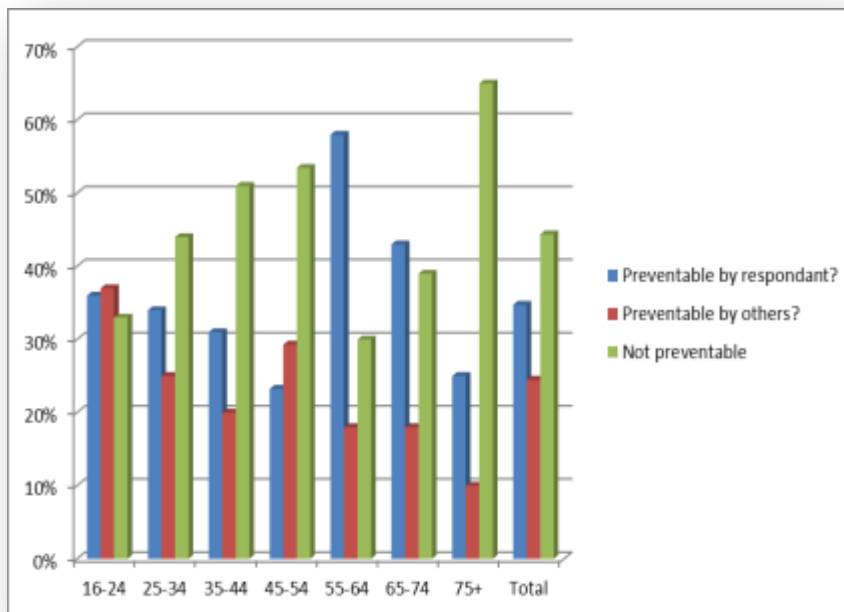


Figure 45 Preventability of Physical Unintentional Harm Incidents (self-assessed) by Age Group – Scottish Health Survey 2013

had one physical unintentional harm incident (81%) with 15% having had two and 3% having three or four occurrences. Multiple injury occurrences were only seen in the older age groups – 8-15 year olds.

There is a slight change in positive responses with deprivation which contradicts other evidence - 19% in the least deprived areas had an injury compared to 16% in the most deprived areas.

SHeS asks those who report having had an injury as a result of physical unintentional harm in the past 12 months whether they thought it was preventable by themselves, other(s) or not preventable. Figure 44 shows that consistently people predominantly felt it was preventable – either by them or others: between 50% and 60%. Around 40-50%

Children

In 2013, 15% of children had experienced an injury as a result of physical unintentional harm in the preceding 12 months (as reported by adults within the household) – in 12-15 year olds this was 1 in 4 (24%).

Most children only

For all children injuries were most likely to arise in the home/garden (42%) or sport/recreation locations (24%) but the profile was different for different age groups: up until the age of seven 70% happened in the home/garden compared to 26% for those over seven.

Injuries resulting from a slip/trip/fall account for over 57% of injuries and 15% from sport/recreation activities. Again, the profile changes for the younger aged and older aged children: 70% injuries in 0-3 age group are the result of a slip/trip/fall compared to 51% in 12-15 age group; 24% injuries in 8-15 age group were the result of sports/recreation compared to 4% of 0-7 age group.

Cuts/bruises and swellings are seen in 1 in 4 to 1 in 3 injuries, 18% resulted in broken bones and 16% in a strain/twist. Burns/scalds and poisonings are much more common in the 0-3 group than any other whilst broken bones are more common in the 12-15 age group compared to the others.

Compared to adults, children were much more likely to be treated by hospitals (despite having a smaller proportion of fractures) – 81%; with a much lower proportion self-treated or treated by other non-medical professionals. This may relate to an increased tendency to instinctively take children to hospital if they have an unintentional harm incident.

57% of occurrences that resulted in injuries to children were assessed to have been unpreventable by the respondent (compared to 44% in adult physical unintentional harm) – Respondents thought 26% could have been prevented by them and 19% by others.

4.4.2 Health Behaviour in School-aged Children survey

In addition to SHeS data for young people, there is a four yearly Health Behaviour in School-aged Children (HBSC) survey conducted. The HBSC study asks young people about their experience of injuries requiring medical attention during the previous 12 months. This data has been collected since 2002.

The findings presented here show that injury is highly prevalent among the Scottish adolescent population. Almost half of young people (47%) have received an injury requiring medical attention in the past 12 months⁵⁰ (Figure 46) – please note that this includes injuries as a result of bullying/fighting as well as ‘accidents’; some work was undertaken to see if these could be separated, but it was not possible. Similar to other data sources, boys are more likely to be injured than girls.

⁵⁰ Currie, C. et al (2015) *Health Behaviour in School-aged Children: World Health Organization Collaborative Cross-National Study (HBSC): findings from the 2014 HBSC survey in Scotland*. Child and Adolescent Health Research Unit (CAHRU), University of St Andrews

Consistently around 1 in 2 young people report having had at least one medically treated injury in the past twelve months (Figure 46). Whilst there has been little change in the prevalence of injuries among girls between 2002 and 2014, there has been a small but steady decline among boys from 55% in 2002 to 50% in 2014 (Figure 47).

There is little variation in reported injuries between the ages of 11 and 15. More boys than girls, however, have been injured at all three ages. There has been no change in the prevalence of injuries between 2002 and 2010.

Adolescents from higher-affluence families were more likely to report a medically attended injury – some of this may be due to the proportion of injuries resulting from sports in this age group and the increased participation in particular type of sports by young people from more affluent backgrounds. Alternatively it could stem from an increased likelihood of seeking medical treatment once an injury occurs.

	n	%
All	3062	47.3
Gender		
Boys	1675	52.9
Girls	1387	42.0
Grade		
P7	936	45.8
S2	972	49.0
S4	1154	47.3
Family Affluence Scale		
High	1095	49.1
Medium	967	48.1
Low	1000	44.8

Figure 46 Medically-Treated Injuries Sustained by Gender, School Year and Family Affluence Scale

Figure 15.2:

INJURED AT LEAST ONCE IN PAST 12 MONTHS 2002 – 2014

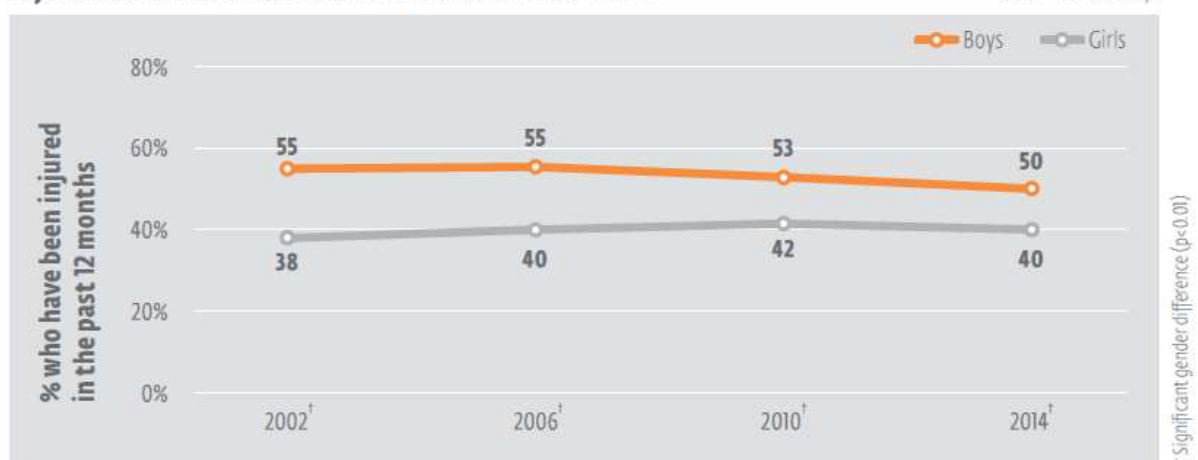


Figure 47 Medically-Treated Injuries Sustained From 2002-2014 by Gender

Alcohol consumption, cannabis use, physical fighting and being bullied are associated with increased prevalence of injury (Figure 48).

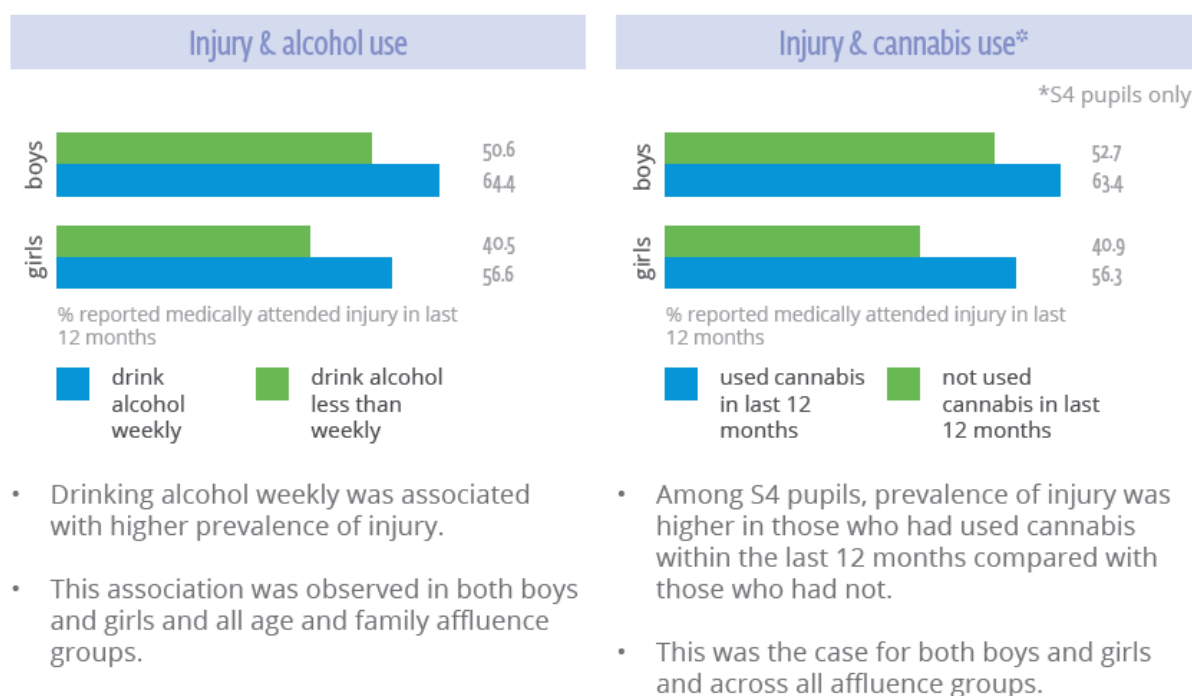


Figure 48 Medically-Treated Injuries Sustained and Their Association with Alcohol Use and Cannabis Use by Gender

In line with previous research, risk behaviour was found to be significantly associated with medically attended injury among adolescents and this relationship was consistent among age, gender and socio-economic groups. This is important because Scottish adolescents have relatively high rates of alcohol use and cannabis use compared to young people in many other European countries. Social assets such as a supportive home or school environment are associated both with reduced risk of injury and with lower prevalence of risk behaviours. However, among young people involved in multiple risk behaviours, having a supportive family or school does not mitigate risk of injury. This suggests that there is a need to target injury prevention programmes at those engaged in risk taking behaviours.

4.4.3 From Growing up in Scotland⁵¹ (early years)

In 2010/11, 8% of babies (8% of boys and 9% of girls) had received treatment for an accident. This is a small (but statistically significant) reduction from 2005/06 when 10% of children had done so (11% of boys, 9% of girls). Of those experiencing accidents requiring treatment, similar proportions in both years had visited casualty or were admitted to a hospital ward (75% in 2010/11, 73% in 2005/06).

⁵¹ A holistic study, concerned with all aspects of the child's life, including health, development, family circumstances, neighbourhood, education, friends and leisure activities. Bradshaw, P et al (2013) *Growing Up in Scotland: Birth Cohort 2 Results from the first year* Edinburgh: Scottish Government <http://growingupinScotland.org.uk/wp-content/uploads/2013/10/GUS-Accidents2013.pdf>.

60% of children had at least one accident or injury during their first five years, for which their parent had consulted a medical specialist (doctor, dentist, health centre or hospital). 11% of children experienced three or more accidents requiring medical attention over their first five years.

Over the first four years of children's lives, the 'peak' time for accidents is between the age of one year and two years, when 23% of children experienced one or more accident requiring treatment. This is probably due to increased (but faltering) mobility as the children begin to walk.

- 19% of children experienced at least one accident between the ages of two and three
- 18% had an accident between the ages of three and four.
- Between the ages of one and four, 1 in 5 children aged experienced two or more accidents requiring medical attention.

26% of those living in the most deprived areas of Scotland experienced an accident, compared with 17% in the least deprived areas (based on Scottish Index of Multiple Deprivation quintiles)⁵². Children living in deprived areas were also more likely than those living in more affluent areas to experience two or more accidents requiring treatment during their first four years.

'Family adversity' (an index combining eight measures of disadvantage including poverty and maternal depression) is significantly associated with children experiencing three or more accidents requiring medical attention during their first five years. However, no significant relationship between parenting styles and parent-child relationships and accidents/ injuries was identified⁵³.

By far the most common injury was a knock or fall causing no serious injury (e.g. bang on the head), accounting for 60% of injuries. The minority of children who, at ten months had already started to walk were more likely to have had treatment for an accident than those not yet walking (11% compared with 7%)⁵⁴.

⁵² Bromley, C & Cunningham-Burley, S (2010) *Growing Up in Scotland: Health inequalities in the early years* Edinburgh: Scottish Government <http://www.gov.scot/resource/doc/310476/0097973.pdf>

⁵³ Parkes, A & Wight, D (2011) *Growing Up in Scotland: Parenting and children's health* Edinburgh: Scottish Government <http://www.gov.scot/Resource/Doc/350041/0117150.pdf>

⁵⁴ Bradshaw, P et al (2013) *Growing Up in Scotland: Birth Cohort 2 Results from the first year* Edinburgh: Scottish Government <http://growingupinscotland.org.uk/wp-content/uploads/2013/10/GUS-Accidents2013.pdf>.

ANALYSIS BY THEME

4.4.4 Children in Scotland Survey

In 2007 a child safety strategy was written for Scotland⁵⁵ and as part of this a survey of children and young people was commissioned which provided a valuable insight into their views, experiences and concerns. In particular, the survey revealed that:

- Children and young people do worry about being injured in an accident;
- A high proportion of children and young people either think they already know all they need to know to stay safe, or reject the whole idea that accidents can be prevented;
- A significant percentage of respondents admitted engaging in behaviours that they knew could result in a serious injury;
- Some respondents wanted to learn more about accident prevention and showed a marked willingness to take real responsibility for keeping themselves safe and in some areas safe behaviour and levels of injury prevention knowledge were very good; **but**,
- There were marked differences in safety-related attitudes, knowledge and behaviour based upon gender and age.

4.5 HOME SAFETY

This is covered in other locations (emergency admissions, A&E data, Scottish Health Survey etc.) but the key point is that almost a third of unintentional harm occurs in the home/garden environment. This is higher for falls, those aged over 65 years and the under-fives.

⁵⁵ RoSPA and CAPT (2007) *Child safety strategy: Preventing unintentional injuries to children and young people in Scotland* <http://www.gov.scot/Resource/Doc/211243/0056109.pdf> accessed August 2015

Key Findings

Physical unintentional harm for the under-fives occurs mainly in the home and this decreases with increasing age until the septuagenarian age group where home injury increases rapidly.

Within the home falls are the most common type of incident. The rate of falls is higher in under-fives and in the over 75s.

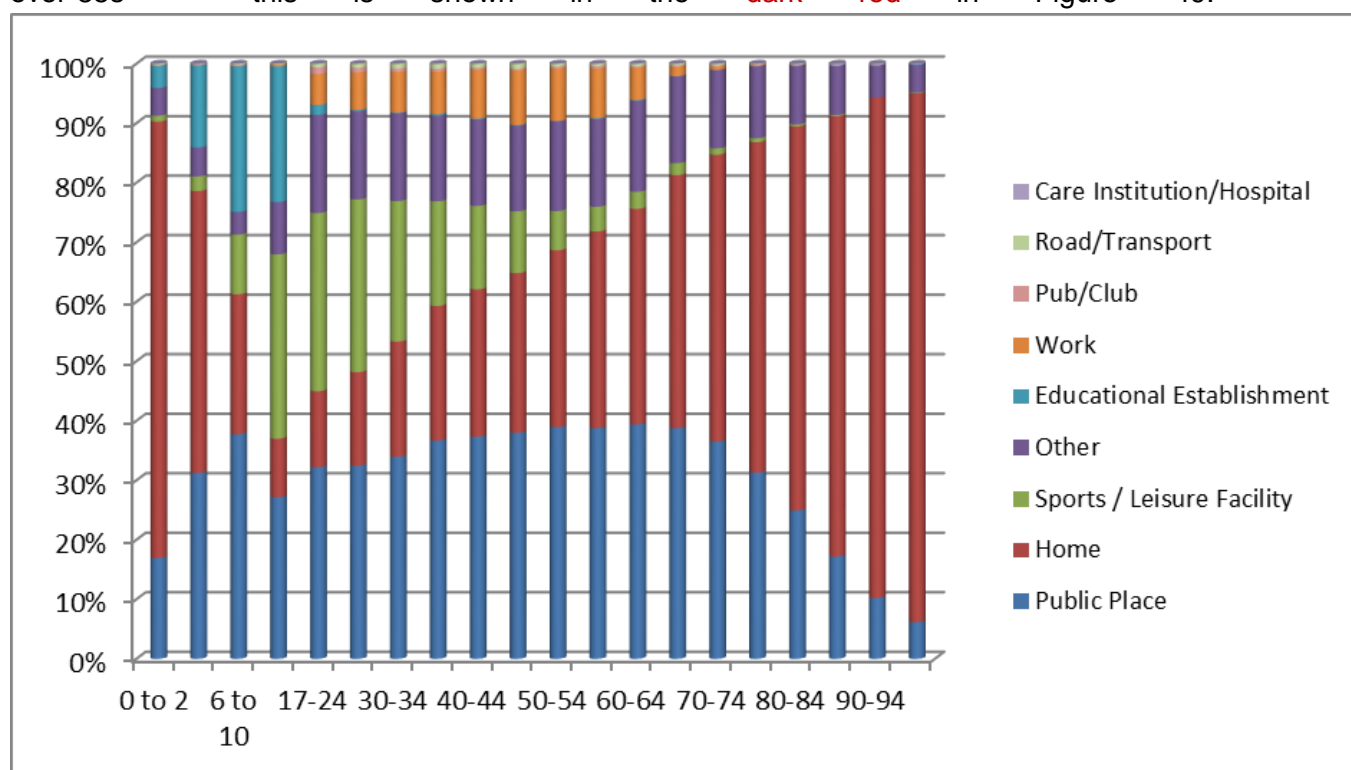
Falls on and from stairs and steps continue to be a leading cause of hospital admissions for the under-fives.

The home is an important location for fires too - the majority of fire casualties occur in dwelling fires (87% of casualties in the last ten years were injured in a fire in the home).

There were 1,098 non-fatal fire casualties in 2014-15. Three in every four non-fatal casualties were in dwelling fires which started accidentally.

Scotland has consistently had a higher rate of fire fatalities than England and Wales.

According to the **A&E attendance snapshot** from the health board most physical unintentional harm takes place in a public place or in the home⁵⁶ (31%, 59,190 and 28%, 53,385, respectively). Physical unintentional harm for the under-fives occurs mainly in the home and this decreases with increasing age until the septuagenarian age group where home injury increases rapidly; accounting for almost all physical unintentional harm in the over-85s – this is shown in the **dark red** in Figure 49.



⁵⁶ This includes within the house and also in the garden

Figure 49 Physical Unintentional Harm Incidents by Age Group and Location of Incident (One Scottish health board's A&E Attendance 2010/11-2014/15)

This is reflected in all the other data sources too:

- According to SHeS data almost 1 in 3 incidents occurs in the home or garden. This is particularly evident for the young and old - up until the age of seven 70% happen in the home/garden and this is over 50% for the over 75s (the average home/garden for those aged seven and over is only 26%).
- According to emergency hospital admission data in 2015-16⁵⁷ there were 18,297 emergency hospital admissions for physical unintentional harm that occurred in the home – this is at least⁵⁸ a third of all admissions for physical unintentional harm.

Within the home falls are the most common type of incident (for all age groups) but poisonings and burns/thermal injuries in young children also occur comparatively frequently too. Burns are concentrated within the kitchen and, to a lesser extent, living room and bathroom (the latter is almost entirely scalding - most scalds occur in the home – 72% of the total emergency hospital admissions for scalds and this is higher for the under-fives and over 65s).

The home is an important location for fires too - the majority of fire casualties occur in dwelling fires (87% of casualties in the last ten years were injured in a fire in the home)⁵⁹.

CHILD DEVELOPMENT

Falls were responsible for 41% of all injuries.

The finding that drops and falls were the most common causes of injury (41% of all injuries in the study), and peaked in the first year is consistent across a number of studies. This is unsurprising as during this time children become mobile and increasingly curious about their environment. Ingestions and foreign body injuries were also fairly common cause of injury and most numerous in the 12–35 month age category (61%) and may be explained by the developmental progress that occurs during this period of a child's life. Strains and grazes/lacerations became more frequent with increasing age.

Almost two-thirds (62%) of injuries happened when the child was engaged in play. This proportion was lowest in the 0–11 month age category (37%), was almost double (64) % in the 12–35 month category and thereafter levelled off.

The most common type of injury was a blow to the head and this was highest in the 0–11 month group (52%). This has been reported by a number of studies and may be due to two factors: the minimal control that babies have in their movements, and their comparative inability to take avoiding or protective action during a fall or when confronted with an external hazard. Injuries affecting the upper limb displayed the second highest frequency and peaked in the 60–83 month group. This is probably because older children tend to throw up their hands to protect their head when they fall, thus placing their arms at increased risk of injury.

⁵⁷ NHS Information Services Division (ISD) (2016) *Unintentional Injuries year ending 31 March 2016*
<https://www.isdscotland.org/Health-Topics/Emergency-Care/Publications/2017-03-07/2017-03-07-UI-Report.pdf>

⁵⁸ A further 33% has an unknown location so in reality the total proportion occurring in the home may be greater than 33%.

⁵⁹ Scottish Fire and Rescue Service (2016) *Fire and Rescue Statistics Scotland 2014-15 (provisional data)* http://www.firescotland.gov.uk/media/880577/statistics_2014_15_v1.1.pdf

According to the Water Incident Database (WAID), fatal incidents that happen around the home account for a small number of fatalities – in 2010-13 there were four (2% of the total) in the bath/jacuzzi. When it does occur however, drowning within the home particularly affect vulnerable groups such as children and the elderly.

Unintentional harm incidents to the under-fives tend to happen in and around the home⁶⁰ and are linked to a number of factors including:

- Child development⁶¹ (see sidebar on **Page 68** for more information)
- The physical environment in the home
- The knowledge and behaviour of parents and other carers (including literacy)⁶²
- Overcrowding or homelessness - as part of developing the context around home safety, around 3% of properties are classed as overcrowded by the SHCS bedroom standard. This rises to 6% within social housing and emphasise the inequalities that exist in unintentional harm.
- The availability of safety equipment
- New consumer products in the home

The Scottish Household Survey asks about the availability of a first aid kit and how quickly respondents could access it in an emergency – two thirds of households have one (though 7% would be unable to access it within five minutes) and almost 1 in 3 households do not have one. In the 15% most deprived areas 42% do not have a first aid kit. Owner occupiers have the highest first aid kit ownership – almost 70%.

4.5.1 Falls

In Scotland, for children aged under 15 years, nearly half (47%) of the emergency admissions to hospital for a physical unintentional harm incident in 2014/15 were the result of a fall. Falls were the most common cause of emergency hospital admissions for physical unintentional harm in adults, accounting for 64% of physical unintentional harm admissions to hospitals. This varied across age groups accounting for just over 28% of relevant admissions in the 15-24 age group compared to almost 87% in the over-75s group. The discharge rate is notably higher with increasing age with the most notable increase within the over-85s age group. See Figure 50.

⁶⁰ Public Health England (2014) *Reducing unintentional injuries in and around the home among children under five years*
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/322210/Reducing_unintentional_injuries_in_and_around_the_home_among_children_under_five_years.pdf accessed 08.09.2015.

⁶¹ MacInnes K and Stone DH (2008) *Stages of development and injury: An epidemiological survey of young children presenting to an emergency department* BMC Public Health

⁶² Cree C, Kay A, Steward J. (2012) *The economic and social cost of illiteracy: a snapshot of illiteracy in a global context.* www.worldliteracyfoundation.org/The_Economic_&_Social_Cost_of_Illiteracy.pdf Accessed on 1 April 2014.

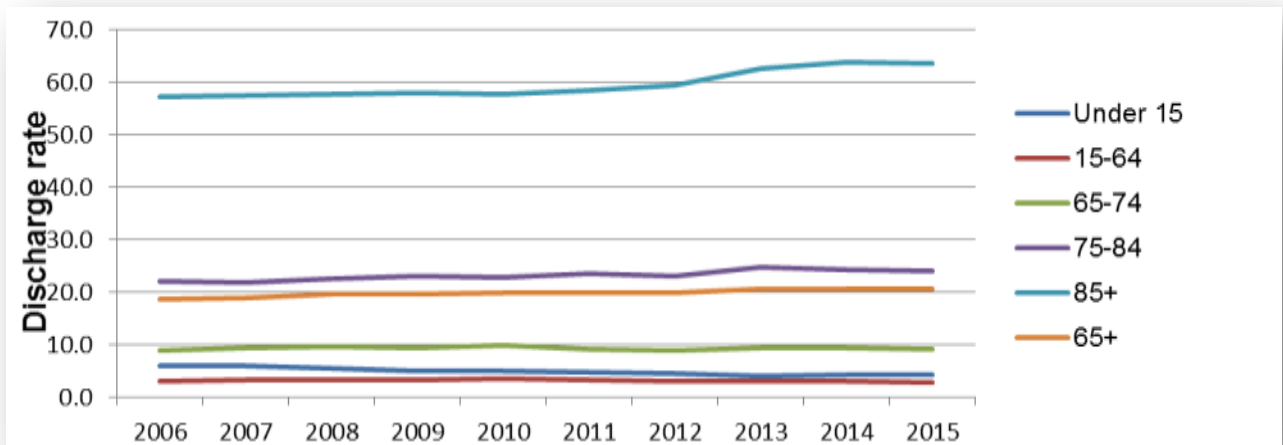


Figure 50 Discharge Rate For Falls Over Time (2006-2015) by Age Group (ISD)

The falls discharge rates for all age groups have remained virtually unchanged for the past ten years with slight increases for the last few years in the over-85s rates. This trend is likely to continue or worsen in the coming years as these population groups increase.

Increasing age is one of the key risk factors for falls. Older people have the highest risk of death or serious injury arising from a fall and the risk increases with age. Another high risk group is children - childhood falls occur largely as a result of their evolving developmental stages, innate curiosity of their surroundings, and increasing levels of independence that coincide with more challenging behaviours commonly referred to as 'risk taking'. Indeed the Growing Up in Scotland survey (see Section 4.3.3) demonstrates that over the first four years of children's lives, the 'peak' time for physical unintentional harm is between the age of one year and two years, when 23% of children experienced one or more physical unintentional harm incidents requiring treatment. This is probably due to increased (but faltering) mobility as the children begin to walk. While inadequate adult supervision is a commonly cited risk factor, the circumstances are often complex, interacting with poverty, sole parenthood, and particularly hazardous environments.

Studies by Office of National Statistics (ONS) in England found that falls in children fell into four distinct groups:

- Falls from furniture lead to the bulk of hospital admissions but few deaths. They result in average lengths of emergency admissions.
- Falls on and from stairs and steps continue to be a leading cause of hospital admissions for the under-fives.
- Deaths are very rare - falls while being carried have resulted in five deaths in the past five years. These injuries primarily affect children under the age of one.
- Falls from/out of buildings, such as from windows or balconies, have also led to five deaths in the past five years

Across all age groups and regions, both genders are at risk of falls. In some countries, it has been noted that males are more likely to die from a fall, while females suffer more non-fatal falls. Older women and younger children are especially prone to falls and increased injury severity – young children suffer head injuries as they are unable to throw their arms up to protect themselves and older women tend to suffer more from osteoporosis resulting in more severe injuries when they fall than men of the same age. Worldwide⁶³, males consistently sustain higher death rates and Disability Adjusted Life Years⁶⁴ (DALYs) lost. Possible explanations of the greater burden seen among males may include higher levels of risk-taking behaviours and hazards within occupations.

Using the figures from NRS on the old basis, the most common cause of deaths as a result of physical unintentional harm in 2014 were falls (739 deaths, or 42% of the total number of deaths as a result of physical unintentional harm). The number of deaths from falls remained broadly around the same level for much of the period: the first seven values of its 5-year moving annual average showed very little change (all were between 659 and 669) followed by a fairly gradual increase (the latest four values of the 5-year moving average being 681, 690, 707 and 718).

OLDER PEOPLE

Physical unintentional harm among older people, particularly those aged 65 and over, are a major and growing health concern. Emergency hospital admissions for unintentional harm are set to rise in this age group over the next decade as the population ages. Falls are of particular interest as 84% of emergency hospital admissions for unintentional harm in those aged 65 and over resulted from a fall in 2014/15.

Older people living in care homes are three times more likely to fall than older people living in their own homes, and there are ten times more hip fractures than in other environments. Some of this is due to the type of older people that require to be cared for within a care home which may make them more susceptible to falls in the first place.

The impact of falls on this age group is particularly striking: Around 1% (6000 per year) of falls result in hip fracture the acute management of which costs NHS Scotland in excess of £73 million each year. 20% of older people who sustain a hip fracture die within six months; approximately half will never be 'functional' walkers again.

Falls are more common due to age related changes such as deterioration in hearing, eyesight, blood pressure, reflexes, strength, mobility & balance. Physical inactivity and some medications can also increase the risk of falls, as can medical conditions such as dementia. Exercise is one of the most important things to reduce risk; however awareness of this is low and many people feel age is a barrier to exercise: exercise can help even those in their nineties & specific strength & balance exercises have been demonstrated to reduce risk of falls by 50%. Medication reviews are also important because some medicines can increase the risk of falls - often the combination of medications that makes people likely to fall.

Source: The National Falls Programme Up and about or falling short? A report of the findings of a mapping of services for falls prevention and management and fracture prevention in older people in Scotland 2012

⁶³ World Health Organisation 2012 factsheet on falls <http://www.who.int/mediacentre/factsheets/fs344/en/> accessed July 2016.

⁶⁴ One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability. Source: World Health Organisation

The rate of falls is higher in under-fives and in the over 75s; for the latter this is a death from falls rate of 138.5 per 100,000 population compared to 16 deaths per 100,000 for the over 15 age group as a whole – the death rate from falls in the elderly is therefore 8.5 times higher than that for the wider population. Deaths as a result of falls in Scotland 2011-13 by age group are shown in Figure 51 in **dark green**.

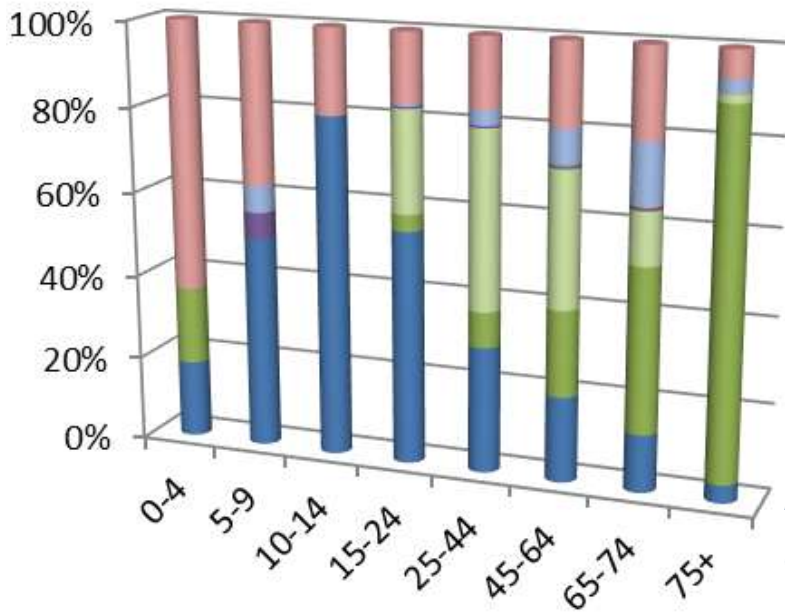


Figure 51 Deaths as a Result of Physical Unintentional Harm by Age Group and Cause (NRS 2010-2014)

In 2014/15 there were 23,632 emergency admissions to hospital for a physical unintentional harm incident in those aged 65 and over, with 84% of these admissions being the result of a fall.

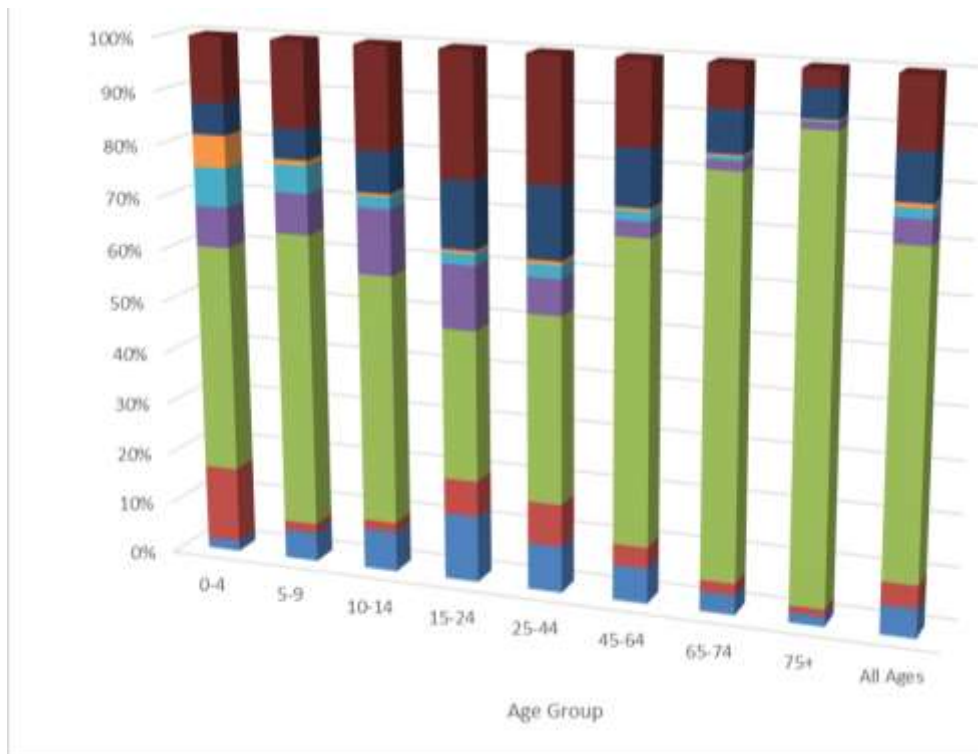


Figure 52 Emergency Hospital Admissions as a Result of Physical Unintentional Harm by Age Group and Cause (ISD 2010/11-2014/15)

In Scotland, for children aged under 15 years, nearly half (47%) of the emergency admissions to hospital as a result of a physical unintentional harm incident in 2014/15 were the result of a fall.

Falls were the most common cause of emergency hospital admissions for physical unintentional harm in adults, accounting for 64% of physical unintentional harm admissions to hospitals. This varied across age groups accounting for just over 28% of relevant admissions in the 15-24 age group compared to just under 87% in the 75 and over age group. Emergency hospital admissions as a result of a fall 2010/11 to 2013/14 are shown in Figure 52 in **dark green**.

STAG data, as with all the other data sources, has falls – particularly those from heights less than 2m – accounting for the greatest proportion of incidents (3701 patients or 62%) in 2013-14. See Figure 53.

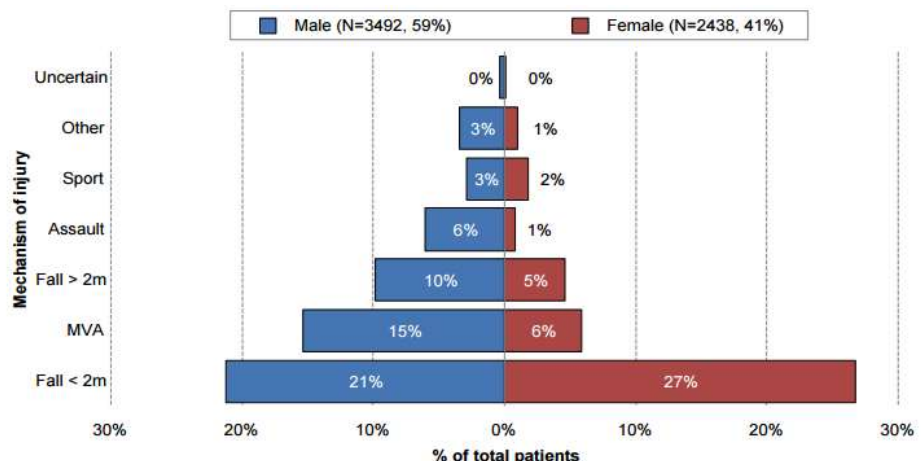


Figure 53 Percentage of Male and Female Patients by Mechanism of Injury in Scotland (STAG 2013-14)

The health board's A&E attendance snapshot shows a similar picture as the other data sources - falls and collisions account for a high proportion (65% - averaging around 24,000 per year) of A&E attendances. Most falls (see Figure 54) are either see and treat or standard triage categories (70%), but 22% are either urgent/very urgent. For every fall over 2m there are 16 falls under 2m. Looking at falls by sub-category (over 2m and under 2m have been used since 2014) a third happen within the home, another third in another public place and the remainder are split between a number of locations. Comparing the proportion of over 2m and under 2m falls by location falls from a height tend to happen more within the workplace 9% of falls over 2m happen at work compared to 5% of falls under 2m.

Falls are high regardless of age group, but account for almost all physical unintentional harm in the very young and the very old (Figure 55) where falls are in **dark blue**). The highest number of deaths from falls are in this older age group with comparatively few falls deaths in young people.

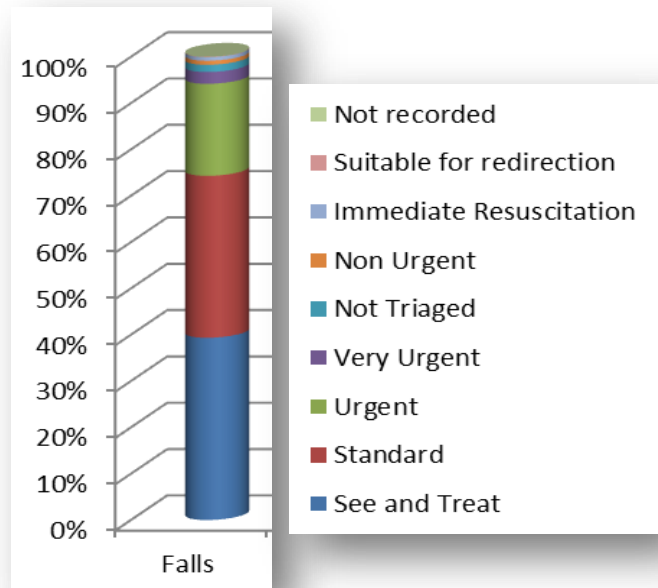


Figure 54 Falls Attendances at One Healthboard's A&E departments and Triage Category (2010/11-2014/15)

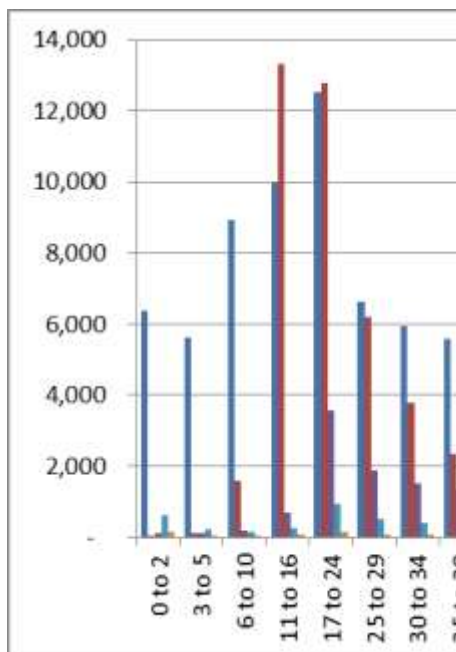


Figure 55 Age range of patients recorded by Type of Incident for Physical Unintentional Harm (One Scottish health board's A&E Departments, April 2010-March 2015)

Overall males tend to have more physical unintentional harm compared to females (53.5% male to 46.5% female); but females have more falls than males (56.3% female to 43.7% male).

