

Health and Wellbeing Board

8 March 2016



Hospital Admissions Caused by Unintentional and Deliberate Injuries (aged 0-24) – Behind the Headlines

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Purpose of the report

- 1 The purpose of this report is to provide an update on hospital admissions from unintentional and deliberate injuries in children and young people (0-24 years). This report is not intended as an update on developments related to the unintentional and deliberate injuries in children and young people's strategy which will be reported at a later date.

Background

- 2 Unintentional injury in children is a significant public health issue. It is a major cause of avoidable ill health, disability and death and has a disproportionate impact on deprived communities. The Health and Wellbeing Board signed off the Unintentional and Deliberate Injuries in Children and Young People's Strategy in 2014.
- 3 The Public Health Outcomes Framework shows that for County Durham admissions are higher than England and the north east region for all age categories (see table 1).
- 4 Hospital admissions caused by unintentional and deliberate injuries in children have many classifications as determined by the formal International Statistical Classification of Diseases and Related Health Problems 10 (**Appendix 2**).

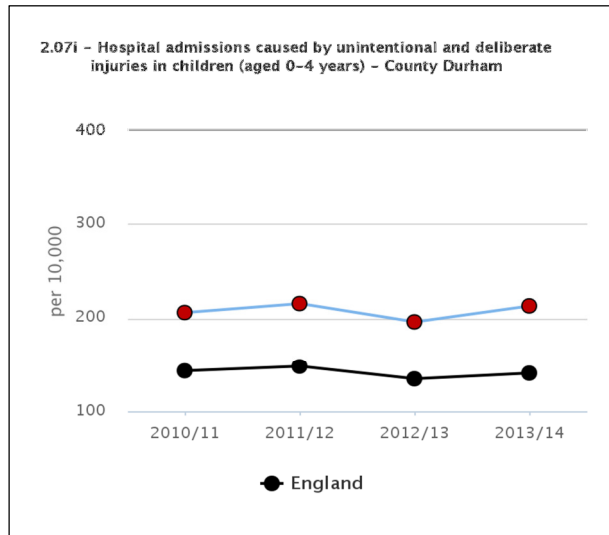
Table 1: Public Health Outcomes Framework

		Rate per 10,000		
		County Durham	North East	England
2.07i - Hospital admissions caused by unintentional and deliberate injuries in children (aged 0-4 years)	2013/14	213.1	199.2	112.2
2.07i - Hospital admissions caused by unintentional and deliberate injuries in children (aged 5-14 years)	2013/14	168.4	158.6	140.8
2.07ii - Hospital admissions caused by unintentional and deliberate injuries in young people (aged 15-24)	2013/14	201.7	173.4	136.7

- 5 Figures 1-3 highlight a slight fluctuation in admissions across all age groups over the last few years, with all showing a slight increase from 2012/13 to 2013/2014.

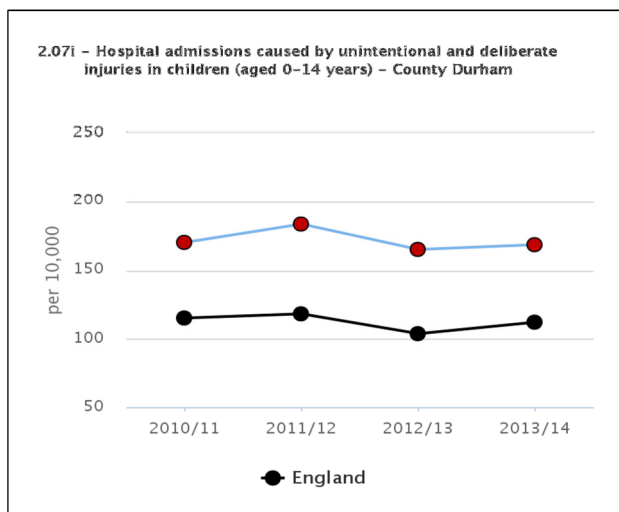
Hospital admission caused by unintentional and deliberate injuries in children 2010/14

Figure 1: Admissions for 0-4 year olds, 2010-2014



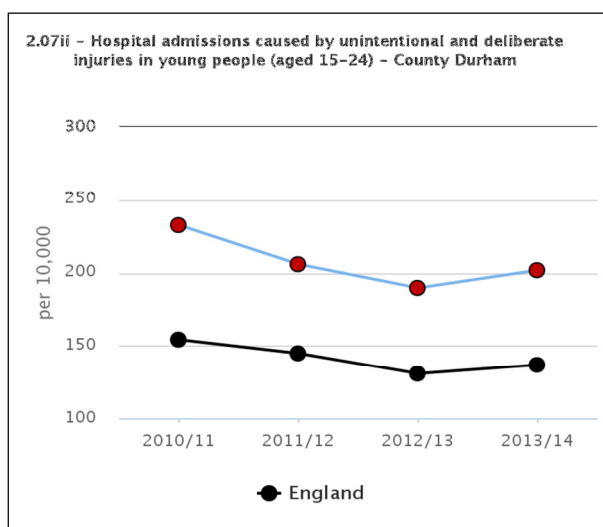
Period	Value	North East	England
2010/11	206.1	197.4	143.3
2011/12	215.6	218.3	148.2
2012/13	196.2	189.5	134.7
2013/14	213.1	199.2	140.8

Figure 2: Admissions for 5-14 year olds, 2010-2014



Period	Value	North East	England
2010/11	170.1	158	115.2
2011/12	183.4	172.9	118.2
2012/13	164.9	146.8	103.8
2013/14	168.4	158.6	112.2

Figure 3: Admissions for 15-24 year olds, 2010-2014



Period	Value	North East	England
2010/11	232.5	218.9	154.2
2011/12	205.8	207.3	144.7
2012/13	189.5	180	130.7
2013/14	201.7	173.4	136.7

- 6 The Public Health Outcomes Framework provides a high level indicator but does not provide detail on the nature of the injuries that contribute towards the indicator. Further analysis may provide additional insight but it is important to frame further analysis within some context.

