LIVING STREETS

PEDESTRIAN SLIPS, TRIPS AND FALLS:

AN EVALUATION OF THEIR CAUSES, IMPACT, SCALE AND COST.

FEBRUARY 2023

Image credit: Centre for Ageing Better

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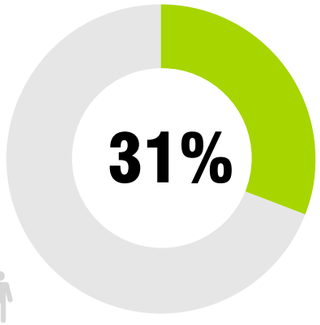
FOREWORD

THE GOVERNMENT'S 2020 GEAR CHANGE STRATEGY[a] SETS OUT THE GOVERNMENT'S AMBITION THAT 50% OF JOURNEYS IN ENGLAND'S TOWNS AND CITIES ARE WALKED OR CYCLED BY 2030.

The accompanying investment of £2 billion in walking and cycling over the next five years will make a huge difference, enabling millions more people to enjoy the benefits of active travel.

However, for some groups in our society – particularly older people and disabled people – the quality of our pavements can act as a major deterrent to walking. Living Streets research[b] has found that nearly **one in three** (31%) older adults (aged 65+) are prevented from walking more or at all on their local streets because of cracked and uneven pavements; 48% of older adults say they would walk more if pavements were better maintained.



31% OF ADULTS AGED 65+ SAID THEY ARE PREVENTED FROM WALKING MORE OR AT ALL ON THEIR LOCAL STREETS BECAUSE OF CRACKED AND UNEVEN PAVEMENTS

Low quality pavements have a real cost – particularly in terms of the burden on the National Health Service due to trips and falls.

We are pleased that the government has recognised the need to address these issues. The CWIS Safety Review[c] highlighted some of the Department's concerns about poor pavement maintenance.

But the number of trips and falls caused by poor pavement maintenance is difficult to establish precisely as there is no systematic collection of data on pedestrian trips and falls in England at present. Improving data collection would allow for positive policy interventions to address the pernicious impact of trips and falls.

This report – made possible through generous support from the Department for Transport – considers in detail what we know about the nature and scale of slips, trips and falls on our pavements in England. We have also surveyed a number of sites in England and have reached out to both local authorities and insurance companies to understand the extent of the challenge. We make some tentative recommendations on what more the government could be doing to address this challenge and inspire even more people to walk.

[a] Gear change: a bold vision for cycling and walking (publishing.service.gov.uk)
[b] Living Streets commissioned survey research for National Walking Month May 2019
[c] gov.uk/government/consultations/cycling-and-walking-investment-strategy-cwis-safety-review

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OUTDOOR FALLS ARE AN UNDERREPORTED PROBLEM

Falls happen to people of all ages, but older people are disproportionately affected; 30% of people older than 65 and 50% of people older than 80 fall at least once a year. This has been estimated to cost the NHS more than £2.3 billion per year. Costs are set to rise with an ageing population – by 2030, one in five people in the UK will be over 65 and the fastest growing age group will be 85+ years. However, the focus is predominantly on falls indoors (e.g., in healthcare settings).

It has been estimated that 10% of people over 65 will experience a pedestrian fall outdoors each year. There are over 10 million people over the age of 65 in England (accounting for 18.5% of the population; 18.6% of the UK population), and annually there could be more than one million outdoor falls among older adults. At a time when keeping physically active is more important than ever – to 'reduce the risk of illness in both the short and long-term, preserve memory and cognitive ability and reduce the risk of falls' – falls outdoors are an underreported problem.

NO-ONE REALLY KNOWS HOW MANY PEOPLE FALL OUTDOORS

Academic literature on pedestrian falls in public spaces is relatively sparse in comparison to that covering pedestrian injuries in traffic collisions. The definition in the UK (and most other countries) of a 'road travel injury' (RTI) includes the involvement of a vehicle, so pedestrian trips, slips and falls are not included within official RTI statistics. Therefore, there is no system for recording injuries that occur in the absence of a vehicle.