SHeS data tells a similar story - injury as a result of a slip/trip/fall is the most common – around 50% of all incidents. This increases with age – 38% in younger age groups up to 86% in over-75s. Injuries resulting from a slip/trip/fall account for over 57% of injuries and 15% from sport/recreation activities. Again, the profile changes for the younger aged and older aged children: 70% injuries in 0-3 age group are the result of a slip/trip/fall compared to 51% in 12-15 age group.

From the Growing Up in Scotland survey by far the most common injury was a knock or fall causing no serious injury (e.g. bang on the head), accounting for 60% of injuries.

4.5.2 Thermal Injuries

Data from the Scottish health board's A&E attendance snapshot shows that burns and thermal injuries account for a small proportion of all attendances as a result of physical unintentional harm – based on a five year average just under 1000 burns/thermal injuries per year; 3% of the total physical unintentional harm incidents in a year.

As there is very little detailed Scottish data available on burns and thermal injuries however some small area data from England and Wales illustrates some trends which may be comparable to Scotland. This⁶⁵ estimates that there are around 120,000-130,000 A&E attendances per year as a result of a burn/scald injury. 55% of these require no follow up and 35% require follow up either as an outpatient or through primary care services. The remaining 10% (estimated to be 11,600 per year) are admitted to hospital; and 75% of these (8-9,000) per year representing the most severe injuries are admitted to specialist burns and plastics units.

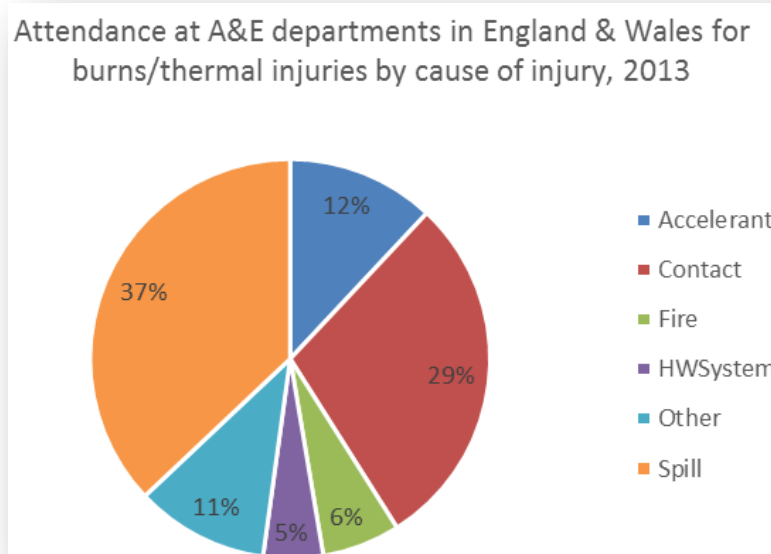


Figure 56 Cause of Burn/Thermal Injuries in England and Wales

⁶⁵ Dunn, K (2014) British Burn Association presentation
http://www.frsug.org/reports/Burn_Injury_2014.pdf accessed 24.08.2015

The same analysis indicates that spill and contact injuries are over-represented, accounting for 37% and 29%, respectively (Figure 56). Looking at the same categories by age (Figure 57) demonstrates that this is the case overall, for each age group but particularly children.

Thermal injuries from liquids (either hot bathwater, hot drinks or hot water from the kettle)

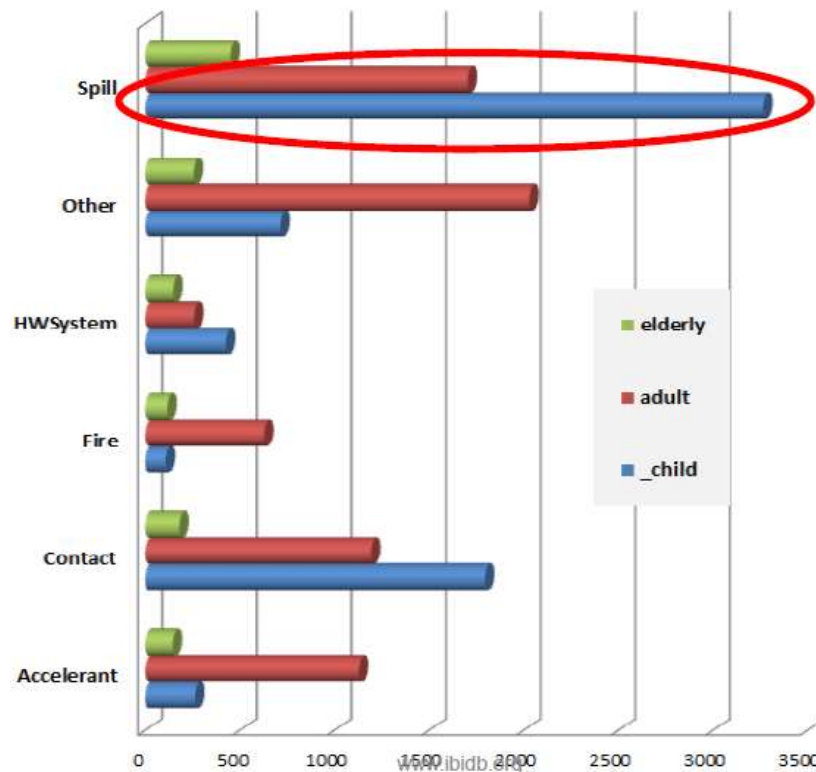


Figure 57 Number of Burn Service Injuries by Age Group and Type of Burn. Small area data from England and Wales.

including spills and contact injuries are a much more significant injury than burns resulting from fire.

These injuries are expensive to treat and serious burns and scalds are disfiguring and disabling for young children. Based on Office of National Statistics (ONS) England work they come from five main sources:

- **Scalds from hot drinks** lead to moderate numbers of admissions, 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 1 in 10 burns injuries to children.
- **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. They peak when children are about a year old. They result in a higher proportion of long hospital stays: 21% of admissions are for over three days. Bath water scalds are very expensive injuries to treat.

Across all age groups in Scotland, scalds only account for a small proportion of all emergency hospital admissions for physical unintentional harm (1% or 444 in 2014-15), however this varies significantly across age groups (Figure 58). The discharge rate per

100,000 for scalds in 2014-15 are shown below for adults and children and for each age group.

Discharge rate per 100,000 population for scalds (2014-15)									
Under-Fives	5-9	10-14	All Ages under 15	15-24	25-44	45-64	65-74	Over-75s	All Ages over 15
65.0	5.9	4.8	25.8	3.4	5.0	4.5	3.9	10.2	5.0

Figure 58 Discharge Rate for Scalds in Scotland by Age Group (ISD Emergency hospital admissions 2014-15)

Under-fives, and to a lesser extent over-75s, are over-represented in these Scottish figures.

The England and Wales small area data also demonstrates significant variation in burns/thermal injuries by age group overall and also by type of injury as shown in Figures 59 and 60.

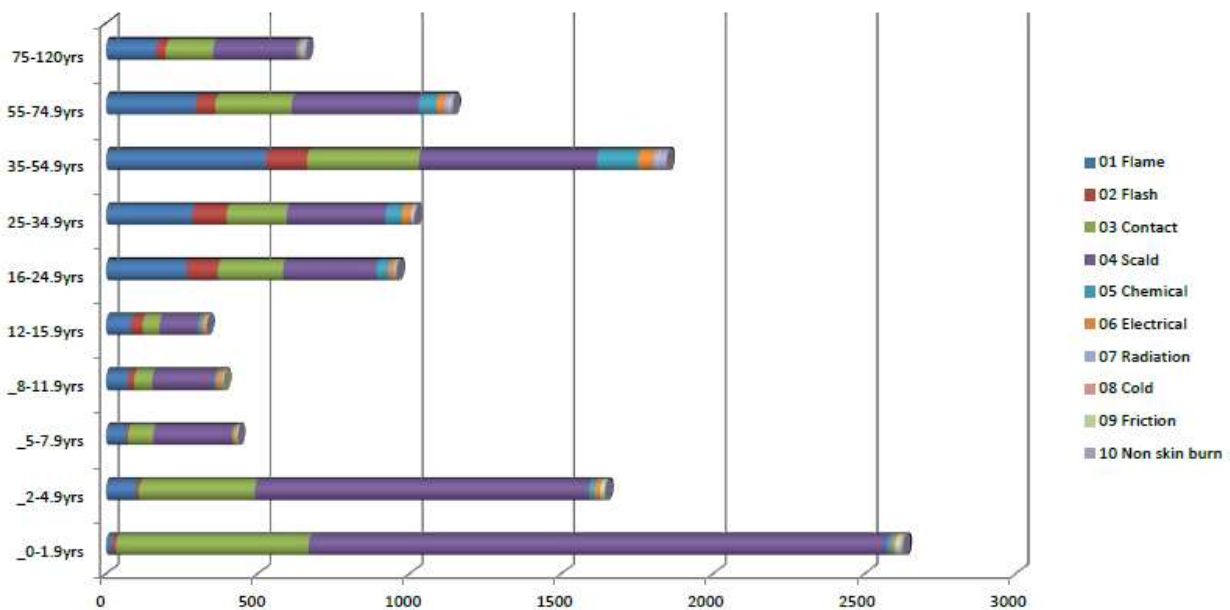


Figure 59 Burns/Thermal Injuries by Age Group and Cause of Injury

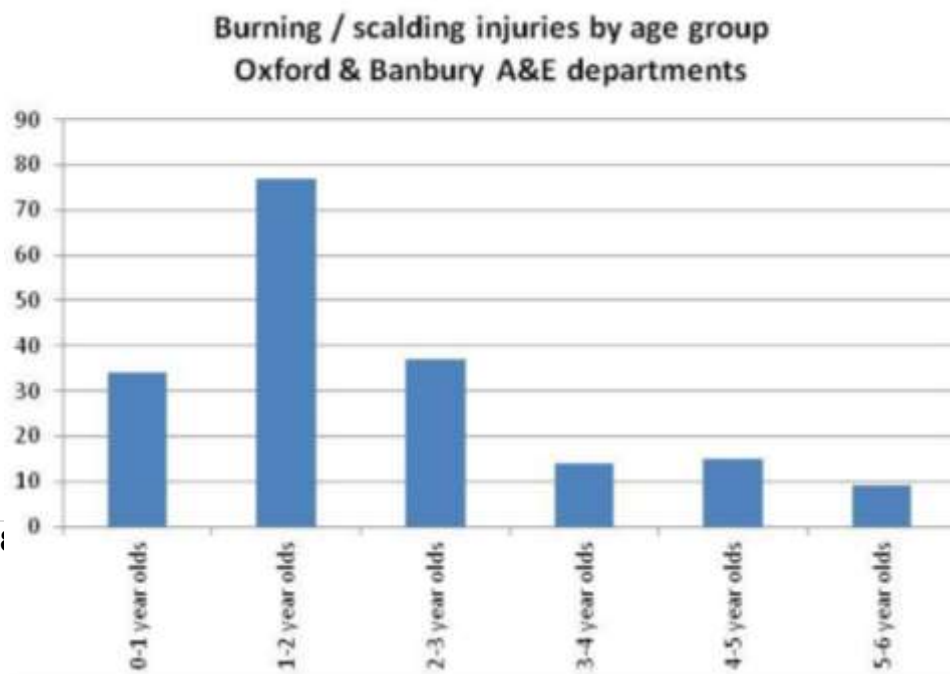


Figure 60 Number of Burns/Scalding Injuries by Age Group

In terms of the location of the incident most scalds occur in the home – 72% of the total emergency hospital admissions in Scotland for scalds and this is higher for the under-fives and over 65s. The England and Wales data shows a more nuanced picture with the majority occurring in the kitchen. This is followed (though not closely) by the living room and bathroom then garden/yard and bedroom.

Based on emergency hospital admission data for 2014-15 most scald injuries are to the wrist or hand in adults and for children and young people to the trunk or head and neck region.

Data from one Scottish health board's A&E attendance snapshot shows that 40% of burns/thermal injuries are classed as 'see and treat', a third as 'standard' and 15% as 'urgent'. 6% were classed as 'very urgent'/'immediate resuscitation'. See Figure 61.

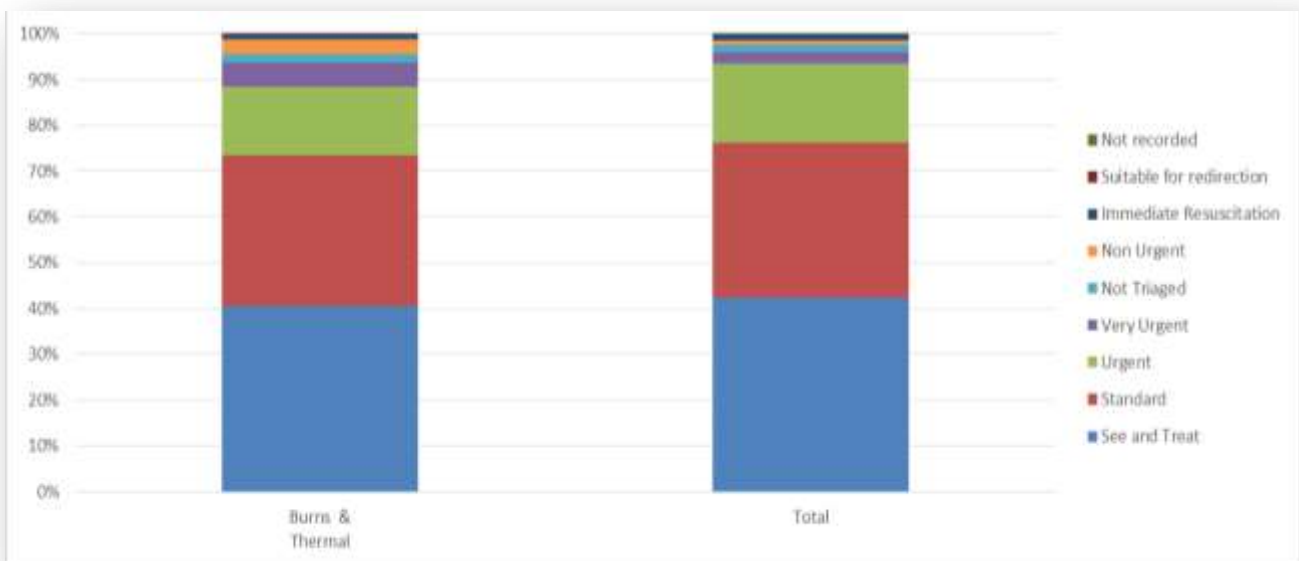


Figure 61 A&E Attendance as a Result of Physical Unintentional Harm by Triage Category - Shown for Burns and All Categories Overall (One Scottish Healthboard's A&E Attendances 2010/11-2014/15)

The Average Length of Stay (ALoS) is 4.3 days once admitted as an emergency admission from fire/flame⁶⁶. Based on one Scottish health board's A&E data from 2010-2014 for fire / flame emergency hospital admissions there are on average 265 such admissions per year.

⁶⁶ ISD data provided to SFRS August 2015

Scottish Fire and Rescue Service⁶⁷

In 2014-15, there were 7.7 fatal casualties from fire per million population in Scotland (41 deaths). Scotland has consistently had a higher rate of fire fatalities than England and Wales (4.7 and 6.8 per million population respectively); though the gap has closed in recent years.

Whilst there was an increase of 6% in the number of accidental dwelling fires in 2014-15, from 4,682 fires in 2013-14 to 4,953 in 2014-15, accidental dwelling fires were at their second lowest level in the last decade (Figure 62).

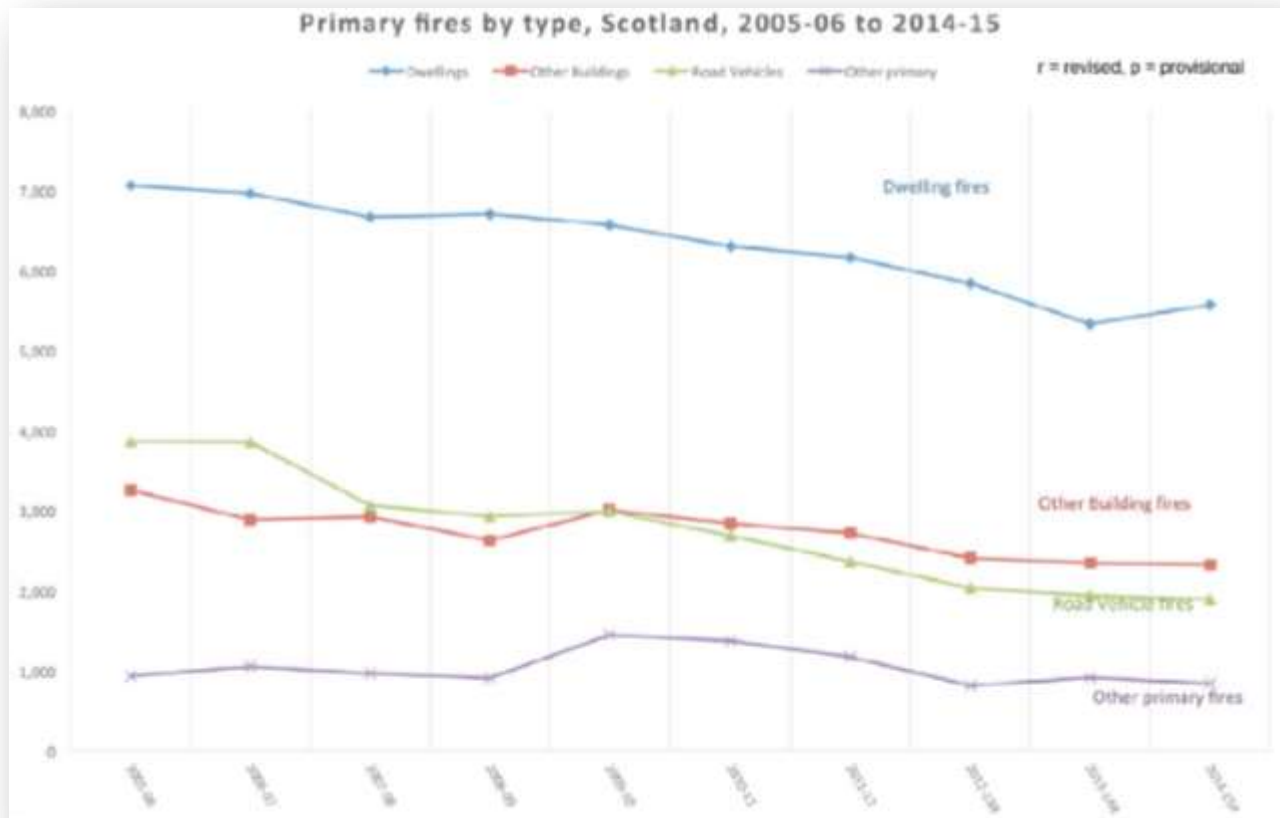


Figure 62 Primary Fires by Type Over Time, Scotland 2005/06 – 2014/15 (Scottish Fire and Rescue Service)

Of the 5,571 dwelling fires in 2014-15, most (88%) were accidental. The number of dwelling fires is important as the majority of fire casualties occur in dwelling fires (87% in the last ten years)⁶⁸. In 2014-15 for every 1,000 accidental dwelling fires there were (provisionally) 5.7 fatal casualties per 1,000 accidental dwelling fires in Scotland. This is the equal second lowest rate in the last ten years, though the rate fluctuates due to the small numbers involved.

⁶⁷ Scottish Fire and Rescue Service (2016) *Fire and Rescue Statistics Scotland 2014-15 (provisional data)* http://www.firescotland.gov.uk/media/880577/statistics_2014_15_v1.1.pdf

⁶⁸ Scottish Fire and Rescue Service (2016) *Fire and Rescue Statistics Scotland 2014-15 (provisional data)* http://www.firescotland.gov.uk/media/880577/statistics_2014_15_v1.1.pdf

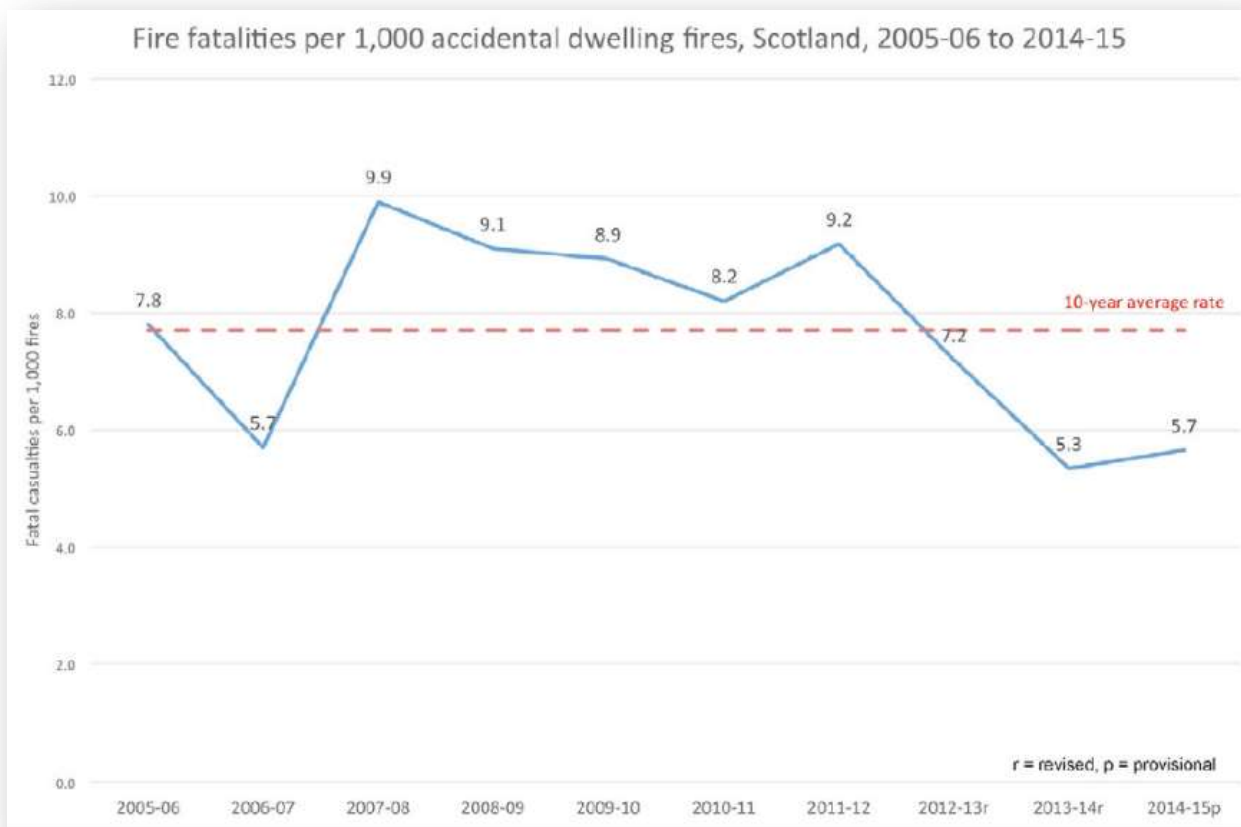


Figure 63 Rate of Deaths as a Result of An Accidental Dwelling Fire, Scotland 2006/06 – 2014/15 (Scottish Fire and Rescue Service)

Provisionally, there were 41 fire fatalities in 2014-15 (Figure 63) – an increase on the all-time low of 33 in 2013-14, however the number of fire fatalities is now just over a third of what it was in 1990. The number of fatal casualties in fires is prone to fluctuation because the numbers are small and, while this figure is higher than in 2013-14, it is the second lowest figure in the last ten years and continues the general downward trend. Of these 41 fire fatalities, 31 were in dwelling fires (28 of which started accidentally), four were in other building fires, one in a road vehicle and five were 'Other' fires. Of the 41 fire fatalities in 2014-15 it was established through subsequent fire investigations that ten people had used fire as a means to commit suicide. In previous years there had been between two and four fire fatalities a year that were found to be suicides.

There were 1,098 non-fatal fire casualties in 2014-15. This is a reduction of 16% from the previous year. 86% of these non-fatal fire casualties in 2014-15 occurred in dwelling fires (947). Three in every four non-fatal casualties were in dwelling fires which started accidentally (826 non-fatal casualties).

For non-fatal and for fatal fire casualties in 2013-14 the main injury was to be 'overcome by smoke, gas or fumes' (45% and 39% respectively).

Contributory Factors

For the sixth year in a row the most common source of ignition for accidental dwelling fires in which a fatality occurred was "smoker's materials" and "matches", accounting for 14 of the total 24 fatal casualties (58%). For non-fatal casualties the main source of ignition was cooking appliances (mostly the cooker) accounting for around three in five non-fatal casualties (59% or 583 non-fatal casualties) – and this has not changed over time; though microwave fires are increasing (from 162 in 2009-10 to 204 in 2013-14).

From the Scottish House Condition Survey, just under a third of houses (based on 2010-2013 average) have an inadequate number of sockets in the household; though only 0.4% are classed as having a "dangerous" electrical power system - these could increase the risk of a fire in the home.

45% of these "inadequate" properties are owned outright or being bought with the help of a mortgage and 28% of these are rented accommodation. This measure is also linked to deprivation – the number of households with an inadequate number of sockets increases with increasing deprivation (Figure 64).

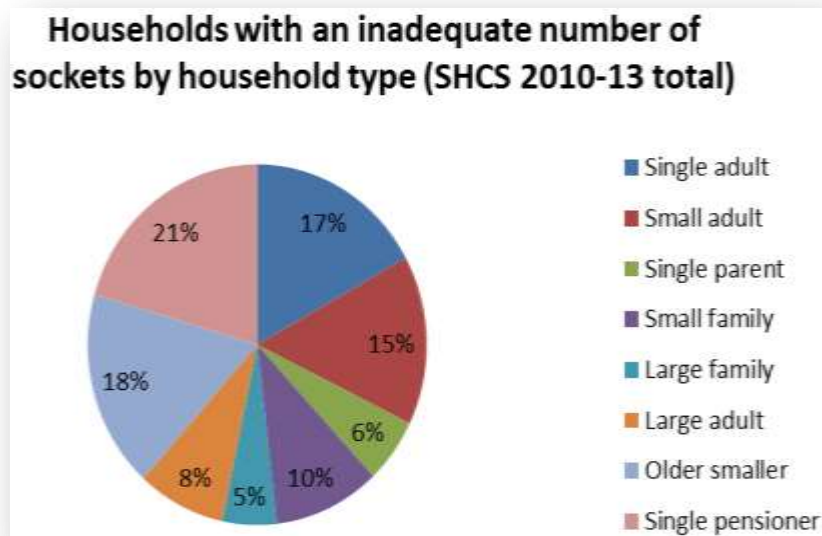


Figure 64 Households with an Inadequate Number of Sockets by Household Type (Scottish House Condition Survey)

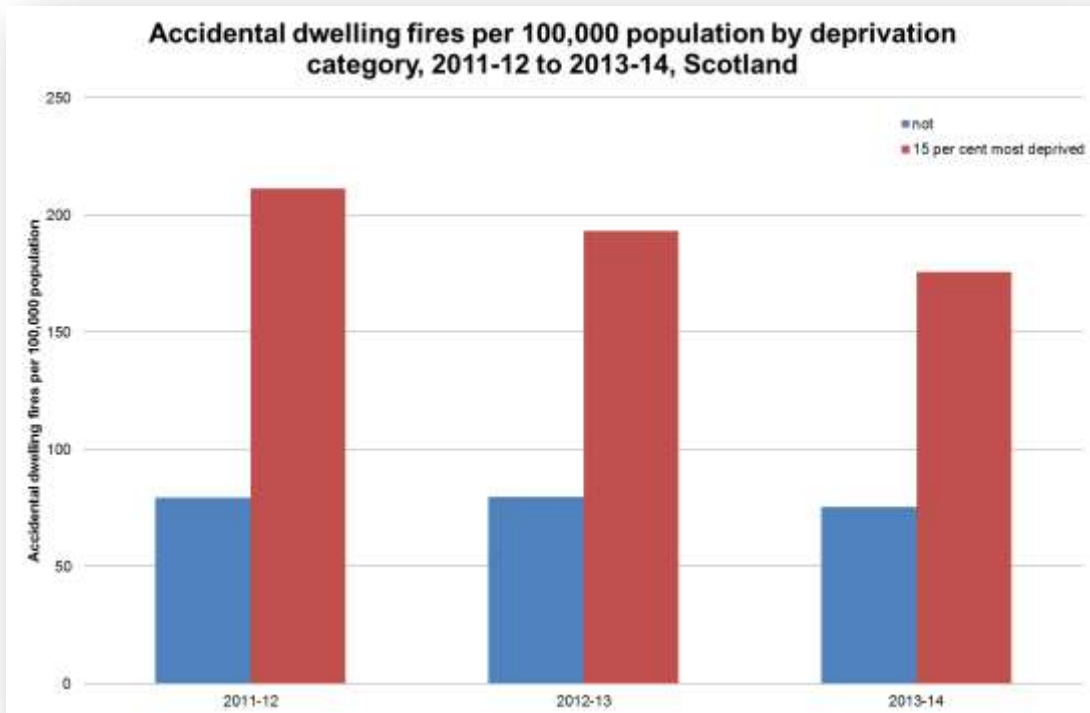


Figure 65 Variation of Accidental Dwelling Fires with Deprivation in Scotland (Scottish Fire and Rescue Service 2011-12 to 2013/14)

Inequality in unintentional harm continues for dwelling fires - there is an accidental dwelling fire rate in the 15% most deprived areas of Scotland of two to 2.5 times that in areas that are not within the 15% most deprived areas (Figure 65) (3 year average 78 dwelling fires per 100,000 population vs 193 per 100,000 population in the 15% most deprived).

Fatalities

During 2014/15, the number of fire related fatalities in Scotland was 41, a 32% increase on 2013/14. Whilst showing an increase on the previous year, the total figure of 41 still represents a 28% reduction on the 5-year average figure (2008/09 - 2012/13) of 57. 92% of the 25 preventable fire fatalities in 2013/14 occurred as a result of accidental dwelling fires. This figure remained consistent in 2014/15, with 93% of the 29 preventable fire fatalities occurring as a result of accidental dwelling fires.

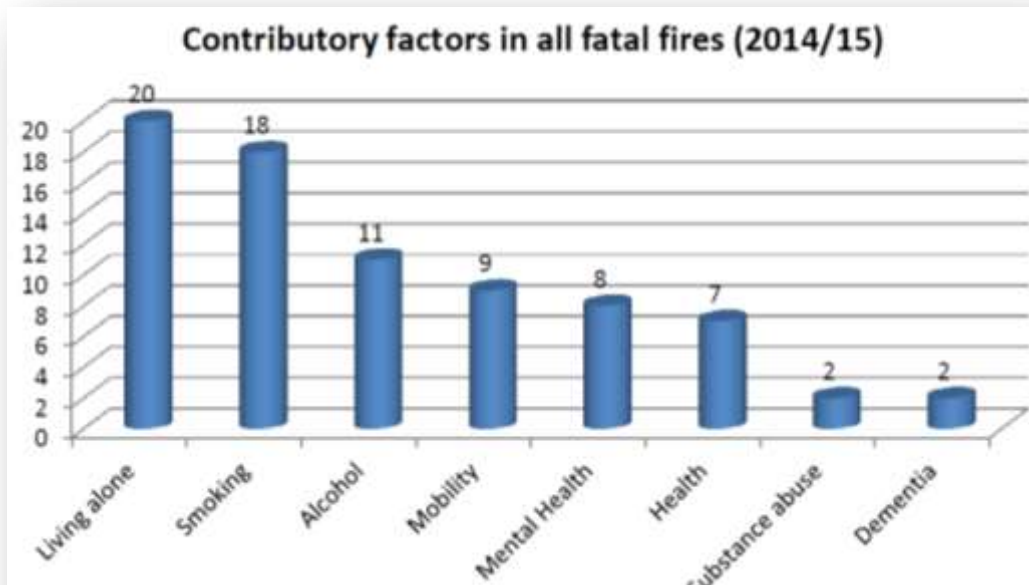


Figure 66 Contributory Factors to Fatal Fires in Scotland, 2014/15 (Scottish Fire and Rescue Service)

Of the 28 preventable fire deaths that occurred during 2014/15, 23 of those (82%) were over 60 years of age) and five were aged 30-59. Contributory factors and circumstances identified across the fire fatalities include age, mental health, mobility, living alone, smoking and alcohol use (Figure 66). A number of those were already known to other public service and third sector organisations, but not to the SFRS.

Flats and detached dwellings account for the highest number of fatalities. (Figure 67). 2014/15 saw a notable increase in the number of fire fatalities occurring in bungalows or cottages in remote rural locations, and a decrease in fatalities in assisted living properties.

In 2014/15, the single highest identified primary cause of fatal fires at 53% was attributed to smoking materials (Figure 68); Whilst 2014/15 has seen a reduction in fatal fires attributed to smokers' materials from 2013/14, the statistic remains high.

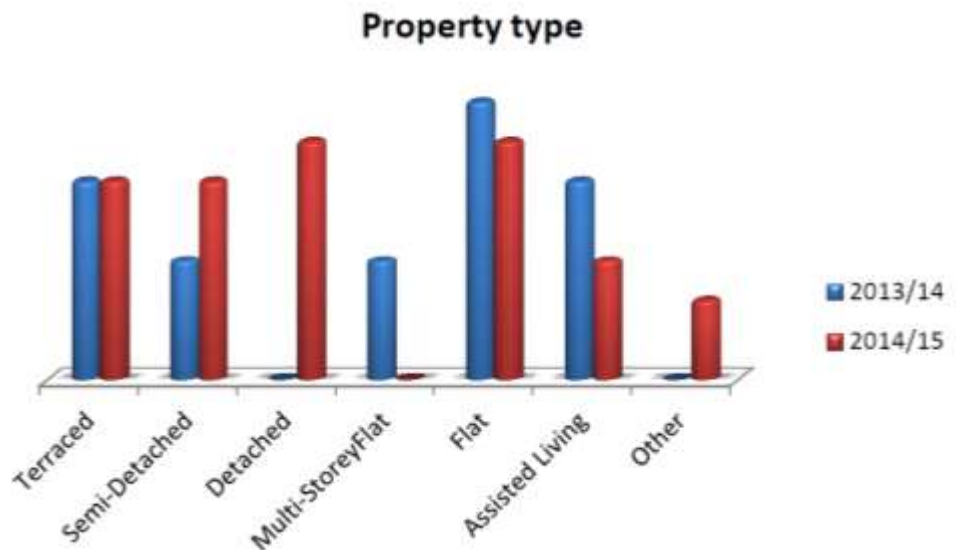


Figure 67 Fatal Fires in Scotland 2013/14 and 2014/15 and the Property Type in which they Occurred (Scottish Fire and Rescue Service)

Primary causes of Preventable Fatal Fires 2014/15

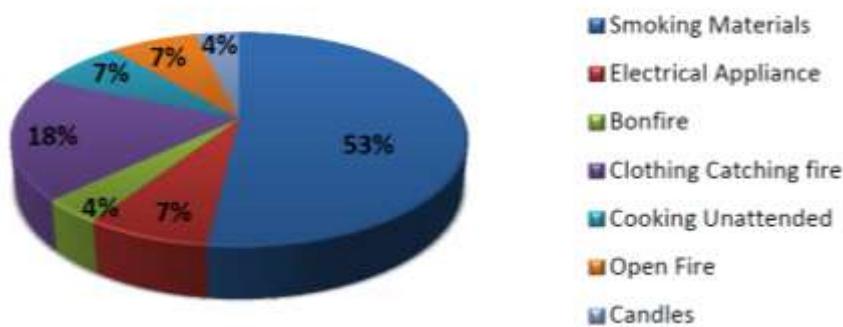


Figure 68 The Primary Causes of Preventable Fatal Fires in Scotland 2014/15 (Scottish Fire and Rescue Service)

Living rooms were the most common room of origin of fatal fires. Smoke alarm detection was fitted in 90% of dwellings where a fire fatality occurred and the alarm operated and raised the alarm on over 70% of occasions. However, other than in the incidents involving Care Home and Sheltered Housing accommodations, of

the fatal fire incidents, there was no smoke detection fitted to any room of origin of fire. Despite the high percentage of homes having smoke alarm detection fitted, the following factors were found to be the case in the majority of the fatal fires:

- The fatality was in the room of fire origin which had no fire alarm detection fitted;
- The fatality was incapacitated as a result of age-related immobility issues or through drink or drug consumption, thus severely limiting their ability to respond to the alarm actuation.

Where an alarm was present but failed to operate this was either due to a missing battery from alarm, detector disconnected from mains electricity or defective telecare system, or system design issues (in some cases the operability of the alarm could not be tested). For a number of these fatalities fire officers determined that a sprinkler system being fitted could have prevented the fatality.

From the Scottish Household Survey data⁶⁹ most homes in Scotland have smoke alarms present, with only 6% of homes without an alarm; although this does equate to around 144,000 homes with no smoke alarm. In homes with smoke alarms present 1 in 2 households have checked whether they're working in the last month (18% in the last week when questioned). Broadly speaking privately rented accommodation have poorer smoke alarm presence and testing. There have been no significant changes in these figures over recent history.

Non-fatal Casualties

The five year rate of non-fatal casualties in dwelling fires is 192.6 non-fatal casualties per 1,000 dwelling fires (2010-11 to 2014-15). The trend in fire casualties since 2009-10 is

⁶⁹ From 2015 this will be collected by the Scottish House Condition Survey rather than the Scottish Household Survey

reducing, though the reduction is slight (rate of 170 in 2014-15) and not consistent; and Scotland still has a higher rate than England and Wales (205 non-fatal casualties per million population in Scotland, whereas in England and Wales there were 139 and 176 respectively.) Three in every four non-fatal casualties were in dwelling fires which started accidentally (826 non-fatal casualties).

There were provisionally 827 non-fatal casualties in dwelling fires in 2014-15. Between 2013-14 and 2014-15 the rate of non-fatal casualties per 1,000 accidental dwelling fires decreased by 21% from 211 to 167 per 1,000 accidental dwelling fires; but between 2009-10 and 2013-14 the rate of non-fatal casualties in accidental fires had been increasing so whether this is natural variation or the start of a trend remains to be seen.

For non-fatal fire casualties in 2013-14 the main injury was to be 'overcome by smoke, gas or fumes' (45%). For injuries that go to hospital slight injuries are much more common than

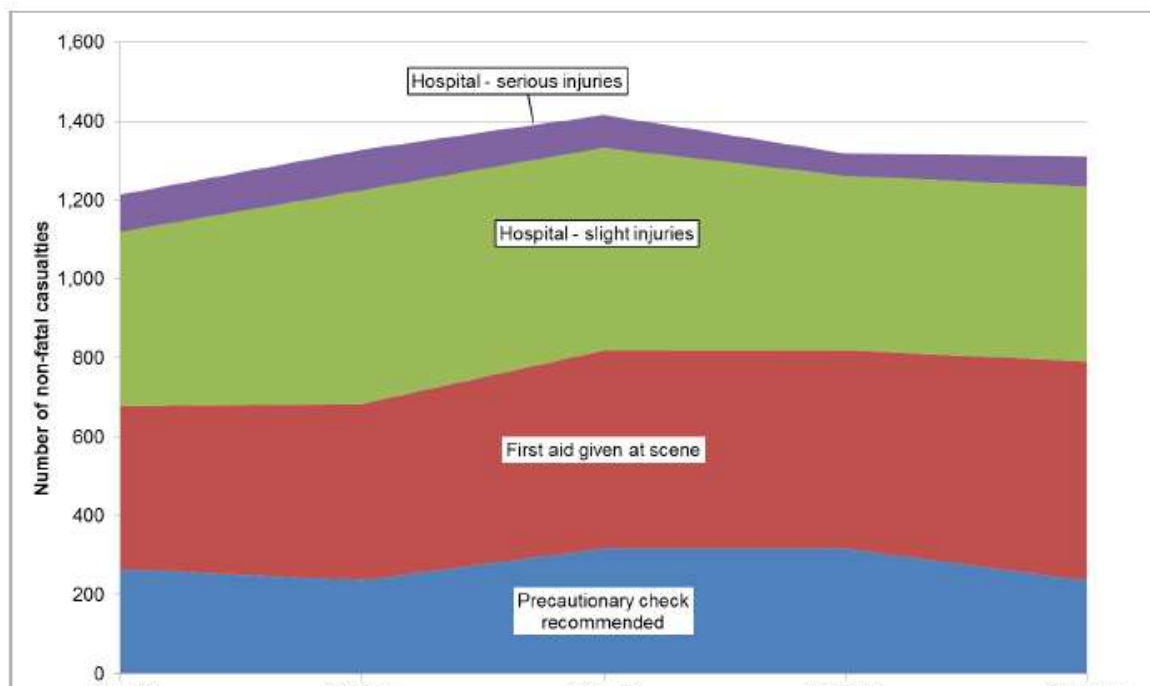


Figure 69 Non-fatal Casualties in Fires by Injury Severity Over Time, Scotland 2009/10 – 2013/14 (Scottish Fire and Rescue Service)

serious injuries (Figure 69) and a similar proportion are given first aid at the scene.