Context and further analysis

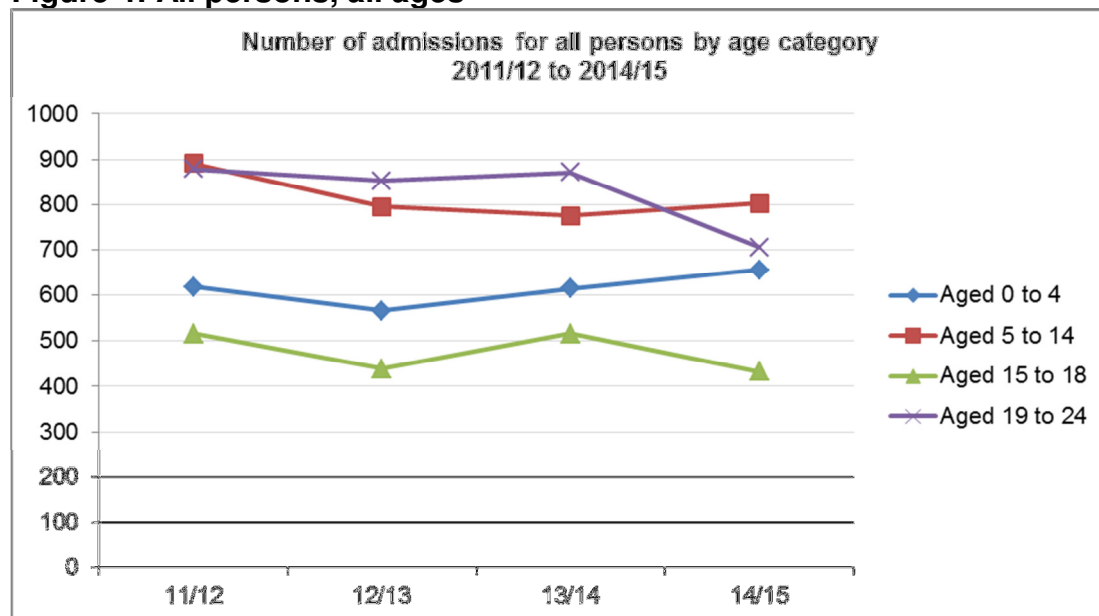
- 7 The data in this report relates to hospital admissions and does not reflect the scale and scope of injuries within the population. Injuries that are not presented at hospital, such as at a GP surgery, walk in clinic, school nurse, are not included. Data around injuries that are not presented to primary or secondary care are also not included in this dataset, nor is the severity of injury captured.
- 8 The decision a parent or carer takes to attend hospital in the first instance, may not solely be determined by the actual injury, but may well be impacted by their own understanding of health, the type of injury, the age of the child (an infant unable to articulate their level of pain may be taken to hospital by a concerned parent, as supposed to young child who can explain their symptoms and maybe more content to visit a GP), access to transport or even their proximity to a health care setting.
- 9 Caution should therefore be exercised when exploring the hospital admission data as this reflects a measure of one element of the health and social care system and not the prevalence of injury within a population.

Data analysis – behind the headlines

- 10 The data used in this report is Hospital Episode Statistics (HES) data relating to 'finished in year admission episodes' for emergency admissions for injuries. The cause code is a supplementary code that indicates the nature of any external cause of injury, poisoning or other adverse effects. Emergency hospital admissions for unintentional and deliberate injuries are defined by external cause codes (ICD10 V01-X59).
- 11 Whilst the previous tables (Fig. 1-3) show the standardised rates across the life-course, it is also worth noting in figure 4 the volume (numbers) and variations in admissions per age category.

Four year trends in numbers emergency admissions by age and sex (0-24 yrs)

Figure 4: All persons, all ages



- 12 The 19-24 age group comprise a significant number of admissions which are not obvious from the Public Health Outcomes Framework. Note these are numbers of admissions, not rates and are not directly comparable.