There is also poor differentiation between outdoor and indoor falls despite the distinct risk profiles of these types of falls. Pedestrians who fall outdoors are more likely to be healthy for their age, not use walking aids and to have markers of positive health such as fast walking speeds. A frequent approach to gathering data is the use of surveys or focus groups to gather retrospective recollections of past falls. Some of these use samples of 'fallers' from hospital or other treatment facility data, and some use a random sample, usually of older people.

FALLS HAPPEN TO PEOPLE OF ALL AGES, BUT OLDER PEOPLE ARE DISPROPORTIONATELY AFFECTED; 30% OF PEOPLE OLDER THAN 65 AND 50% OF PEOPLE OLDER THAN 80 FALL AT LEAST ONCE A YEAR.

"CONSISTENCY IN THE RECORDING OF THE CAUSE OF PEDESTRIAN FALLS AND ANY RESULTING INJURIES WOULD ALLOW COMPARISON ACROSS NHS AND LOCAL AUTHORITY DATASETS."

Emergency and elective admitted patient care (admission requiring an overnight hospital stay) provides the most comprehensive information on outdoor falls injuries. There were an average of 30,000 admissions in 2018 and 2019, dropping by almost a third with lockdown restrictions in 2020. The coding of external cause codes (e.g., W004 for a fall on the same level involving ice and snow) varied significantly between England and the rest of the UK. Out of a total of 84,549 admissions between 2018 to 2020, the majority (97% or 82,235) were attributed to England, whereas Scotland, Wales and Northern Ireland with a combined population of 10.5 million people (15.6% of the UK population) recorded only 2,165 admissions in the same period. Most Scottish local authorities show zero admissions for outdoor falls across three years, which seems unlikely. This identifies a significant gap in information on outdoor falls in the devolved administrations.

Information on footway faults and falls is also held within local authorities, but it is not collected consistently or available nationally. Some authorities will log the location of every reported fall as well the location of pedestrian falls resulting in personal injury claims. Furthermore, the way that footway faults and injuries are recorded varies across local authorities rendering a national comparison difficult. Consistency in the recording of the cause of pedestrian falls and any resulting injuries would allow comparison across NHS and local authority datasets.

Pedestrian Slips, Trips and Falls

Continued

EXECUTIVE SUMMARY

THE TRUE COST OF PEDESTRIAN FALLS COULD PRIORITISE FOOTWAY MAINTENANCE

Street reviews revealed trips hazards across all street classifications, in urban and rural areas, across England. Pavements on higher classification streets were more likely to be paved and subject to damage from heavy goods vehicles. Pavements on lower classification streets were more cluttered, damaged by vehicles parked on pavements or using crossovers, as well as being repaired less frequently. These findings are supported by the much more comprehensive assessment of the nation's footways carried out in 2019 and 2021 by Gaist on behalf of the Department of Transport (DfT). They estimated an average total cost 'of all maintenance operations that would need to be carried out to either address poor condition on a footway or to preserve the footway in its current condition and prevent further deterioration' in England (excluding London) of £1.695bn. The funding formula allocations for local authority highways maintenance do not currently take into account walking and cycling infrastructure assets, such as footway length. DfT's local authority survey results record considerable variation in spending on active travel infrastructure (from 2 to 40% of local transport budgets), underlining the need for a better understanding of how much is spent and where.

Section 41 of the Highways Act (1980) places a duty on highways authorities to maintain the highway. Personal injury claims made against a council for pedestrian falls can be defended under Section 58 of the Act – whereby the authority will not be liable if it can demonstrate that it has taken 'such care as in all the circumstances is reasonably required to secure that the part of the highway to which the action relates was not dangerous to [pedestrian] traffic'. This is a successful strategy because the local authority survey showed fewer than 20% of claims made for pedestrian falls injuries were successful. While some of the unsuccessful claims may prove fraudulent, the majority represent people who have fallen on a pavement and hurt themselves. They may still need treatment to recover and impose a health and/or social care cost on the local authority and the National Health Service.