In 2013-14, there was smoke and/or heat damage only in 46% of dwelling fires (2,449). For a further 25% (1,332), there were flames reported but the fire did not spread to other parts of the room or building.

The time at which fire occurs can impact upon casualty rates - fires occurring between midnight and 5am had twice as many casualties as those occurring outside of these hours (Figure 70).

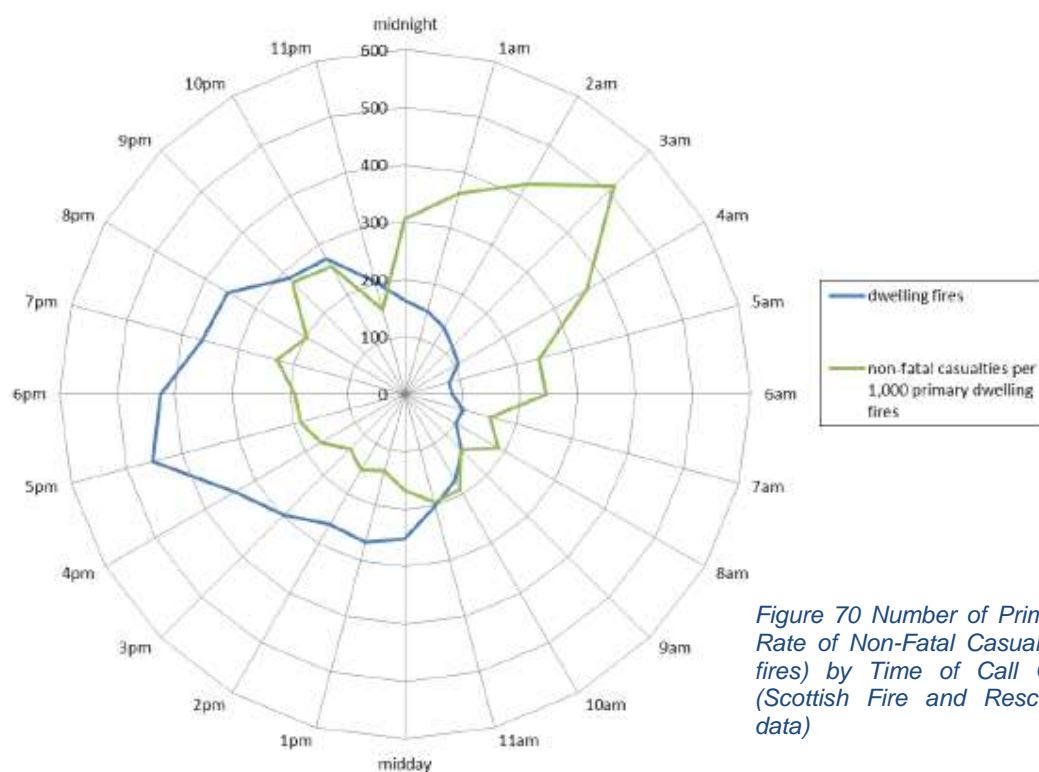


Figure 70 Number of Primary Dwelling Fires and Rate of Non-Fatal Casualties (per 1000 dwelling fires) by Time of Call Out, Scotland 2013/14 (Scottish Fire and Rescue Service provisional data)

4.5.3 Poisoning

Poisoning accounts for a relatively small proportion of physical unintentional harm - 5.5% in 2014/15; however its distribution amongst age groups and location i.e. the very young (see discharge rates in Figure 71 and within the home (46-48% but probably more) – make it a more important issue than it initially appears.

Poisoning discharge rate per

100,000 population										
Age group										
	Under-Five	5-9	10-14	0-14	15-24	25-44	45-64	65-74	75-84	Over 85
Total rate	1,151.1	826.4	740.8	910.4	630.8	589.3	742.2	1,194.8	2,859.9	7,098.6
Poisoning rate	241.2	20.1	12.1	93.4	56.3	61.1	38.3	31.4	58.3	63.0

Figure 71 Variation of Unintentional Poisoning Discharge Rates by Age Group (ISD)

The discharge rates show that although the comparative discharge rates for poisoning and the total for unintentional harm are low; across the age groups the discharge rate for the under-fives' is notably high – 241.2 discharges per 100,000 population; almost four times that of the next highest age group. The male/female split for poisoning is similar to the overall – 53% male compared to 47% female.

Poisonings are highest in the under-fives and the 15-44 age groups, and even then they account for a small proportion of the physical unintentional harm in these groups. In toddlers poisoning tends to be unintentional but as a result of them consuming prescribed drugs – methadone gets a particular mention in publications⁷⁰; but tranquilizers or sleeping and anti-anxiety medication are noted too. Deaths and severe side effects are rare in comparison to adults but the incidents are still occurring and result in needless harm to children.

Two models have shown that maternal psychiatric distress increased poisoning risk (likely to be linked to medication being present within the household). Individual models identified the following variables as risk factors: less proximal maternal supervision during risk taking activities, medicinal substances stored in more accessible locations in and lower total parenting stress (poisoning-healthy). Household products, specifically liquid detergent capsules (ingestion and skin and eye damage) and liquid nicotine have all risen in prominence lately in the media but are less prominent in the UK literature; though household substances feature heavily in analysis from other countries⁷¹. For the older age groups there is a varied picture with substances from paracetamol, prescription medication such as benzodiazepines to accidental overdoses of illegal drugs involved.

The Scottish health board's snapshot of A&E attendance shows that on average poisoning accounts for around 1% of physical unintentional harm attendances but, similar to other sources, these are concentrated in a much smaller proportion of the population than the other types. They affect the under-fives in particular and are generally rather serious:

- 2-3% were 'immediate resuscitation'
- 25% very urgent

⁷⁰ Schmertmann M, et al. (2013) *Risk factors for unintentional poisoning in children aged 1-3 years in NSW Australia: a case-control study*. BMC Paediatrics May 24 2014 and <http://edition.cnn.com/2016/05/16/health/poisoning-deaths-and-injury-uk-teenagers-and-toddlers/> for more detail. Accessed July 2016.

⁷¹ Presgrave R, Camacho L and Villas Boas M (2008) *A profile of unintentional poisoning caused by household cleaning products, disinfectants and pesticides* Reports in Public Health <http://www.scielo.br/pdf/csp/v24n12/19.pdf> accessed July 2016.

- 49% urgent (74% in total for poisonings compared to 19.5% classed this way for all physical unintentional harm)
- Only 20% are 'see and treat' or 'standard' (compared to 76% for physical unintentional harm overall)

They tend to result in a longer stay than all physical unintentional harm overall – a much higher proportion of four hour stays (34% compared to 18%) *and* a high inpatient admittance than the rest of physical unintentional harm incidents – 28% of poisonings are admitted as inpatients compared to 10% of all physical unintentional harm incidents.

4.5.4 Drowning

According to the Water Incident Database (WAID), fatal incidents that happen around the home account for a small number of fatalities in Scotland – in 2010-13 there were four (2% of the total) in the bath/jacuzzi. Drowning within the home particularly affects vulnerable groups such as children and the elderly.

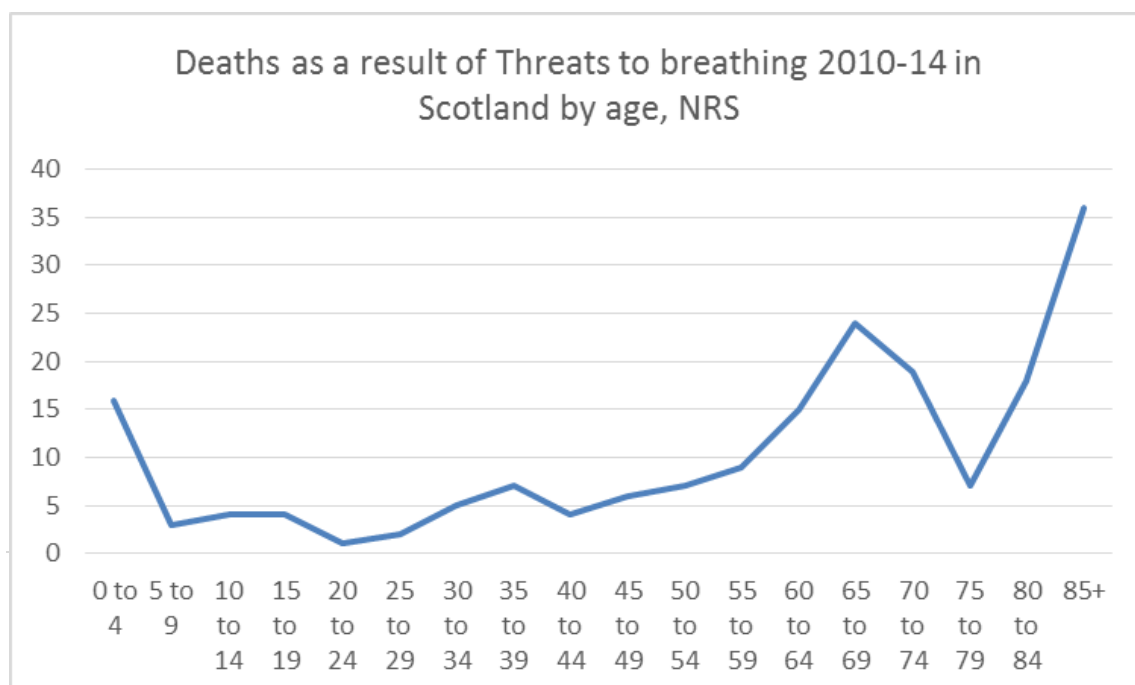
Accidental drownings reflect normal, everyday activities, and happen throughout every stage of life. For example, young children are most vulnerable when they first begin to move in, around and close to the home and stray further from parental supervision and the elderly are more commonly affected by underlying health conditions which can lead to drowning incidents.

4.5.5 Threats to Breathing

Asphyxiation / other threats to breathing is only routinely published by National Records of Scotland (NRS) in relation to deaths as a result of physical unintentional harm – nothing is published routinely by NHS' Information Services Division (ISD) on emergency hospital admissions as a result of this nor by A&E departments.

On average in Scotland there are 37 deaths as a result of 'other threats to breathing' (based on a five year average from 2010-2014). The ten year average is slightly higher at 44 deaths

Figure 72 Unintentional Harm Deaths in Scotland as a Result of 'Threats to Breathing' by Age, 2010-14 (NRS)



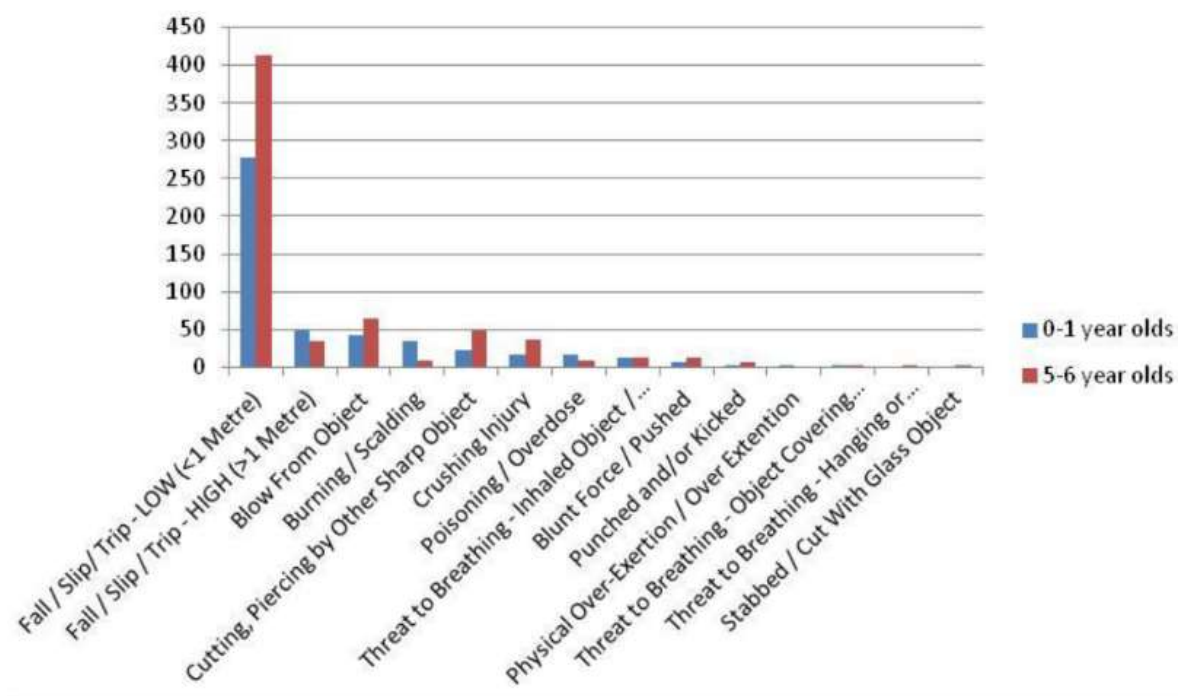


Figure 73 Injury Mechanism for Two Different Age Groups of Children for Injuries Treated in an A&E Department in England

per year. This is, on average, 3% of all deaths from physical unintentional harm per year (based on the five year average).

The most common incidents are inhalation/ingestion of food causing obstruction to respiratory tract (16 deaths per year) inhalation of gastric contents (eight deaths per year) and inhalation/ingestion of other objects causing obstruction to respiratory tract (six deaths per year). Much less frequent are accidental hanging and strangulation (four deaths per year, mainly in bed) and other threats to breathing or being trapped in a low oxygen environment.

Figure 72 shows deaths from this are higher in the under-fives, 65-69 and over 80s. It is likely that most of these will occur in the home. Accidental suffocation and strangulation occur much more frequently in the early years than other age groups. The over 60s have rather more deaths as a result of inhalation / ingestion of food.

Incident data isn't available in Scotland however a presentation by RoSPA on some small area work in England showed that, similar to mortality data, threats to breathing account for a relatively small proportion of all physical unintentional harm in children but developmentally curious and more physically able but unable to risk assess (and possibly less supervised than the younger age groups) ages 2-3 and 3-4 year olds are at higher risks of incidents of this type. Similar to fatalities, inhalation of an object or substance are the most prevalent threats to breathing. See Figures 73 and 74.

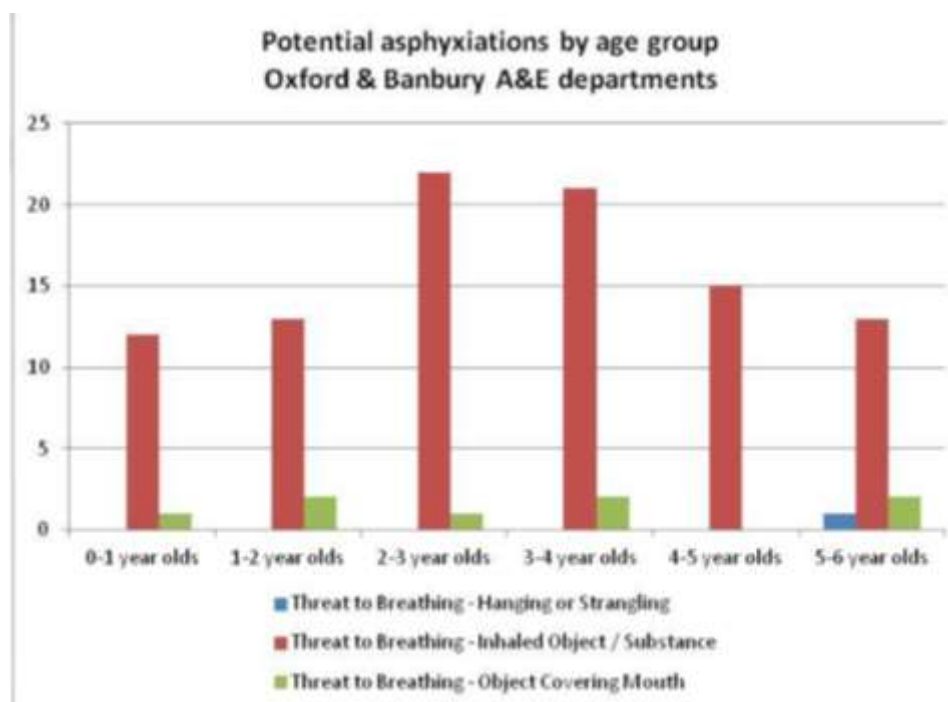


Figure 74 Potential Asphyxiations by Age Group Treated in an A&E Department in England

4.6 TRANSPORT SAFETY⁷²

The evidence on this area of unintentional harm was considered by the national advisory group in November 2015 however this group did not assess transport safety to be a priority for Building Safer Communities at this point on top of the existing work done by Road Safety Scotland.

In 2014, Scotland's provisional overall road death rate of 37 per million population was the twelfth lowest of the 37 countries surveyed (counting each of Scotland, England, Wales and Northern Ireland as a separate country, but not counting the overall GB and UK figures). In most cases Scotland has one of the lowest rates per capita of fatalities; however, the Scottish rate is ninth lowest for casualties aged 0-14. It was the fourteenth lowest for those aged 15-24, fifteenth lowest for those aged 25-64 and sixth lowest for 65+ (out of 34 countries).

In 2013, Scotland's pedestrian fatality rate was 7 per million population. Scotland ranked twelfth of the 37 countries for which figures are available. When the car user fatality rate is calculated on a per capita basis, Scotland has a car user fatality rate of 17 per million population: the ninth lowest of 37 countries.

⁷² Unless otherwise specified all data in this section is sourced from Transport Scotland (2015) *Reported road casualties Scotland 2014*. Key reported road casualties for 2015 were published in June 2016 however these are only provisional and will be updated in October 2016 – for this reason the confirmed 2014 data rather than provisional 2015 data have been used in the production of this strategic assessment. <http://www.transport.gov.scot/statistics/j397988-004.htm>

In 2014, Scotland's casualty rates were 36% higher (killed), 14% lower (serious) and 34% lower (all severities) than in England and Wales. Historically these figures have all been higher in Scotland than in England and Wales.

Key Findings

The overall number of people killed or injured in road accidents fell from the 2004/08 average of 17,097 to 11,268 in 2014.

There were 1,034 child (0-15 years old) casualties in 2014, representing 9% of the total number of casualties of all ages – this has more than halved in the past decade.

Children's casualty rates (per head of population) increase with age.

In 2014-15 there were a total of 2,915 emergency hospital admissions as a result of a RTC: 2617 in those over 15 years of age and 298 in those aged younger than 15.

Male adults are more likely to be injured/involved in a Road Traffic Collisions than females but the difference is particularly notable for motorcyclists and pedal cycles.

4.6.1 Road Safety

Road safety in Scotland is an established and well-developed policy area involving a number of partners - Scotland's Road Safety Framework to 2020⁷³ is Scotland's National road safety plan and has a high-level aim of a Vision Zero where there will be:

"A steady reduction in the numbers of those killed and those seriously injured, with the ultimate vision of a future where no one is killed on Scotland's roads, and the injury rate is much reduced."

The Framework takes a distinctive approach in setting commitments, priorities and challenging casualty reduction targets to 2020, which will deliver the outcome of safer road travel in Scotland for everyone. The targets cover reductions in fatalities, serious injuries and slight casualties and reductions in fatal child casualties and children seriously injured.

⁷³ Scottish Government (2009) *Scotland's Road Safety Framework to 2020*
<http://www.gov.scot/resource/doc/274654/0082190.pdf>

Scotland's long-term casualty reduction trends (Figure 75) show that the number of people killed in road accidents in Scotland reduced by 31%, from an average of 292 between 2004/08 to 200 in 2014, despite increasing road traffic. The overall number of people killed or injured in road accidents fell from the 2004/08 average of 17,097 to 11,268 in 2014.

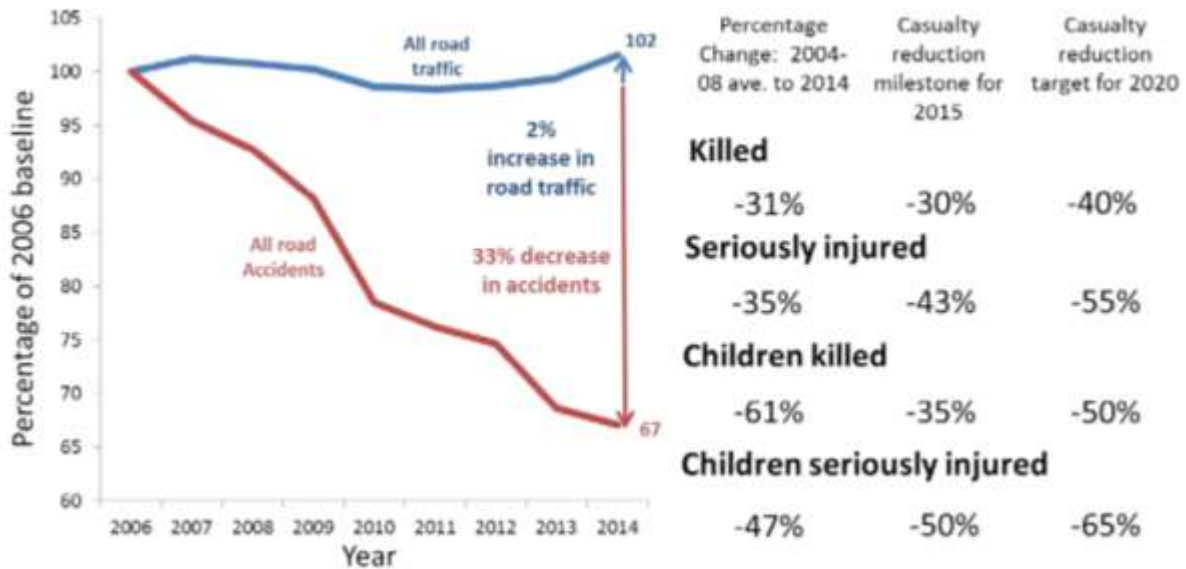


Figure 75 The Change in Traffic on the Roads and Injuries over time in Scotland (Transport Scotland)

A mid-point review (the Review) of Scotland's Road Safety Framework to 2020 (the Framework) was undertaken in 2015 and 2016 to assess the progress that has been made to date, to identify key Priority Focus Areas, and to agree the approach to be taken in order to ensure continued delivery of road safety outcomes to 2020 and beyond.

Three Priority Focus Areas for further consideration were identified and these are supported by overarching outcomes and indicators to effect behavioural and attitudinal change. High-level risks and issues that could impact the below have also been identified.

- Speed and Motorcyclists
- Pre-drivers, Drivers aged 17 to 25 and Older drivers
- Cyclists and Pedestrians

The commitments supporting the Priority Focus Areas have been ranked, in terms of their likely impact on reducing casualty numbers to 2020 in order to help delivery partners to prioritise and coordinate their road safety activity where most impact can be achieved.

A number of revisions to existing Framework commitments and a new commitment on elderly pedestrian casualties have been identified. The review also identified remaining challenges, risks and other considerations which include capacity and resourcing issues nationally and locally, road safety inequalities in socio-economic disadvantaged communities and graduated driving licenses.

Overall figures⁷⁴

The overall fatal collision rate has dropped from 0.66 per 100 million vehicle kilometres in 2004 to 0.40 in 2014; the serious accident rate fell from 5.46 to 3.32; and the overall accident rate (all severities) reduced from 32.59 per 100 million vehicle kilometres to 19.67.

The estimated volume of traffic on Scotland's roads was at its highest ever - 44.8 billion vehicle kilometres in 2014, an increase of 2% on 2013 and slightly above the previous recent peak in 2007 of 44.7 billion⁷⁵ (Figure 76).

Motorways had consistently lower accident rates than A-roads. Leaving aside the relatively low rate for fatal accidents, minor roads (taken together as a group) tend to have higher accident rates than major roads, and accident rates tend to be higher for built-up roads (roads with speed limits of up to 40 mph) than for non-built-up roads (ones with higher speed limits).



Figure 76 2013 Scotland's Travel Statistics

The following compares 2014 figures to the 2004-08 average:

- 13% reduction in pedestrian fatalities, 35% reduction in pedestrians seriously injured (overall 39% KSI). For KSI children this is a 50% reduction; almost all on built up roads.
- 17% increase in cyclist KSI (16% serious injuries); 16% on built up roads and 25% on non-built up roads. For KSI children this is a 61% reduction; almost all on built up roads.
- 22% reduction in motorcyclist KSI; 18% on built up roads and 27% on non-built up roads.
- 36% reduction in car occupant KSI (42% reduction in killed and 47% seriously injured); 30% reduction in KSI on built up roads and 41% on non-built up roads. For KSI children this is a 41% reduction; 34% on built up roads and 48% on non-built up roads.

The Scottish Fire and Rescue Service (SFRS) is sometimes required to attend Road Traffic Collisions (RTCs) as a 'special service' in 2014-15 they attended 2,293 RTCs where a fire

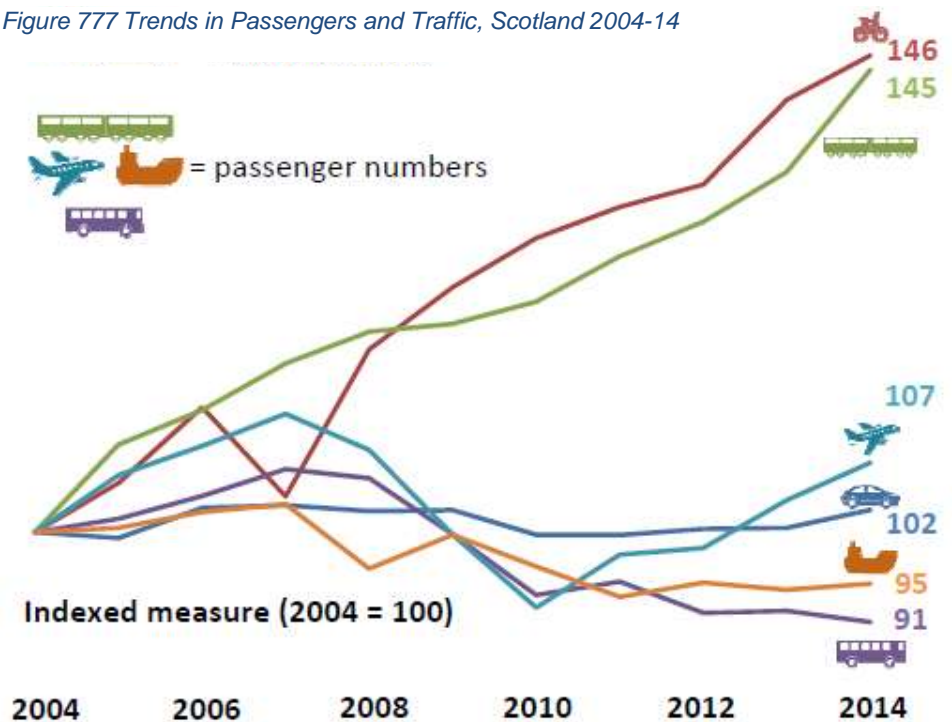
⁷⁴ Transport Scotland (2015) *Reported road casualties Scotland 2014*.
<http://www.transport.gov.scot/statistics/j397988-004.htm>

⁷⁵ Transport Scotland (2015) *Transport and Travel in Scotland 2014*
http://www.transportscotland.gov.uk/sites/default/files/documents/rrd_reports/uploaded_reports/j389989/j389989.pdf accessed 28.09.2015

did not occur and these are the most common type of special service incident SFRS attended during the period.

Figure 77 shows a notable increase in the number of road kilometres travelled by cyclists in particular which has impacted upon the casualty rate for these users. This in turn can impact upon the use of cycling as a mode of active travel - of those who didn't cycle to work in 2014, 18% said this was due to 'too many cars on the road' and 12% said 'traffic travels too fast'⁷⁶.

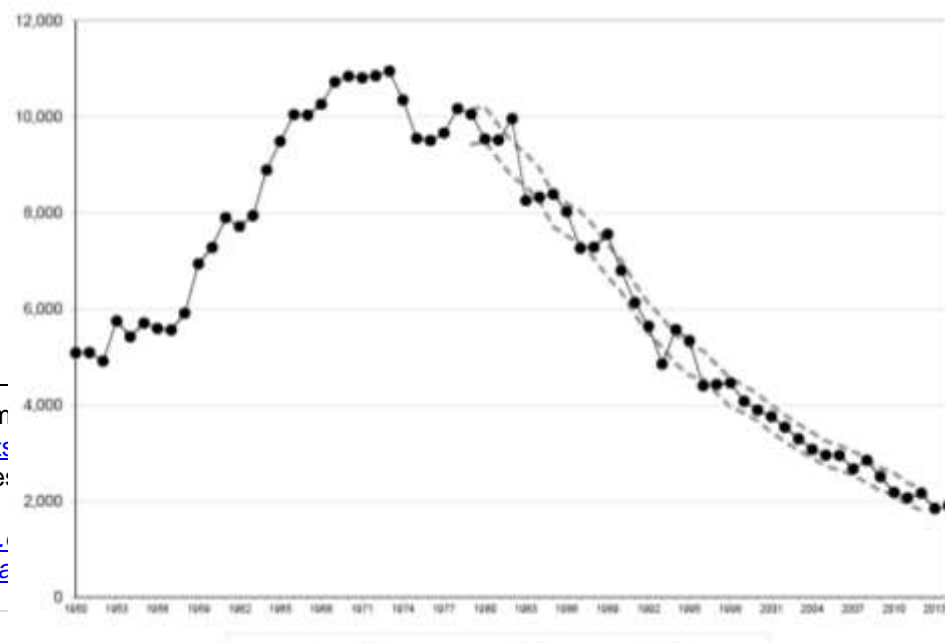
Figure 77 Trends in Passengers and Traffic, Scotland 2004-14



National results for primary, secondary, Special Educational Needs (SEN) and independent schools show a slight increase in pupils travelling by scooter or skateboard and a slight decrease in car use, with little change over time between levels of motorised and non-motorised travel overall⁷⁷ - overall levels of active travel to school have consistently remained between 49.3% and 49.9% between 2009 and 2012, with 2008 and 2013 showing slightly higher levels of active travel at 51.8% and 50.4% respectively.

2014

In 2014, there were 8,789 accidents in which someone was killed or injured, 2% fewer than in 2013 and the lowest number since records began (Figure 78). There were 178 fatal accidents in 2014, 19 (12%) more than in 2013. In 2014,



⁷⁶ Graphs taken from <http://www.transportscotland.gov.uk/j389989.pdf> accessed 10/01/2015

⁷⁷ Sustrans (2014) <http://www.sustrans.org.uk/summary-embed>

Figure 78 Killed and Seriously Injured (KSI) Reported Casualties in Scotland over time showing the likely range of values around 5-year moving average (Transport Scotland)

there were 1,486 serious injury accidents - an increase of 56 (4%) on 2013; and 7,144 slight injury accidents reported in 2014, 3% (272) fewer than 2013.

There were 200 people killed in road accidents in Scotland in 2014, 28 (16%) more than in 2013. Although the long-term trend is a decrease for road safety targets, and all are an improvement on the 2004-08 baseline; the 200 fatalities in 2014 were increased on the 28 for the previously year – an increase for the first time in eight years⁷⁸. They are always, however, within the expected range.

Of the total 11,268 casualties: 1,699 were seriously injured and 9,369 slightly injured; the former 2% increased on the previous year and the latter 3% reduced. In the case of slight and the total injuries, the figures were the lowest since records began.

There were 1,034 child (0-15 years old) casualties in 2014, representing 9% of the total number of casualties of all ages – this has more than halved in the past decade (2395 in 2014). Of the child casualties, 171 were seriously injured, and seven died. Children's casualty rates (per head of population) increase with age: using the averages for the years 2010-2014 taken together, for the under-fives the rate was 0.62 per thousand population, whereas it was 1.42 per thousand for those aged 5-11 and for the 12-15 age group it was 1.97 per thousand. The pedestrian casualty rate for younger children (under-fives) was 33% of those for 5-11 and 22% of the 12-15 year old rate.

Road type

In 2014, non-built-up roads accounted for two-fifths of the total number of casualties (39%: 4,421 out of 11,268). However, because speeds are higher on non-built-up roads than elsewhere (the definition is roads with a speed limit of more than 40mph), they accounted for almost two thirds of those killed (65%: 129 out of 200) and for just under half of the total number of seriously injured (47%: 793 out of 1,699).

Trunk roads accounted for only small proportions of the total numbers of accidents in 2014: 32% of fatal accidents, 16% of serious accidents, and 17% of all accidents. The trunk road network's shares of accident numbers in previous years were broadly similar. The light and road surface conditions and the type of road (e.g. built-up) contribute to the severity of an accident. Severity rates are higher on non-built-up roads than on built-up roads, likely due to the higher average speed. Severity rates are also higher in darkness than in daylight, likely due to poorer visibility. Similarly, the percentage of accidents classified as serious is lower for built-up roads in daylight than for built-up roads in darkness. Severity rates did not appear to be higher when the road surface condition was wet, damp or flooded, or affected by snow, frost or ice.

⁷⁸ Note that provisional 2015 figures show a decrease with 162 fatalities in 2015 – the lowest since records began in 1950.

By mode of transport⁷⁹:

Figure 79: Facts and Figures Relating to Road Safety in Scotland by Mode of Transport

	CAR OCCUPANTS	PEDESTRIANS	CYCLISTS	MOTORCYCLISTS
2014 figures and change over time (where applicable)	<p>6770 injured (a 2.8% decrease on 2013)</p> <p>Accounted for 60% of all casualties. 93 of these people died.</p>	<p>1,744 injured (a 0.2% decrease on 2013)</p> <p>Accounted for 15% of all casualties. 57 of these people died.</p>	<p>888 injured (a 0.3% increase on 2013)</p> <p>Accounted for almost 8% of all casualties – of whom eight died.</p> <p>Since 2004 there has been a 14% rise in all pedal cycle casualties, the number who were seriously injured has risen by 28%, and the number of fatalities has fluctuated between 4 and 16.</p> <p>Pedal cycle traffic is estimated to have increased by 46% since 2004 and this increase in cyclists has clearly impacted upon casualty numbers.</p>	<p>820 injured (a 5.8% increase on 2013)</p> <p>Accounted for 7% of all casualties – of whom 30 died.</p> <p>Despite reductions in Scotland from 2004-08 averages and 2014 (though there has been an increase 2013-14); motorcyclists are over-represented in official crash statistics:</p> <ul style="list-style-type: none"> • Over 400 motorcyclists (versus under 30 car drivers) are involved in an injury RTC per 100 million vehicle kilometres • Account for 10% of all traffic casualties and 20% of all fatalities but motorcycles account for just 4% of all registered vehicles

⁷⁹ These figures take no account of changes in modal choice so changes could be because more or fewer people are travelling by a particular mode.

	CAR OCCUPANTS	PEDESTRIANS	CYCLISTS	MOTORCYCLISTS
<i>Children and Young People</i>	<p>In 2014, there were 393 child casualties in cars, 6% of the total number of car user casualties of all ages (393 out of 6,770).</p> <p>27 were seriously injured and four died.</p>	<p>In 2014, there were 501 child pedestrian casualties; 29% of all pedestrian casualties of all ages (501 out of 1,744).</p> <p>116 were seriously injured and three died.</p>	<p>There were 79 child pedal cycle casualties in 2014 (9% of the total of 888 pedal cycle casualties of all ages).</p> <p>18 who were seriously injured, none died.</p>	
<i>Road Type</i>	<p>81% (75 out of 93) of car users that were killed and 73% (501 out of 687) of car users that were seriously injured were on non-built up roads (usually with higher speeds).</p>		<p>In 2014, 88% of pedal cycle casualties were on built-up roads but 67% of all fatalities over the last five years were on non-built up roads (usually with higher speeds).</p>	<p>44% of all motorcyclist casualties occurred on non-built-up roads but (perhaps because of their higher average speeds) such roads accounted for 56% of those seriously injured, and 80% of those killed.</p>

	CAR OCCUPANTS	PEDESTRIANS	CYCLISTS	MOTORCYCLISTS
Demographic Information (Note that per capita casualty rates do not provide a measure of the relative risk, because they do not take account of the levels of usage of a particular mode of transport.)	<p>Peak is for young drivers (particularly males):</p> <ul style="list-style-type: none"> Annual average 2010 to 2014: the casualty rate for 16-22 year old car users was 3.18 per thousand population. <i>For comparison the rate for car users in the older age groups, varied from 0.8 to 2.4 per thousand population.</i> The overall male car driver accident rate in 2014 was 3.0 per thousand population; the overall female car driver accident rate in 2014 was 1.9 per thousand population. Both rates have fallen over time – the overall, ratio of male to female car driver accident rates has fallen from 1.9:1 for 2004 to 1.6:1 in 2014. 	<p>Peak is 12-15 year olds for injury and older people (over 70s) for fatalities. Boys in under-fives age group more likely to be injured than girls.</p> <ul style="list-style-type: none"> The 12-15 age-group had the highest 'serious' and 'all severities' pedestrian casualty rates (0.21 and 0.99 per thousand population, respectively). The corresponding casualty rates for the 5-11 age-group were slightly lower. Annual average 2010 to 2014, the pedestrian fatality rate was highest for those aged over 70 years (0.02 per thousand population). The pedestrian casualty rate for boys seriously injured in the under-fives was more than twice that for girls. 	<p>Peak is 30-39 year olds and 26-29 and 40-49 year olds.</p> <ul style="list-style-type: none"> Annual average 2010 to 2014, the casualty rate per head of population was highest for those aged 30-39 (0.29 per thousand population) and 26-29 and 40-49 (both 0.25 per thousand). 	

	CAR OCCUPANTS	PEDESTRIANS	CYCLISTS	MOTORCYCLISTS
<i>Factors Contributing to the Incident listed in descending order of importance</i>	<ol style="list-style-type: none"> 1. 'Failed to look properly' (reported in 18% of vehicle collisions) 2. 'Failed to judge other person's path/speed' (11%) 3. 'Travelling too fast for the conditions' (5%) <p>For younger drivers 'Loss of control' is more prevalent than in other age groups.</p> <p>'Failed to look first' is a factor for all ages but more frequent for older drivers.</p>	<ol style="list-style-type: none"> 1. 'Failed to look properly' (reported in 44% of all pedestrians) 2. 'Failed to judge vehicle speed/path' (14%) 3. 'Careless/reckless or in a hurry' (13%) 4. 'Crossed road masked by stationary/parked vehicle' (12%) 5. Impaired by alcohol (10%). Anecdotal evidence has also linked alcohol consumption to an increasing number pedestrian collisions. 	<ol style="list-style-type: none"> 1. Failed to look properly was the most frequently reported factor. 2. Failed to judge other person's speed was the second most common factor associated with cyclists (associated with 7% of bicycles). 	<ol style="list-style-type: none"> 1. Loss of control (23%) was the most commonly reported factor for motorcyclists. 2. Travelling too fast for the conditions was associated with a total of 5% of all vehicles involved in reported accidents.