Figure 5: Males, all ages

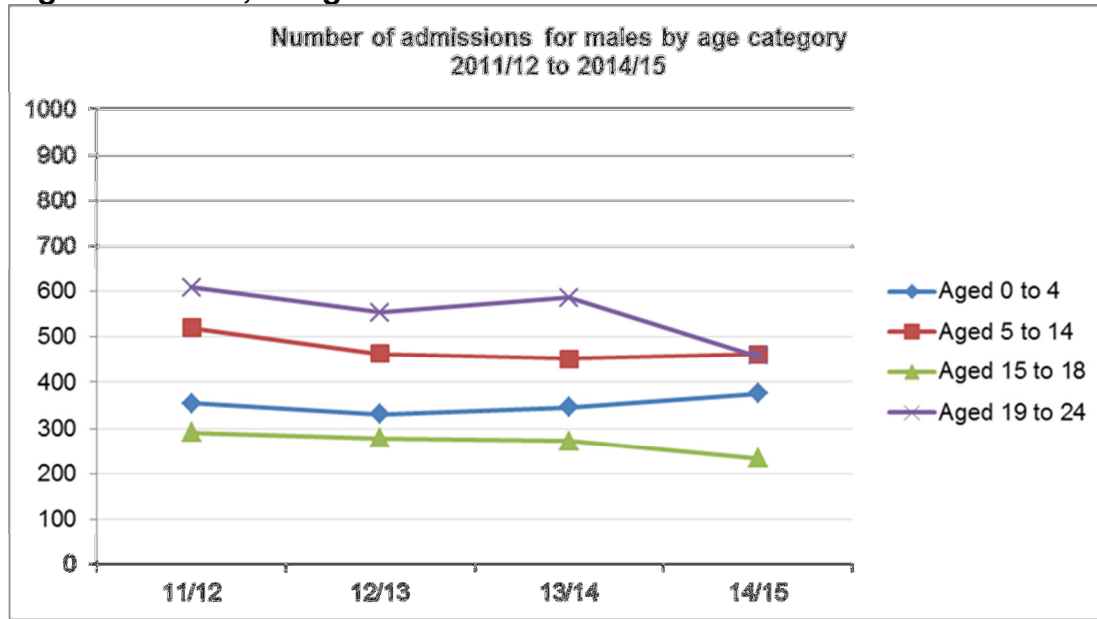
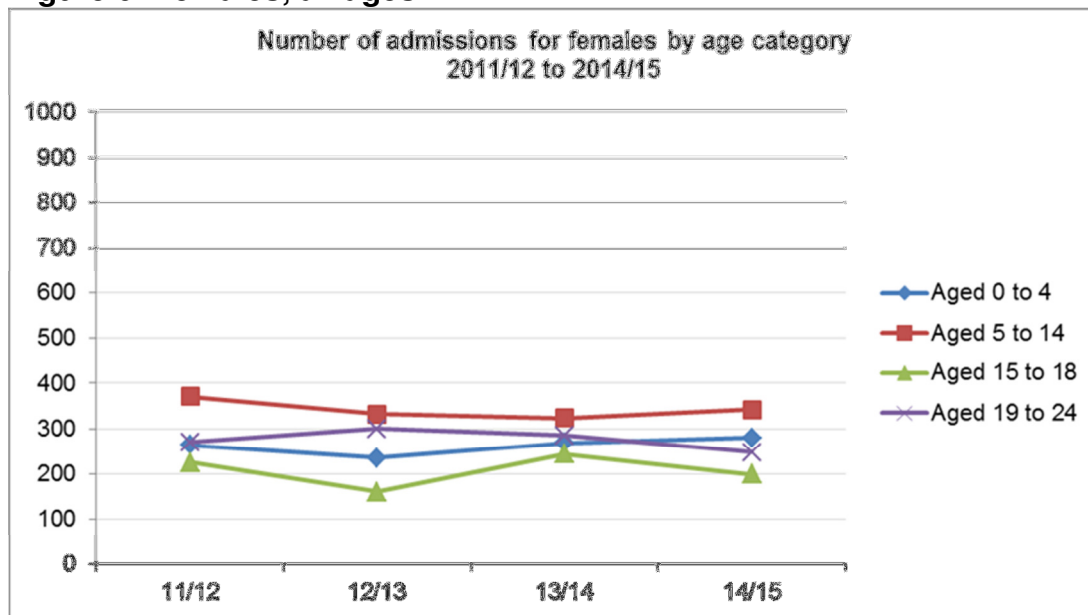


Figure 6: Females, all ages

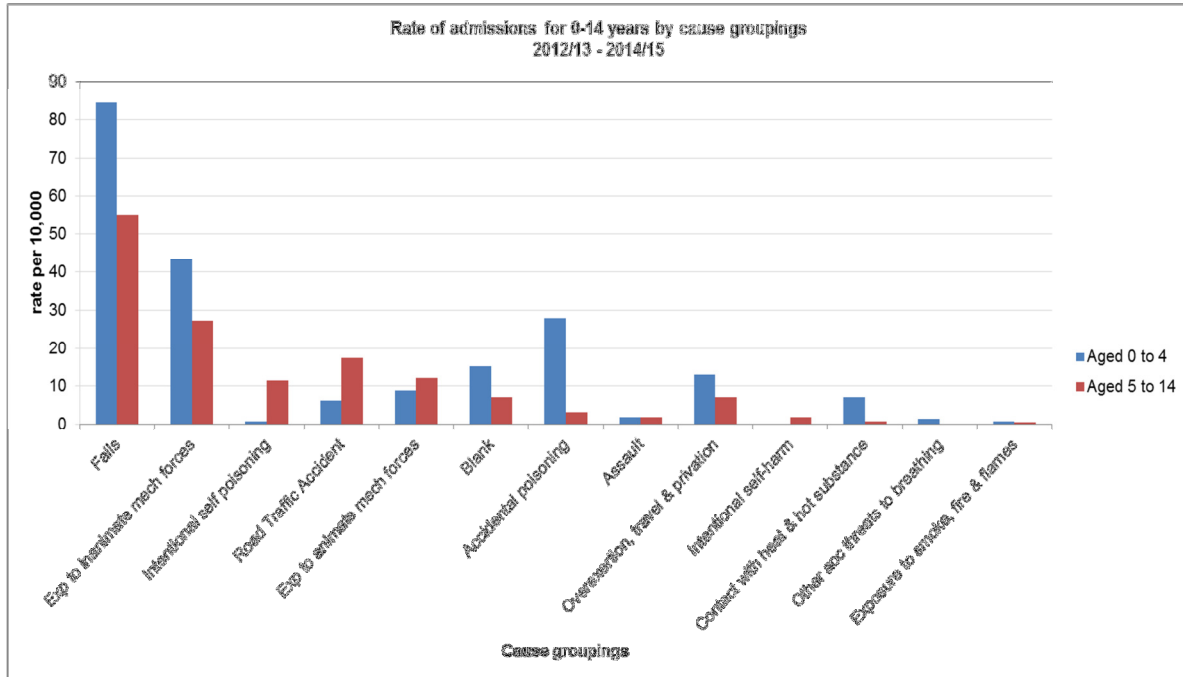


13 When comparing figures 5 and 6 more males have a hospital episode through unintentional and deliberate injuries than females. The reason for the episode suggests some gender or cultural reason for these differences as the individual moves through the life-course. Small boys may be more inclined or culturally encouraged to take part in more physical and riskier play. As they age recreational activity such as sports are likely to cause more injuries for males rather than females. Risk taking behaviour is more closely associated with males than females. Activities such as physical altercations are more associated with males than females and reflected in the admissions data.