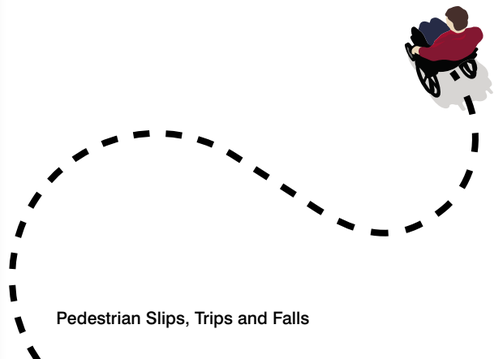
The hospital admissions data clearly shows the increase in the rate of admissions for pedestrian falls injuries with age. For women this appears to rise from the age of 55 and male admissions remain relatively constant and behind the curve until the age of 65. The injury profile is distinct between the sexes, with the more frequent presentation of head injuries for males versus fractures for females. Nevertheless, fractures of the femur (or of the hip) rise steeply for both sexes. Hip fractures are a frequent cause of morbidity and mortality in older people – and are expensive to treat[1].

The risk inherent in the current approach to highways asset management is that it does not take into account, for example, local authority-funded social care (e.g., domiciliary care, day care and care homes). A maximum cost of emergency admissions for pedestrian falls in the UK (mostly England) in 2019 was calculated at £98.7 million. A potential fourfold increase in the cost of hospital, community and social care services after admission brings the bill to an additional £394.8 million. In contrast, results of the local authority survey suggest that annual personal injury claims payments in England ranged from approximately £15.6 million in 2018 to £7.3 million in 2020. A system wide analysis of healthcare costs of outdoor falls in older patients is required.

If data on pedestrian falls was available, it could change priorities for road maintenance spending. The risk assessment tool developed in 2006 and updated in 2018 for the Footway and Cycle Track Management Group could be a starting point. In 2006, the authors called for correlation with accident and emergency records, in both the 2006 and 2018 revisions they underlined the need for standard information. As well as differences in the way that hospitals code patient admissions and local authorities record falls, claims data is of variable quality. The addition of healthcare costs of outdoor falls would allow the calculation of the full cost of pedestrian falls – and the consequent benefits of prevention.

Prevention of injury is better than the cure. Emphasis must shift to minimising external trip and slip hazards. In order for people to age healthily, we require well maintained footways. When footway condition is poor, older pedestrians will, understandably, be more cautious and avoid walking outdoors for fear of falling. It is a vicious circle leading to loss of independence, loss of fitness and an increased risk of falls.

"IN ORDER FOR PEOPLE TO AGE HEALTHILY, WE REQUIRE WELL MAINTAINED FOOTWAYS. WHEN FOOTWAY CONDITION IS POOR, OLDER PEDESTRIANS WILL, UNDERSTANDABLY, BE MORE CAUTIOUS AND AVOID WALKING OUTDOORS FOR FEAR OF FALLING."



Pedestrian Slips, Trips and Falls

KEY RECOMMENDATIONS

1. Standardise and improve data collection across healthcare settings and local authority CRM networks:

a) Devolved administrations should review the coding of falls outdoors for hospital admissions. The new Emergency Care Data Set introduced in 2020 may mitigate the deficiencies in current data collected outside England.

b) The Department for Transport should establish a standard classification of footway faults, and of fall causes and falls injuries consistent with the external cause codes and primary diagnoses recorded for admitted patient care. This would allow comparison across NHS and local authority datasets.

c) Highways authorities should record the location of all pedestrian falls reported to them; this would include the subset of falls leading to personal injury claims. This is a matter of best practice for all local authorities.

d) Highways authorities should make falls location and injury data publicly available and consider its use as a performance measure.

2. Prevention is better than a cure. Integrate costs to transport and health budgets, to set funding priorities that deliver the best value for money:

e) The Department for Transport and Department of Health and Social Care should carry out a system wide analysis of the healthcare costs of outdoor falls in older patients – making sure to capture the cost of local authority funded social care. Use this to establish a common methodology for local authorities to carry out their own assessments and/or provide baseline care costs.

f) The Department of Transport should sponsor the update of the UK Road Liaison Group's 'Asset Management Guidance for Footways and Cycle Routes' to include the health and social care costs of pedestrian falls as well as the costs of injury claims.

g) Active Travel England should work with local authorities and other bodies to develop a nationally consistent dataset of footway infrastructure.