	CAR OCCUPANTS	PEDESTRIANS	CYCLISTS	MOTORCYCLISTS
Additional Information	<p>Novice drivers and, in particular, novice young drivers are at the greatest risk of being involved in a collision – particularly in their first six months or around 1,000 miles after passing their test.</p> <p>Recent research into cognitive development of young people has shown that their brains are comparably less able to perceive hazards and take evasive action – they become aware of what is going to happen far later than older drivers. Since the hazard perception module was introduced in 2002 it has reduced some crash types for novice drivers by 17%⁸⁰.</p> <p>Some research has shown helping new drivers to manage the transition from too little control over the driving task and too much confidence in their ability can create mature, responsible, adult drivers who can recognise developing hazards and resist impulses to engage in unsafe acts.</p>	<p>In adult and child pedestrian casualties, deprivation is a factor for both places of deprivation and people from deprived areas – risk factors for place were high road network density, high traffic volume, A-roads and larger vehicles and for people; exposure to risk (spend more time walking in the high risk areas), young adults and alcohol.</p> <p>One study⁸¹ contributes to the growing evidence base concerning the role of socio-economic deprivation in the occurrence of child pedestrian accidents and finds that these socio-economic factors (such as single parenthood, reliance upon income support and crime) to be of significance as well as environmental factors such as vehicular and pedestrian flows, area of domestic gardens and the number of junctions in an area – particularly higher up the road hierarchy. The socio-economic factors were of greater note than physical factors and influenced child pedestrian casualties irrespective of where they happened i.e. the children from more deprived areas were still more likely to be involved in a collision irrespective of where it happened. The other physical factors were only of importance to collisions in the area where collisions occurred.</p>	<p>Road Safety Information Tracking Study (RITS) in Scotland has found that among the general population there is little movement when it comes to attitudes towards cyclists:</p> <ul style="list-style-type: none"> • It continues to be widely and strongly believed that there should be more respect between different road users • To a lightly lesser extent, it finds that it is believed that cyclists have the same rights as drivers. <p>The lack of consensus as to whether cyclists on the road annoy drivers remains and similarly, views as to whether cyclists are often to blame for accidents involving cars remains polarised:</p> <ul style="list-style-type: none"> • These attitudes are a little more negative in 17-25 year olds with lower strong agreement that there needs to be more respect and that cyclists have the same rights, and higher strong agreement of getting annoyed with cyclists when in the car. • There is a huge variation in tolerance towards cyclists according to risk taking behaviour; highlighting very different approaches to driving. 	<p>There are a number of contributory factors to motorcycle incidents, but speed features prominently, though left hand bends feature heavily too – some work was conducted and presented at the Royal Society for the Prevention of Accidents (RoSPA) conference in 2010 about attitudes of motorcyclists and whether these were changeable and could be used as levels to promote safety (similarly to what's been done with car drivers).</p> <p>The survey conducted by Mark Elliot from University of Strathclyde identified potential options for reducing speed in motorcyclists. In summary overall findings indicated that different cognitions (types of 'attitudes') determine motorcyclists' decisions to speed on different road types (30mph urban versus 70mph roads) and therefore safety interventions need to be carefully targeted i.e. need to take into account which variables are important determinants of speeding for different types of road.</p>

⁸⁰ Wells et al 2006
⁸¹ Child Pedestrian casualties and deprivation: James Green, Helen Muir and Mike Maher. Accident analysis and prevention 43 (2011)

Injuries and Hospital Stays

In 2014-15 there were a total of 2,915 emergency hospital admissions as a result of a RTC: 2617 in those over 15 years of age and 298 in those aged younger than 15. These are 5.5% and 3.8% of all emergency hospital admissions for over-15s and under-15s, respectively in 2014-15. The discharge rate for those over 15 years of age was 58.2 per 100,000 population for RTCs and for those under 15; 34.9 per 100,000 population (this compares to 1044.4 in over-15s and 910.4 for under-15s for all physical unintentional harm).

Male adults are more likely to be injured/involved in a RTC than females but the difference is particularly notable for motorcyclists and pedal cycles (the discharge rate for male pedal cyclists is five times the female discharge rate and for motorcyclists is ten times higher for males compared to females).

For pedestrians injured the 5-9s, 10-16s, and over 65s have a higher discharge rate than the average for all genders and ages. For pedal cyclists the 5-9s, 10-16s and 45-64 age groups have a higher discharge rate than the average. For motorcyclists the 10-16s, 17-24s and 25-44 age groups have a higher discharge rate than the average. For car occupants the 10-16s, 17-24s and over 75s have a higher discharge rate than the average.

Hospital discharge rates for RTAs broadly reflect how the age groups are likely to be injured as a result of how they are transported i.e. older children are much more likely to be pedestrians and pedal cyclists than the under-fives, almost no children ride motorcycles; male adults are more likely to ride motorcycles etc..

The typical injuries in the over 15s are lower leg fractures, fractures to the rib/sternum/thoracic spine, femur fractures and shoulder/upper arm fractures. In those under 15 injuries tend to be head injuries or wounds and fractures to the lower leg.

For children under 17 years of age the average length of stay in hospital is 1.5 days; the under-fives and 10-16s are slightly under this average but the 5-9 year olds have a higher than average length of stay: 2.1 days. Males, as well as being more likely to be involved in a road traffic collision also have a higher average length of stay: 1.7 days compared to 1.4 in females. Males under-five and 5-9 years old have higher than the average length of stay (1.8 and 2.3, respectively compared to 1.2

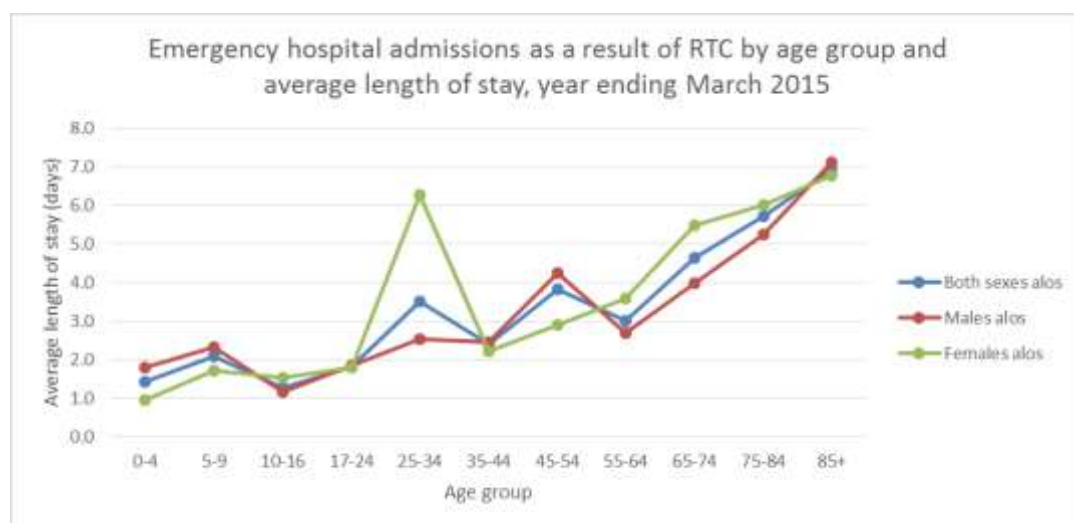


Figure 79 Emergency Hospital Admissions as a Result of a Road Traffic Collision by Age Group and Average Length of Stay, Scotland (ISD, year ending 31 March 2015)

days for males aged 10-16 years). Females under-five have a lower than average length of stay - 1 day; 5-9 year old females have an average stay of 1.7 days and 10-16 females 1.5 days.

Adults typically have a longer Average Length of Stay (ALoS) than children and young people: 3.5 days compared to 1.5 days. There is a variable picture of average length of stay depending on the age group - females have longer average stays in 25-35 and 55-84 year age groups. Males and females aged 17-24 (young drivers) have similar average length of stays. Females have shorter average stays in hospital than males in the 35-54 and over 85s age groups. See Figure 80.

2014 Contributory Factors⁸²

From 2005, all police forces across Great Britain reported Contributory Factors (CFs) as part of the Stats19 accident reporting form. These were developed to provide insight into why and how road accidents occur⁸³. Their aim is to help identify the key actions and failures that led directly to the actual impact to aid investigation of how it might have been prevented. On average there were more than two contributory factors listed per reported accident with more factors recorded for fatal accidents and fewer for slight accidents.

The most frequently-occurring combination of CFs is driver/rider failed to look properly and (driver/rider) failed to judge other person's path/speed, which was recorded on 603 occasions.

Key Points:

- **Driver/rider errors or reactions** were reported in 67% of all reported accidents with failed to look properly the most common type (involved in 30%). This was followed by *failed to judge other person's path/speed* (19%) and *loss of control* (17%). *Slippery road* and *careless/reckless or in a hurry* (both 12%) and *poor turn/manoeuvre* (11%), were also in the top five.
- **Travelling too fast for the conditions** or **excessive speed** was reported in 11% of all reported accidents and 18% of fatal accidents.
- **Pedestrian only** factors were reported in 19% of **fatal** accidents whilst **loss of control** and **failed to look properly** were the most frequently reported driver/rider factors (involved in 35% and 25% of fatal accidents respectively).

⁸² Transport Scotland (2015) *Reported road casualties Scotland 2014*. <http://www.transport.gov.scot/statistics/j397988-004.htm>

⁸³ Care should always be taken when interpreting the factors as they Reflect the reporting officer's opinion at the time of reporting the accident (or the opinion of a person whose duties include deciding which CFs should be recorded based on the officer's report) and Are based on the information which was available at that time, so may not be the result of subsequent extensive investigation (indeed, subsequent enquiries could result in the reporting officer's opinion changing).

The incidence of some CFs **varies with the severity** of the accident as Figure 81 shows.

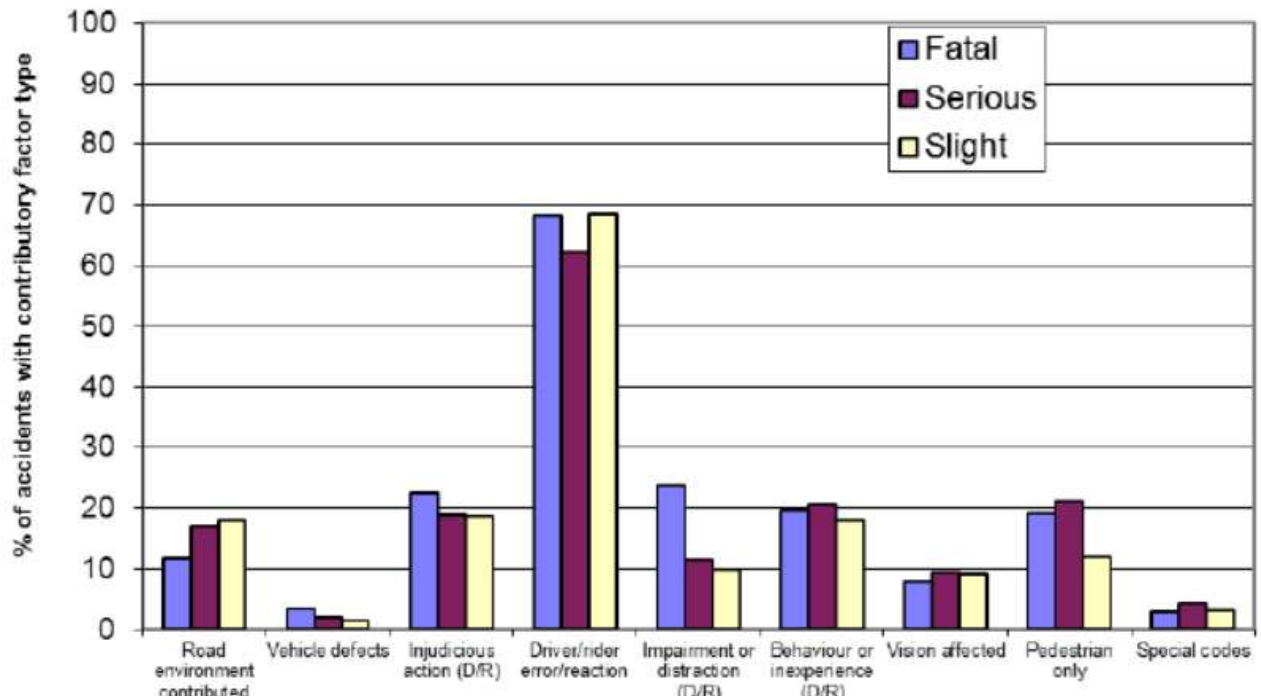


Figure 80 Contributory Factors to Road Traffic Collisions in Scotland Shown by Casualty Type (Transport Scotland)

Other Factors - Driver behaviour and attitudes⁸⁴

On average 73% of respondents have undertaken some kind of risk behaviour on the road - speeding is the most prevalent of risk behaviours undertaken by drivers (on average 57%), followed by mobile phone-related behaviours (on average 25%); the latter of which has shown little improvement over time. See Figure 82).

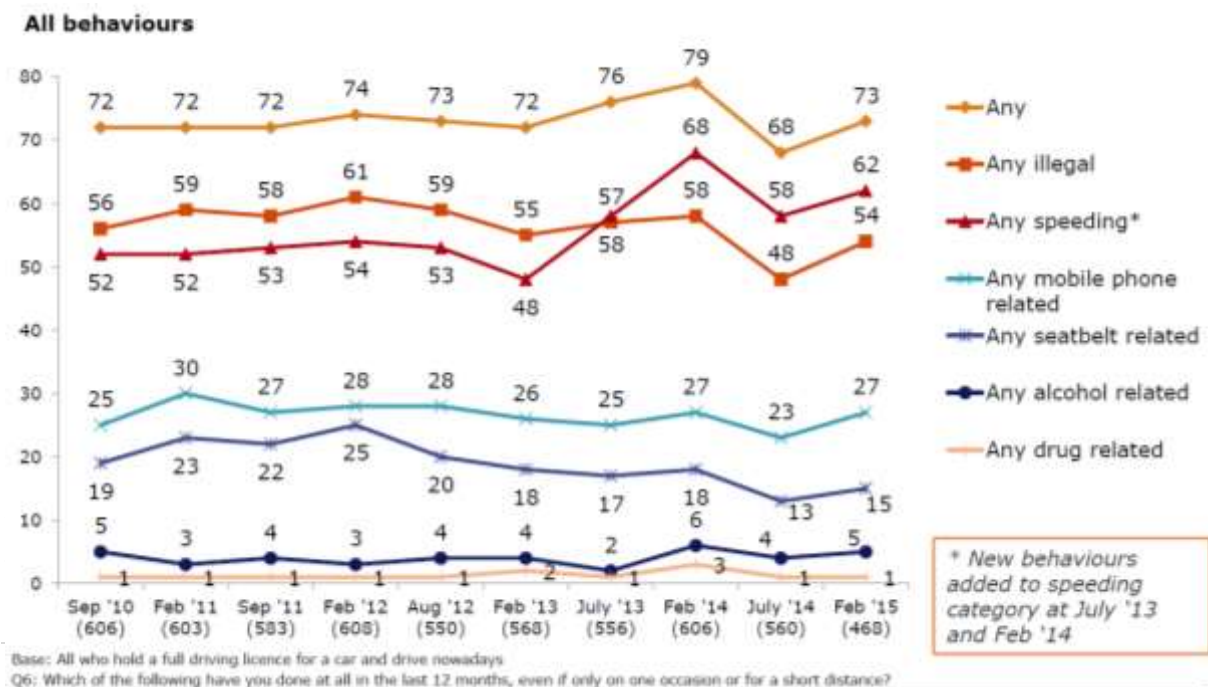


Figure 81 Risk Behaviours Undertaken by Drivers in Scotland (Road Safety Information Tracking Study (RITS) 2014/15

Drivers who take risks show more acceptance of drink driving than non-risk takers – between July 2014 and February 2015 this difference in attitudes became less pronounced but it was still present⁸⁵. For other things⁸⁶ there is little difference in the attitudes between drivers who undertake risk behaviours and those that do not.

With exception of those related to mobile phone, levels of at risk behaviours are broadly consistent up to age 64 years (Figure 83).

Drivers aged 17-19 only make up 1.5% of UK licence holders, but are involved in 12% of fatal and serious crashes. 1 in 4 18-24 year old drivers (23%) crash within two years of passing their test. Throughout Brake and Direct Line's driver surveys⁸⁷, young drivers (17-24) have consistently been shown to be more likely to report a range of dangerous driving behaviours. For instance in 2013, more than four in 10 (44%) admitted texting while driving, compared with three in 10 (30%) of all drivers and in 2015, more than half (56%) admitted breaking the 60mph limit on a single carriageway rural road, compared with two in five (37%) of all drivers.

The proportion convinced by the need to always set a good example to children in the car is slowly declining (a negative shift - unless it indicates a growing normalisation of setting a good example?). The risk attached to this behaviour is also declining. Attitudes to being a good role model to children also weakening among younger drivers.

The previous upward trend in seriousness of speeding in towns/cities has not continued at latest wave; however among 17-25s there is an overall pattern of decline in the perceived seriousness of most of these behaviours – albeit more so for some than others (Figure 84).

Rating of seriousness of risk behaviours in Feb '15 (W10)



Figure 82 How Seriously Risk Behaviours are Assessed in All Ages Surveyed Over Time (RITS).
Key: Purple bars are 2014/15 ratings.

⁸⁵ Scottish Government (2015) *Road Safety Information Tracking Study (RITS) 2014-15*
<http://www.roadsafetyscotland.com/research/road-safety-information-tracking-study-rits/>

⁸⁶ It's okay to answer a hand-held mobile phone if someone calls you when you are driving; If you're just nipping round the corner in the car, it's not essential to wear a seatbelt; I would report someone who I suspected was going to drink and drive or who was drink driving; When I am driving with children in the car I'm always conscious I need to be a good role model to them

⁸⁷ Direct Line and BRAKE (2015) *2003-2015 A Summary*
http://www.brake.org.uk/assets/docs/dl_reports/DLreception-report-final.pdf

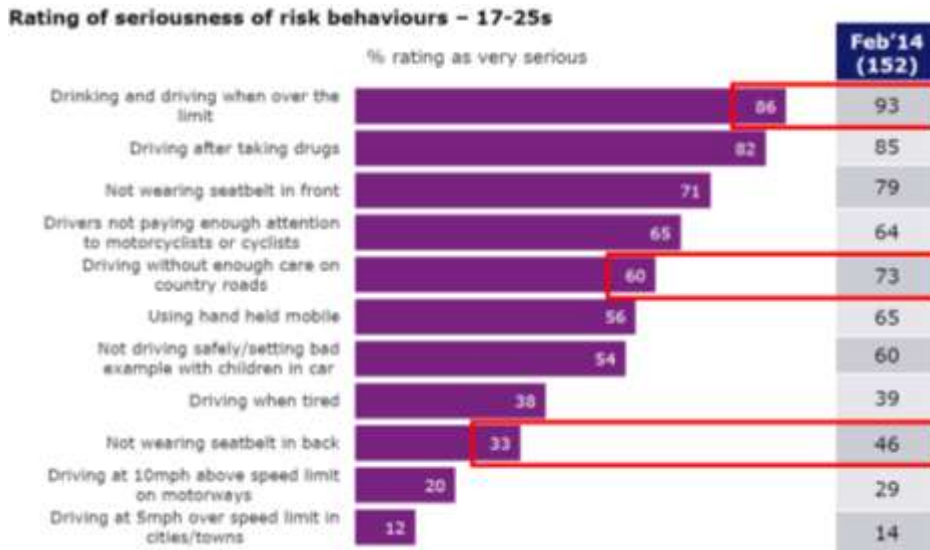


Figure 83 How Seriously Risk Behaviours are Assessed in Young Drivers (17-25 years) Over Time (RITS). Key: Purple bars are 2014/15 ratings.

Driver impairment

Scotland: Note that on 5 December 2014, legislation came into effect lowering the drink-driving limit from 80mg to 50mg of alcohol per 100 ml of blood, with equivalent changes to the limits in breath or urine. Over time this may impact upon the RITS results for the drink-driving question.

Evidence shows that even one drink can increase the risk of crashing. Only 5% of respondents admitted drinking before driving, (the 2003 UK figure was 51% and the 2013 UK figure is 32%) and around 1% taking drugs and driving (the 2003 and 2013 UK figures are 3%). The vast majority of respondents – 95% rate drinking and driving when over the limited as *very serious*. This is slightly less for 17-25 year old respondents. 89% of respondents rate driving after taking drugs as *very serious* and, again, this is slightly lower in 17-25 year old respondents.

The estimates (made by the Department for Transport) show that the numbers of drink-drive accidents fell by 56% and the number of casualties by 60% between 2003 and 2013 (the latest year for which estimates are available): from a rounded estimate of 750 to roughly 330 (accidents) and from around 1,130 to some 450 (casualties). While fluctuating from year to year, the number of people killed as a result of drink-drive accidents is estimated to have fallen by three fifths, from about 50 in 2003 to around 20 in 2013. The number of serious casualties is estimated to have dropped by seven tenths (from roughly 230 in 2003 to some 70 in 2013).

Distraction

A number of studies demonstrate that driver distraction is a contributory factor to road traffic collisions - one that drivers who perform a secondary task at the wheel are two to three times more likely to crash; the increase in smart technology use is a growing concern behind the wheel. Drivers speaking on phones are four times more likely to be in a crash that causes injury, whether on a hands-free or hand-held phone. Research shows hands-free

calls cause almost the same level of risk as hand-held, as the call itself is the main distraction, not holding the phone.

Scotland: The gradual increase in the acceptance of using a mobile phone when driving, allied with a decrease in driver focus, suggests that driver distraction will continue to be a key factor in road traffic accidents, especially among younger drivers.

Over time there has been a softening of attitudes in respect to mobile phone usage; although 84% on average strongly disagree with the statement “It’s okay to answer a hand-held mobile phone

if someone calls you when you are driving”. In young drivers the acceptability of using a mobile is more widespread – 73% strongly disagree with the statement.

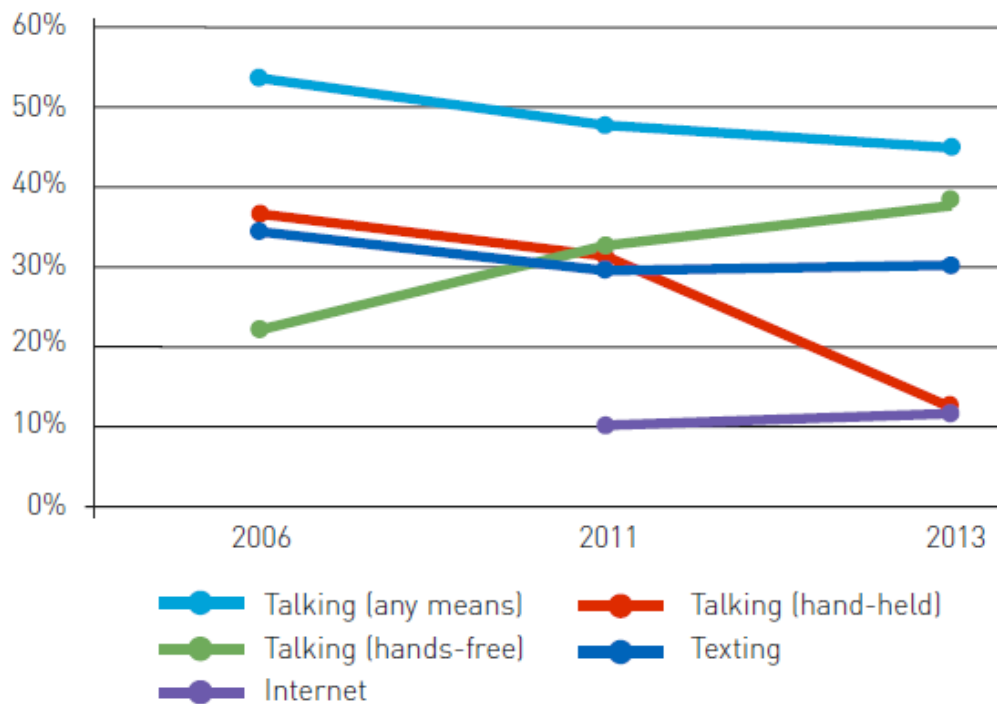


Figure 84 Trends in Driver Distraction, UK 2006-13 (Brake and Direct Line Surveys)

UK: The overall proportion of drivers talking on a phone,

hand-held or hands-free in the UK appears to be declining, slowly (Figure 84). In 2013, less than half (45%) of drivers admitted to doing this, compared with 54% in 2006. However most drivers who used to talk on hand-held phones have simply switched to using hands-free phones instead, despite studies showing this increases your crash risk just as much. Texting at the wheel has remained a constant problem, with the proportion of drivers admitting doing this varying between 34% and 29% from 2006 to 2013. Drivers using the internet, social media and other apps on smartphones appears to be an emerging problem – 12% admitted doing this in our 2013 survey, up slightly from 10% in 2011.

Speed

Reducing and managing traffic speeds is crucial to road safety. It has been estimated that for every 1mph reduction in average speeds, crash rates fall by an average of 5%¹. Slower speeds are especially important in protecting people on foot and bike and speed is often a determining factor in the severity of a crash. British drivers who speed are nearly twice as likely to have been involved in a road crash than those who do not speed.

UK: The overall proportion of drivers breaking the speed limit, on any kind of road, has fallen but is still unacceptably high (Figure 85). In 2015, more than half of respondents (57%) admitted doing this at least once in the past year, an improvement on 88% in 2004.

The biggest problem appears to be on 30mph urban roads and 70mph motorways and dual carriageways, on which speeding rates have remained flat and, as of 2013, sit at 63% and 60% of respondents respectively. This relates to speeding at 35mph and 80mph or more – the numbers breaking the limits by less than this are likely to be even higher.

In comparison to other risk behaviours, far fewer drivers consider driving over the speed limit to be a very serious safety risk and interestingly attitudes towards the seriousness of speeding on the motorway by 10mph and speeding by 5mph in cities/towns are similar.



Figure 85 Trends in Speeding Over Time on Different Road Types, UK (2004-15 Brake and Direct Line Surveys)

Scotland: Speeding is the most prevalent of risk behaviours undertaken by drivers - on average 57% admit to speeding in the preceding 12 months. Of all speeding behaviours, driving 35mph in a 30mph zone, 25mph in a 20mph zone and speeding up through an amber light were the most prevalent from 32% for the latter to 46% for the former. Driving at 90 mph on the motorway and driving too fast for the conditions on a country road were much less frequent – 12% for motorway speeding and 8% for country road ‘speeding’.

Seatbelts

Over time agreement levels have risen and fallen but generally holding at around 1 in 10 resisting need for a seatbelt on short journeys. On average 12% of respondent’s rate not wearing a seatbelt in the rear of a car/taxi as ‘not very serious or not serious at all’; in the front this is less than 3%.

Areas for improvement recommended by the European Union report area: Enhancing pedestrian safety by introducing laws placing the burden of proof on the vehicle driver in crashes involving a child pedestrian and supporting efforts to modify European vehicle design standards to reduce risk of injury to children (e.g., pedestrian friendly bumper heights); Enhancing passenger/driver safety by introducing national laws requiring that children remain seated rear facing in cars until age 4 years (will be enforced from 2018 onwards) and that children and adolescents be seated in the back seat of a motorised vehicle until 13 years of age and by introducing graduated licensing for newly licensed drivers; Enhancing cycling safety by the introduction of a law requiring bicycle helmet use while cycling for all ages.

CHILD SAFETY IN CARS

Using the correct child safety restraint in vehicles is key to children’s safety in the event of a road traffic collision. Factors such as using the correct restraint and ensuring it is fitted properly can impact upon injuries sustained by children in the event of a collision. Evidence shows that particular fittings, fitting the seat correctly, keeping children travelling rear facing for longer (up to the age of four), basing restraint decisions on height and weight rather than age, using high-backed booster seats with side protection and not allowing children to travel in the front until adolescence can all make a difference to injuries sustained in a collision and legislation is beginning to catch up.

A team from Police Scotland and Good Egg campaign did some spot checks in September 2011¹: The teams stopped vehicles on the school run in a few areas of Edinburgh - 24 drivers were stopped, all of whom had children in car seats, but only one was fitted correctly. Six were taken out of the cars to be adjusted and refitted, while the remainder needed minor adjustments. In addition, 14 motorists were given warnings because seatbelts were not being used properly. Of these, 11 related to children who were travelling in the cars.

4.6.2 Railway Safety

The following information on injuries on the railway network comes from Transport Scotland's 'Scottish transport statistics 2015 edition'⁸⁸.

The overall number of injuries relating to railways rose from 919 in 2013 to 1,039 in 2014 with a five year average of 950. The total number of fatalities was 24, of which 20 were suicides, three were trespassers and one was railway staff; the five year average is 24 deaths per year most of which are suicides. See Figure 87. Injuries from train accidents in stations rose from 536 in 2013 to 607 in 2014, with a five year average of 554 per year.

Casualties (Five-Year Annual Average 2010-14)			
All accidents	Train	Deaths	0
		Injuries	5
Accidents in stations	in	Deaths	0
		Injuries	554
Accidents on trains	on	Deaths	0
		Injuries	133
Accidents outside of trains and stations (excludes suicides and or trespass)		Deaths	1
		Injuries	248
Trespassers and suicides		Deaths	23
		Injuries	10
Total deaths			24
Total injuries			950

Figure 86 Five-Year Annual Average Number and Nature of Casualties on the Rail Network, Scotland (Transport Scotland). Deaths include all accidental fatalities and Injuries includes all major and minor injuries but excludes shock/trauma.

People commit trespass for a variety of reasons and it is useful to understand the reasons why people trespass so that the most appropriate risk management measures can be applied. For some, trespass may be a convenience - taking a short cut along the tracks, or walking the dog. For others, it may be a spur of the moment decision - for example if something has been mistakenly dropped from the platform edge.

In more than half of incidents (from a UK perspective), the reason for the trespass is not known or not identified. In those events where the motivation for the trespass is identifiable, the most common reason is taking a shortcut (42%). Other reasons where the trespass is incidental to the main motivation of the person include retrieving an item (9%), evading a

⁸⁸ Transport Scotland (2015) Scottish Transport Statistics No.34 <http://www.transport.gov.scot/report/j415388-00.htm>

third party (17%), or committing criminal theft or damage (7%). For those engaged in horseplay or thrill-seeking behaviour (19%), the trespass itself may be part of the motivation⁸⁹.

4.7 OUTDOOR AND WATER SAFETY

This section covers safety within the outdoor environment – e.g. hills and mountains, forestry and national parks, in the air – and outdoor water safety.

There isn't consistent injury surveillance for unintentional harm in outdoor spaces – certain bodies (e.g. for some activities) must collate information but not all, and the data provided in this section is only the data that is available – there may be much other unintentional harm that occurs within outdoor spaces of which we are unaware or can only be found within the larger data sources e.g. mortality data from NRS, emergency hospital admission data from ISD etc. where detailed analysis for 'outdoor safety' cannot be undertaken

The evidence on this area of unintentional harm was considered by the national advisory group in November 2015 however this group did not assess outdoor safety to be a priority for Building Safer Communities at this point on top of the existing work done by, for example, the Visitor Safety in the Countryside group and Water Safety Scotland.

Evidence from this strategic assessment could be used as a template for local Community Planning or Community Safety Partnerships to gather evidence and assess whether this type of unintentional harm is a local priority.

4.7.1 Water Safety

Policy Context

In line with guidance from the World Health Organisation report that recommended every country should have a national water safety and drowning prevention plan, the National Water Safety Forum (NWSF) developed the first UK National Drowning Prevention Strategy 2016-26⁹⁰. Launched in February 2016 their aim is:

“To reduce accidental drowning fatalities in the UK by 50% by 2026, and reduce risk amongst the highest risk populations, groups and communities.”

Over the initial phase of the Strategy - the next three years – they plan to address the following targets:

⁸⁹ Rail Safety and Standards Board (2015) *Annual Safety Performance Report 2014/15 Key facts and figures* <http://www.rssb.co.uk/Library/risk-analysis-and-safety-reporting/2015-07-aspr-key-findings-2014-15.pdf>

⁹⁰ National Water Safety Forum (2016) *A future without drowning: The UK drowning prevention strategy 2016-2026* <http://www.nationalwatersafety.org.uk/strategy/info/uk-drowning-prevention-strategy.pdf>

- Every child should have the opportunity to learn to swim and receive water safety education at primary school and where required at Key Stage 3
- Every community with water risks should have a community-level risk assessment and water safety plan
- To better understand water-related self-harm
- Increase awareness of everyday risks in, on and around the water
- All recreational activity organisations should have a clear strategic risk assessment and plans that address key risks.

Water Safety Scotland is currently producing a “response for Scotland” to the UK National Water Safety Forum’s National Drowning Prevention Strategy. It is Water Safety Scotland’s intention to launch a public consultation of a first draft of the “response” at the Water Safety Conference on March 2017. It will be subject to a three month consultation period with the finalised document available in Autumn 2017.

A 2014 report by RoSPA into the management of water safety by Local Authorities⁹¹, managing water safety ranked as being very or quite important in relation to other service demands among 70% of authorities, however less than half had a policy level commitment on the issue. More than two thirds of authorities were aware of groups that covered water safety issues, and 80% worked with multiple agencies and external organisations. However, more than half said they did not have a specific person or group who took control. Almost half of authorities reported that they had not run a specific water safety information campaign in the last three years, but more than half had provided information to key groups. Many local authorities said they tended to work with outside agencies and organisations on the issue, with some running or supporting campaigns. In addition, some local authorities included water safety advice on their websites. The vast majority, however, did not. Overall, there is a mixed picture; several authorities were addressing water safety, but there was little in the way of uniformity or issues considered strategically.

Water fatality data (from Water Incident Database, WAID) and National Records Scotland (NRS)

The UK Drowning Prevention Strategy published in early 2016 shares that apart from a limited number of locations, such as tourist and visitor hotspots, fatal incidents do not tend to cluster in specific locations; however, they highlight a number of consistent patterns. In absolute terms, England records the highest number of accidental drownings (73%), Scotland (14%); Wales (10%) and Northern Ireland (3%). The UK Drowning Prevention Strategy notes that half of fatal incidents (52%) occur in just four out of thirteen specific parts of the UK, namely; South East, South West, Wales and Scotland. This in part can be attributed to higher population numbers, increased tourism and activity, and/or greater amounts of water in proximity to populations.

⁹¹ RoSPA *Local authority approaches to managing water safety*
<http://www.rospace.com/rospaweb/docs/advice-services/leisure-safety/approaches-to-managing-water-safety.pdf> Accessed July 2016.

Relative to population, Wales and Scotland both carry a disproportionate burden: compared to the UK, Scotland has 8% of the population but 15% of the deaths by drowning.

The reasons for this are likely to be complex, however around 90% of standing freshwater in the UK is in Scotland with more than 27,000 lochs and more than 120,000km of rivers and streams. Mainland Scotland has 6,160 miles (9,910 km) of coastline, and including the numerous islands, this increases to some 10,250 miles (16,500 km) - this is 52% of the UK coastline. The sheer volume of water combined with high levels of coastal tourism in addition to higher levels of non-recreational water use (e.g. fishing) could all impact upon deaths by drowning.

From NRS there were 34 deaths from drowning/submersion in 2013 – this is one type of cause of death that has increased over time (from 2000-04 average of 16 to 34 2009-13 average) with 21 deaths on average from drowning or submersion per year; albeit it remains a low proportion of all deaths as a result of physical unintentional harm (2.6% for 2009-13 average figure). There were four water transport accidents which resulted in death (two of which were drowning/submersion). WAID puts the deaths as a result of drowning figure at 57 for 2013⁹² and the remainder of the analysis is based upon figures from this source rather than NRS.

Demography

Accidental drownings happen throughout every stage of life and the circumstances can often reflect every day activities. The UK Drowning Prevention Strategy has a number of good examples of this:

- Young children are vulnerable when immobile and reliant on constant supervision to remain safe (e.g. drownings in the bath); this continues when they become mobile and can stray further away from parental supervision but are unaware to risks to their safety
- Adolescents are at risk through a combination of thrill-seeking behaviours but also cognitive development (particularly in males) which means risk perception is not as advanced as an adults’.
- Middle-aged adults are at risk due to increased participation in recreational activities, as a result of more leisure time and available income.
- Older people are more commonly affected by underlying health conditions which can lead to drowning incidents.

⁹² WAID figures are deaths by accidental/natural causes only – they do not include suicides or crimes. Note that WAID does not cover water fatalities relating to work – this will be included in time. NRS figures are deaths caused by drowning/submersion categorised as ‘accidental deaths’.

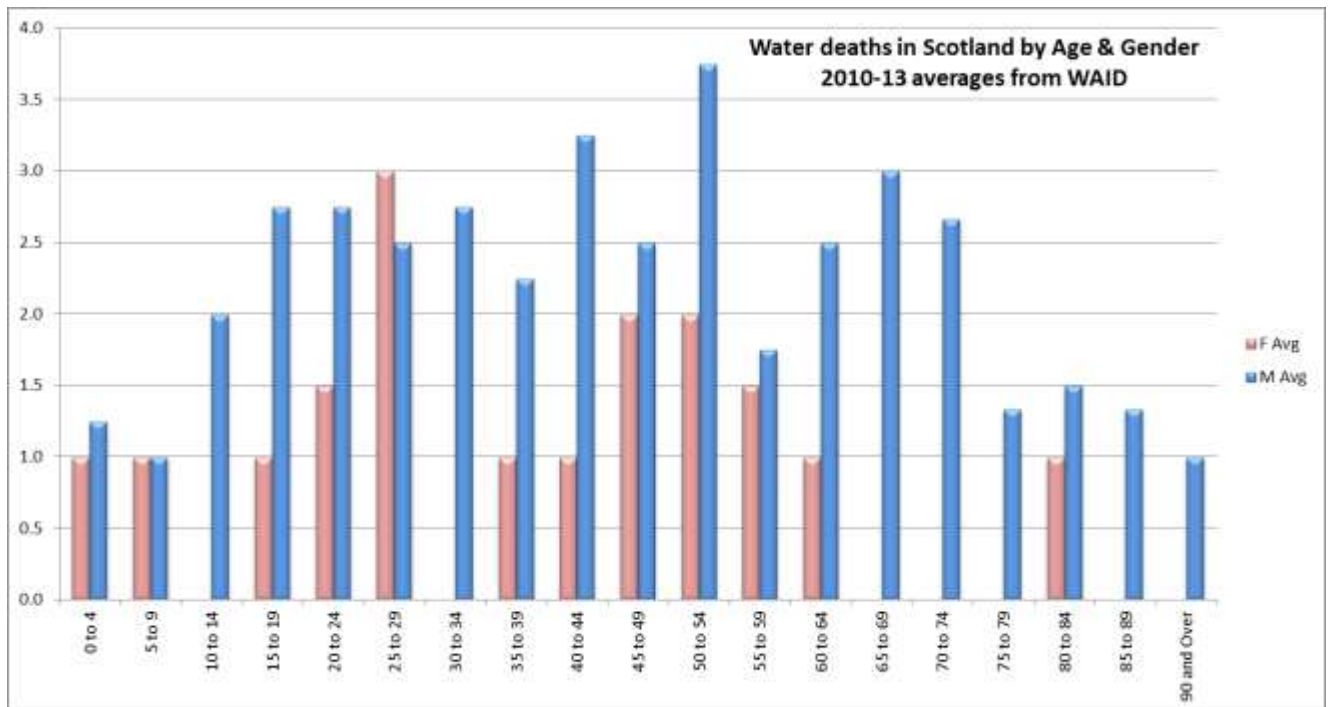


Figure 87 Water Deaths in Scotland by Age and Gender – 2010-13 Annual Average (WAID)

For all age groups males in Scotland are much more likely to be victim of a drowning than females – almost three times as likely in particular age groups and six times more likely for all age groups taken together – and anecdotal evidence links alcohol consumption with an increased risk of drowning particularly with young men. There are two small peaks for drowning deaths at particular age groups in Scotland: 15-25 years and 40-55 years (Figure 88).

Geography

Coast/shore/beach account for 37% of all drownings, 24% in rivers and 12% at sea in Scotland. Very few occur in a bath/Jacuzzi or other domestic setting or in swimming pools. More specific geographical information on all drownings and water rescue/distress incidents should be undertaken by local Community Planning or Community Safety Partnerships if they're undertaking local analysis of deaths by drowning and water rescues.

The UK drowning prevention strategy also recommends that every community with water risks should have a community level risk assessment and water safety plan.

Activity

In almost half of all fatal incidents in the UK (44%) the person had no intention of entering the water and were taking part in everyday activities such as walking.

Participation in recreational water activity is increasing in Scotland⁹³ – in 2014 this was 24.5% of people (up by 7% from 2013); though for the amount of coastline it lags behind Northern Ireland (63.3% and Wales/South West 33.6%). Compared to Scotland's 56 deaths by drowning there were 11 drownings in Northern Ireland during 2013 and 94 in Wales/South West. Recreational activity on or near the water accounts for just under half of fatal incidents (45%), but when participation numbers are taken into account most activities present a low risk.

Fatal incidents that happen around the home account for a small number of fatalities in Scotland. These particularly affect vulnerable groups such as children and the elderly.