Rate of admissions by cause (2012/13 - 14/15) – standardised rate per 10,000

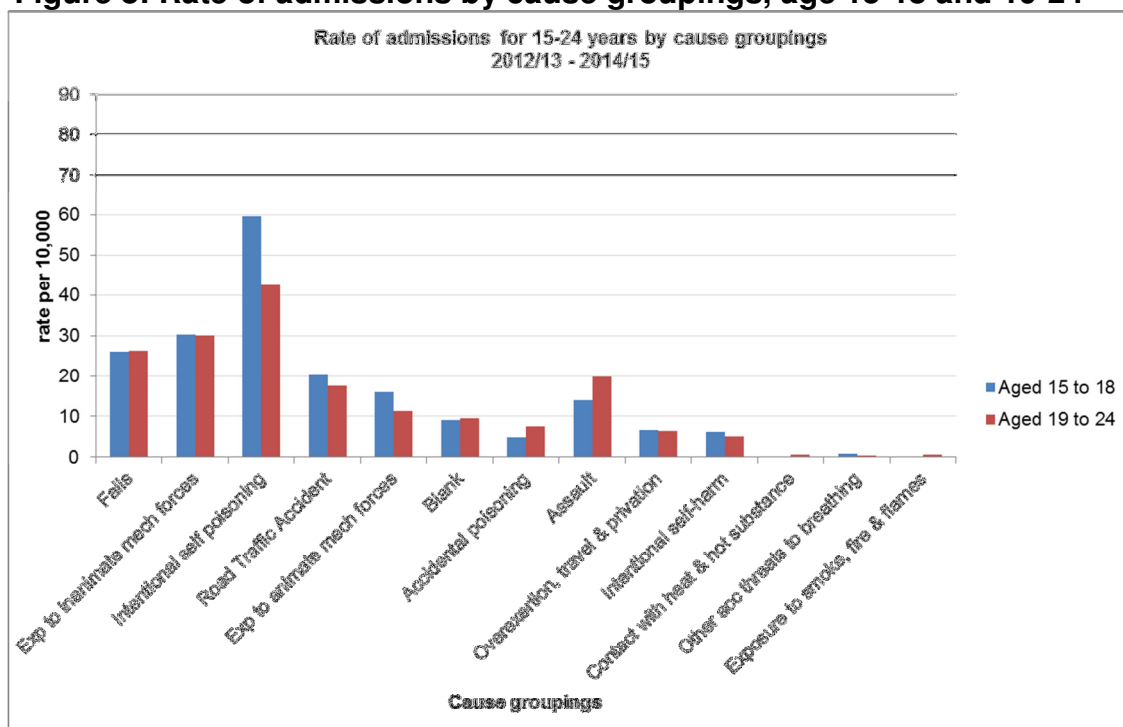
14 Cause groupings (fig. 7 and fig. 8) are the 'high level' reason for admission. The most dominant categories based on rates per 10,000 are displayed below to provide an overview of the types of admissions. These are for all admissions bar those that are suppressed due to low numbers.

Figure 7: Rate of admissions by cause groupings, age 0-4 and 5-14



15 Falls are the leading cause of admissions in both the 0-4 and 5-14 year old groupings, followed by exposure to inanimate mechanical forces.

Figure 8: Rate of admissions by cause groupings, age 15-18 and 19-24



- 16 The picture changes for young people with intentional self-poisoning the main cause of admission followed by exposure to inanimate mechanical forces.
- 17 It should be noted that the category 'blank' features in all age ranges but is most pronounced in the 0-4 category. A child in this age range may be unable to vocalise the nature of their injury, a parents or carer maybe unaware of the nature of their injury, or the hospital episode may be distressing for those involved leading to an incomplete record during the admission.
- 18 After the cause grouping has been recorded more detail on the nature of that injury can be provided. If a child has fallen, falling down stairs may provide a different scenario than falling from a tree. **Appendix 3** captures this information and ranks admissions accordingly.

Location of injury - distribution of top 5 locations of injury, by age category (2012/13 - 2014/15)

- 19 Home is the most dominant location (58.6%) for injury for the under-fives which is where they will be likely spending the majority of their time. An unspecified place is the second leading location. It is not known whether it is unspecified because it has not been recorded, or because the carer does not know the exact location on the injury, and depending on the injury and age of the child, they may be unable to provide that detail. **Appendix 4** provides further details across the age ranges and it is notable that "unspecified place" as a location increase as a child and young person ages. The reasons for this are unclear but likely to relate to the recording of the accident.

Impact of deprivation

- 20 Public Health England has identified unintentional injuries as a major health inequality. There is a persistent social gradient for unintentional injuries and inequalities have widened. This social gradient is apparent in County Durham and clearly indicates where targeted interventions should be delivered.