3. Prompt treatment for falls injuries and rehabilitation helps people back on their feet sooner and could reduce health and social costs in the long term.

h) Further research could explore support options for pedestrians injured on footways as soon as injuries are reported, irrespective of the outcomes of personal injury claims.

i) Most pedestrians will not make claims but might benefit from support in regaining confidence in walking outside.

1.0 LITERATURE REVIEW

1.1 INTRODUCTION

This overview lays out our current state of knowledge on causes and costs of pedestrian falls in public spaces. It considers whether data sets exist in the UK that could reliably tell us how many pedestrian falls are occurring on our streets. Background literature was gathered through a non-systematic search of academic and grey literature published since 2000 from all countries.

The literature on pedestrian falls in public space is relatively sparse in comparison to that covering pedestrian injuries in traffic collisions[2]. There is also poor differentiation between outdoor and indoor falls[3] despite the distinct risk profiles of these types of falls[4 5]. A frequent approach is the use of surveys or focus groups to gather retrospective recollections of past falls. Some of these use samples of 'fallers' from hospital or other treatment facility data, and some use a random sample, usually of older people.

1.2 WHO FALLS?

While pedestrian falls happen to people of all ages, older people are disproportionately affected both in terms of the number who fall and the number who incur injuries (e.g., charts 1.1 and 1.2 below showing data from hospitals in Victoria, Australia)[6]. Tournier et al. provide a useful overview of the physical and cognitive abilities, such as balance and decision-making, involved in safe outdoor walking and demonstrate the greater extent to which older people tend to have impairments in those abilities[7]. Falls are a leading cause of injury-related deaths and hospital admissions among older adults and can result in the person who falls becoming homebound or institutionalised[8].

Chart 1.1: ED and hospital admission rates per 100,000 residents 2009/10 - 2013/14

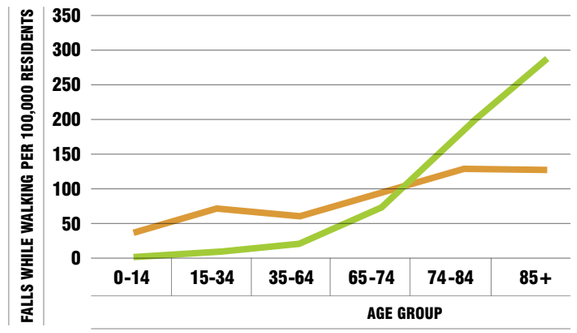
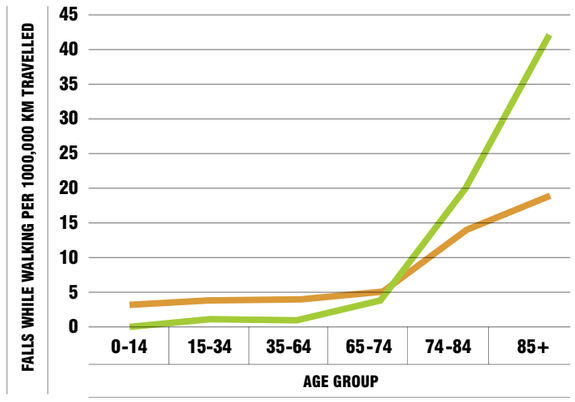


Chart 1.2: ED and hospital admission rates per 1000,000 kilometres walked 2009/10 - 2013/14



Charts 1.1 and 1.2 reproduced with permission from Oxley et al. (2018).

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1.2 WHO FALLS?

It has been estimated that 10% of people over 65 experience pedestrian falls outdoors each year[9]. Nevertheless, compared to older people who fall indoors, pedestrians who fall outdoors are more likely to be healthy for their age, not use walking aids and to have markers of positive health such as fast walking speed[10 11]. This may be related to the amount of outdoor walking undertaken by this group: people who rarely go out will rarely fall outdoors. Surveys commissioned by Living Streets show that many older adults are discouraged from walking outdoors by concerns about broken pavements or other obstacles to walking[12]. This interpretation is supported by the finding that older people who undertake 'utilitarian' walking are more likely to fall than 'leisure' walkers[13]. These 'utilitarian-only' everyday walkers are generally of lower socio-economic status and in poorer health than others, suggesting that they may have no alternative to walking to meet their needs (e.g., for shopping).