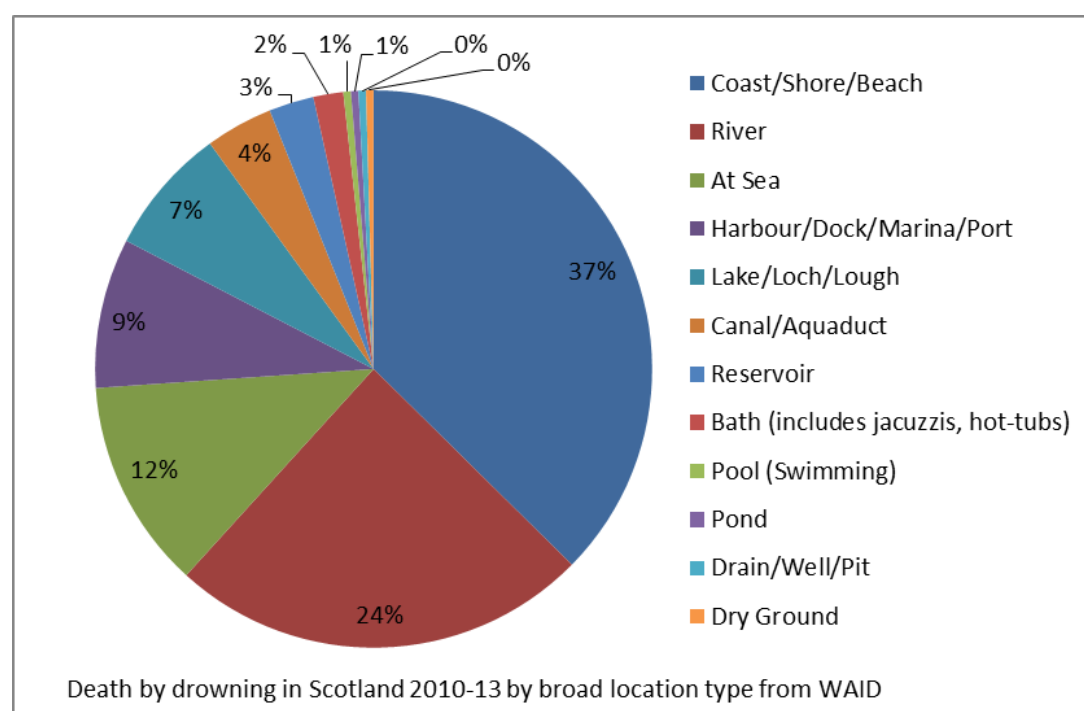


Figure 88 Death by Drowning in Scotland by Broad Location Type (2010-13, WAID)

37% were fishing/diving/boat users, 24% were walking/running when the incident occurred and 8% swimming (see Figure 89).

Behaviours

The UK Drowning Prevention Strategy notes that improved understanding of the events leading up to, during and after a drowning will enable us to understand individual behaviours and design relevant behavioural change messages, activity and interventions – the same has been noted for unintentional harm as a whole issue. It is interesting to note from UK drowning data that many of the people who drowned had no intention of entering the water. The UK Drowning Prevention Strategy notes the following behaviour traits which all increase the risk of drowning or being involved in an incident associated with the water:

⁹³ From data provided by MCGA sourced from Arkenford "Watersports Participation Survey 2014 (http://www.rya.org.uk/SiteCollectionDocuments/sportsdevelopment/Watersports_Survey_2014_Executive_Summary.pdf). For any body of water and includes "spending time at the beach".

- Lack of knowledge and underestimating risks
- Lack of competence
- Ill-informed thrill seeking – peer pressure could have a role to play in this
- Poor supervision of children
- Other factors such as alcohol which has been a factor in 103 fatal coastal incidents from 2010-2013 in the UK. In adults of working age, alcohol was a suspected or confirmed factor in about 1 in 3 drownings in the UK

It is estimated from UK figures that 86 people might have survived (2010-2013) if they had worn a lifejacket or buoyancy aid. Understanding the decisions and factors which affect choice, such as the decision not to use protective equipment, could aid in the development of preventative interventions and help people make informed choices. Understanding choice and applying this approach to other aspects of unintentional harm could similar developments.

Swimming skills and other Contributory Factors

Although few deaths occur within swimming pools, 8% of deaths by drowning occur whilst swimming and the number of near-misses is unknown. Swimming is an essential and potentially life-saving skill to have. Although based on a US study, there could be parallels to the UK - only 56% of adults who say they can swim can perform five critical water-safety skills that could save their lives, according to a new American Red Cross survey⁹⁴:

1. Floating or treading water for one minute without a floatation device
2. Stepping or jumping into water over your head and returning to the surface
3. Treading water or floating in a circle then finding a way out of the water
4. Exiting a pool without needing a ladder
5. Swimming the length of a standard pool without stopping

Swimming is not a compulsory part of the curriculum in Scotland, unlike in England (though no analysis has been undertaken to link this directly to an impact on drowning/near drownings). The provision of primary school swimming lessons varies extensively between local authorities, with children living in the most socially deprived areas having the highest number of non-swimmers. Scottish Swimming claimed that as many as 40% of children, about 15,000 each year, headed to high school as non-swimmers⁹⁵.

Similar data for Scotland is unavailable at this time however the Amateur Swimming Association's (ASA) report for England⁹⁶ notes that despite improvements, in 2014 45% of children aged 7-11 are still unable to swim 25m unaided. A survey commissioned by ASA⁹⁷

⁹⁴ <http://www.usatoday.com/story/news/nation/2014/05/20/swim-skills-red-cross/9283747/> Accessed 11.08.2015.

⁹⁵ All from BBC news report: <http://www.bbc.co.uk/news/uk-scotland-33215836> accessed 11.08.2015

⁹⁶ Amateur Swimming Association (2014) *Taking swimming seriously – the 2014 school swimming census* http://www.swimming.org/assets/uploads/library/2014_census_web_version_secure.pdf accessed 11.08.2015

⁹⁷ <http://www.swimming.org/asa/news/general-news/asa-launches-manifesto-for-aquatics/23532>

noted that over nine million adults in England are unable to swim – 22% of women and 20% of men over 14.

The same report notes lack of parental awareness of swimming skills: 40% of parents are unaware of their child's progress or ability when it comes to water safety and whether they are able to swim unaided. Often when transitioning to secondary school, no record of a child's ability to swim progresses with them. In most cases (83%) the ASA report that secondary schools do not know the level of swimming attained by their incoming students. Swimming has a positive impact on personal development and well-being by improving confidence in the water – research conducted by Speedo in 2013 (and quoted by the ASA report) highlighted that swimming unaided gave children a greater sense of independence than other childhood milestones and nearly a quarter of children aged 5-12 feel embarrassed about not being able to swim or feel isolated by being unable to swim.

In the United States there is information which links drowning victims or near-drowning incidents to a lack of swimming ability but this is unknown in the UK (and US has typically higher rates of drowning, particularly for young people, than the UK). This isn't strong enough to draw conclusions for the UK or Scotland but does demonstrate the need for better UK data for fatalities and non-fatal incidents and swimming ability.

Water Rescue

Another source of information on unintentional harm related to water are organisations that coordinate or attend calls for assistance – most are coordinated by the Maritime and Coastguard Agency (MCGA) and Police Scotland and are undertaken by a variety of organisations including MCGA, the Royal National Lifeboat Institution (RNLI), Scottish Fire and Rescue Service (SFRS) and other charity or community lifeboat organisations.

On average (based on 2010-2014 incidents from MCGA) there are 4142 incidents per year in Scottish coastal waters which includes recreational and commercial incidents. In 2015 the RNLI, rescued 7,973 people and saved 348 lives in 2015. On average (2009-10 to 2014-15) SFRS attend 155 water rescues per year.

For the purposes of Phase 2, nationally or locally, and with the aid of any epidemiological information available there may be merit in managing commercial incidents under 'workplace safety' and only covering recreational incidents within the wider auspices of 'outdoor and water safety'.

Incidents are broadly split into incidents involving the vessel and incidents involving people. Intelligence suggests an even split between incidents relating to vessels and incidents relating to people (half and half).

Although the data cannot distinguish between them, intelligence suggests that around 70% of vessel incidents involve recreational vessels and around 30% commercial vessels.

Recent estimates suggest there is a relatively even split between vessels and people being responsible for the call out in recreational incidents; in commercial incidents vessels are responsible for a higher proportion of incidents than people (approximately 70/30).

Removing exercises and false calls etc. there are an average of 3393 incidents per year broken down by type in Figure 90:

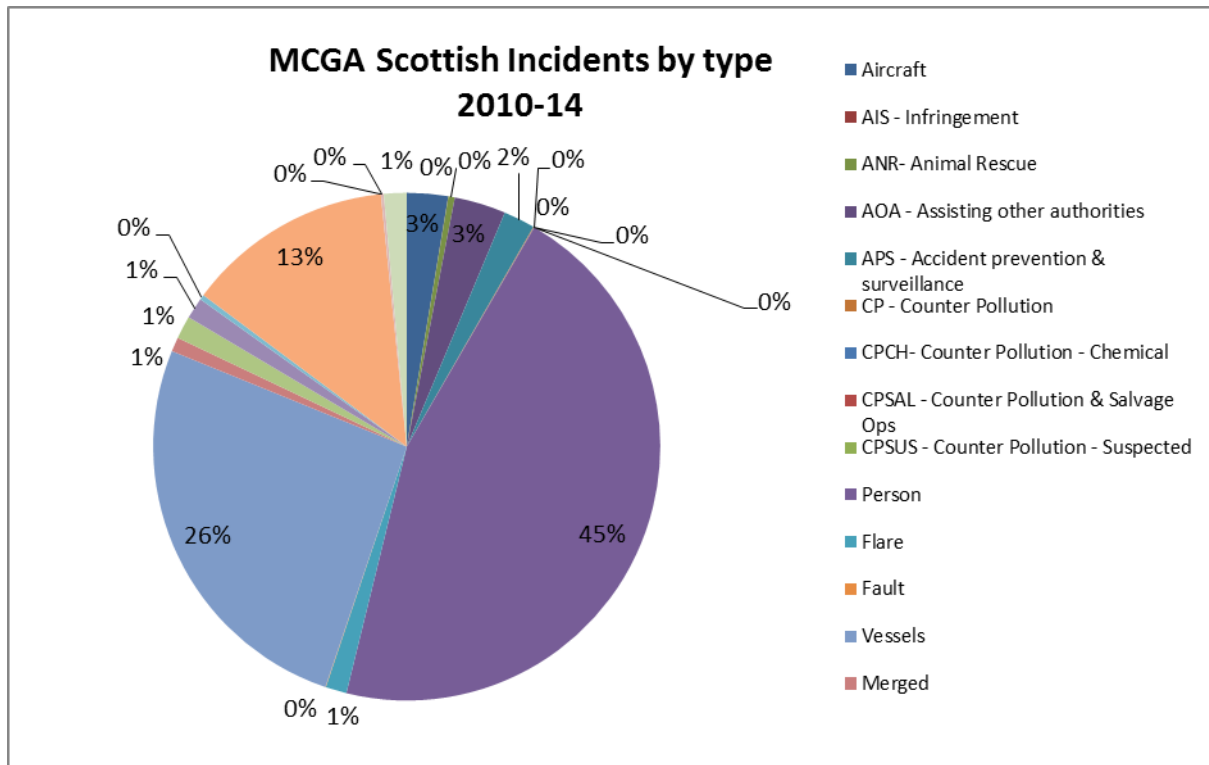


Figure 89 Type of Unintentional Harm Incidents Reported to the Maritime and CoastGuard Agency (MCGA) in Scotland 2010-14

Looking more in depth at the largest proportion of incidents ('Person' and 'Vessels') see Figure 91:

- Medical evacuations from land or vessels account for a high proportion of incidents (54% 2010-14 average).
- 10% are reported as suicides or attempted suicides (averages almost 160 per year).
- 'Person in water' and similar incidents account for around 12% (178 5yr average). People stranded/missing/stuck together account for 14%.
- Increases in the number of missing person incidents recorded by MCGA (80 in 2010 to 128 in 2014).
- Regarding vessels, 44% relate to defects or cargo issues; the remainder are 19% vessels in distress/capsized or taking in water, sunk/sinking or having collided (averaging 165 per year). 2% are vessels that are overdue.

The outcome of these incidents or further information on people involved and activity being undertaken etc. is unfortunately unavailable. It may be possible to get a more local picture for this based on a lower number of incidents to sift through.

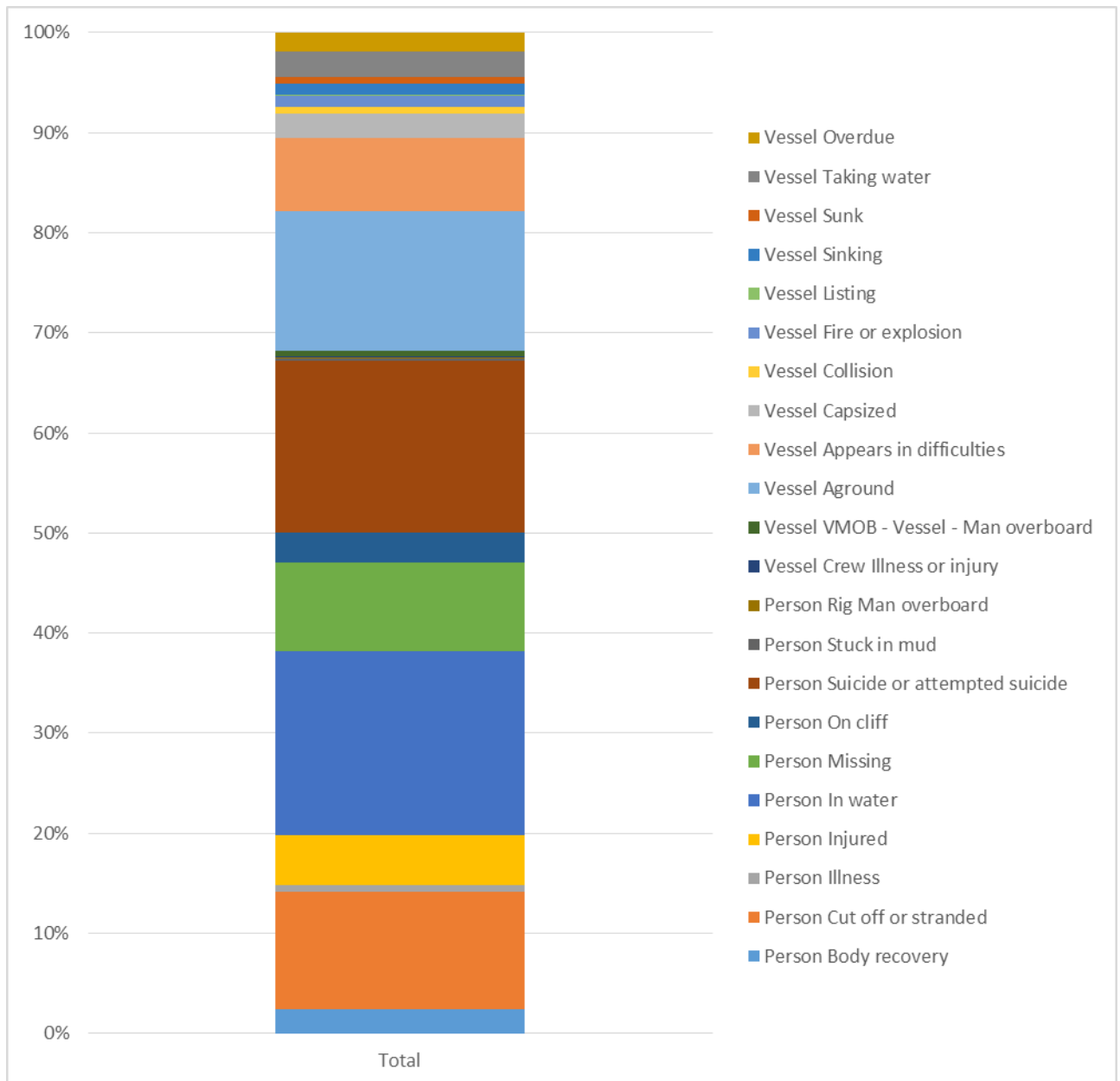


Figure 90 Sub-Classification of Vessel and Person Incidents Reported to MCGA 2010-14 Annual Average

Unfortunately looking at the number of incidents in comparison to the volume of traffic is not possible – the MCGA areas are not co-terminus with the Department for Transport's ports.

Regional data isn't available for type of industry, and varying levels of under-reporting and small annual numbers affect industry to industry comparisons; however commercial fishing is one of the most dangerous jobs that can be undertaken in the UK.

Information from Transport Scotland's 'Scottish transport statistics 2015 edition':⁹⁸ has the following historical data from HM Coastguard which shows a fairly steady number of incidents over recent years – around 3,500 per year (based on a five year average from 2010-14).

Although older data, the three year averages for 2004-06 show 2,175 coastguard rescue team callouts assisting a total of 12,608 people every year. 1,130 people were rescued on average each year (Figure 92).

Water rescue incidents recorded by Police Scotland (to account for the non-MCGA water incidents at coastline and other water types) is not available as this time. As a result the water rescue incident data whilst giving a good indication of the picture of water safety in Scotland is currently incomplete.

Type of callout	2004	2005	2006	2007 ¹	2008 ¹	2009 ¹	2010 ¹	2011 ¹	2012 ¹	2013 ¹	2014 ¹
Assistance rendered	1,481	1,416	1,178	..	..	..	..	..	..	..	..
Assistance not rendered	1,341	1,434	2,074	..	..	..	..	..	..	..	..
Hoax	64	53	99	92	56	89	62	41	57	60	45
Total incidents	2,680	2,903	3,351	3,383	3,583	3,765	3,669	3,910	3,283	3,422	3,364
Coastguard rescue team callouts	2,037	1,897	2,591	..	..	..	..	..	..	..	..
Number of persons assisted	11,696	12,810	13,317	..	..	..	..	..	..	..	..
Number of persons rescued	1,148	1,273	970	..	..	..	..	..	..	..	..
Lives lost	58	86	69	..	..	..	..	..	..	..	..

Source: Maritime and Coastguard Agency - Not National Statistics.

1. Due to 'Industrial action short of a strike' undertaken by Coastguard staff during 2007 to 2014, the Maritime and Coastguard Agency is unable to provide full incident details for 2007 to 2014. The figures provided are provisional - they have not been audited.

Figure 91 HM Coastguard Callouts over time: Search and Rescue Operations in Scotland (MCGA)

Other data from specific water

rescue agencies has not been requested due to time constraints, but is part of local analysis that could be undertaken to inform the local picture on unintentional harm. Note that between the MCGA, SFRS and Police all reported water safety incidents should be captured as they coordinate response activity. Missing incidents could be gathered locally by services that aren't mobilised through a 999 call.

⁹⁸ Transport Scotland (2015) *Scottish Transport Statistics 2015 edition* <http://www.transport.gov.scot/report/j415388-12.htm> accessed June 2016.

From SFRS special services⁹⁹

The fire and rescue service in Scotland attend a large number of non-fire incidents classed as 'special services' which include a number relating to unintentional harm. On average (based on five years' worth of data from 2009-10 to 2013-14 provisional) they attended incidents which resulted in 222 fatalities and 2,628 casualties. Of these, transport incidents – mainly road traffic collisions – accounted for almost 50% of special service attendance fatalities and 72% of casualties.

On average there are 19 fatalities and 44 casualties relating to water rescue/evacuation per year that SFRS attend. Other incidents attended are suicides/attempts (average of 36 fatalities and casualties per year), assisting other agencies, non-specific rescues/evacuations and other medical incidents. Further analysis at a local level by local Community Planning or Community Safety Partnerships would draw out any specific local concerns or priority areas.

Key findings

Relative to population, Wales and Scotland both carry a disproportionate burden: compared to the UK, Scotland has 8% of the population but 15% of the deaths by drowning.

Coast/shore/beach account for 37% of all drownings with 24% in rivers and 12% at sea in Scotland. Very few occur in swimming pools, baths, jacuzzis or other domestic setting.

In almost half of all fatal incidents in the UK (44%) the person had no intention of entering the water and were taking part in everyday activities such as walking.

37% of people were fishing/diving/sailing, 24% were walking/running and 8% swimming when the incident occurred.

On average there are 19 fatalities and 44 casualties relating to water rescue/evacuation per year that SFRS attend. Other incidents attended include suicides/suicide attempts (average of 36 fatalities and casualties per year), assisting other agencies, non-specific rescues/evacuations and other medical incidents.

Data provided by the Forestry Commission shows 209 injuries to members of the public in Scotland, from a total of 9.1 million visitors, between 2011/12 and 2014/15.

⁹⁹ Please note that the numbers provided by SFRS relating to injuries and fatalities from non-fire incidents cannot be simply added to those reported by MCGA and/or Police Scotland or other agencies – there will be a number of incidents with multiple agencies responding so there is a risk of duplication. SFRS data is included to illustrate SFRS involvement in non-fire safety nationally.

4.7.2 Forestry commission

According to data provided by the Forestry Commission there were 209 injuries to members of the public in Scotland (from a total of 9.1 million visitors) and 317 injuries to staff between 2011/12 and 2014/15. This is likely to be an under-estimate as the Forestry Commission in Scotland have a much more limited injury surveillance programme than in England and Wales – a study of injuries to mountain bikers between 2007 and 2008 at Glentress in the Scottish Borders recorded 202 injuries alone. One imagines that there will be particular activities which result in higher proportions of injuries e.g. activities undertaken by the public such as climbing and mountain biking and activities undertaken by members of staff.

Of those reported, most were injuries to adult males, although 30 children were injured too. Activities being undertaken are either walking, being in the recreational area or biking. Dumfries and Borders and Galloway areas report the highest number of injuries (alternative explanations are that they have either a) the highest number of visitors and/or b) the best surveillance programme).

For members of public two thirds required first aid, and 70% of all injuries were taken to hospital (this is likely to be due to there being no requirement for members of public to report injuries – compared to staff - and so only the most severe will actually come to the attention of the Forestry Commission).

Snapshot: United Kingdom

To provide a better picture of what unintentional harm of this nature may look like in Scotland a brief analysis of data for the whole UK has been undertaken as a snapshot.

On average there are 64 reports of injury made to the Forestry Commission per month across the UK (based on a 4 year average 2011/12 to 2014-15) – as expected there is seasonal variation which reflects the variable popularity of outdoor activities from January to

Figure 92 Forestry Commission Areas
in Scotland



December. There is a peak during the summer months with an average of 136 incidents per month compared to 37 per month during the winter months.

Most of those injured are members of public – 73% - with the remaining 27% either members of staff or agency staff. Of the total 3087 incidents reported over the four years, only 107 (3.5%) were RIDDOR reportable, some of which were for staff¹⁰⁰.

The incident location and nature of injury are shown in Figure 94:

Injured Party	Incident Location	Nature of Injury
Member of Public	Trail cycling (over 1000 incidents)	Slipped/Tripped/Fell on the same level Cycle accident
	Play park or recreation area	Fell from a height
	Trail or forest area (600 incidents)	Hit something fixed or stationary Hit by a moving/flying/falling object
	Car park or forest road	Injured by an animal

Figure 93 Typical Unintentional Physical Harm Incident Locations and Nature of Injuries Sustained by Members of the Public on Forestry Commission Land

Most injuries involved slipping/tripping/falling on the same level and some involved being hit by a moving object or hitting something fixed/stationary. Members of the public also had cycling accidents, falls from a height, animal injuries. See Figure 95.

¹⁰⁰ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013. For most types of incident, including: accidents resulting in the death of any person / accidents resulting in specified injuries to workers / non-fatal accidents requiring hospital treatment to non-workers / dangerous occurrences

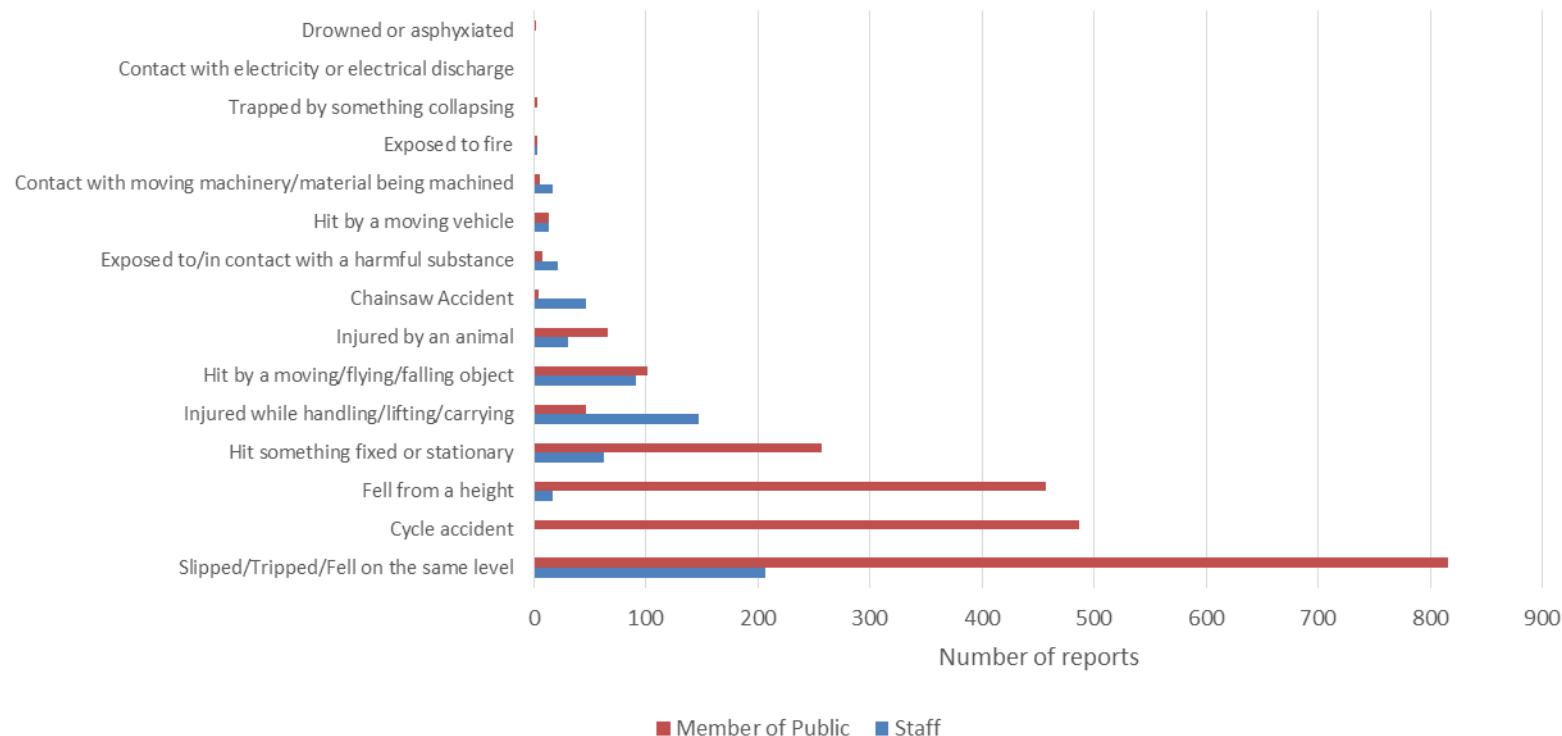


Figure 94 Unintentional Physical Harm Incidents Reported to the Forestry Commission (UK) by Person Injured and Injury Cause (2011/12-2014/15)

For members of the public cuts/lacerations/grazing are the most prevalent type of injury sustained (Figure 96); there are also a number of fractures. During the period there were seven member of public fatalities¹⁰¹.

Following the incident – 70% of injuries to members of the public were given first aid at the scene and 56% taken directly to hospital following the incident. In 10% of member of public injuries there was no first aid administered and no direct hospital visit.

¹⁰¹ These do not include suicides, deaths as a result of natural causes or non-accident related fatalities.

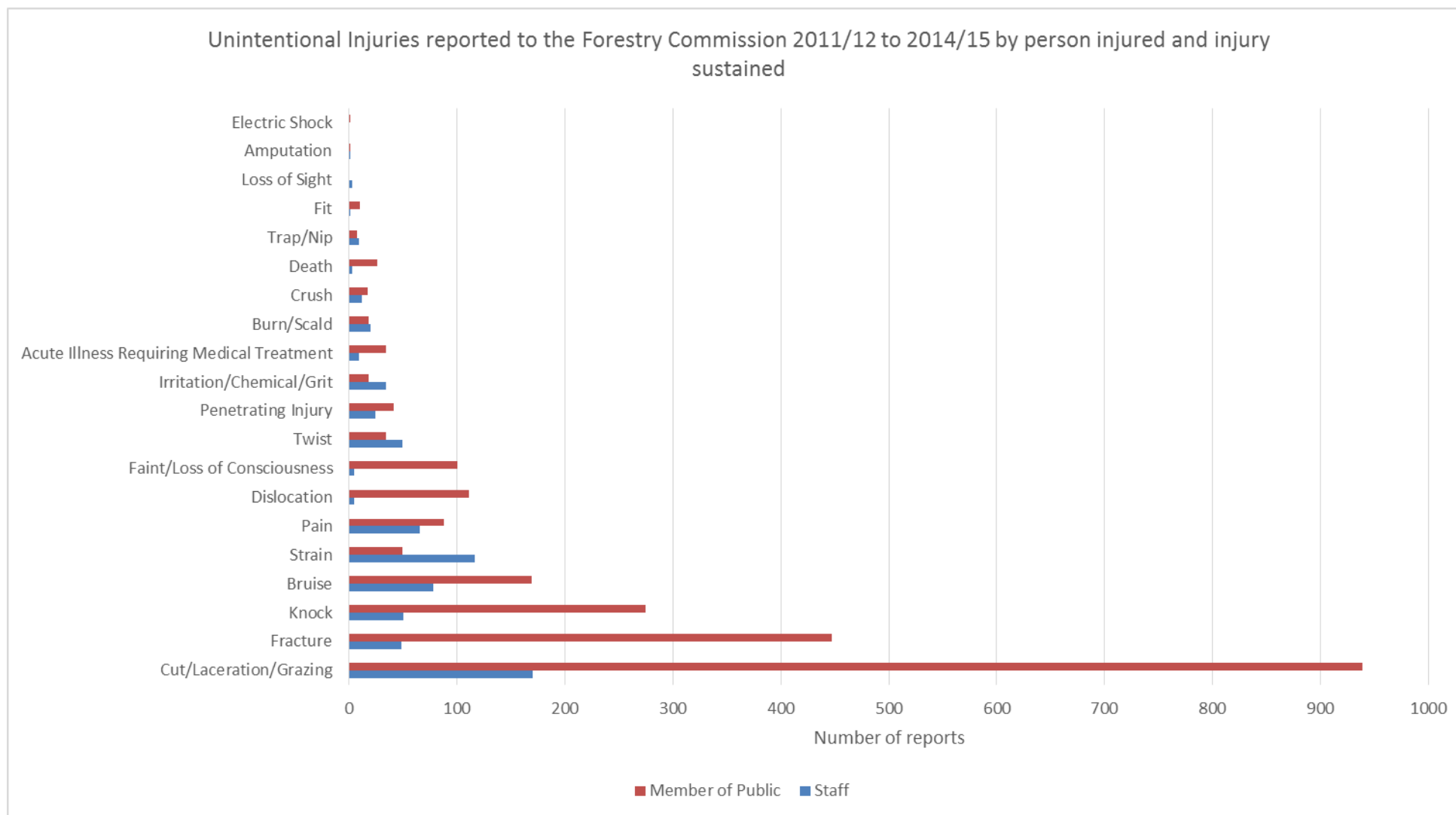


Figure 95 Unintentional Physical Harm Incidents Reported to the Forestry Commission (UK) by Person Injured and Injury Sustained

4.7.3 Mountain rescue¹⁰²

The evidence on this area of unintentional harm was considered by the national advisory group in November 2015 however this group did not assess outdoor safety in this specific respect to be a priority for Building Safer Communities at this point on top of the work done by Scottish Mountain Rescue and the mountain rescue teams.

Evidence from this strategic assessment could be used as a template for local Community Planning or Community Safety Partnerships to gather evidence and assess whether this type of unintentional harm is a local priority.

Incidents have increased considerably since early records in the 1980s where there were around 120 per year – since the mid-2000s there have been around 550-580 incidents per year; with mountaineering accounting for around 400 of these.

Just over 50% of rescues involve searching for people who are lost or overdue. In most cases the people involved are not injured.

In 2012 there were 543 mountain rescues

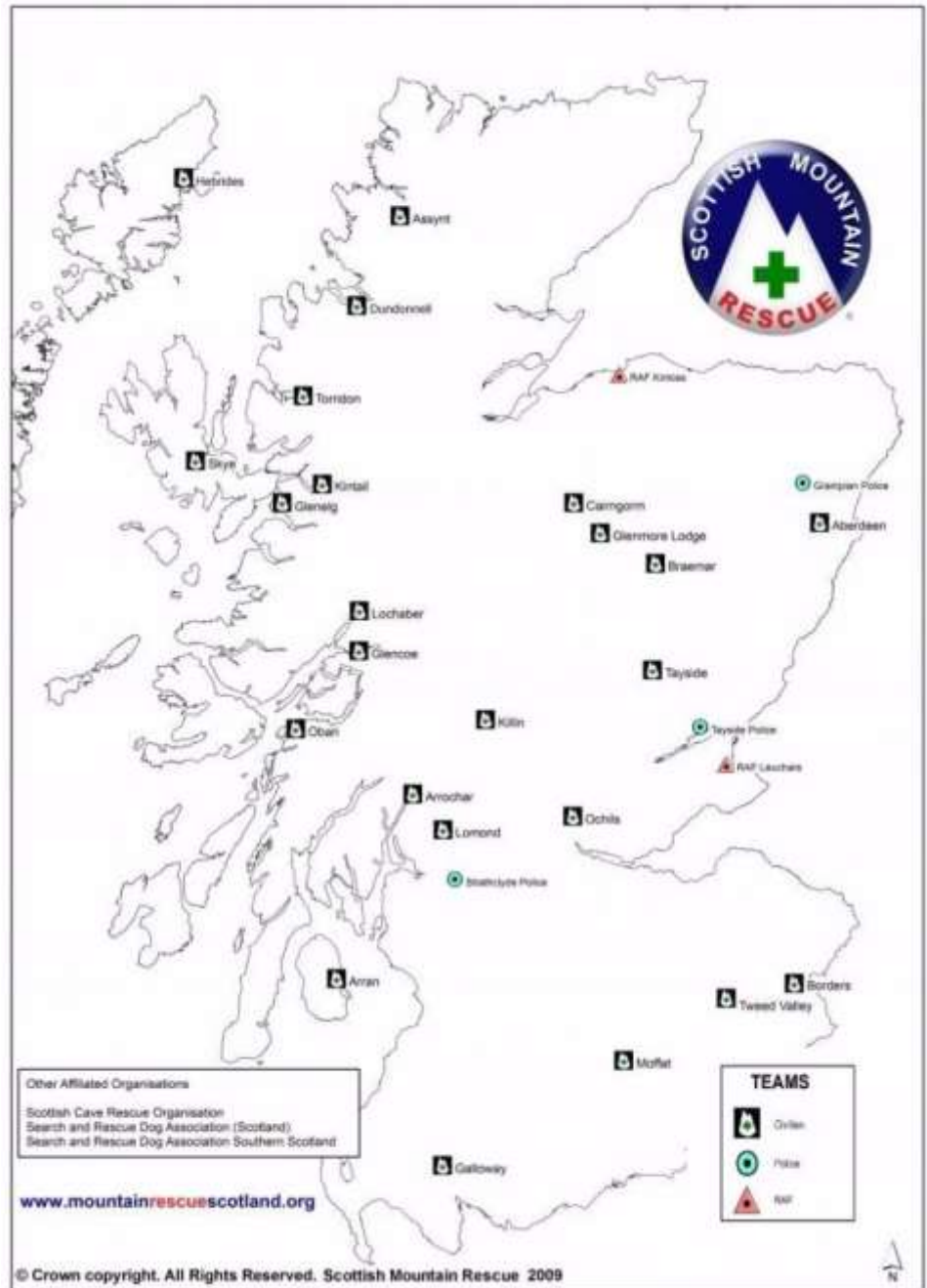
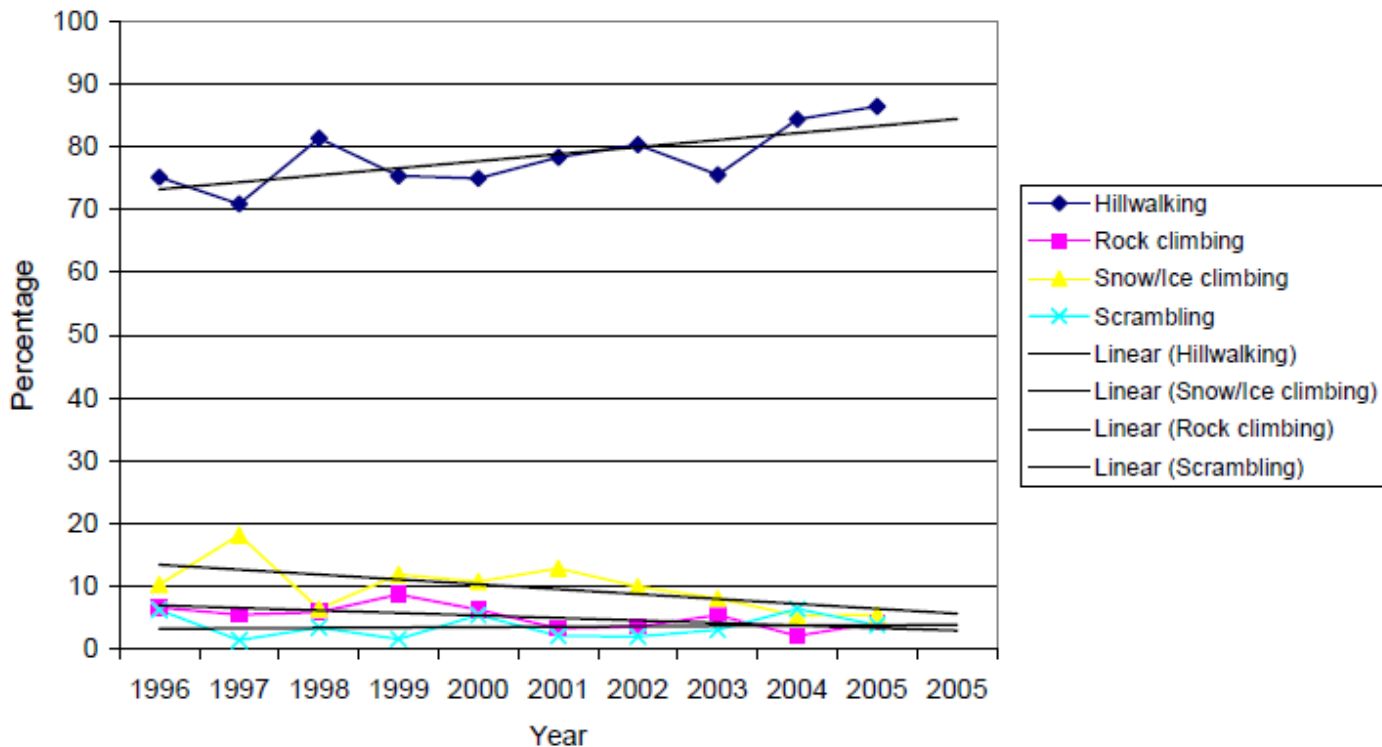


Figure 96 Location of Scottish Mountain Rescue Teams and Affiliated Organisations

¹⁰² Unless otherwise specified, information in this section is taken from a presentation given to the Scottish Mountain Rescue AGM in March 2015 available at <http://www.scottishmountainrescue.org/wp-content/uploads/2015/04/MRCoS-Stats-presentation-March-2015.pdf>

carried in out Scotland – hillwalking and illness account for a large proportion of these; and leg/ankle injuries are most common. For non-mountaineering activities, most are classed as 'other' but missing and self-harm concerns also account for a fair proportion (around ¼ and 10%, respectively). Other sports such as running or mountain biking account for a small



proportion.

Although the number of call outs and people assisted is highest for mountaineering activities (which includes hillwalking see Figure 98); deaths are higher for non-mountaineering activity – this could be due to things like body recovery/self-harm/missing being classed as non-mountaineering and this tend to be deaths/result in deaths to a greater degree (Figure 99).

Similar to a number of types of unintentional harm, irrespective of age men are more at risk than women – this could be due higher participation in activities which are riskier or perhaps due to a

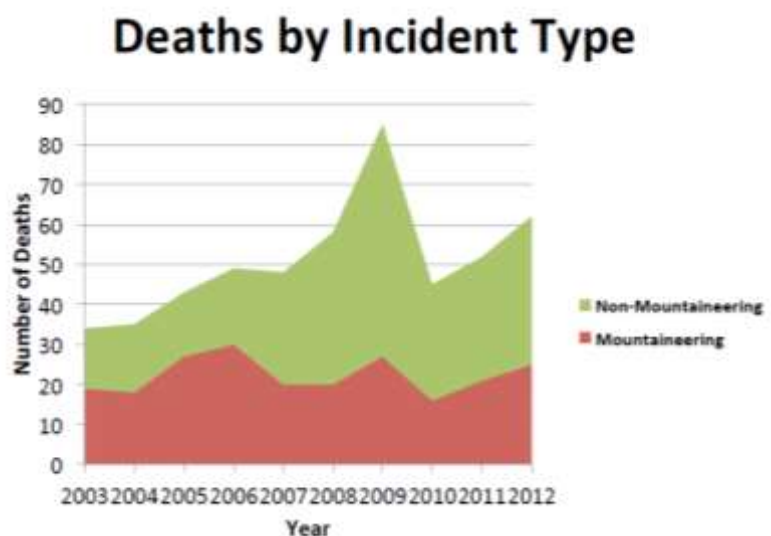


Figure 99 Deaths By Incident Type Over Time (Mountain Rescue Council of Scotland)
 Figure 98 Mountain Rescue Incidents by Activity Undertaken, Scotland 1996-2005 (Mountain Rescue Council of Scotland)

greater tendency to take risks. The age group 21-30 appears to be a higher risk group.