Admissions (2012/13 - 2014/15) by deprivation quintile (IMD2015) *sum of male and female categories

Figure 9: Admissions by deprivation quintile, 0-4 years old

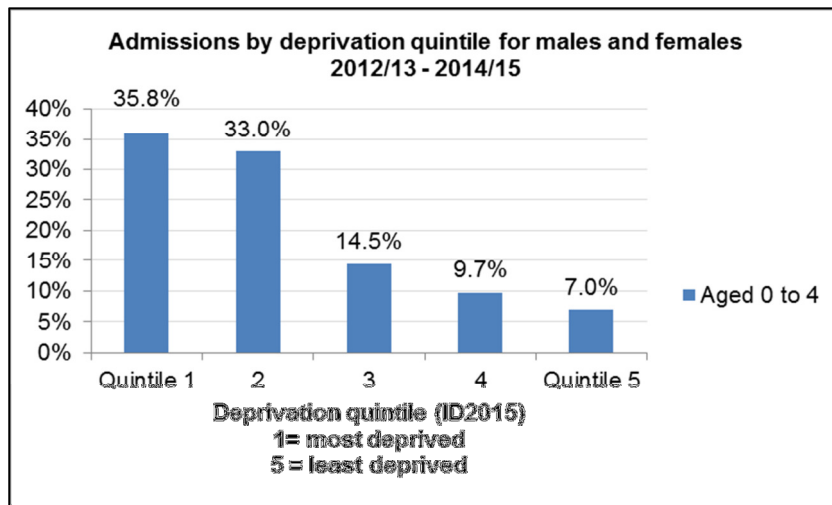


Figure 10: Admissions by deprivation quintile, 5-14 years old

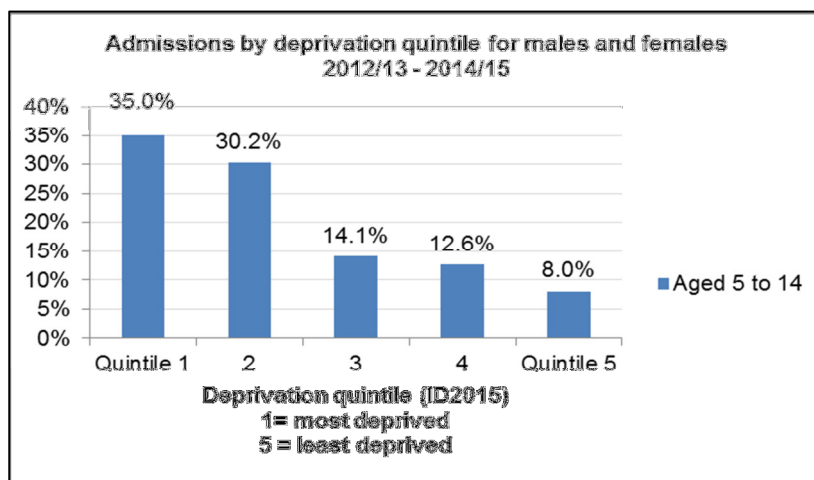


Figure 11: Admissions by deprivation quintile, 15-18 years old

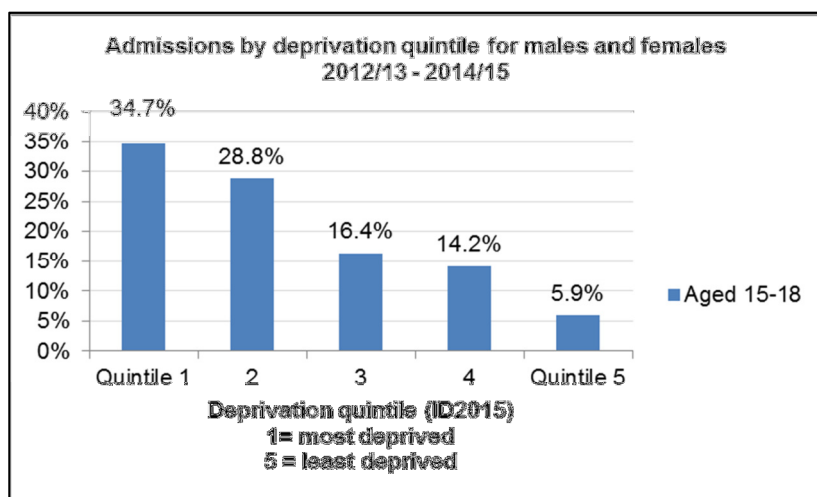
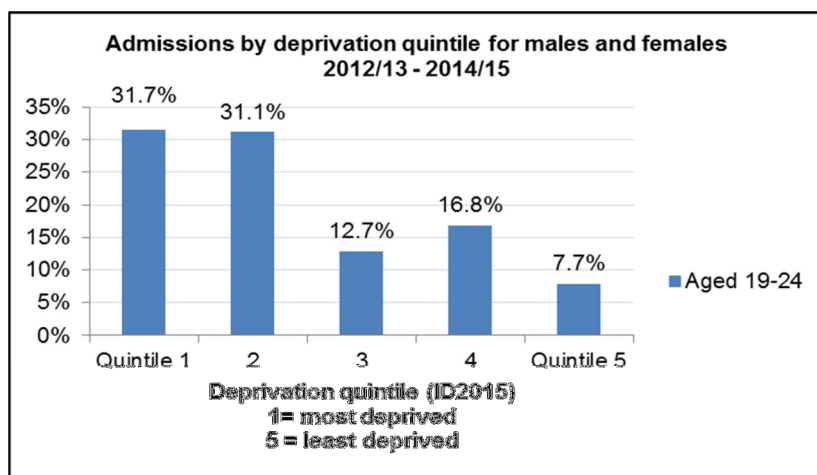