More support for the idea that, among older people, those who fall are those who walk comes from Vafaei et al. who found that older people who felt that their neighbourhoods had greater social capital, on measures of social cohesion, were more likely to fall[14]. However, research has also found that "typical" frail older people who did not go outdoors much and experienced indoor falls were also more likely to live in neighbourhoods with poor walkability[15]. This raises questions as to what is the cause and what (and in which direction) the association is between individual health and environmental factors, and highlights again the importance of addressing walking infrastructure in all neighbourhoods.

Several papers found that older people in poorer health, particularly with visual or cognitive impairments, were more likely to incur serious injury if they did fall outdoors and that injury rates and length of hospital stay increased with each 10-year age band over 65[16 17].

1.3 WHY DO PEOPLE FALL?

FOOT PROBLEMS, LOWER EXTREMITY NEUROMUSCULAR SYMPTOMS, THE USE OF WALKING AIDS, CIGARETTE SMOKING, ALCOHOL CONSUMPTION AND THE NUMBER OF MEDICATIONS A PERSON IS TAKING CAN INCREASE THE ODDS OF INDOOR AND OUTDOOR FALLS[18].

Nevertheless, those who fall outdoors are very likely to attribute their fall to hazards such as poor paving, lighting or tree roots in the pavement[19 20] or to navigating kerbs or crossings[21 22]. Nyman et al. found that, although participants in their qualitive study often mentioned 'rushing' at the time of their falls, they tended to feel that the environment was the primary cause. Support for this is provided by van Kamp et al. who found that there were higher rates of falling in areas where footpaths were, by an external measure, of lower quality.

Several studies looked at winter weather and found that in winter in Canada, 72% of falls requiring an ambulance were attributable to ice[23]. There are similar findings for Norway, where the risk of winter falls was found to be more elevated for women than men[24]. A study of the 'Big Freeze of 2009-10' in England[d] demonstrates how the weekly rate of emergency hospital admissions for falls on snow and ice was inversely related to the mean weekly temperature[25].

There is an interesting question about participants' attribution of causation when recalling falls. Kamp et al. found that Chinese elders in Sydney tended to attribute falls to their own inattention, while white elders were more likely to cite external factors. Given that most of the self-report literature cited here derives from places with majority-white populations, this points to a potential significant data bias, though it is unclear in which direction this may tend to go: are people who blame their own inattention or those who blame environmental factors closer to the truth, or are both factors equally relevant but more likely to be mentioned by one or the other group?

Given this demonstrable non-objectivity in falls attribution in self-report studies, some studies correlate recollection with measurable data about the location of falls, or about neighbourhoods in which falls occurred.

[d] See Winter of 2009–10 in Great Britain and Ireland - Wikipedia

1.4 WHERE DO PEOPLE FALL?

STUDIES LOOK AT THE CHARACTERISTICS OF THE NEIGHBOURHOODS IN WHICH PEOPLE FALL.

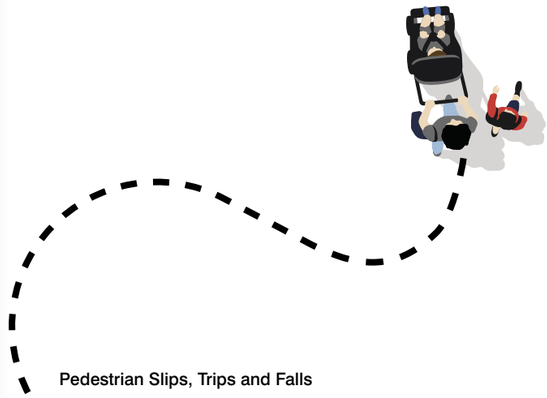
Neighbourhoods are generally a larger area, therefore, the focus tends not to be on specific street hazards but broader measures, such as walkability[26] and participants' perception of neighbourhood accessibility. Lai et al. used a spatial mapping approach to identify falls that resulted in treatment in a Hong Kong accident and emergency department, identifying several 'hotspots' within the data[27]. This gives a strong suggestion that there are features of the location that are related to falls, although this feature may only be that more people are walking there. However, the observation that falls are more likely to occur in high density residential areas and shopping areas again indicates that 'utilitarian' walking may be the activity resulting in most falls[28 29].