At the time the rescue incident report is being completed a subjective assessment is made about whether or not the casualty is experienced. This is an attempt to measure whether the individual was competent to cope with the circumstances in which they found themselves.

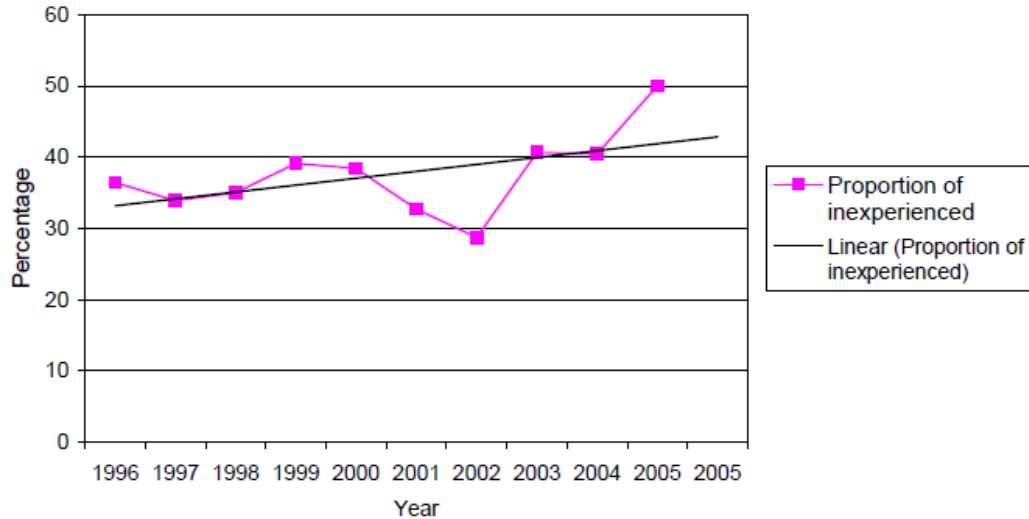


Figure 100 Mountain Rescue Incidents By Experience, Scotland 1996-2005 (Mountain Rescue Council of Scotland)

Almost two thirds (62%) of casualties are considered to be experienced, a

finding which goes against the popular belief that people who are rescued are typically inexperienced¹⁰³. This could be due to experienced people participating in higher risk activities, for example ice-climbing or being more inclined to participate in activities despite poorer conditions that may put less experienced people off. Although over time the proportion of inexperienced casualties have risen from 33% to 43% (Figure 100).

February and August show a relatively high number of accidents, possibly reflecting the number of participants at these times (to engage in winter mountaineering and summer hill walking respectively). The two low points in March and November may be related to numbers in the hills at these times when weather conditions are generally poor, often the transition times from one season to the next. Women make up a relatively high proportion of summer casualties and men make up a relatively high proportion of casualties in the winter months, probably reflecting their relative participation at these times.

Of those who are injured, limb injuries are the most common (Figure 101) followed by fatal injuries, multiple injuries and medical problems. Men are more likely to suffer serious injuries

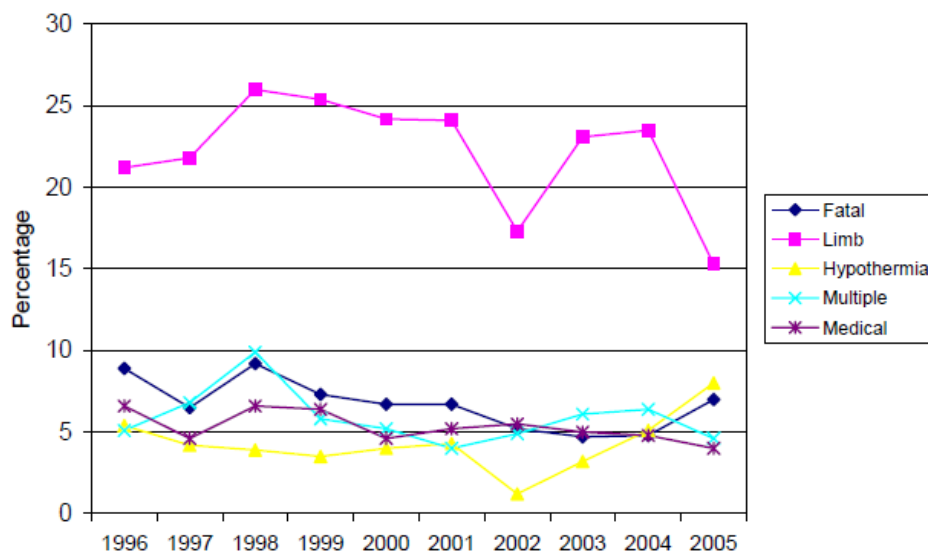


Figure 97 Mountain Rescue Incidents by Type of Injury, Scotland 1996-2005

(fatal, multiple and spinal) whereas women are proportionately more likely to experience lesser injuries

[Mountain-Incidents-](#)

and medical problems – this reflects the proportional differences in activity undertaken. Scrambling results in the highest proportion of fatal and multiple injuries. Limb injuries in hill walking are most common and spinal injuries in rock climbing are most common. Overall, injuries tend to reflect the activity undertaken by the casualty.

Causal Factors

The weather variable that accompanies more incidents than any other is wind - nearly half of all incidents take place on windy days which can compromise accurate navigation and cause a loss of balance. Although in almost a quarter of all incidents there is no wind, rain, snow or cloud poor understanding of weather at the top of the highest mountains/hills can be a contributory factor – particularly in summers of poor weather – in the middle of summer snow remains at some summits.

Almost one third of all casualties are overdue and 21% are lost. Research papers and recent press releases from rescue organisations highlight two particular causes of preventable incidents, particularly in those less experienced - poor navigation and poor planning – and call for improved education on both¹⁰⁴.

4.7.4 Air Safety

The following was received from Civil Aviation Authority (CAA) statistics and the 2008 Aviation Safety Review published by the CAA.

On average (based on 2011-14 ground and airspace data) there are around 1722 reports made to the CAA – most of these occur within airspace rather than on the ground and the specific flight phase it occurs in is seen in chart (See Figure 101). Over a third of reports result when the flight is en route (38%, 520 per year on average) followed by approach (21%; almost 300 each year on average); very few incidents proportionally occur in manoeuvring or landing phases (1% and 4%, respectively the latter is 56 per year on average) and the remainder are split between taxiing (7%; 98 per year on average), take-off (11%; 148 per year on average) and standing (17%; 242 per year on average). See Figure 102.

¹⁰⁴ Sharp D (2002) *Scottish Mountaineering Incidents 1996-2005* Sports Scotland
<http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0ahUK EwjLnd3ottDPAhXJJsAKHUfnAIYQFggtMAI&url=http%3A%2F%2Fwww.mcofs.org.uk%2Fassets%2Fmountainsafety%2Fmountain-incidents-digest.doc&usg=AFQjCNFYPLIz0WAYUT2pVld8FmJ9kft1sw>

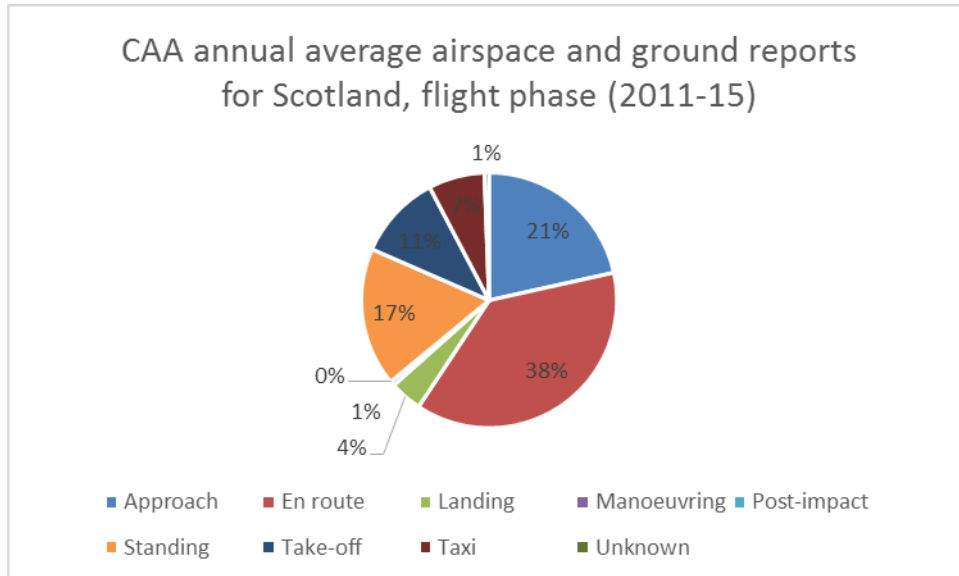


Figure 98 Annual Average Airspace and Ground Reports, Scotland by Flight Phase (2011-15 Civil Aviation Authority)

Of course, not all of these reports are accidents or serious accidents - most occurrences are incidents (1146 per year; 83%) followed by occurrences without safety effect (202 per year; 15%). 2% are 'accidents' (24 per year) with only 5 'serious incidents' per year.

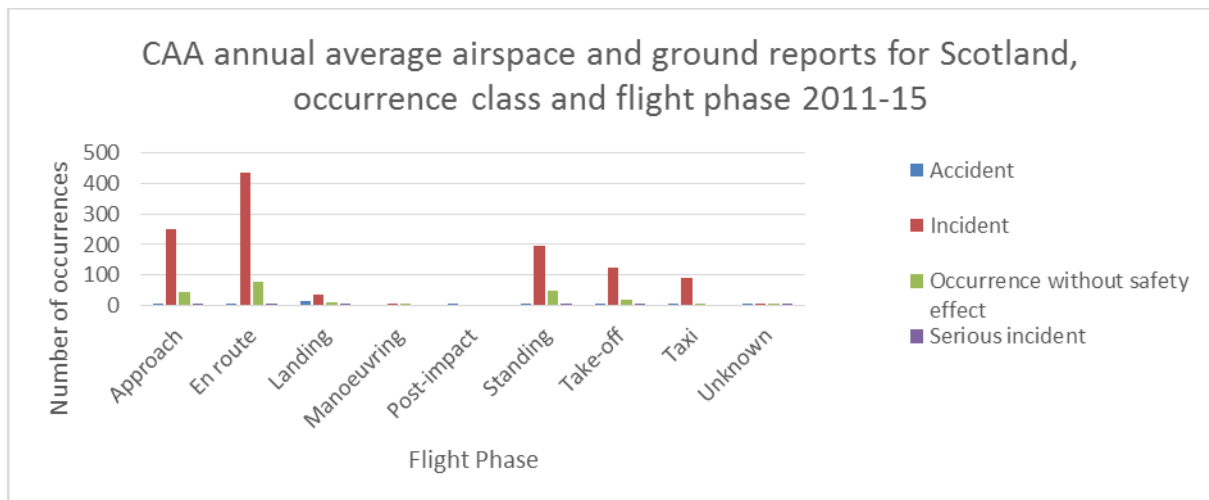


Figure 99 Annual Average Airspace and Ground Reports, Scotland by Occurrence Class and Flight Phase (2011-15 Civil Aviation Authority)

Figure 103 shows the number of occurrences by flight phase and occurrence class. Although comparatively few reports occur during landing, the highest proportion of accidents occur within this flight phase – 23% of the 56 per year reports during landing are classed as accidents.

The 2008 Aviation safety review published by the CAA looks in more depth at the safety of aviation worldwide and within the UK and the following is an excerpt of their findings.

The following section applies to public transport operations in the UK (i.e. those involving ambulance, cargo, passenger, police support, or search and rescue).

Large Aeroplanes

The reportable accident rate for large UK public transport aeroplanes between 1998 and 2007 was 4.8 per million hours and the corresponding fatal accident rate was 0.2 per million hours. There were 155 serious incidents involving large UK public transport aeroplanes between 1998 and 2007. The most common type of serious incident was engine-related, followed by smoke/fumes on the flight deck. There were over 42,000 occurrences reported to the CAA's Mandatory Occurrence Reporting Scheme (MORS) in the period 1998-2007 involving large UK public transport aeroplanes. The three-year moving average occurrence rate, per million hours, has increased by 30% in the period analysed. By contrast the three-year moving average rate for high-severity occurrences has decreased by 70% over the same period.

Small Aeroplanes

The reportable accident rate in this category was 53.0 per million hours and the fatal accident rate was 4.8 per million hours. There were 10 serious incidents involving small UK public transport aeroplanes: by class of aircraft, the majority of these serious incidents were piston aeroplanes; by nature of flight, the majority of these serious incidents were passenger operations. There were approximately 650 occurrences reported to MORS during the period 1998-2007. 1.5% of these occurrences were considered to be high severity. The rate of occurrences increased by 85% between 1998 and 2007, by contrast the high severity occurrence rate decreased by 31% over the same period.

Helicopters

Between 1998 and 2007, the reportable accident rate for public transport helicopters was 19.1 per million hours and the fatal accident rate was 3.1 per million hours. There were 11 serious incidents involving public transport helicopters between 1998 and 2007. All of these serious incidents involved twin-turbine aircraft and the majority involved offshore operations. Over 2,400 occurrences involving UK public transport helicopters were reported to MORS. 1.9% of helicopter occurrences were considered to be high severity; the three-year moving average rate of these high severity occurrences has not changed significantly between the periods 1998-2000 and 2005-2007.

The following section applies to non-public transport operations in the UK which includes aircraft not engaged in ambulance, cargo, passenger, police support, or search and rescue operations.

Large Aeroplanes

There were 21 reportable accidents (typically ground collisions) and 12 serious incidents involving large non-public transport aeroplanes in the period 1998-2007. Nine of the 12 serious incidents involved jet aircraft and three involved turboprop aircraft.

There were approximately 6,700 occurrences reported to MORS involving large UK non-public transport aeroplanes in the period 1998-2007. 0.5% of these were considered to be high severity. No utilisation data are available for UK non-public transport large aeroplane operations; therefore rates of accident, serious incident and occurrence cannot be calculated.

Small Conventional Aeroplanes (includes landplanes, seaplanes, and self-launching motor gliders)

The overall reportable accident rate for small conventional aeroplane non-public transport in the period 1998-2007 has been estimated to be 179.0 per million hours and the fatal accident rate has been estimated to be 11.7 per million hours. The fatal rate is lower than that for small helicopters but the reportable accident rate is higher. Both rates are lower than those for small aeroplanes involved in public transport, though the aircraft may not be directly comparable.

For this category in the period 1998-2007, there were approximately 1,500 reportable accident; typically involving single piston aeroplanes were involved (89% of this), and 96 fatal accidents. In total, there were 163 fatal, 105 serious and 241 minor injuries in the period analysed.

Small Helicopters

The overall reportable accident rate between 1998 and 2007 has been estimated to be 127.4 per million hours. The corresponding fatal accident rate has been estimated to be 14.4 per million hours. The fatal rate is higher than that for small conventional aeroplanes but the reportable accident rate is lower. Both rates are lower than those for small aeroplanes involved in public transport, though the aircraft may not be directly comparable.

For this category there were 213 reportable accidents in the period 1998-2007, 71% of which involved single piston helicopters, 25% involved single turbine helicopters and 5% involved twin turbine helicopters. Of the 213 reportable accidents, 24 were fatal, resulting in 58 fatalities to the occupants; and there were also 17 serious injuries and 80 minor injuries in the period analysed.

Small 'Other' Aircraft (UK registered or operated airships, balloons, gliders, gyroplanes and microlights engaged in non-public transport flights).

The fatal accident rate per million hours for gyroplanes in the period 1998-2007 was some 18 times greater than the combined average for airships, balloons, gliders and microlights.

- Between 1998 and 2007, there was only one reportable accident involving a UK registered airship and there were no injuries. In the same period, there were 21 reportable accidents involving UK non-public transport balloons resulting in 10 serious and 10 minor injuries.
- Between 1st October 1997 and 30th September 2007, there were 436 reportable accidents involving UK gliders, 36 of which resulted in fatalities in addition to two third party injuries.
- In the period 1998-2007, there were 25 reportable accidents involving UK-registered gyroplanes, of which eight were fatal, resulting in nine fatalities.
- During the same period, there were 320 reportable accidents involving UK-registered microlights, 23 of which were fatal, resulting in 31 fatalities.

4.7.5 Sport and Play

This is a growing area of interest at both the professional and amateur adult and school level. It is included within this document for completeness and to ensure all aspects of unintentional harm have been considered. It was not assessed as a priority issue for Building Safer Communities by the advisory group however there are some valuable insights and issues which another policy area may wish to take forward in the future. Specific child health, sports or education strategies may also wish to include reference to it.

Injury sustained whilst participating in sport is not routinely recorded by ISD or NRS for deaths or emergency admissions, although the A&E attendance data from a health board indicates that it is an issue (albeit sports injuries do not tend to be serious compared to almost all other incident types). A year-long study using ISD data in 2011 couldn't be located and since the retiral of the Leisure Accident Surveillance System (LASS) in 2003 data on sports injury is not collated centrally.

A&E attendance data from the health board snapshot highlights that sport injuries account for a quarter of all attendances for unintentional harm (an average of 9,000 per year).

Although attendances as a result of sports injuries account for 24% of all A&E attendances this is only for a narrow age group: 11-24 year olds and to a lesser extent the 25-29 year olds. Sports injuries decrease gradually from 30 years old to 50 years old and are barely perceptible from sixty onwards. More analysis is required into sports injuries but younger people are much more susceptible due to their youth and to a lesser extent due the higher levels of frequent participation and the types and nature of sport played.

The SHeS asks about cause of injury with sports/recreation – which could include playing - as follows (Figure 104):

All aged over 16 who had an accident in past year	Age over 16 in ten year bands							Total
	16-24	25-34	35-44	45-54	55-64	65-74	Over 75	

Cause of accident - sports / recreation	21%	17%	16%	17%	13%	[-]	[-]	14%
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Figure 100 Unintentional Physical Harm Incidents to Adults in Scotland Where the Principal Cause Was Sports or Recreation (Scottish Health Survey)

And for children (Figure 105):

All aged under 16 who had an accident in past year	Child's age (four age groups)				Total
	age 0-3	age 4-7	age 8-11	age 12-15	
Cause of accident - sports / recreation	2%	6%	21%	24%	15%

Figure 101 Unintentional Physical Harm Incidents to Children in Scotland Where the Principal Cause Was Sports or Recreation (Scottish Health Survey)

Specific studies into sports injuries tend to focus on specific sports – for example there is relatively good information collected on injuries sustained whilst participating in snow sports in Scotland (for interest rates of injury are lower than in other sports (such as rugby and football) but snowboarding has higher injury incidence than skiing). Injuries sustained whilst participating in rugby have also received a lot of attention in recent years. Injuries in other sports don't receive nearly as much attention as rugby and snow sports.

Focus on: Play¹⁰⁵

Scotland's play strategy 2013 highlights that play is an important part of childhood development and quotes the following: *'The experiences children have in early life – and the environments in which they have them – shape their developing brain architecture and strongly affect whether they grow up to be healthy, productive members of society'* (Harvard University, 2007). *Play is an essential part of a happy, healthy childhood and 'when children play their brains do two things: they grow and they become organised and usable'* (Hughes, 2013).

The Scottish Household Survey (SHS) asks about access to play:

- Almost nine-in-ten households (88%) with young children have access to some form of play areas within their neighbourhood. Over half have access to a park (57%), whilst around half have access to either a playground (52%) or field or other open space (49%).
- Generally, those households with young children within rural areas are more likely to say children would be very safe or fairly safe when walking or cycling to play areas on their own, ranging from around three-fifths for most play areas in urban areas to around four-fifths in rural areas.

¹⁰⁵ Scottish Government (2012) *Scottish Household Survey 2012*
<http://www.gov.scot/Publications/2013/08/6973/7>

- Most householders with young children would feel comfortable with children being aged around 9 or 10 years old to play without supervision at such play areas. This increases to closer to 11 years old when playing within a natural environment or wooded area for those living in urban areas.

The majority of young people (53%) take part in sports or sporting activity whether played competitively or not¹⁰⁶. There are clear patterns in those not taking part in any of the activities within deprivation (34% in the 15% most deprived compared to 26% in the least deprived areas) and through the Urban Rural Classification (from around a quarter in urban areas down to 12% in remote rural areas). Those in remote rural areas are most likely to take part in other outdoor activities (34%) which may reflect more informal and independent activities.

Participation in any of the activities (sport/sporting activity or outdoor activity) is lower for those living in the 15% most deprived areas of Scotland: most notably, 42% regularly take part in sporting activities compared to 56% in the least deprived areas.

There is a clear balance to be struck between participating in sporting, outdoor or play activities for the developmental and well-being benefits whilst reducing the risk of serious injury.

Academic Research – Sports Injury

This is an area of growing interest in the last ten years – particularly for young people therefore this hasn't been duplicated in depth within this piece of work.

Evidence from a systematic review of 15 studies¹⁰⁷ found that injuries needing medical attention

RUGBY

Professor Allyson Pollock¹ (public health research and policy) has done a great deal of work on injuries in school rugby and did a larger survey, published in 2009, which found that a typical schoolboy playing 15 matches a season had a one-in-six chance of being injured – that is, suffering a complaint that prevented him playing for at least a week. The most dangerous aspects of the game were the scrum and the tackle.

This issue has been highlighted by a number of national newspapers with the following taken from a Guardian article¹:

“There is reason to believe that the risks of playing rugby are increasing. In 1995 the sport became professional at the senior level and now it is clearly a more physical, punishing endeavour. International players today weigh, on average, 10% more than they did in 2000 and have improved their time for the 10m sprint by 5%. The effects have trickled down to schoolboy level. A study by Professor Michael Garraway from the University of Edinburgh found in 2000 that injuries had near-doubled in the professional era and increased among school-age boys as well.

There is particular concern now about concussion. Across multiple sports, the long-term effect of repeated blows to the skull is being surveyed, and there is substantial evidence in retired players linking it to brain damage. Since the advent of professionalism in 1995, injury rates in Rugby Union have increased in the adult game, and although unproven, the same is suspected in schoolboy rugby. Serious neck and spinal injuries are thought to be rare in youth rugby. In 2010, however, Mr David Allan (consultant and head of the Queen Elizabeth National Spinal Injuries Unit in Glasgow) reported an unprecedented increase in the incidence of catastrophic spinal injuries among teenage rugby players admitted to the unit - disproportionate to the school-age playing population when compared with data for the other home nations. Physical mismatch between players was highlighted as a possible contributory factor in these injuries¹.”

¹⁰⁶ Scottish Government (2012) *Scottish Household Survey 2012*
<http://www.gov.scot/Publications/2013/08/6973/7>

¹⁰⁷ Pollock A and Kirkwood G

Sport related injury in children and adolescents in the UK, what do we know? Centre for International Public Health Policy <http://www.childreninwales.org.uk/wp-content/uploads/2014/05/Sport-related-injury-in-children-and-adolescents-in-the-UK-what-do-we-know.pdf> accessed 21.08.2015

occurred between 27.5 to 129.8 times per 1,000 match hours. The highest incidence of concussion was 3.3 per 1,000 playing hours. The wide variation reflects the variation in data collection and in participation levels (Figure 106). Football, netball, cycling, basketball, swimming/diving/lifesaving all rank highly.

Other data shows rugby also ranks highly and it has been the focus of injury prevention recently. There is also good injury surveillance data for snow sports in Scotland - on an individual basis, one would have to ski, snowboard or skiboard in Scotland for 447 days on average before sustaining an injury

Sex	Sport	Participation ranking 11-14 years (Sport England 2002) *	Injury ranking 10-14 years (HASS & LASS 2002) **
Female	Netball	1	3
	Rounders	2	13
	Swimming, diving, lifesaving	3=	6
	Tennis	3=	21
	Athletics – track or field	5	50
Male	Football (inc. 5-a-side)	1	1
	Athletics – track or field	2	35
	Cycling, riding a bike	3	5
	Basketball	4	6
	Tennis	5	17

* - did sport at least 10 times, in or out of lessons, in 2002, source: "Young People and Sport in England", 2002, Sport England

** - all types of swimming and cycling combined

Figure 102 Top Sports Played (by Frequency) Compared with Injury Ranking

The greatest numbers of sports-related injuries occur to young people playing football (27%) and rugby (10%), because these are the most widely played sports¹⁰⁸. When activity rates are taken into account, rugby is by a long way the most dangerous mass-participation sport. Stick-based

sports, such as hockey, also have high injury rates, and eye injuries are more common in racquet sports. One study

found that half of all injuries to young people in an accident and emergency department were sports related, and most studies which examined differential injury between sexes found that young men suffered more injuries than young women. The Health Survey for England found that sport/exercise accident rates peaked in young people between the ages of 13 and 15 years old.

Despite this focus it is important to remember that sports injury is a small proportion of all injuries sustained by children and adolescents overall, and injuries sustained by children and adolescents is a small proportion of all sports injury.

4.8 WORKPLACE SAFETY

This is another area which is a well-developed policy area with its own legislation – as a result the analysis is quite light touch but is included for completeness. For the same reason it was not assessed the Phase 2 advisory group in November 2015 as a priority for Building Safer Communities.

Key Facts 2014/15 (Figure 107):

¹⁰⁸ *Accidental injury, risk-taking behaviour and the social circumstances in which young people (aged 12-24) live: a systematic review (2007)*

- 3,250 total cases of ill health per 100,000 people employed in the last 12 months in Scotland compared to 3,820 in the whole of Great Britain.
- 2,230 non-fatal injuries per 100,000 workers 3yr average (2012/13 – 2014/15) in Scotland. This compares to 2,140 for Great Britain overall.
- 20 fatal injuries to workers (2014/15 provisional); 14% of Great Britain's total. The highest rates in 2014/15 are in Scotland and the South West. Over a five year period the highest rates are in Wales, Yorkshire and the Humber and Scotland.

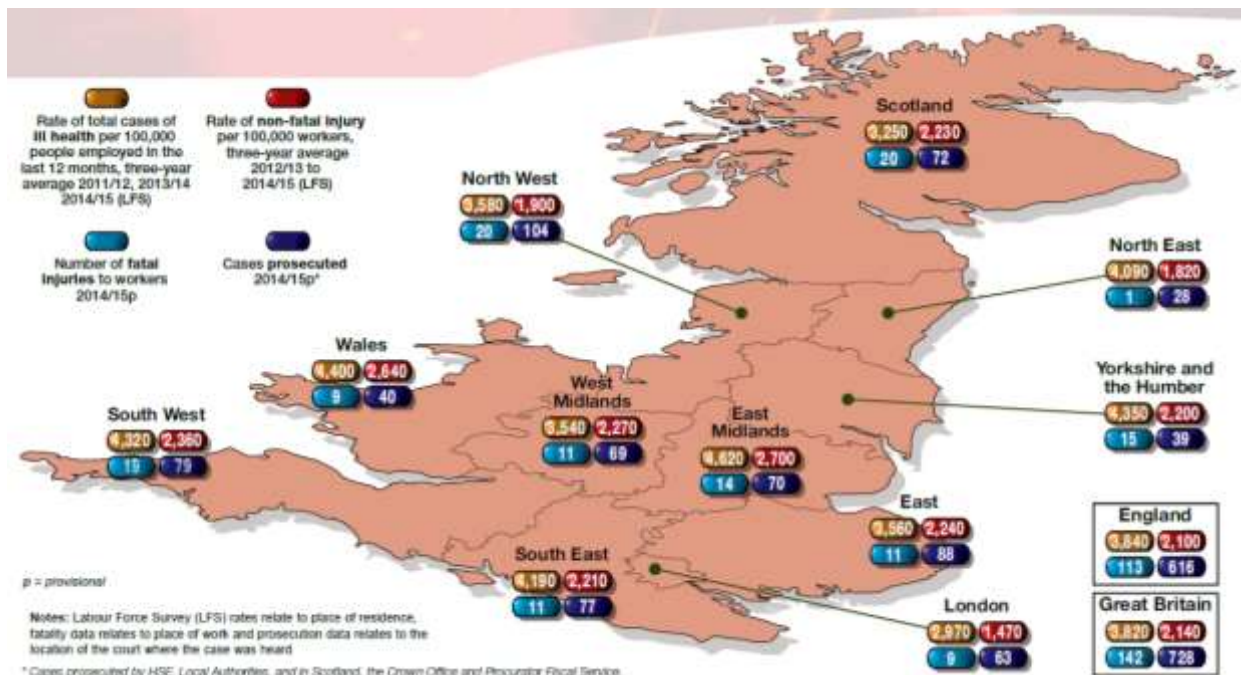


Figure 1037 Key Workplace Safety Facts 2014/15 for the UK (Health and Safety Executive)

When London and the SE are excluded from the statistics, the fatal and major injury rate for the rest of England is on a par with Scotland (due to the high density of low risk managerial/office-based jobs in London and SE). Overall, Scotland has lower rate of ill health than England or Wales but a slightly higher rate of injury (this is a shift on 2013/14's report). This finding holds true within the manufacturing and construction sectors (typically higher risk) as well as across industry as a whole.

- The causes of reported accidents are very similar across all the countries and regions of Great Britain, with just under a third of all reported accidents involving manual handling and just over a quarter involving slips and trips. Over half the fatal injuries to workers were of three kinds: falls from height; contact with moving machinery; and being struck by a vehicle (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations or RIDDOR);
- Falls and slips & trips, combined, account for over a third (35%) of employee injuries. They made up more than half of all reported major/specified injuries and almost three in ten (29%) over-seven-day injuries to employees (RIDDOR);

- Handling was the most frequent cause of over-seven-day injury (RIDDOR);

RIDDOR reported injury rates per 100,000 employees, by country/region and injury severity, averaged over the period 2007/08 to 2011/12:

- The rate of all RIDDOR reported injuries in Scotland is lower than the corresponding rates in England and in Wales. Only two of the nine English regions have a lower injury rate.
- The rate of serious RIDDOR reported injuries (fatals and majors) in Scotland is lower than the corresponding rate in Wales but higher than that of England. Three of the nine English regions have a higher rate of serious injuries and six have a lower rate.
- The rate of fatalities in Scotland is lower than the corresponding rate in Wales but higher than that in England.

The causes of RIDDOR accidents as a proportion of all reported injuries by type and by country/region over the period 2006/07 to 2010/11:

- The all injury rate estimated by the Labour Force Survey (LFS) is lower in Scotland than corresponding rates in England and in Wales, which is consistent with the findings from RIDDOR. The same is true of LFS injury rates (over 7 day absence injuries) per 100,000 employees, by country/region, averaged over 2008/09 to 2012/13 and LFS new cases (incidence rate) and all cases (prevalence rate) of ill health per 100,000 employed in the preceding 12 months, by country/region, averaged over the period 2007/08 to 2011/12.
- Within the higher risk industries such as manufacturing and construction, the overall injury rates are again lower in Scotland than in England or Wales. No English region has a lower injury rate than Scotland within these two sectors.

There are on average 1500 A&E attendances per year for workplace injury; accounting for 4% of all physical unintentional harm A&E attendances within the NHS health board. The ratio for male to female workplace physical unintentional harm is 1.5:1 and unsurprisingly occurs only in the working age population – particularly the 40-59 age group – though even then it accounts for only 10% of all physical unintentional harm that occurs to these age groups. Comparing the proportion of over 2m and under 2m falls by location falls from a height tend to happen more within the workplace 9% of falls over 2m happen at work compared to 5% of falls under 2m.

5. PSYCHOLOGICAL UNINTENTIONAL HARM¹⁰⁹

Psychological unintentional harm comprises a number of existing and established policy areas so analysis below is very light touch. The exception to this is the issue of social isolation and loneliness which is a less well-established policy area and has only been recently brought to the fore by the work of the Equal Opportunities Committee within the Scottish Parliament. There are clear links between loneliness and social isolation and other aspects of unintentional harm, as well as it being a public health issue of unintentional harm owing to the impact on health and wellbeing in its own right: older people and those living in more deprived areas are, as with physical unintentional harm, disproportionately affected by loneliness and the impact on health and well-being is arguably akin to the injuries sustained as a result of unintentional physical harm albeit of a different nature.

As outlined in Section 2 (methods), the focus of psychological unintentional harm under Phase 2 of Building Safer Communities includes mental well-being i.e. positive mental health and other aspects such as loneliness and social isolation, life satisfaction and 'happiness' and work-related stress and excludes mental health issues (such as depression, anxiety, personality disorders etc.), suicide and self-harm and substance misuse issues.

The advisory group in November 2015 did not select this as a priority for Building Safer Communities Phase 2 due to a lack of information on it at the time, however there was interest in loneliness and social isolation in particular and it was not discounted as an area of focus, particularly given that this issue affects two priority groups: older people and those living within more deprived areas.

Key Findings

The mean WEMWBS¹¹⁰ (mental wellbeing) score for adults over-16 fell from 51 in 2006 to 50.0 in 2008 and remained at a similar level in 2009 (49.7) and 2010 (49.9). The mean score on the WEMWBS scale in 2012/2013 was 50.3 for men and 49.6 for women. Mental wellbeing is significantly associated with age, with mean scores high in the youngest adult age groups (50.1 and 50.2 for ages 16-24 and 25-34 respectively), dropping among adults aged 45-54 (48.9), rising to a peak between ages 65 and 74 (51.1), and then dropping off again among the oldest group (over-75s, mean score 49.5).

The factor most strongly associated with low mental health and wellbeing is economic activity, in particular the group of adults who are permanently unable to work. Although these results may partially reflect the effect of unemployment on mental wellbeing, as cited by

¹⁰⁹ Scottish Government *Scottish Health Survey topic report: Mental health and wellbeing*
<http://www.gov.scot/Resource/0046/00469088.pdf>

¹¹⁰ Warwick Edinburgh Mental Well-Being Score is a scale of 14 positively worded items, with five response categories covering feeling and functioning, for assessing a population's mental wellbeing. It results in a single score ranging from 14-70 (score for Scotland score, at 50.0, did not change between 2013 and 2014 and has shown little change since 2008). WEMWBS is now included in the core module of the annual Scottish Health Survey (from 2008 for adults and 2012 for 13-15 year olds), the Scottish Adolescents Lifestyle and Substance Use Survey (SALSUS) from 2010 and is also being widely used throughout the UK and beyond.

other research, the results may be compounded by those who are unable to take up work as a result of poor mental health. However, these associations are still useful to identify population subgroups at greatest risk of poor mental wellbeing. Physical inactivity, smoking and possible dependence on alcohol (all of which are more prevalent in SIMD more deprived areas) are all significantly associated with low WEMWBS scores, as is providing over 35 hours of unpaid care per week.

From various academic sources it is estimated that around 10% of UK residents aged over 65 are lonely most or all of the time¹¹¹, with many more at risk of loneliness¹¹². Amongst the older old, those aged over 80 years, rates of self-reported loneliness climb steeply to approximately 50%¹¹³.

New research by The Big Lunch has found that social interaction is declining in the UK and in Scotland, contributing to a rise in loneliness: a nationwide survey carried out by Opinion in early April 2015 found that 65% of adults in Scotland say they feel lonely either often, always or sometimes. This is most acute among 18 to 34-year-olds, with 83% of this age group experiencing loneliness. Almost a third (33%) of respondents in Scotland now have less interaction with people they know than they did five years ago.

The Mental Wellbeing in Children and Young People Survey found that around 40% of S2s and 35% of S4s in 2010 'never felt lonely in the last week' meaning a large proportion had felt lonely in the last week. The NSPCC carried out research on loneliness among children who call ChildLine. It found that between April 2008 and March 2009, it counseled 5,525 children about loneliness, sadness and isolation as their main problem and a further 4,399 children were counseled about loneliness as an additional problem (out of a total number of calls of just under 509,000).

Studies have found that, aside from age, several other factors are associated with loneliness. These include living alone, never being married, widowhood, support network type, poor health, cognitive impairment or poor mental health. These factors are common and often overlap in older age, giving a rationale to provide particular support to those going through the changes and transitions of growing older that might lead to loneliness. There is also a high prevalence of loneliness in deprived areas.

The links between loneliness and poor health are well established. In their recent review of the evidence on loneliness and social isolation, the Social Care Institute for Excellence highlighted that being lonely has a significant and lasting effect on individuals' health.

5.1 LONELINESS & SOCIAL ISOLATION

¹¹¹ Victor, CR & Yang, K (2012) *The prevalence of loneliness among adults: A case study of the United Kingdom* Journal of Psychology

¹¹² Bolton, M (2012) *Loneliness the state we're in* Age UK Oxfordshire available at <http://www.ageuk.org.uk/brandpartnerglobal/oxfordshirevpp/documents/loneliness%20the%20state%20we%20are%20in%20-%20report%202013.pdf>

¹¹³ Age UK (2010) *Loneliness and isolation evidence review*, London: Age UK

Context

The links between Phase 1 and Phase 2 are clear within loneliness and isolation, link into the resilience agenda, work of community safety partnerships and also fit neatly within the Scottish Approach taken by Phase 1 of the BSC. More in depth analysis will need to be conducted in due course if this is adopted.

During 2015 the Scottish Parliament's Equal Opportunities Committee undertook an inquiry into Age and Social Isolation which published its final report in October 2015¹¹⁴. A Scottish Government response was issued in December 2015¹¹⁵ and the Scottish Parliament debated on this subject in January 2016¹¹⁶.

For the purposes of evidence taking they used the social isolation definition devised in research undertaken by Professor Mima Cattán.

Professor Cattán considers that whilst it might be possible to measure social isolation, the feelings of loneliness are personal and individual and therefore more challenging to measure objectively. It is

"Social isolation could be defined as an objective, measurable state of having minimal contact with other people, such as family, friends or the wider community."

important to note that that loneliness is a separate issue in that a person can be isolated but not necessarily lonely. Isolation an objective measure of the social contacts that people have, and loneliness categorised as a subjective negative feeling which very often, but not always, accompanies it¹¹⁷.

Despite these variable definitions, evidence points clearly to a large overlap between social isolation and loneliness¹¹⁸, with social isolation being one of the biggest predictors of subjective loneliness¹¹⁹. Importantly, both circumstances result in negative self-assessment of health and wellbeing¹²⁰. This distinction has important implications on the way in which we approach this issue.

¹¹⁴ The Scottish Parliament (2015) *Equal Opportunities Committee Age and social isolation* http://www.parliament.scot/S4_EqualOpportunitiesCommittee/Reports/EOS042015R05.pdf. Accessed July 2016

¹¹⁵ Scottish Government response to The Scottish Parliament (2015) *Equal Opportunities Committee Age and social isolation* http://www.parliament.scot/S4_EqualOpportunitiesCommittee/Reports/SG_responseAge.pdf. Accessed July 2016

¹¹⁶ Meeting of the Scottish Parliament 6 January 2016 official report <http://www.parliament.scot/parliamentarybusiness/report.aspx?r=10291&mode=pdf>. Accessed July 2016

¹¹⁷ Victor, CR & Yang, K (2012) *The prevalence of loneliness among adults: A case study of the United Kingdom* Journal of Psychology

¹¹⁸ Golden J, Conroy RM, Bruce I, et al (2009) Loneliness, social supports, mood and wellbeing in community-dwelling elderly, *International Journal of Geriatric Psychiatry*,

¹¹⁹ Age UK (2010) *Loneliness and isolation evidence review*, London: Age UK

¹²⁰ Luanaigh C and Lawlor BA (2008) *Loneliness and the health of older people*, International Journal of Geriatric Psychiatry

The evidence heard and received during the inquiry led the committee to believe that social isolation and loneliness are significant problems in Scotland and that individual citizens, public services and the Scottish Government should take collective responsibility for improving the situation. They believe that it is everyone's problem, that it should not be ignored or tolerated and that a change in attitude is needed. Given the negative impacts of social isolation and loneliness the inquiry concluded that it should be considered alongside issues such as poverty and poor housing as part of the public health agenda in Scotland. The inquiry did not believe that there is a lack of will or care to tackle the problem and are convinced that if the issue is considered at a national, strategic level, both existing and new commitment would drive change across Scotland.

The inquiry made a number of recommendations in relation to a national strategy, embedding the issue within health and social care strategies and considerations for housing; in addition to publicity campaigns, training and education and further research into those most at risk and the impact, to which the Scottish Government response and debate transcripts can be found using the links in footnotes 99-101.