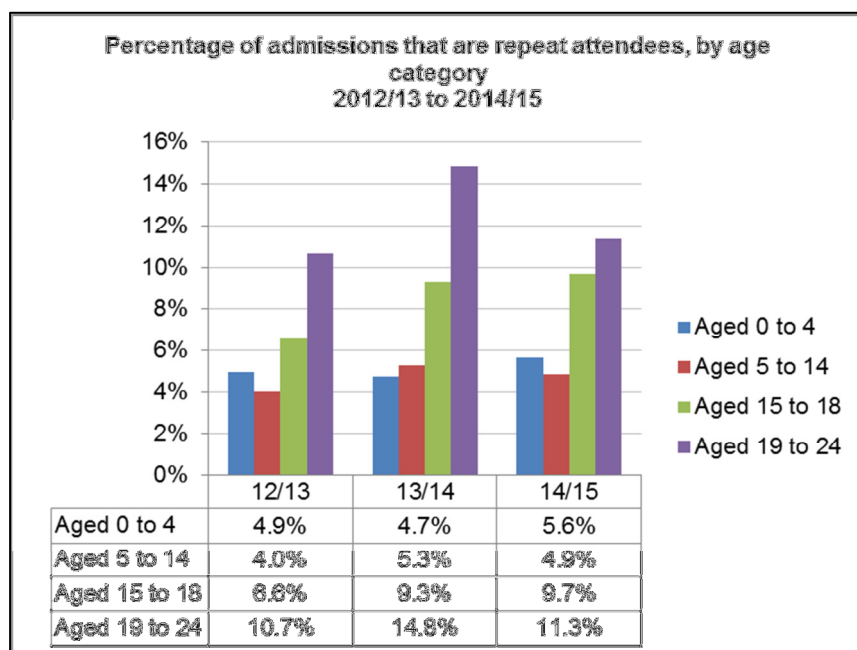
Figure 12: Admissions by deprivation quintile, 19-24 years old



Repeat admissions

- 21 Caution should be applied in relation to repeat admissions data as the numbers are too small to assess whether an individual is readmitted for the same injury or type of injury. Further analysis of the data is required

Figure 13: Percentage of admissions that are repeat attendees



Other considerations

- 22 The Public Health Outcomes Framework data and this analysis is based around hospital admissions. Little data is collected nationally about injuries that do not result in hospital admissions but are treated in other healthcare settings or at home.
- 23 Nationally there are weaknesses in the data available, with the cause of hospital admissions unknown for a number of patients for this age group. This report therefore does not provide a complete picture of admissions due to deficiencies in data.
- 24 The Health and Social Care Act (2012) introduced new measures and categories for accidental and deliberate injury data. New organisations such as Public Health England have a greater role in regards to data analysis. Some previous data sources and reports hosted by organisations such as the Health and Social Care Information Centre (HSCIC) are no longer available. It has not been possible to provide longer term trend analysis as the data was either unavailable or not directly comparable.

Conclusion

- 25 Gaps exist in data to help plan and monitor injury prevention programmes locally. Data relates to hospital admissions and does not capture data from minor injury, walk-in centres or primary care. It also does not consider injuries that are treated at home or in other settings e.g., school.
- 26 Gaps also exist within hospital admissions with 'blank' reasons for admission being noticeable across all age ranges and unspecified location being the most common location of injury across all but the 0-4 age range.

- 27 The types of preventable injury in children and young people are age related. The major cause of injury in the 0-4 and 5-14 age groups is due to falls. Most injuries in the 0- 4 year olds occur in the home, when a location is recorded.
- 28 The nature of injuries changes through the life course with some injuries reducing as children age and others increasing.
- 29 Home is consistently the most dominant location of injury though the other locations change during the life-stage (schools are prominent within 5-14 age group but decrease after that as the numbers attending schools will decrease). It should also be noted that after 0-4, the most dominant location is unspecified. The reasons for this are unknown.
- 30 Gender is a factor in the types of injury particularly as a child ages. This may be cultural or biological.
- 31 Deprivation is a key factor and a strong social gradient is evident across the whole life course of children and young people in County Durham.
- 32 A local children and young people injury prevention strategy group has been developed with partners and leads on implementation of a strategic action plan.

Recommendations

- 33 The Health and Wellbeing Board is recommended to:
- Note the content of this report and that further data is expected from Public Health England that will allow granular analysis within County Durham that is not available at the time of writing.
 - Consider how childhood injury prevention is explicit in all key strategies to ensure steps are taken to raise the profile of child injury prevention across all partner agencies.
 - Note opportunities across partnerships to influence and prevent injuries through a targeted approach across County Durham, taking into account deprivation e.g., commissioning of children's services, the community parenting programme and the development of a new early years strategy
 - Note the unintentional and deliberate injuries in children strategy will be refreshed to take account of most recent data sets
 - Raise the issue with AAPs once the Middle Super Output Area (MSOA) detailed information is available to enable consideration during their prioritization process
 - Note that locality / (Clinical Commissioning Group) CCG level data will be available at a later date.

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Appendix 1: Implications

Finance

None

Staffing

None

Risk

None

Equality and Diversity / Public Sector Equality Duty

Greater impact on deprived communities.

Accommodation

N/A

Crime and Disorder

N/A

Human Rights

N/A

Consultation

N/A

Procurement

N/A

Disability Issues

None

Legal Implications

None

Appendix 2: Glossary

Accidental poisoning	ICD Code X40-X49 Includes: accidental poisoning from various chemicals, gases and pesticides. Also includes accidental poisoning by alcohol
Assault	ICE Code X85-Y09 Includes: assault by bodily force, assault by sharp object
Exposure to animate mechanical forces	ICD Code W20 – W49 Includes: Hit struck kicked twisted bitten/scratched by another person, Striking against or bumped into by another person, Bitten or struck by dog
Exposure to inanimate mechanical forces	ICD Code W20 – W49 Includes: struck by thrown object, struck by sports equipment, contact with knife, contact with sharp glass, contact with hand tools etc.
Falls	ICD Code W00-W19 This includes: unspecified falls, falls from chair, falls from bed, falls from tree etc.
Hospital admissions caused by unintentional and deliberate injuries in children	The number of finished emergency admissions due to unintentional and deliberate injuries in children (aged 0-24 years) based on any mention of cause codes ICD 10: S00 - T79 or V01 - Y36. Admissions are only included if they have a valid Local Authority code.
ICD 10	International Statistical Classification of Diseases and Related Health Problems
Intentional self-harm	ICE Code X70-X84 Includes: Intentional self-harm by sharp object, Intentional self-harm by jumping from a high place
Intentional self-poisoning	ICD Code X60 – X69 Includes: Intentional self-poison/expos other drug acting on nervous system etc.
Other accidental threats to breathing	ICE Code X85-Y09 Includes: Inhalation & ingestion of other objects causing obstruction to respiratory tract, Inhalation and ingestion of food causing obstruction to respiratory tract, Inhalation of gastric contents.
Overexertion, travel and privation	ICD Code X50 – X59 Includes: lack of food, lack of water, overexertion and strenuous or repetitive movements.