1.5 HOW MANY PEOPLE FALL?

MUCH OF THE RESEARCH POINTS TO THE INADEQUACY OF EXISTING DATA SOURCES IN ANSWERING THIS QUESTION.

The definition in the UK (and most other countries) of a 'road travel injury' (RTI) includes the involvement of a vehicle so pedestrian trips, slips and falls are not included within official RTI statistics. Therefore, there is no system for recording injuries that occur in the absence of a vehicle. The STATS19 reporting form only records the information collected by a police officer when an injury road collision involving one or more vehicles is reported to them[30]; this informs the Department for Transport Road Safety Data for England.

A review of available data carried out in 2017 points to the high number of people treated in hospital as a result of pedestrian falls – for example, in England in 2007-9, there were about 76,000 admissions (three times the number of pedestrians injured in vehicle crashes)[31]. These proportions were found to be similar to the Netherlands. Oxley et al. compared hospital data and crash data in Victoria, Australia over a five-year period (2008-13 and 2009-14) observing that: 'only 85 fall-related incidents were reported in the crash-based data, but pedestrian falls while walking accounted for an average of 1,680 hospital admissions and 3,545 emergency department presentations each year'[32].

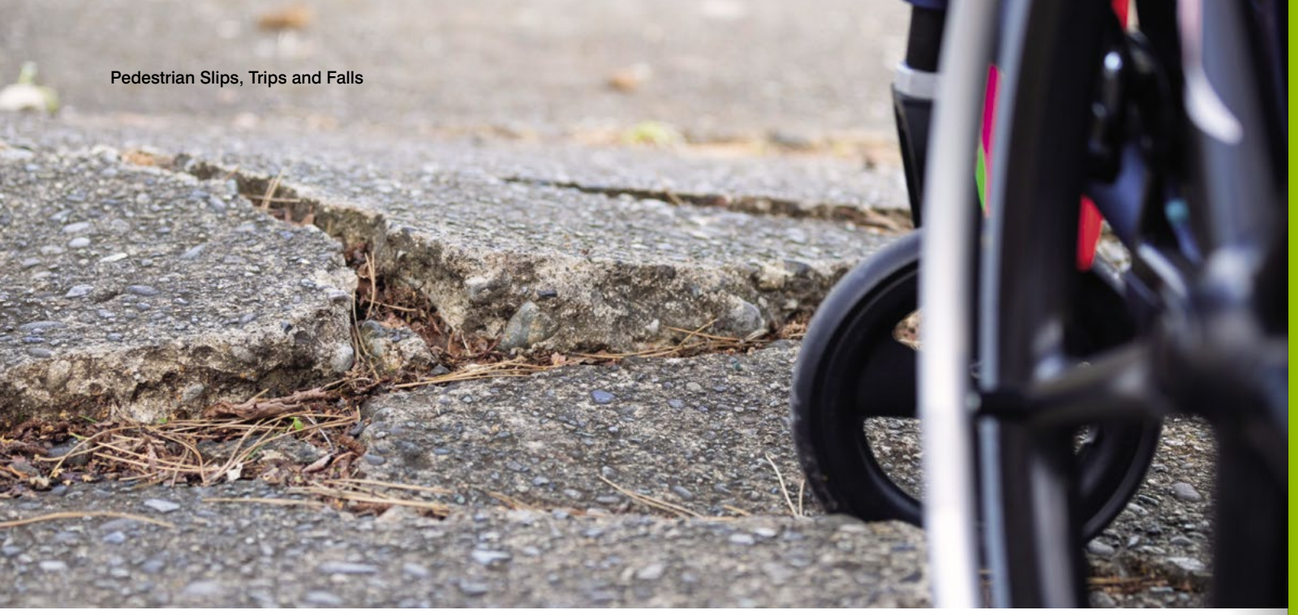


Probably the most recent and comprehensive approach to calculating the odds of pedestrian falls injuries for different demographics in the UK suggests that being female or a person with a disability doubles the risk of injury, whereas age and higher reported walking frequency are associated with increased risk of injury[33]. The modelling was based on self-reported road collisions recorded as by the National Travel Survey (NTS) for England – which allows for the reporting of pedestrian falls. The author (Aldred) notes the limitation that:

> "The [NTS] dataset cannot, however, be linked to any reporting datasets, and so cannot be verified in terms of police or hospital records. Indeed, most NTS incidents would not be present in either STATS19 or HES*, being relatively minor injuries often not involving the police or hospital attention. Hence, we cannot simply see these data as representing the 'true' extent of injury. It is more complex than that, with bias and differences in reporting affecting self-report data, as well as police or hospital data."[34]

The National Travel Survey does not at present gather data on injuries, but even if it were to add questions on this, there are potential problems with it as a source of information. The sample is representative of the demographics of the population, which will mean that relatively small numbers of those most at risk of falling will be sampled, and that the numbers of falls among "atypical" fallers will be very small. In addition, its methodology is of retrospective self-report, making it subject to the same concerns expressed above about the non-objectivity of such data, and the potential for some types of fall and groups of fallers to be systemically under-reported.

*Hospital Episode Statistics (HES) is the information collected when a patient is admitted to hospital (e.g. accident and emergency, out patients or for an overnight stay).



1.6 WHAT ARE THE COSTS OF PEDESTRIAN FALLS?

NO ONE REALLY KNOWS THE TRUE COST.

Olesen et al. found that pedestrian falls were the most expensive group of “traffic injuries” registered at Dutch and Danish hospitals, largely because of the high number of people involved (34% of the sample) and the concentration of those in older age groups – pedestrian fallers had individually similar costs, when adjusted for age, to those involved in cycle and motor vehicle collisions[35]. They suggest that the under-reporting of injuries to cyclists and pedestrians may lead to a focus of spending and legislation on the mitigation of injuries to motor vehicle users.

If data on pedestrian falls was available, it could change priorities for road maintenance spending. This idea is explored by Methorst et al. with a specific focus on the effect of this data imbalance on the treatment of road crossings, suggesting that the inclusion of data on pedestrian falls could lead to a greater focus on kerb heights and surface treatments than on interactions with vehicles[36]. The call for more quantitative data to support evidence-based approaches to street design and repair is echoed elsewhere[37].

This is nothing new. In 2006, the Transport Research Laboratory published a report commissioned by the Highways Agency to develop a risk analysis model for footways and cycleways[38]. This work was steered by the Footway and Cycle Track Management Group[f]. Third party claims were examined for factors that influence the number of falls, including pedestrian age, defect size and footway construction. The authors established that there was an extremely low rate of compensation claims, with ten accidents per million pedestrians passing over a 20mm footway defect, and fewer than two of those resulting in a claim. However, this was not a measure of injury severity or other personal and systemic costs incurred and did not look at the impact on different groups of pedestrians.

The statistics of falls requiring hospital treatment and the results of medical research into walking provided further insight. For a given footway network and maintenance regime, the likely number of injuries and their cost could be calculated – enabling highway authorities to compare the costs of different maintenance regimes and footway construction, with the benefits of incidents prevented.

[f] One of four technical groups reporting to the UK Roads Board, now the UK Roads Liaison Group.

At that time, the authors noted that collecting further data in a standard format would enable refinement of the model – noting that correlation with hospital Accident and Emergency department records is also considered necessary[39]. Yet by 2013, a report for the RAC Foundation on the economics of road maintenance simply concluded that the ‘deterioration of facilities for pedestrians and cyclists on local roads is likely to increase the level of risk. However, no firm evidence was found to conclude the magnitude of the impact.’[40]

In 2018, updated claims and costs data were applied to the 2006 risk analysis model by the Footway and Cycle Track Management Group and developed into an ‘approach to risk based maintenance management’[41]. Once again, the authors noted that ‘the claims data that is available is of variable quality and is not structured in a way that allows systematic analysis’. Indeed, efforts to extract location data from the Hospital Episodes Statistics for this project were hampered by GDPR. Data on patients’ postcodes is confidential and restricted – an issue confirmed by one of the Highways Officers interviewed for this project. Their authority had wanted to compare hospital admissions with claims, but it had to abandon the project because NHS DARS would not release that information.