Findings

From various academic sources it is estimated that around 10% of UK residents aged over 65 are lonely most or all of the time¹²¹, with many more at risk of loneliness¹²². Amongst the older old, those aged over 80 years, rates of self-reported loneliness climb steeply to approximately 50%¹²³.

New research by The Big Lunch, an initiative led by the Eden Project and made possible by the Big Lottery Fund, has found that social interaction is declining in the UK and in Scotland, contributing to a rise in loneliness. A nationwide survey carried out by Opinium in early April 2015 found that:

- 68% of adults in the UK - 65% of adults in Scotland - say they feel lonely either often, always or sometimes. This is most acute among 18 to 34-year-olds, with 83% of this age group experiencing loneliness.
- Almost a third (33%) of respondents in Scotland now have less interaction with people they know than they did five years ago.
- 19% Scots only interact with others once a week, compared to 16% of adults across the UK.
- A Mental Wellbeing in Children and Young People Survey found that around 40% of S2s and 35% of S4s in 2010 'never felt lonely in the last week'.

¹²¹ Victor, CR & Yang, K (2012) *The prevalence of loneliness among adults: A case study of the United Kingdom* Journal of Psychology

¹²² Bolton, M (2012) *Loneliness the state we're in* Age UK Oxfordshire available at <http://www.ageuk.org.uk/brandpartner/global/oxfordshirevpp/documents/loneliness%20the%20state%20we%20are%20in%20-%20report%202013.pdf>

¹²³ Age UK (2010) *Loneliness and isolation evidence review*, London: Age UK

- The NSPCC carried out research on loneliness among children who call ChildLine, It found that between April 2008 and March 2009, it counselled 5,525 children about loneliness, sadness and isolation as their main problem and a further 4,399 children were counselled about loneliness as an additional problem.
- 81.5% of 13 year and 15 year olds say they have three or more close friends although this has declined for all age and gender groups over 2006 to 2013, particularly for 15 year olds. Hanging out on the street, Seeing friends outside school and Going to friend's houses are declining; compared to increases in social media use to connect with friends which is rising. Some studies have hypothesised a link between this and rising loneliness and some feelings of isolation in young people. Four years ago, just 7% of 5- to 15-year-olds in the UK had access to a tablet. By last year it was 71%. Some 34% of this age group even owned the tablets themselves, as well as 11% of 3- to 4-year-olds, according to Ofcom figures¹²⁴.

In a separate, recent YouGov study commissioned by The Big Lunch in Scotland, research revealed that relationships between Scottish neighbours are friendly but go little further than small talk, collecting post or lending a hand when needed, suggesting Scots could also feel isolated in their own communities. 60% of Scots speak to their neighbours at least once a week but just under one third (32%) still wish they had a better relationship with their neighbours. One third (33%) say they feel disconnected from their neighbours, with over 1 in 5 (21%) doubting they could call on neighbours for help, suggesting that we could be more mindful of neighbours who may feel isolated.

As a follow-up, the new research from Opinium reveals that people in Edinburgh spend more time (52 minutes a day) interacting socially than adults in general across the UK (48 minutes a day), whereas Glaswegians spend less time (46 minutes a day). In a typical week, Scots interact with only six friends, family members or neighbours – be it a face-to-face conversation, a phone call or chatting online. On average, women spend 10 minutes longer interacting socially each day than men.

A quarter (24%) of respondents in Scotland wish they had more friends but almost a third (30%) admit they find it harder to make new friends than they did 10 years ago. 1 in 10 (11%) people in the UK say they do not know how to start friendships anymore and this rises to 14% in Scotland.

Associated Factors

Studies¹²⁵ have found that, aside from age, several other factors are associated with loneliness. These include living alone, never being married, bereavement, becoming a carer,

¹²⁴ Sourced from <http://www.theguardian.com/technology/2015/aug/24/tablets-apps-harm-help-children-read> accessed 24.08.2015

¹²⁵ Victor CD, Scrambler SJ, Bowling A, et al (2005) The prevalence of and risk factors for loneliness in later life: A survey of older people in Great Britain, *Ageing and Society*; Cann P and Jopling K (2011) [The challenge. Safeguarding the convoy: A call to action from the Campaign to End Loneliness](#), Oxfordshire: Age UK; Schnittger RIB, Wherton J, Prendergast

a diminishing support network, poor health and therefore being unable to maintain networks or take part in previously enjoyed activities, cognitive impairment or poor mental health. These factors are common and often overlap in older age, giving a rationale to provide particular support to those going through the changes and transitions of growing older that might lead to loneliness. Interestingly, however, Action for Children found that becoming a parent for the first time or having two or more children can result in an increase in people reporting they feel lonely or cut off from support.

In children who spoke to ChildLine about loneliness, family relationship problems, bullying and physical abuse were the top problems associated with loneliness (as a main or an additional problem). Depression and mental health problems, school problems and bereavement are also associated with loneliness. In younger people some studies have made links between loneliness and social isolation and the increasing use of technology and social media rather than traditional social interactions that take place face to face or even over the phone.

There is also a high prevalence of loneliness in deprived areas. Two-in-five adults surveyed in the GoWell areas (areas of regeneration in Glasgow) experienced loneliness. This included 17% of men and 15% of women who reported frequent feelings of loneliness (“all of the time” or “often”). They also found that:

- Loneliness is not just the preserve of the elderly, but was most frequent among other social groups, particularly single adults living alone, and people with a long standing illness or disability.
- There is a strong association between loneliness and mental health, although causality may run in both directions

The relationship between weekly social contact and age is broadly U-shaped in distribution, declining from 96% in those aged 16–24 to a low of 91% for those aged 45–54 and then rising again to 96% for those aged over 75. The proportion of adults reporting having three or more people to rely on in a crisis (social support) declined almost linearly with age from 94% of 16- to 24-year-olds to 83% of those aged over 75.

While the impact that loneliness has on older people has been widely acknowledged, The Big Lunch survey reveals that many younger people are also lonely, with statistics being consistent in Scotland and across the UK. 16% of 18 to 34-year-olds comment that they *always* feel lonely but around half (48%) of people over 55 years old say they *never* feel lonely. More than two in five (43%) of 18 to 34-year-olds wish they had more friends and 15% of young people who say they find it harder to make friends nowadays are “too scared” to talk to people they do not know. Nearly a third of young people questioned for the report said they spent too much time communicating with friends and families online when they should see them in person.

D, et al (2012) Risk factors and mediating pathways of loneliness and social support in community-dwelling older adults, *Aging and Mental Health*; The Local Government Association guide for local authorities in tackling loneliness <http://www.local.gov.uk/documents/10180/7632544/L15-431+Combating+loneliness+-+a+guide+for+local+authorities/b4b88757-2623-4696-ae04-565892a58909>

This is backed up by the Scottish YouGov data, which revealed that 42% of under 25s are keen to improve community spirit, wishing they had a better relationship with neighbours (compared to 30% of 55s and over). 55% of under 25s are also interested in more community events or chances to meet people in their local community, suggesting younger people are looking for ways to reach out to others.

Equalities - Gender

Women were significantly more likely to feel involved in their local community (28% vs 24%), to have social contact¹²⁶ with non-household members at least once a week (97% vs 91%) and to have social support (90% vs 86%) than men. However they were less likely to report that they had an escape facility (somewhere in their local area – not their home or garden - where they could go to ‘escape’ from everyday problems/stresses) (77% vs 84%), less likely to feel they have a safe and pleasant park, green or other area of grass in their neighbourhood (excluding personal garden space) which they and their family can use (74% vs 78%) and less likely to rate the condition of their home as very or fairly good (80% vs 85%).

Between 2000 and 2003, the proportion of men who felt involved in their local community a great deal or a fair amount fell slightly but significantly from 24% to 21%; there was no significant change for women (27% to 28%).

Equalities - Ethnicity

Most people have a strong feeling of belonging to their neighbourhood and feel they could rely on the support of neighbours and/or family and friends (between 72% and 78% for all measures). Younger people and ethnic minority communities, and to some extent those living in more deprived areas feel less strongly about these.

Impact

Loneliness has wide-reaching implications for both the individual experiencing it, and their community.

The links between loneliness and poor health are well established. In their recent review of the evidence on loneliness and social isolation, the Social Care Institute for Excellence highlighted that being lonely has a significant and lasting effect on individuals’ health: it is associated with higher blood pressure and depression, and leads to higher rates of mortality – comparable to those associated with smoking and alcohol consumption. It is also linked to higher incidence of dementia, with one study reporting a doubled risk of Alzheimer’s disease in lonely people compared with those who were not lonely. As a result of these health impacts, lonely individuals tend to make more use of health and social care services, and are more likely to have early admission to residential or nursing care.

¹²⁶ In person, by phone, letter, email or through the internet

The GoWell annual report 2014-15 found that the people with poor mental health, and those experiencing stress, anxiety or depression were far more likely than others to report frequent loneliness; though some studies have also found loneliness and isolation to contribute to the development of poor mental health.

A meta-analysis of all relevant studies between 1900 and 2007¹²⁷ showed that older people who have unsatisfactory or limited social relationships have a significantly greater risk of mortality than people with stronger social networks. Those with good connections had a 50% greater chance of survival. This remained true when a number of different factors such as gender, age, initial health status and length of follow-up were considered. The authors highlighted that this is comparable to the impact of smoking fifteen cigarettes each day and has a greater effect on mortality than current public health priorities such as obesity, drinking alcohol or being sedentary.

It is important to note that amongst older adults, both loneliness and social isolation are associated with a greater likelihood of engaging in multiple behaviours which carry a risk to health such as smoking and being inactive (Shankar et al, 2011), which in turn exacerbates the effects on health already noted.

5.2 WORK-RELATED STRESS

The estimated prevalence of work-related stress reported by constituent country for Great Britain (England, Wales and Scotland) in 2013/14, was 427,000 cases in England, 25,000 cases in Wales and 35,000 cases in Scotland¹²⁸. There were no statistically significant differences in prevalence rates of work-related stress when comparing Wales and Scotland to the average across England. No individual country has observed a statistically significant change in the prevalence rate of stress compared with 2001/02.

The industries that reported the highest prevalence rates of work-related stress, depression or anxiety (three-year average) were human health and social work, education and public administration and defence. The occupations that reported the highest prevalence rates of work-related stress, depression or anxiety (three-year average) were health professionals (in particular nurses), teaching and educational professionals, and health and social care associate professionals (in particular welfare and housing associate professionals). Smaller businesses (fewer than 50 employees) tend to have lower levels, and female prevalence and incidence rates have remained statistically significantly higher than corresponding male rates over time. The 45-54 age group had the highest incidence rate for all persons, and this rate was statistically significantly higher than the average for all persons. An average of 23 days per worker suffering is taken.

The main work activities suggested as causing work-related stress reported to general practitioners (GP three year average 2011-2013) are:

¹²⁷ Holt-Lunstad et al (2010) *Social relationships and mortality risk: a meta-analytic review* PLoS Med <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000316>

¹²⁸ Health and Safety Executive (2015) *Work-related stress, anxiety and depression statistics in Great Britain 2015* <http://www.hse.gov.uk/statistics/causdis/stress/stress.pdf> accessed 21.08.2015

- Workload pressures including scheduling, shift work and other organisational factors;
- Interpersonal relationships including difficulties with superiors and bullying or harassment; and
- Changes at work including reduction of resource or staff and additional responsibilities.

5.3 MENTAL WELLBEING

5.3.1 Adult¹²⁹ mental wellbeing

Life satisfaction has not changed significantly over time - measured on a scale from zero (extremely dissatisfied) to 10 (extremely satisfied), the mean score was 7.0 in 2002 and 7.5 in 2008. Between 1999 and 2008, neighbourhood satisfaction among adults increased slightly but significantly from 91% to 92%.

Equality Analysis – Age

Mental wellbeing, measured by WEMWBS, was broadly U-shaped in distribution, declining from age 16–24 to 45–54, rising to 65–74 before falling to the lowest mean score among those aged over 75. Mean scores were highest in adults aged 65–74, 55–64 and young adults aged 16–24 (mean scores 50.9, 50.3 and 50.2 respectively) and lowest in those over 75 (48.6) and those aged 45–54 years (48.8).

Involvement in the local community increased almost linearly with age: 20% in those aged 16–24 and 25–34, around one quarter of those aged 35–44, 45–54 and 55–64, and around one third of the oldest adults (34% of 65- to 74-year-olds and 37% of those over 75 years of age). The proportion of adults who felt they could influence local decisions was lowest in adults aged 16–24 (13%), highest in those aged 45–54 (26%), falling to around one fifth in all three older age groups.

Adults aged 16–59 were three times more likely than older adults (aged over 60 years) to report that overcrowding was a problem in their home (18% and 6% respectively).

Equality Analysis – Deprivation

Of all the equality dimensions examined, inequalities in mental health and well-being were most common by deprivation, 44 out of 50 indicators (88%) – though not for social contact.

¹²⁹ NHS Health Scotland (2012) *Scotland's Mental Health: Adults 2012*
<http://www.healthscotland.com/uploads/documents/19848-Scotland'sMentalHealthAdults%202012%20-%20full%20report.pdf>

Both measures of mental wellbeing (overall mental wellbeing and life satisfaction) showed a negative linear relationship with deprivation in that they were lowest in the most deprived quintile and increased stepwise to the least deprived quintile.

A significant non-linear association was found between deprivation and overcrowding, with overcrowding least common in the two least deprived quintiles (11% in the 5th quintile and 12% in the 4th) and higher in the three most deprived areas (15%, 14% and 16% in the 1st–3rd quintiles respectively). Neighbourhood satisfaction, access to an escape facility, access to green space and good house condition increased stepwise from the most to the least deprived quintiles.

Community

Changing household structures – increases over time in single person households – are particularly interesting at the same time as loneliness, social isolation and lack of social support are all increasing.

Of the family structure indicators, in 2011, 22% (21% to 23%) of children and young people aged 17 years and under were living in lone parent households.

There is also projected to be an increase in Scotland's population of older people¹³⁰. Scotland's population is projected to increase by 9 % between 2012 and 2037, however this increase is not spread evenly across all age groups of the population. As Figure 108 shows, the population aged under 60 is projected to remain fairly constant with a small decrease in the 45-59 age group and a small increase in the number of the 0-15 age group whilst the number of older people is projected to increase significantly especially the over-75 age group. 2012 base is 1,248,000 over-65s rising to 1,489,000 in 2022 and 1,779,000 in 2037.

Between 2012 and 2037, the number of children (those aged 0-15) is projected to increase by 5 % from 0.91 to 0.96 million. Figure 111 shows that most of this increase is due to children in the 5-11 age group who are projected to increase from 383,000 in 2012 to 424,000 in 2037 (an increase of 11 %).

¹³⁰ National Records of Scotland (NRS) (2013) *Population Projection of Scotland (2012-based)* <http://www.nrscotland.gov.uk/files/statistics/population-projections/2012-based/2012-pop-proj-publication.pdf> accessed 21.08.2015.

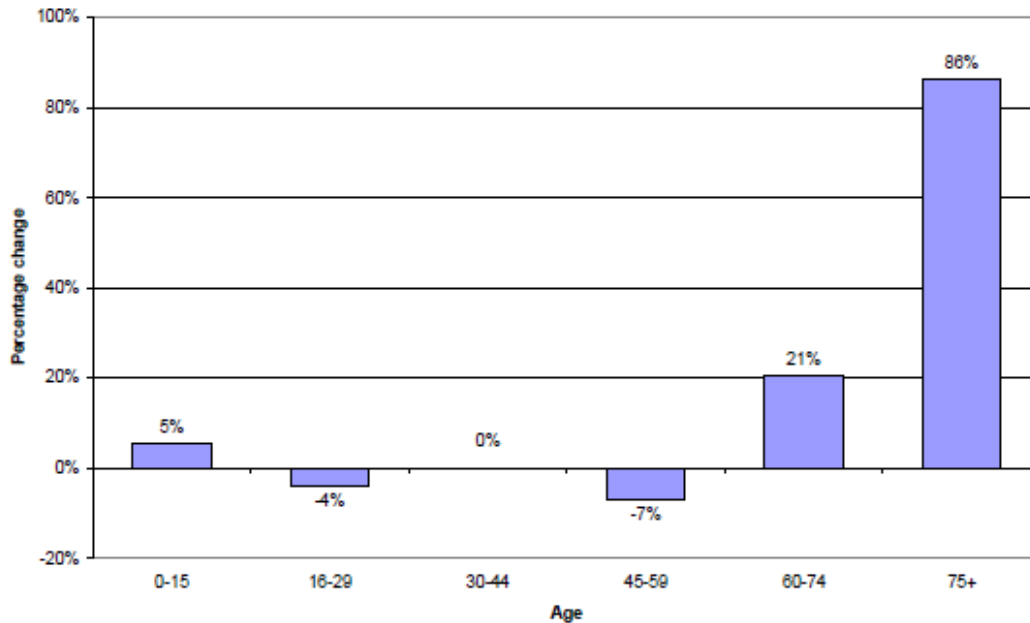


Figure 10408 The Projected Percentage Change in Scotland's Population by Age Group 2012-2037 (National Records Scotland)

The largest increases are for households headed by someone aged 65 or over. By 2037, there are projected to be 966,600 households headed by someone in this age group, an increase of 54% from 2012. This is mainly because Scotland's population is ageing - the latest population projections show that the number of people aged 65 or over will increase by 59% by 2037. The increases in household numbers are even more striking when focussing on those aged 85 or over. The number of households headed by someone in this age group is projected to more than double from 77,400 to just over 200,000.¹³¹ Figure 109.

¹³¹ National Records of Scotland (NRS) (2014) *Household Projections for Scotland 2012-based* <http://www.gro-scotland.gov.uk/files/statistics/household-projections/2012-based/2012-house-proj-publication.pdf> accessed 21.08.2015.

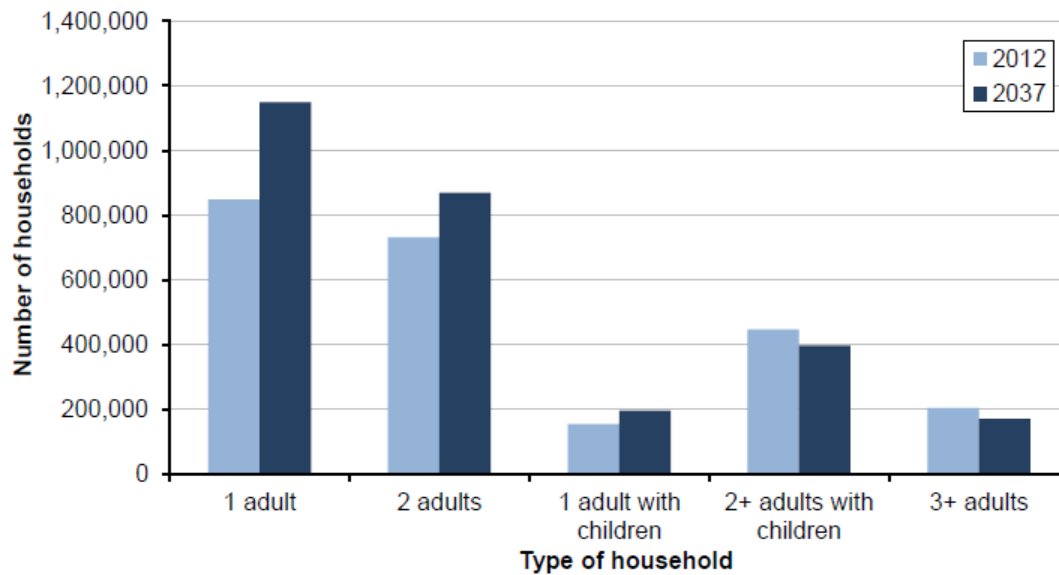


Figure 10509 Projected Number of Households in Scotland by Household Type 2012 and 2037 (National Records Scotland)

5.3.2 Children and young people's¹³² mental wellbeing

The mean score on the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) for 16 and 17 year olds in 2011 was 50.1 and the score for S2 (typically 13 year olds) and S4 pupils (typically 15 year olds) in 2010 was 50.4 and 49.7, respectively. Mental wellbeing (as measured by WEMWBS) did not display a clear linear trend between 2008 and 2011 as it fluctuated from a mean score of 51.0 in 2008 to a high of 52.1 in 2009 before dropping to 50.1 points in 2011. In 2010, 27% of P7, 31% of S2 and 36% of S4 pupils reported feeling sad in the last week.

Although only one measure worsened over time, the data suggest that there is considerable scope for action amongst those measures which remained largely steady or improved over time but which are still at a relatively high level. Of those measures, hyperactivity/inattention stayed elevated over time for all age groups – as well as being a well-being issue in itself this may be linked to an elevated likelihood of unintentional physical harm. Happiness was still only reported by around half of P7 pupils, less than half of S2 pupils and about a third of S4 pupils in 2010. Similarly, despite some improvement between 2006 and 2010, approximately a quarter of S2 and S4 pupils still suffered from emotional and behavioural problems and conduct problems in 2010. As well as being an issue in its own right there is also the link between children suffering from behavioural and conduct problems and a higher level of unintentional harm¹³³.

¹³² NHS Health Scotland (2013) *Scotland's Mental health: Children and young people 2013* <http://www.scotpho.org.uk/downloads/scotphoreports/scotpho131219-mhcyp2013-briefing.pdf>

¹³³ Constant et al (2014) *Utility of self-reported mental health measures for preventing unintentional injury: results from a cross-sectional study among French schoolchildren* BMC Pediatrics; Rowe R and Maughan B. (2009) *The role of risk-taking and errors in children's liability to unintentional injury* Accident Analysis & Prevention Volume 41, Issue 4; Lange et al (2014) *Accident Proneness in Children and Adolescents Affected by ADHD and the Impact of Medication* Journal of Attention

Inequalities by area deprivation (SIMD) were common across both mental wellbeing (and mental health problems). Children and young people living in more deprived areas had poorer mental health and well-being outcomes than those living in less deprived areas. This was observed for all but two indicators, common mental health problems and alcohol dependency.

From parental completion of the SDQ in 2011, 14% of 4 to 12 year olds had emotional and behavioural problems (Total Difficulties Score); 13% had emotional symptoms; 21% had conduct problems and 20% had hyperactivity/inattention. From self-completion of the SDQ by children in 2010, 23% of S2 pupils and 26% of S4 pupils had emotional and behavioural problems; emotional symptoms were present in 15% of S2 and 19% of S4 pupils; conduct problems in 24% of both S2 and S4 pupils; and hyperactivity/inattention in 29% of S2 and 34% of S4 pupils. In 2010, 27% of P7, 31% of S2 and 36% of S4 pupils reported feeling sad in the last week.

The change in the proportion of children and young people with emotional and behavioural problems over time was not uniform across all age groups.

- The odds decreased year on year between 2006 and 2010 for S2 pupils by 3% (-4% to -2%) and increased by 2% (1% to 4%) for S4 pupils. The odds also decreased by 3% (-5% to -1%) each year for children and young people aged 4 to 12 years between 2003 and 2011.
- The odds of having emotional symptoms in S2 pupils showed no change year on year between 2006 and 2010, 0% (-2% to 2%), while the odds for S4 pupils were 6% (4% to 8%) worse per year. The odds for 4 to 12 year olds between 2003 and 2011 reduced by 2% (-4% to 0%) per year.
- The odds of having conduct problems decreased over time for all age groups: S2 pupils and S4 pupils had a year on year decline between 2006 and 2010 of 8% (-9% to -6%) and 6% (-7% to -4%) respectively; and the odds for 4 to 12 year olds also decreased year on year between 2003 and 2011 by 2% (-4% to 0%).
- There was a steady annual decline between 2008 and 2010 in the odds of S2 pupils displaying hyperactivity/inattention with a reduction of 4% (-5% to -2%) per year. S4 pupils showed very little year on year change over the same time period with an average annual decline of 1% (-2% to 1%) and 4 to 12 years with an average increase of 1% (-1% to 3%) per year between 2003 and 2011.

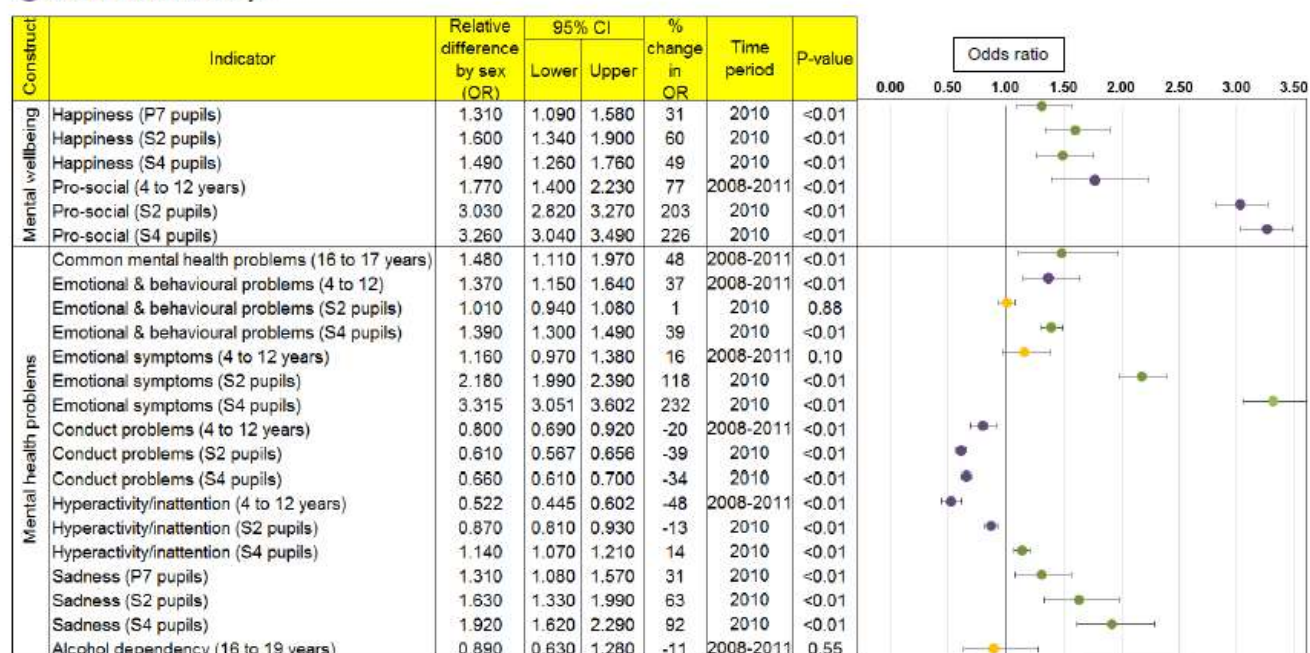
Equalities Analysis: Gender (Figure 110)

There was no significant difference by gender for the following indicator measures:

Disorders; David L. Jaquess D and Finney J (1994) *Previous Injuries and Behavior Problems Predict Children's Injuries* Journal of pediatric psychology

- Boys were more likely to score marginally higher than girls for mental wellbeing on the WEMWBS scale for all age groups.
- Life satisfaction in P7 pupils; boys and girls both had a mean score of 8.1, a difference of 0 points (-0.16 to 0.17)
- Emotional and behavioural problems in S2 pupils 23% for both boys and girls with an estimated variation in the odds of 1% (0.9% to 1.1%)
- Emotional symptoms in 4 to 12 year olds: boys 14% and girls 16% with an estimated percentage difference in the odds of 16% (3% to 38%)

- Boys fare better than girls
- No difference between boys and girls
- Girls fare better than boys



^{xv} Factors included in the model: sex, age, SIMD and urban-rural classification. In the differences for alcohol dependency we did not control for urban-rural classification due to the small number of cases.

Figure 110 Gender Difference in Mental Health Outcomes

Equalities Analysis: Age

There was no or very little difference by age for the following indicator measures:

- Mental wellbeing, 16 and 17 year olds
- Life satisfaction, 16 and 17 year olds
- Conduct problems, S2 and S4 pupils
- Common mental health problems, 16 to 19 year olds

A comparison of S2 pupils with S4 pupils in 2010 showed a slight decrease in mental wellbeing with increasing age with the mean score for S2 pupils on WEMWBS being 50.4 and for S4 pupils 49.7, a decrease of 0.7 points.

When compared with four to five year olds, those in the older age groups had increased odds of having emotional and behavioural problems.

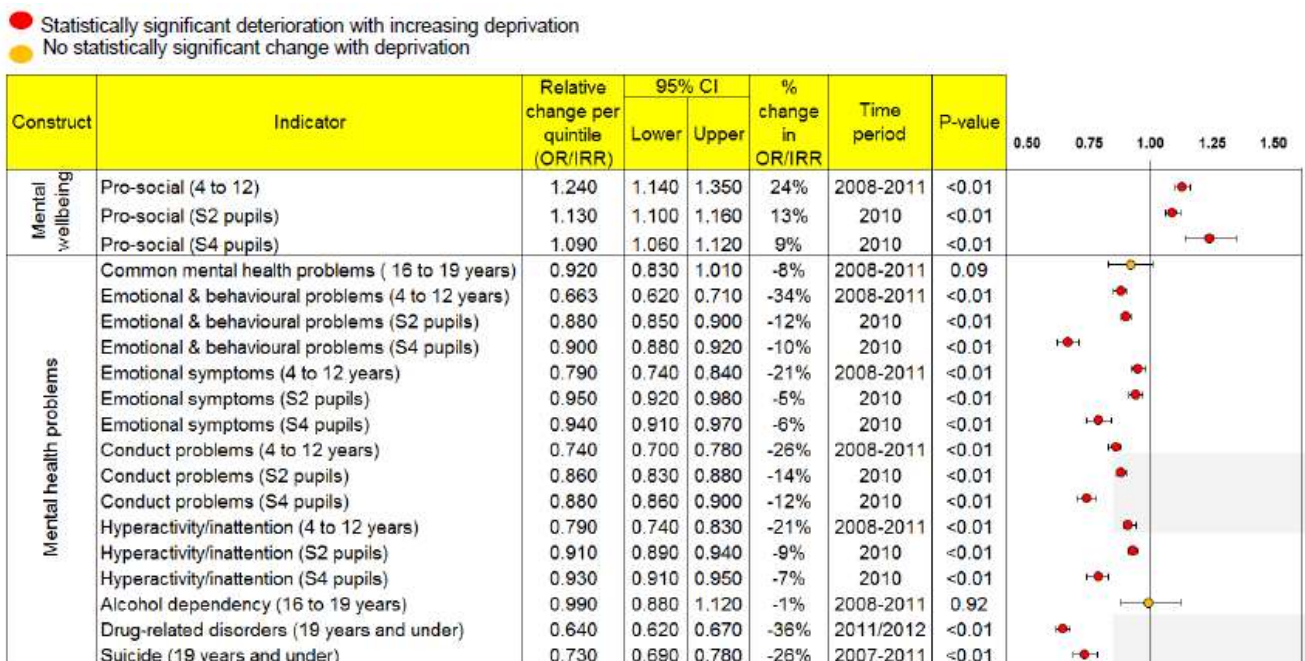
- Six to seven year olds had odds ratio of 27% (4% to 68%), eight to nine years, 35% (2% to 80%), and 10-12 years, 51% (18% to 94%).
- Compared with four to five year olds, the older age groups had increased odds of emotional symptoms being 96% (44% to 167%) for six to seven year olds, over twice as high for eight to nine year olds (123% (65% to 204%)) and nearly three times as high in 10-12 year olds (191% (121% to 284%)).
- When compared with 4 to 5 year olds, the older age groups had reduced odds of conduct problems. For 6 to 7 year olds, the odds were reduced by 16% (-32% to 4%), for 8 to 9 year olds there was a 24% (-39% to 4%) reduction in odds and for 10-12 year olds, a 31% (-64% to -10%) reduction in odds.

Hyperactivity/inattention did not show a consistent pattern by age.

In 2010, sadness was found to increase steadily with age being lowest for P7 pupils (27%), increasing to 31% for S2 pupils, and 36% for S4 pupils.

Equalities Analysis: Deprivation (Figure 111)

All three reportable indicators of mental wellbeing (mental wellbeing assessed by WEMWBS, life satisfaction and pro-social behaviour) decreased with increasing deprivation (i.e. lower WEMWBS etc. in the more deprived areas) across all age groups.



Factors included in the model: sex, age, SIMD and urban-rural classification. Alcohol dependency did not control for urban-rural classification due to small numbers. All charted values are for odds ratios (OR) with the exception of drug-related disorders and suicide which are incident rate ratios (IRR). Odds ratios are for decreasing deprivation where 1 = most deprived and 5 = least deprived.

Figure 1061 Inequalities in Mental Health Outcomes by Scottish Index of Multiple Deprivation (SIMD), Average Change Per Quintile

Six of eight reportable indicators (14 of 16 reportable measures) for mental health problems showed the reverse trend, being most common in the most deprived quintile and falling to the lowest value in the least deprived quintile – this was true for emotional & behavioural problems, emotional symptoms, conduct problems and hyperactivity & inattention.

Of all the equality dimensions examined, inequalities in mental health outcomes by urban-rural classification were the least common, being present in only three out of seven indicators:

- Emotional and behavioural problems in S2 and S4 pupils, 2010
- Conduct problems in S2 and S4 pupils, 2010
- Hyperactivity/inattention in S2 pupils, 2010

Community / Contextual Measures (Figure 112)

- For peer and friend relationships, in 2010 96% (94% to 97%) of P7 pupils had at least three or more close friends and this increased by 3% from 93% (91% to 94%) in 2002 to 96% (94% to 97%) in 2010.
- According to parental reports 18% (15% to 21%) of 4 to 12 year olds had peer relationship problems (assessed by the Strengths and Difficulties Questionnaire (SDQ)) in 2011. This remained essentially unchanged for S2 pupils from 86% in 2006 to 85% in 2010 and decreased by 3% for S4 pupils between 2006 and 2010 from 87% to 84%.
- There was an overall reduction for all school years assessed in the percentage who found it easy to talk to their best friend about things that really bother them between 2002 and 2010.
- Those children and young people who felt they had enough time for themselves in the past week (SALSUS 2010) was: P7 59%, S2 51% and S4 37%. Boys (at all ages) felt they had enough time for themselves more than girls.
- Those children and young people who felt they were able to do things they wanted to do was: P7 65%, S2 60% and S4 44%. Boys (at all ages) felt they were able to do things they wanted more than girls.

Construct	Indicator	Measure	School year / age (years)	Unit	Year										
					1998	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Family relations	Family meals	Eat a meal with one or both parents 4 or more times a week	P7	%	76	75				75				76	
			S2	%	76	75				73				73	
			S4	%	71	65				66				68	
	Talking to Parents	Find it easy to talk to their mother about things that really bother them	P7	%		91				91				87	
			S2	%		79				79				78	
			S4	%		74				74				75	
		Find it easy to talk to their father about things that really bother them	P7	%		76				77				73	
			S2	%		65				63				65	
			S4	%		62				60				59	
Family structure	Lone parent family	Living in lone parent households	17 and under	%		22	22	23	22	21	22	21	22	21	22
	Teenage parents	Live births to females	15 and under	CR		1.2	1.1	1.0	1.1	1.2	1.1	1.0	1.1	0.9	0.9
Parental health/living	Maternal smoking in pregnancy	Mothers who smoked during pregnancy in the past year	Child-bearing age	%		26	25	24	23	22	21	19	18	19	19
Parental health	Parental common mental health problems	Have a parent scoring 4 or more on the GHQ-12*	15 and under	%			16					16		19	
	Parental alcohol dependency	Have a parent scoring 2 or more on the CAGE questionnaire	15 and under	%			9					10		10	
	Parental limiting long-standing physical condition or disability	Have a parent with a long-standing physical condition or disability that limits daily activities	15 and under	%			17					16		17	

Figure 1072 Family Domain Contextual Factors: Trends Over Time

In the area of participation, in 2011, 3% (2% to 4%) of households containing a child aged 8 to 17 years old reported having a child who regularly takes part in representing young people's views or involvement in youth politics and 80% (78% to 82%) of such households that a child regularly takes part in clubs, groups or organisations. This has not changed over time.

Construct	Indicators	Measures	School year / age (years)	Unit	1996	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Participation	Influencing local decisions	Households with at least one child who regularly takes part in representing young people's views or involvement in youth politics	8 to 17	%									3	3	3
	Participation in clubs, groups or organisations	Households with at least one child who regularly takes part in clubs, groups or organisations	8 to 17	%									81	76	80
Social support	Social support	Agree they can ask for help from neighbours in the area where they live	S2	%		78				75				73	
			S4	%		73				67				66	
Trust	Neighbourhood trust	Agree they can trust people in the area where they live	S2	%		70				69				68	
			S4	%		61				63				60	
		Disagree that most people in the area where they live would try to take advantage of them	S2	%		66				64				58	
			S4	%		62				63				58	
	Community cohesion	Agree that people say 'hello' and stop to talk to each other in the street in the areas where they live	S2	%		79				76				76	
			S4	%		80				76				72	
Safety	Neighbourhood safety	Feel safe walking alone in their neighbourhood after dark	16 to 17	%		82	78	75	79	81	84	80	74	79	88
		Generally feel safe in the area they live	S2	%	38	48				50				52	
			S4	%	42	45				47				49	
		Agree that it is safe for younger children to play outside during the day in the area where they live	S2	%		81				82				81	
			S4	%		79				82				76	

Figure 113 Community Domain Contextual Factors: Trends Over Time

Highlights from Figure 113

- Almost $\frac{3}{4}$ of children and young people felt that can ask for help from neighbours in their local area ('social support'). This fell gradually by 5% between 2002 and 2010 for both S2 (from 78% (76% to 80%) to 73% (71% to 75%)) and S4 pupils (from 73% (70% to 76%) to 68% (66% to 70%)).
- Neighbourhood trust felt by children and young people between 2002 and 2010 remained virtually unchanged or fell depending on the measure but trust in the people in their local area remained positive. Trust of people in the area where they lived changed minimally, if at all, for S2 pupils (from 70% (68% to 73%) to 68% (65% to 70%)) and S4 pupils (from 61% (57% to 65%) to 60% (58% to 62%)). While disagreement that most people in the area where they live would try to take advantage of them if they got the chance fell by 6% for S2 pupils from 66% (63% to 68%) to 58% (55% to 61%) and by 4% for S4 pupils from 62% (58% to 66%) to 58% (56% to 61%).
- Community cohesion fell for both S2 and S4 pupils between 2002 and 2010: for S2 pupils by 3% from 79% (77% to 82%) to 76% (74% to 77%); and for S4 pupils linearly by 8% from 80% (76% to 82%) to 72% (70% to 74%). Almost $\frac{3}{4}$ of pupils felt that people stop and say hello and talk to each other in the street though.
- The percentage of those reporting a sense of social support fell with age with 73% (71% to 75%) of S2 pupils agreeing that they could ask for help or a favour from neighbours but 5% fewer S4 pupils (68% (66% to 70%)). There was a similar sized difference of 4% between S2 pupils (76% (74% to 77%)) and S4 pupils (72% (70% to 74%)) who agreed that people say hello and stop to talk to each other in the street in the area they live.

Analysis by geography and demography

6. GEOGRAPHICAL VARIATION BY DEMOGRAPHY

With a few exceptions¹³⁴, data for injury is unavailable at levels lower than Local Authority unfortunately (though those areas with good A&E attendance data may get good local data for analysis) so in the absence of this; mapping the following are good proxies for mapping unintentional harm:

- Population distribution of the higher risk groups (under-fives and over-65s)
- Deprivation
- Household structure

Layering the Local Authority or Community Health Partnership (CHP) data from the following on top of the above may assist in identifying areas to progress from a Place perspective in Phase II.

- Emergency hospital admissions
- A&E attendance
- Police water incidents
- STATS19 road traffic collisions¹³⁵
- SFRS data
- Rescue organisations such as the Coastguard, Mountain rescue Scotland, Forestry Commission, RNLI will be able to supply data to a sub-national level.

SMRs and SDRs – Local Authority (Figures 114 and 115)

The Standard Discharge Ratio (SDR) is the number of observed discharges/number of expected discharges*100 where the number of *observed* discharges is the number of discharges in each area of interest (e.g. NHS Board, deprivation quintile) and the number of *expected* discharges is number of discharges that would have been 'expected' in area of interest if the Scottish discharge rates had prevailed. An estimate of the statistical significance of the standardised ratio (SMR or SDR) can be obtained from the 95% confidence interval. If the confidence interval does not include 100, the difference in physical unintentional harm rates recorded for a particular population compared with the standard population (Scotland) is said to be 'statistically significant'. In summary the SDR and SMR (Standard Mortality Rate) tells us which, in this case Local Authority, has a higher or lower than anticipated SMR or SDR for physical unintentional harm.

¹³⁴ Police data, STATS19 road traffic collisions, SFRS data

¹³⁵ Note the due consideration STATS19 data should be given when mapped with location of incident and home address/postcode of person/people involved often producing two distinct analyses.