Appendix 3: Narrow categories for admissions

Ranking by age and sex, for narrow categories (2012/13 - 2014/15) – 0-4 years

- Unspecified falls are the most dominant reasons for admission in the 0-4 category.
- Detail surrounding the nature of the fall is not always recorded, or plausibly even possibly recorded. A similar instance maybe noticed from 'exposure to an unspecified factor'. Potentially with this measure, and this age range, further recorded data, does not provide further clarity on the issue.
- Striking against or struck by other objects (exposure to inanimate mechanical forces) is the second most dominant reason.
- Differences between genders are not pronounced.

Ranking by age and sex, for narrow categories (2012/13 - 2014/15) – 5-14 years

- Unspecified fall remains the most dominant category. Falls from playground equipment becomes a dominant category, again reflective of life stage. Injuries such as falls from rollers skates or skateboards also figure.
- As people move through the life course reasons for admission may change. Self-poisoning becomes more significant and is the dominant admission in the female category. It is likely that this changes as people age, and become more self-aware, and is realistic that this does not figure in the lower ages as it the individual is not capable of making such decisions.
- Males become more likely to become involved collisions with motor vehicles whilst cycling and also begin to be recorded as 'Hit struck kicked twisted bitten/scratched by another person' which may well be the result of a physical altercation.

Ranking by age and sex, for narrow categories (2012/13 - 2014/15) – 15-18 years

- Within this age range differences between the genders become noticeable. The dominant categories within females become related to self-poisoning and self-harm.
- The dominant categories within males become associated with 'assaults' and injuries likely resulting from a physical altercation (though self-poisoning is still a dominant category).
- Interesting unspecified falls still figure highly.

Ranking by age and sex, for narrow categories (2012/13 - 2014/15) – 19-24 years

- Self-poisoning is a dominant reason in this age range. Falls and collisions remain dominant within males though assaults become the leading reason for admissions along with other injuries that may be associated with an altercation.
- Factors such as falls and collisions actually increase in this age range from the 15-18 year old and admissions such as assaults rise. The exact reasons for this are unknown but it is reasonable to assume that alcohol becomes legal for this age range and its effects on violent behaviour are well known.

Ranking by age and sex, for 3 digit ICD10 cause codes for admissions (2012/13 - 2014/15) *1 = highest number of admissions

Ranking - 0-4 years			
	Female	Male	Persons
Fall on and from stairs and steps		6	7
Unspecified fall	1	1	1
Striking against or struck by other objects	2	2	2
Foreign body entering into or through eye or natural orifice	3	7	5
Exposure to unspecified factor	4	4	4
Fall on same level from slipping tripping and stumbling	5	3	3
Fall involving bed	6		9
Fall involving playground equipment	7	9	8
Caught crushed jammed or pinched in or between objects	7	5	6
Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	8	8	
Accidental poisoning by and exposure to non-opioid analgesics, antipyretics and antirheumatics	8	7	8

Ranking by age and sex, for 3 digit ICD10 cause codes for admissions (2012/13 - 2014/15) – 5-14 years

Ranking - 5-14 years			
	Female	Male	Persons
Other fall from one level to another		10	
Hit struck kicked twisted bitten/scratched by another person		7	9
Intentional self-poisoning by and exposure to non-opioid analgesics, antipyretics and antirheumatics	1		3
Unspecified fall	2	1	1
Fall involving playground equipment	3	2	2
Caught crushed jammed or pinched in or between objects	4	5	4
Fall on same level from slipping tripping and stumbling	5	4	5
Striking against or struck by other objects	6	6	6
Fall involving ice-skates skis roller-skates or skateboards	7	8	8
Bitten or struck by dog	8		
Exposure to unspecified factor	9	9	10
Pedal cyclist injured in non-collision transport accident	10	3	7

Ranking by age and sex, for 3 digit ICD10 cause codes for admissions (2012/13 - 2014/15) – 15-18 years

Ranking - 15-18 years			
	Female	Male	Persons
Other fall same level due collision/pushing by another person		8	
Striking against or struck by other objects		3	5
Pedal cyclist injured in non-collision transport accident		5	9
Exposure to unspecified factor		6	8
Striking against or bumped into by another person		7	
Intentional self-poisoning by and exposure to non-opioid analgesics antipyretics and antirheumatics	1	2	1
Intentional self-poisoning by and exposure to anti-epileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	2	9	4
Intentional self-poisoning by and exposure to narcotics and psychodysleptics (hallucinogens), not elsewhere classified	3		6
Intentional self-harm by sharp object	4		7
Unspecified fall	4	4	4
Assault by bodily force	5	1	2
Intentional self-poisoning by and exposure to other and unspecified drugs medicaments and biological substances	6		
Caught, crushed, jammed or pinched in or between objects	7		
Bitten or struck by dog	7		
Hit, struck, kicked, twisted, bitten/scratched by another person	7	2	3

Ranking by age and sex, for 3 digit ICD10 cause codes for admissions (2012/13 - 2014/15) – 19-24 years

Ranking 19-24 years			
	Female	Male	Persons
Hit struck kicked twisted bitten/scratched by another person		6	7
Exposure to unspecified factor		8	
Striking against or struck by other objects		4	6
Contact with sharp glass		9	8
Intentional self-poisoning by and exposure to non-opioid analgesics, antipyretics and antirheumatics	1	2	1
Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic antiparkinsonism and psychotropic drugs, not elsewhere classified	2	3	3
Unspecified fall	3	5	4
Fall on same level from slipping tripping and stumbling	4	7	5
Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	4	9	7
Fall on and from stairs and steps	4		
Assault by bodily force	5	1	2
Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	6		
Car occupant injured in collision with car, pickup truck or van	7		
Intentional self-harm by sharp object	8		8

Appendix 4

Figure 9: Locations, 0-4 years

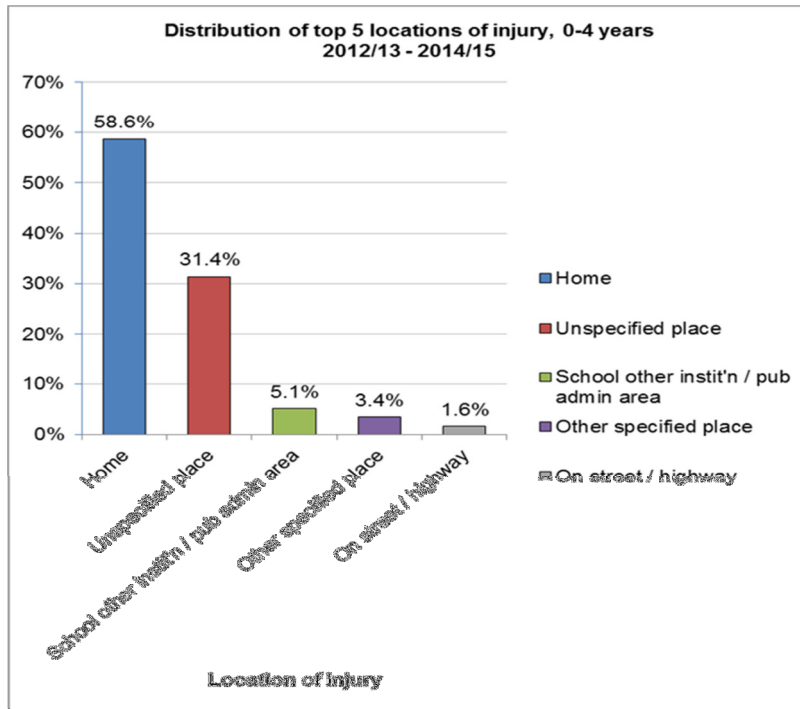


Figure 10: Locations, 5-14 years

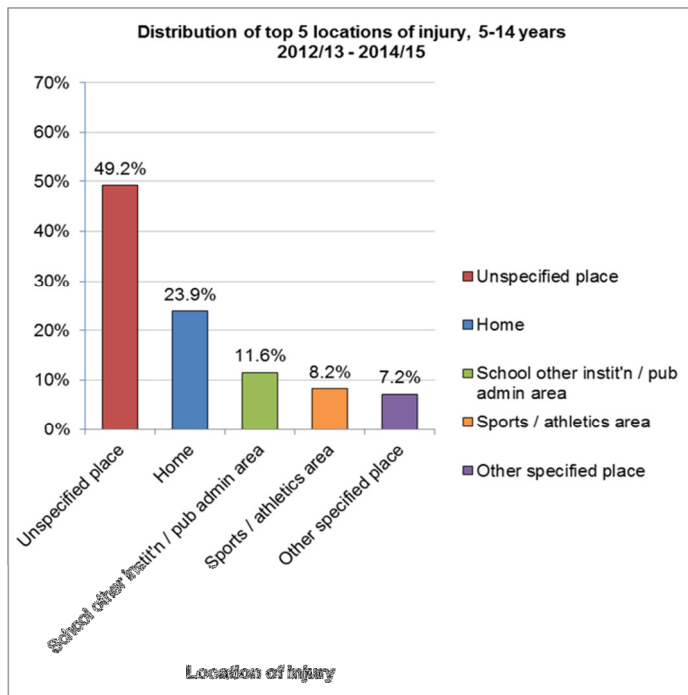


Figure 11: Locations, 15-18 years

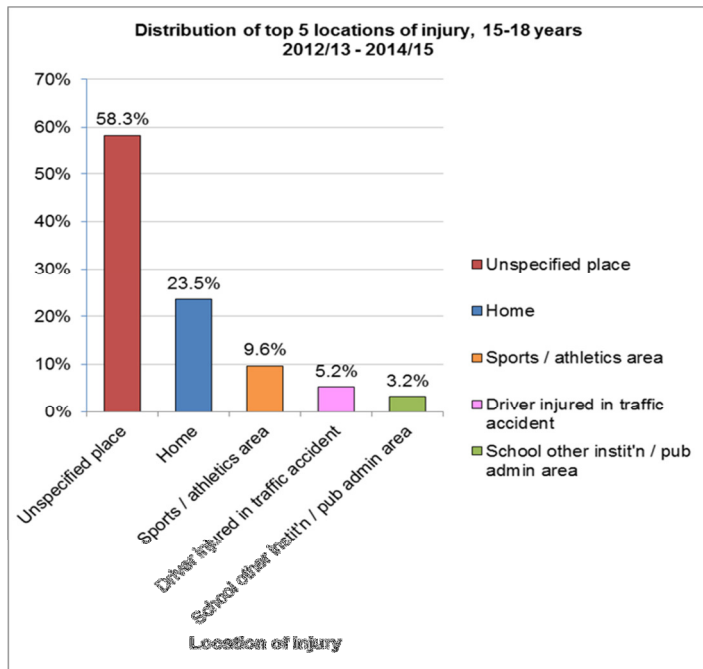


Figure 12: Locations, 19-24 years