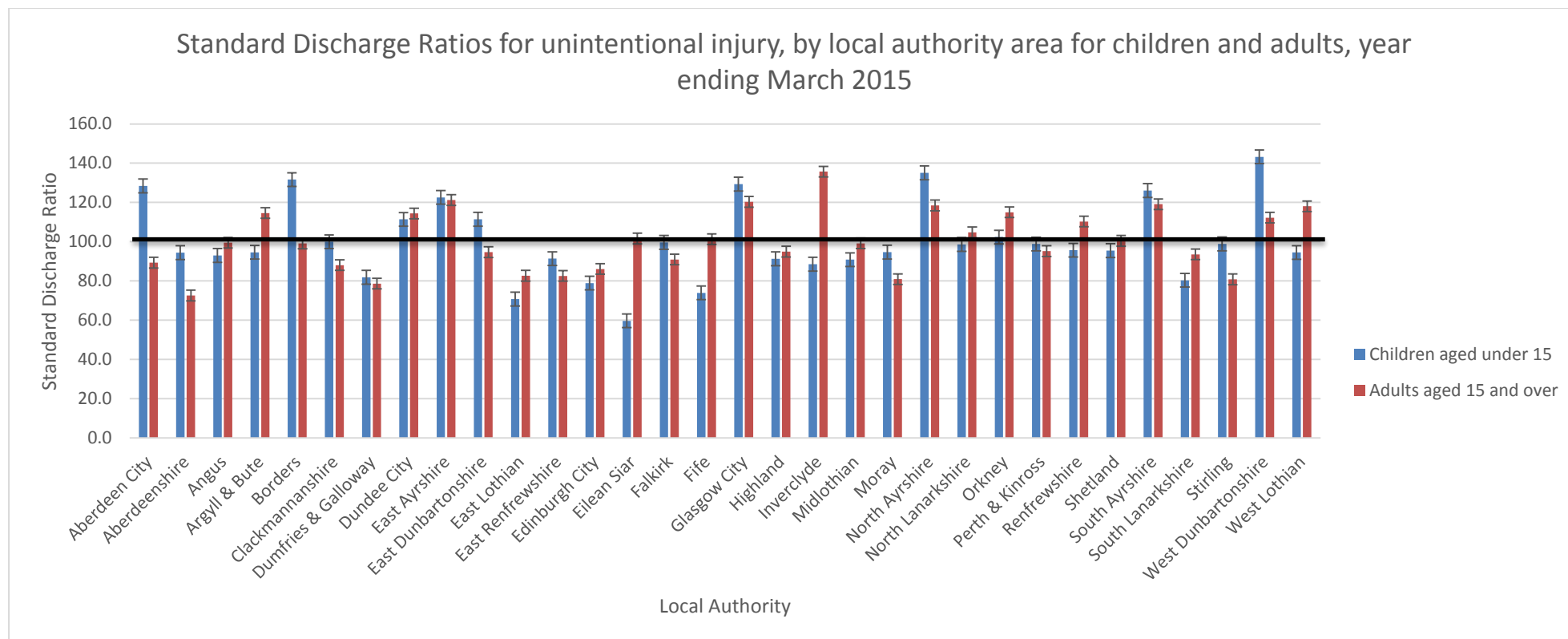


Figure 1084 Standard Discharge Ratios for Physical Unintentional Harm (“unintentional injury”) by Local Authority Area in Scotland for Children and Adults (ISD Year ending 31 March 2015)

Significantly HIGH SDR			Significantly LOW SDR		
Child	Adult	Both	Child	Adult	Both
Aberdeen City	Argyll & Bute	City of Glasgow	Dumfries & Galloway	Aberdeen City	City of Edinburgh
Borders	Dundee City	East Ayrshire	East Lothian	Aberdeenshire	East Lothian
East Ayrshire	East Ayrshire	North Ayrshire	City of Edinburgh	Clackmannanshire	Dumfries & Galloway
City of Glasgow	City of Glasgow	South Ayrshire	Eilean Siar	Dumfries & Galloway	South Lanarkshire
North Ayrshire	Inverclyde	West Dunbartonshire	Fife	East Lothian	
South Ayrshire	North Ayrshire		South Lanarkshire	East Renfrewshire	
West Dunbartonshire	Renfrewshire			City of Edinburgh	
	South Ayrshire			Falkirk	
	West Dunbartonshire			Highland	
	West Lothian			Moray	
				South Lanarkshire	
				Stirling	
Significantly HIGH SMR (all ages)			Significantly LOW SMR (all ages)		
Highland	Greater Glasgow and Clyde		Fife	Forth Valley	Lothian

Figure 1095 Local Authorities in Scotland with Significantly High or Significantly Low Standard Discharge Ratios and Standard Mortality Ratios for Physical Unintentional Harm

Crude rates – emergency hospital admissions – Local Authority (Figure 116)

Similar to SDRs crude rates allow the simple calculation of where there is a higher or lower than anticipated amount of emergency hospital admissions as a result of physical unintentional harm for a local authority area using a 'rate per 1000 population' calculation. This is not as accurate as SMR as the age structure of the population isn't taken into account when calculating crude rates however is included for completeness.

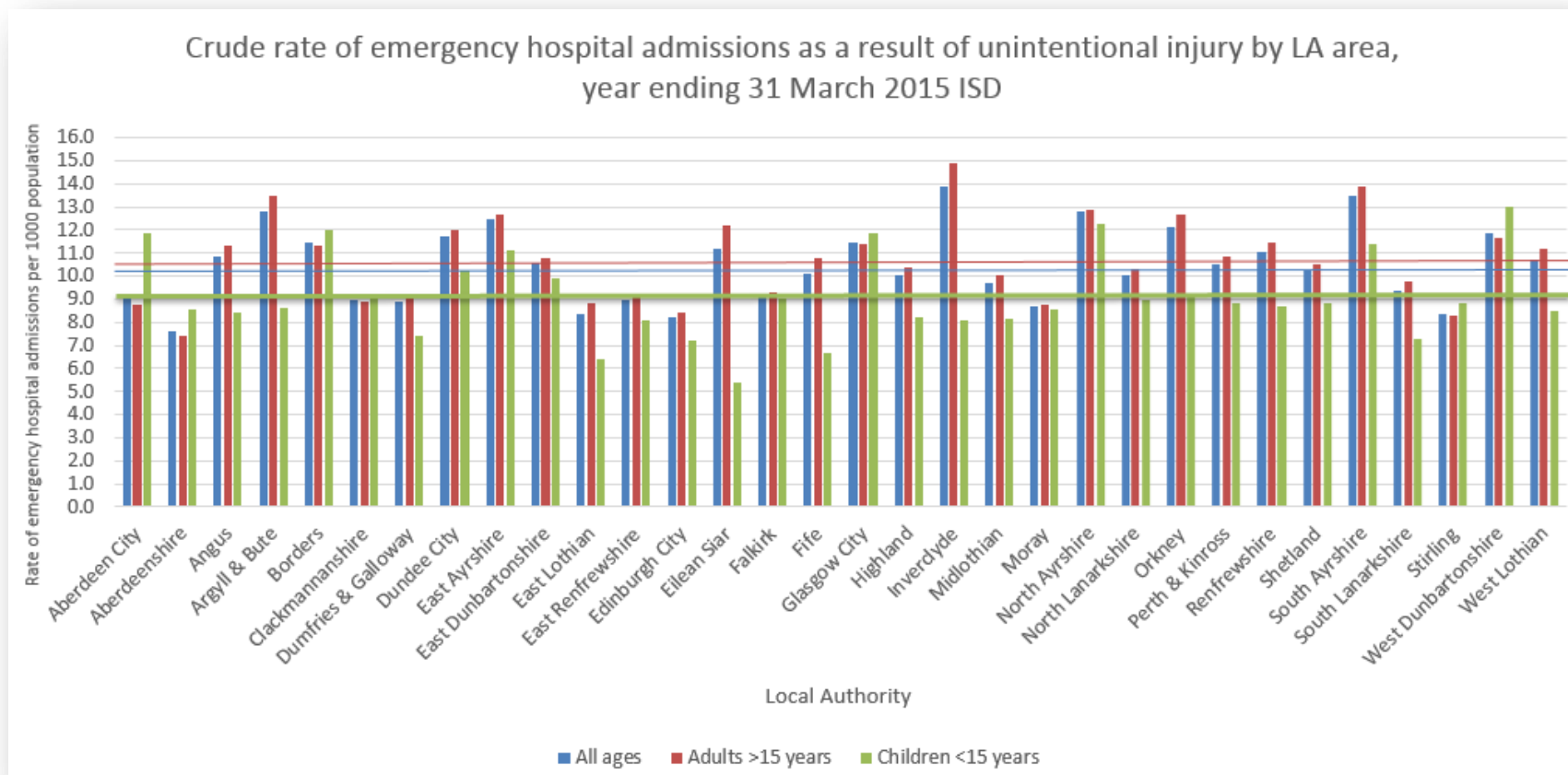


Figure 1106 Crude Rate of Emergency Hospital Admissions as a Result of Physical Unintentional Harm by Local Authority Area in Scotland (ISD year ending 31 March 2015)

The Scottish rate is shown for each of the categories (all ages – blue, adults – red, children – green) as a line. Where the bar for each local authority and age category is higher than the Scottish rate (the coloured lines) the local authority can be said to have a higher rate of emergency hospital admissions as a result of physical unintentional harm as a proportion of its population (for example Aberdeen City's under-15s rate and Inverclyde's all ages and adult over-15s rate) and vice versa if it's below the Scottish line (for example South Lanarkshire's under-15s rate and Aberdeenshire's crude rate for all). Please note there are no error bars or statistical significance attached to this as it's a crude calculation so should be used as a guide only. SMRs and SDRs are the preferred way of looking at local authority data for emergency hospital admissions.

Deprivation

Throughout the assessment it is clear that unintentional harm (physical and psychological) is yet another aspect of life that is correlated with increased deprivation on a gradient.

If the programme wishes to select a number of areas for focusing on then using some of the most deprived areas and/or those with high SDRs and SMRs and/or those with high proportions of over-represented populations (under-fives and over-65s, over-75s and over-85s) would be the best starting place.

The 20 most deprived data zones SIMD2016 (listed in descending order and with the datazone reference in brackets) are:

1. Ferguslie Park (Area 1), Paisley (S01012068)
2. Carntyne West and Haghill, Glasgow City (S01010245)
3. North Barlanark and Easterhouse South (Area 1), Glasgow City (S01010122)
4. Old Shettleston and Parkhead North, Glasgow City (S01010148)
5. Nitshill, Glasgow City (S01009780)
6. Muirhouse, City of Edinburgh (S01008929)
7. Possil Park (Area 1), Glasgow City (S01010323)
8. Cliftonville, North Lanarkshire (S01011598)
9. Drumchapel North (Area 1), Glasgow City (S01010493)
10. North Barlanark and Easterhouse South (Area 2), Glasgow City (S01010118)
11. Ferguslie Park, Paisley (S01012067)
12. Parkhead West and Barrowfield, Glasgow City (S01010050)
13. Alloa South and East, Clackmannanshire (S01007465)
14. Niddrie, City of Edinburgh (S01008710)
15. Possil Park (Area 2), Glasgow City (S01010326)
16. Drumchapel North (Area 2), Glasgow City (S01010495)
17. Ardrossan Central, North Ayrshire (S01011243)
18. Central Easterhouse, Glasgow City (S01010111)
19. Keppochhill, Glasgow City (S01010312)
20. North Barlanark and Easterhouse South (Area 3), Glasgow City (S01010121)

Figure 117¹³⁶ shows that there are a number of areas of “deep-rooted deprivation” – these areas have been consistently among the 5% most deprived in Scotland since SIMD2004:

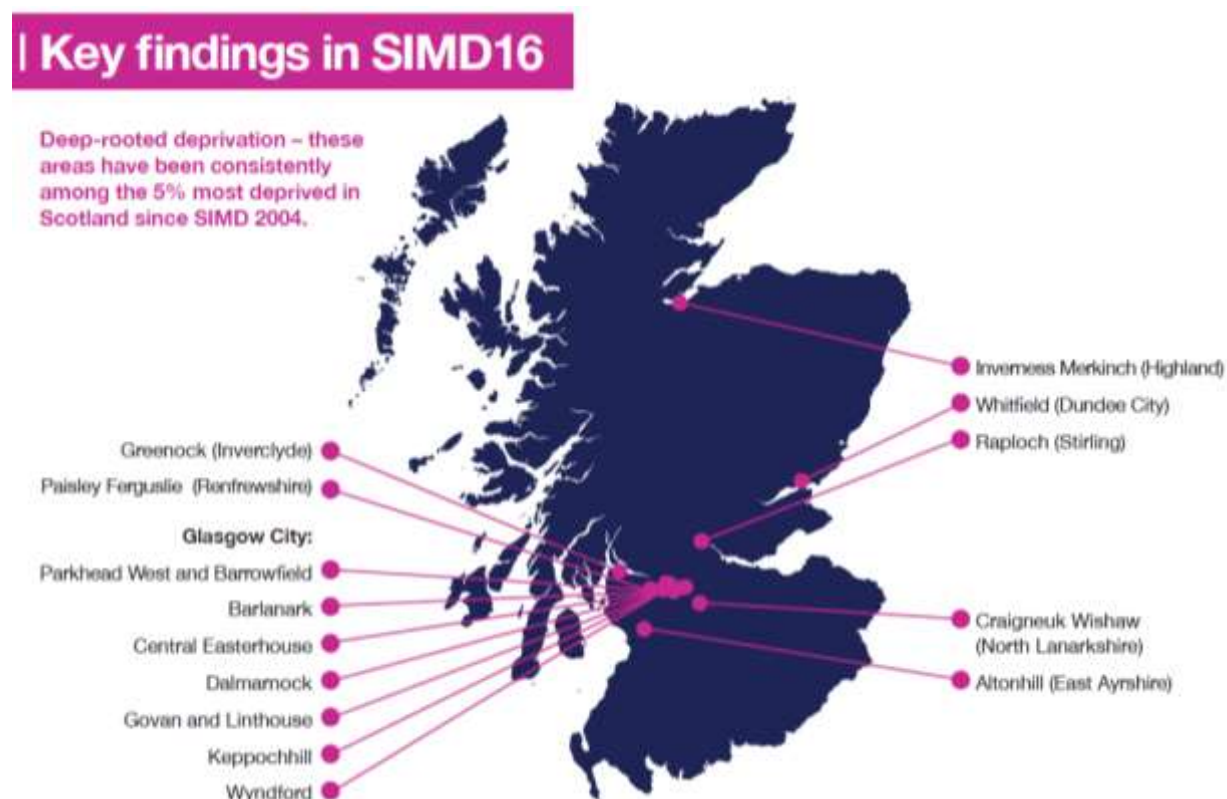


Figure 117 Local Authorities with the highest 'local share' of 20% most deprived datazones

Five local authorities contain the most datazones with deprivation (the most deprived 20%): Glasgow City, Inverclyde, West Dunbartonshire, North Ayrshire and Dundee City. Figure 118¹³⁷ shows the local share of the most deprived 20% (i.e. the percentage of datazones in the local authority area that are in the 20% most deprived in pink). The white bar shows the local share of the most deprived 21-40% datazones – people who live here may also experience difficulties.

¹³⁶ Scottish Government (2016) *Introducing The Scottish Index of Multiple Deprivation 2016* <http://www.gov.scot/Resource/0050/00504809.pdf>

¹³⁷ Scottish Government (2016) *Introducing The Scottish Index of Multiple Deprivation 2016* <http://www.gov.scot/Resource/0050/00504809.pdf>

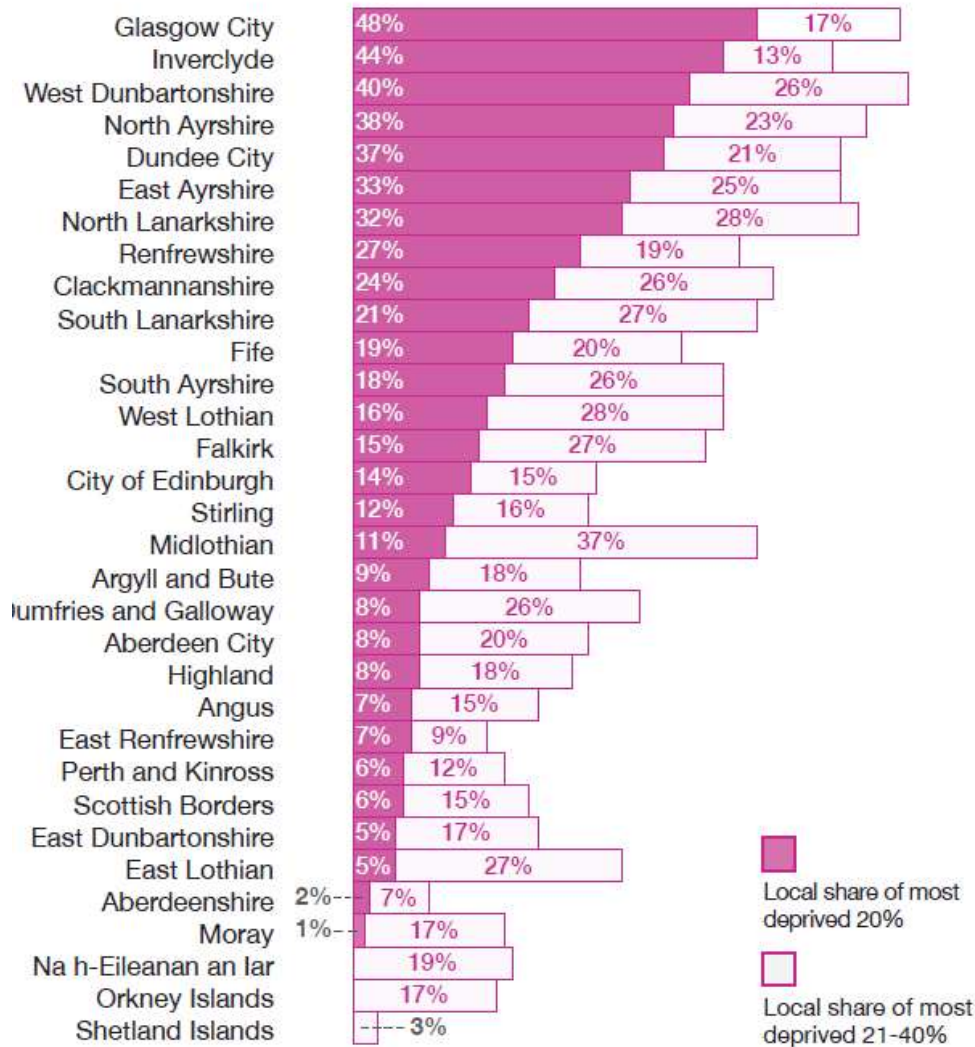


Figure 118 Local share of 20% and 21-40% most deprived data zones by Local Authority

An interactive map of all deprived datazones is available at <http://simd.scot/2016/#/simd2016/BTTTTFTT/9/-4.0000/55.9000/> which could be used to select particular areas of focus on unintentional harm by local partnerships.

Children

There is a full list of 325 data zones which are the Top 5% areas with the most children in Appendix 3 some of which are also in the ‘more deprived’ list too.

In Scotland, 19.2% of the population are children (5.47% are under five) and for the top 5% data zones with the most children all have a child population of over 28% (almost one and a half times the national proportion).

The top ten are as follows (Figure 119):

Datazone	% of children in population	Rank	Intermediate Geography Name	SIMD rank (2012)	In most 15% deprived ?
Scotland	19.2				
S01000777	41.98	1	Argyll & Bute - Helensburgh North	2789	no
S01005247	40.95	2	Renfrewshire - Paisley Ferguslie	1	yes
S01004316	40.56	3	Moray - IZ Eighteen	5405	no
S01005075	39.48	4	Perth & Kinross - Muirton	137	yes
S01001260	39.45	5	Dundee City - Whitfield	219	yes
S01005071	39.25	6	Perth & Kinross - Muirton	2098	no
S01006165	38.68	7	Stirling - Dunblane East	5156	no
S01001258	38.29	8	Dundee City - Whitfield	738	yes
S01003082	37.6	9	Glasgow City - Nitshill	230	yes
S01001799	37.48	10	Edinburgh, City of - Gracemount, Southouse and Burdiehouse	371	yes

Figure 11119 Top 5% Areas in Scotland by Child Population

Data zone	% of 0-4
S01004316 Moray - IZ Eighteen	18.7
S01001570 East Lothian - IZ Six	15.4
S01000777 Argyll & Bute - Helensburgh North	15.3
S01004285 Moray - IZ Eight	15.1
S01006505 West Lothian - Linlithgow Bridge	15.0
S01004698 North Lanarkshire - Birkenshaw	14.7
S01001821 Edinburgh, City of - Comiston and Swanston	14.7
S01003825 Highland - Inverness Central, Raigmore and Longman	14.7
S01006393 West Lothian - Blackridge	14.5
S01000774 Argyll & Bute - Helensburgh North	14.4

Figure 120 Top 5% Areas in Scotland by population of under-fives

The Elderly

There is a full list of 325 data zones which are the Top 5% areas with the most pensioners in Appendix 3 some of which are also in the 'more deprived' list too.

In Scotland, 18.61% of the population are pensioners (8.81% are 65-74, 5.34% are 75-84 and 1.75% are over-85) and for the top 5% data zones with the most children all have a child population of over 32.3% (1.7 times the national proportion).

The top ten are as follows (figure 121):

Datzone	Population	Rank	Intermediate Geography name	SIMD rank (2012)	In most 15% deprived?
Scotland	18.61				
S01002429	71.69	1	Falkirk - Falkirk Town Centre and Callendar Park	1011	no
S01001382	55.02	2	East Ayrshire - Altonhill South, Longpark and Hillhead	43	yes
S01001158	54.45	3	Dundee City - Craigie and Craigiebank	3096	no
S01004086	53.82	4	Inverclyde - Greenock Town Centre and East Central	391	yes
S01005210	52.34	5	Renfrewshire - Paisley South East	1135	no
S01003439	52.17	6	Glasgow City - City Centre East	216	yes
S01005580	51.66	7	South Ayrshire - Ayr South Harbour and Town Centre	5244	no
S01003431	50	8	Glasgow City - Riddrie and Hogganfield	385	yes
S01001178	48.38	9	Dundee City - Fairmuir	1729	no
S01006195	48.37	10	West Dunbartonshire - IZ Four	535	yes

Figure 121 Top 5% Areas in Scotland by Pensioner Population

7. GEOGRAPHICAL VARIATION BY INCIDENT TYPE

It has not been possible to gain access to geographical information pertaining to all types of incident due partially to time constraints and issues with data sharing and protection. In lieu of this Section 5.9 which shows geographical information based on those groups we know are at higher risk of unintentional harm (i.e. the locations of those living in the most deprived areas, areas with higher than average under five and older people) and those areas with higher emergency hospital admissions and mortality rates for *all* types of unintentional harm

The following maps (Figure 122) show the variation across NHS Boards in the rates of emergency hospital admissions in the over-65s age group for unintentional harm and also for falls for the year 2014/15.

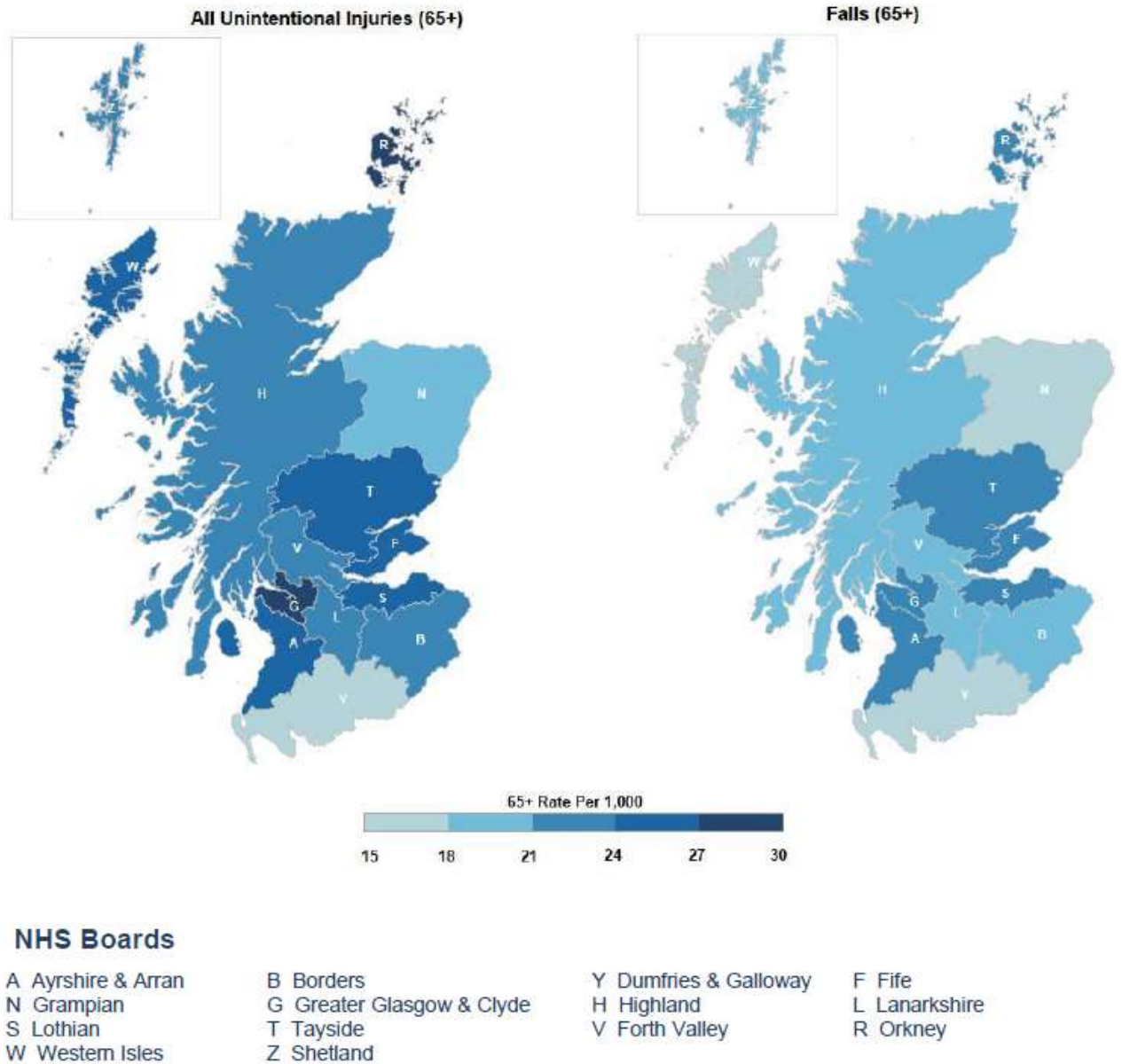


Figure 122 Variation across NHS Boards in the rates of emergency hospital admissions in the over-65s age group for unintentional harm and also for falls for the year 2014/15.

The following shows road accident fatalities in 2014 by local authority (Figure 123):

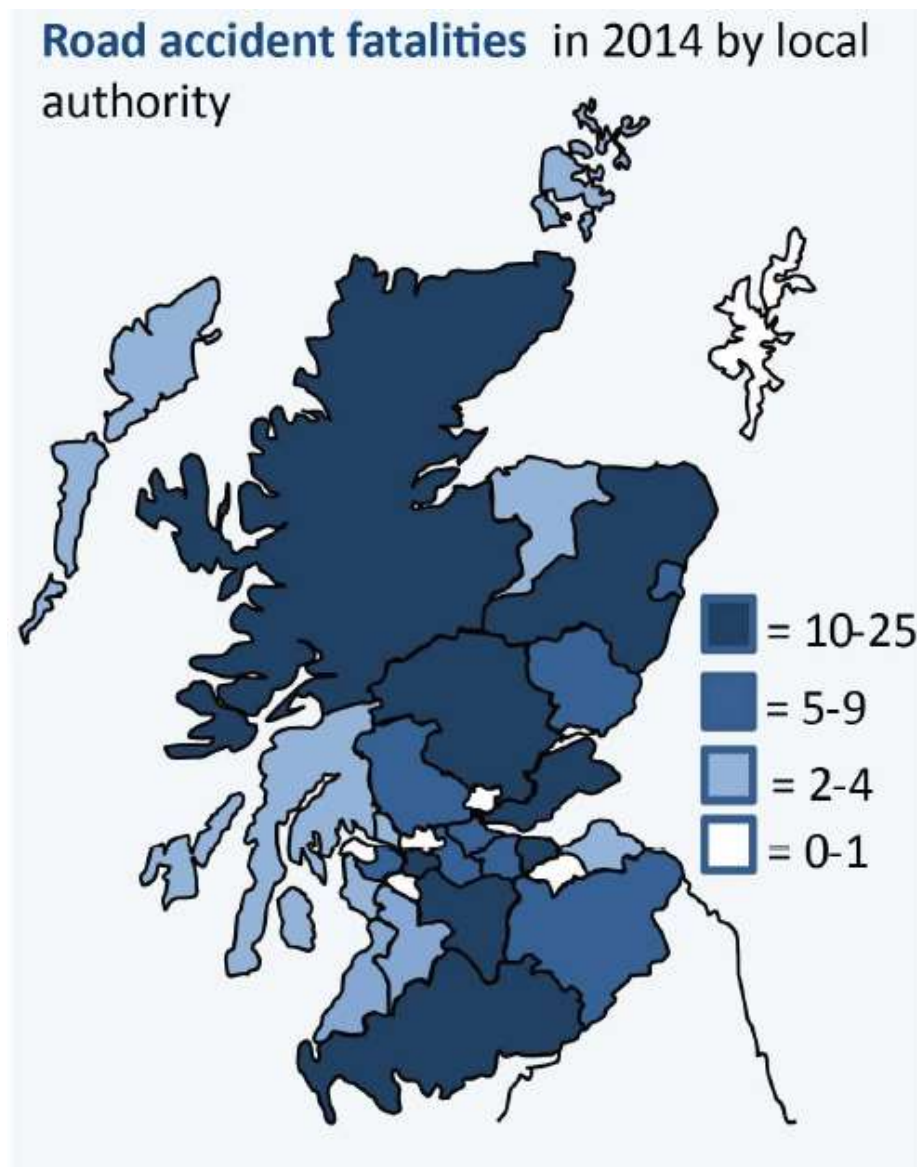


Figure 123 Fatalities As a Result of Road Collisions in 2014 by Scottish Local Authority Area (Transport Scotland)

The following shows the rate of accidental dwelling fires (Figure 124) and rate of non-fatal casualty rate (Figure 125) as a result of accidental dwelling fires by local authority:

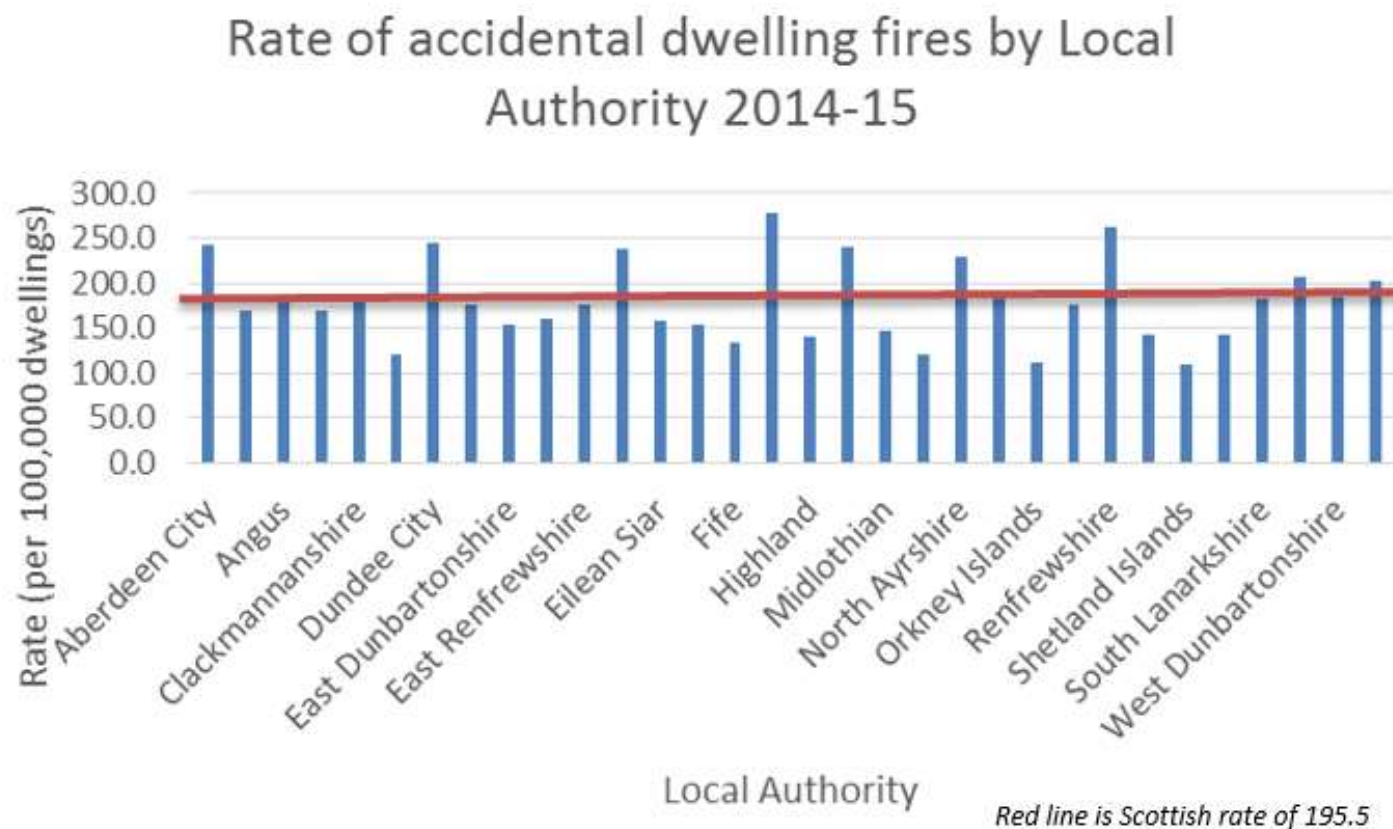


Figure 124 Rate of Accidental Dwelling Fires by Local Authority (SFRS 2014/15)

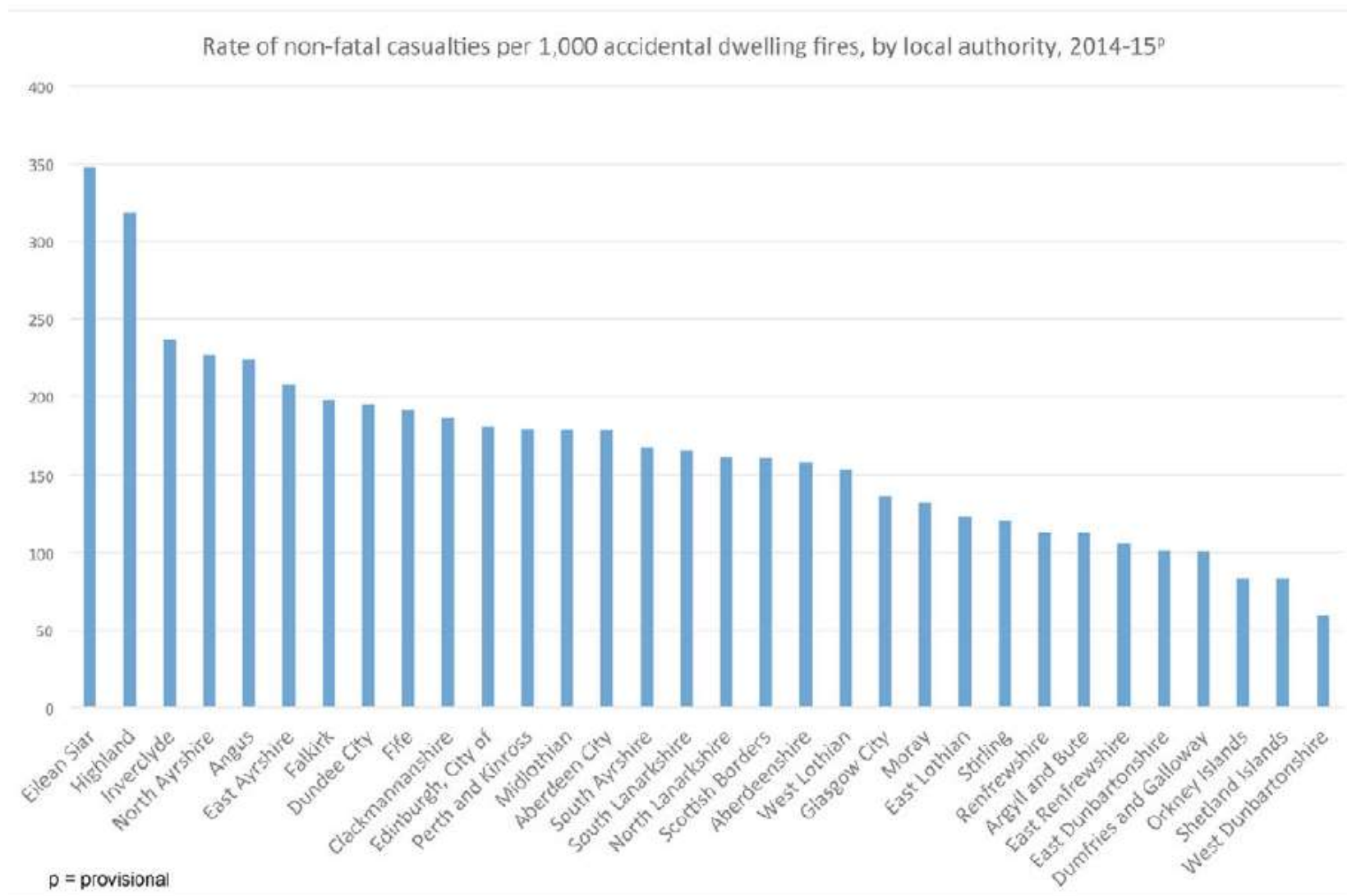


Figure 125 Rate of Non-Fatal Casualties Per 1000 Accidental Dwelling Fires by Scottish Local Authority (SFRS 2014/15)

8. CONCLUSIONS

Unintentional harm in Scotland is an issue of note; one that deserves to be a higher priority nationally and locally than it is currently and demands a more partnership-focussed approach to prevention.

For a largely preventable issue, unintentional harm in Scotland is a large burden on the population in terms of death and serious injury but also the number of years lost to disability, time off work, not to mention the emotional impact on those injured and their family and friends. For public services it can also be a burden in terms of unscheduled care costs, volunteer risk and time and reduce the amount of time that can be dedicated to prevention. Extrapolating from UK figures, the costs to the NHS in Scotland amount to at least £200 million per year (of which £40 million relate to children).

From strategic assessment it became clear that there is a compelling narrative that arises when unintentional harm is looked at in any depth:

- The sheer numbers compared to other community safety themes: 1,250-1,400 deaths per year; 54,500 emergency hospital admissions annually and at least half a million incidents per year. There has been little improvement in any of these (with the exception of deaths from road traffic collisions and fire and flame) over time.
- There is a potential for unintentional harm to be an increasing burden in Scotland – older people are over-represented in deaths and injuries from unintentional causes and the projected rise in this population bracket in the coming years means demographics are not favourable for unintentional harm rates, falls in particular.
- Notwithstanding the sometimes devastating impact on people's lives – social, emotional and physical – unintentional harm can be extremely costly¹³⁸: A single fatality can cost from £1.4m to £1.9m. A serious injury can cost anywhere from £45.5k to £214k. Even a minor injury can cost anywhere from £200 treated at a GP up to £8k treated at a hospital.

Despite this, however, much unintentional harm is preventable through a variety of mechanisms and the limited improvement in death and injury rates present broad scope for improvements – road traffic collision and fire fatalities are excellent examples of the potential for improvements.

A number of themes became prominent during the strategic assessment process and are recommended as priority areas for Phase 2 of Building Safer Communities:

1. *The Under-Fives*
2. *The Over-65s*

¹³⁸ These figures include the costs to public services e.g. NHS, Local Authority, Police and Fire & Rescue Service but also to the economy in terms of lost working hours/days/years.

3. *Deprivation*
4. *Strategic data gathering, sharing and analysis*
5. *Bridging the gap between strategy and delivery*

In addition to these, a number of other significant themes emerged including home safety, falls and loneliness and social isolation; and community-led prevention.

Making unintentional harm a core theme of a prominent Scottish Government programme on top of the commitment to the creation of the strategic assessment are commendable first steps to tackling the issue of unintentional harm in Scotland and in time will hopefully be supported by activity nationally and locally with resources devoted to this important community safety and public health issue.