“IF DATA ON PEDESTRIAN FALLS WAS AVAILABLE, IT COULD CHANGE PRIORITIES FOR ROAD MAINTENANCE SPENDING.”

1.7
SUMMARY

THE LITERATURE REVIEWED HERE GIVES SOME CLEAR POINTERS TOWARDS GROUPS OF PEOPLE WHO ARE AFFECTED BY PEDESTRIAN FALLS, AND TO SOME OF THE CIRCUMSTANCES SURROUNDING THEM.

Older people are disproportionately affected in terms of the number who fall and the number who incur injuries. It has been estimated that 10% of people over 65 experience pedestrian falls outdoors each year. Falls are a leading cause of injury-related deaths and hospital admissions among older adults and can result in the person who falls becoming homebound or institutionalised.

There is research to show that "typically" frail older people who did not go outdoors much and experience indoor falls are also more likely to live in neighbourhoods with poor walkability. Surveys commissioned by Living Streets show that many older adults are discouraged from walking outdoors by concerns about the quality of their walking environment. Compared to older people who fall indoors, pedestrians who fall outdoors are more likely to be healthy for their age, not use walking aids and to have markers of positive health such as fast walking speed.

People who fall outdoors are very likely to attribute their fall to trip hazards, such as poor paving, lighting or tree roots in the pavement, rather than their own inattention. This has led to a focus on neighbourhood 'walkability' and people's perceptions of neighbourhood accessibility. A study of the 'Big Freeze of 2009-10' in England also showed how the weekly rate of emergency hospital admissions for slips on snow and ice were inversely related to the mean weekly temperature. The odds of falling are also increased by foot problems, lower-extremity neuromuscular symptoms, the use of walking aids, cigarette smoking, alcohol consumption and the number of medications a person is taking. It is clear that self-report studies are not objective. However, there is no strong quantitative data on the numbers of falls in the published evidence for anywhere in the world, let alone in the UK.

There is no system for recording road traffic injuries that occur in the absence of a vehicle. A review of available hospital admissions data carried out in 2017 suggests that the number of people treated in hospital as a result of pedestrian falls is three times the number of pedestrians injured in vehicle crashes. Modelling based on the National Travel Survey suggests that being female or a person with a disability doubles the risk of injury, whereas age and higher reported walking frequency are associated with increased risk of injury.

It has been suggested that pedestrian falls are the most expensive group of "traffic injuries" largely because of the high number of people involved (compared to pedestrian injuries involving a vehicle) and the concentration of those in older age groups. If data on pedestrian falls (e.g., the cost of hospital admissions and health care, and the costs of personal injury claims) were more widely available, it could inform risk-based management of footways and change priorities for road maintenance spending. The deterioration of facilities for pedestrians (and cyclists) on local roads is likely to increase the level of risk of injury. The problem is that no-one really knows the true cost of pedestrian falls.

2.0
REVIEW OF TRIP HAZARDS

2.1 INTRODUCTION

THE PURPOSE OF THIS CHAPTER IS TO REVIEW A REPRESENTATIVE SAMPLE OF STREETS AND TO IDENTIFY TYPICAL TRIP HAZARDS, noting where these are the result of construction, maintenance or use. It is possible to make some general conclusions on the type of roads where faults commonly occur.

2.2 METHODOLOGY

Ten streets were surveyed in local authorities across England, selected according to a range of geographical and administrative factors:

- **English region:** Selected across the eight English regions with two selected within Greater London.
- **Highway Authority type:** Mix of combined authority, county, unitary and London borough authorities.
- **Area type:** Mix of urban, rural or urban rural English regions. One inner and one outer London borough selected.
- **Settlement type:** Mix based on the six classifications used by The House of Commons Library.
- **Street classification:** Mix based on the footway hierarchy in the 2016 national Code of Practice for 'Well-managed highway infrastructure'.

Table 2.1: Street review selection criteria

REGION	AUTHORITY TYPE	LOCAL AUTHORITY	AREA TYPE	SETTLEMENT TYPE	TOWN	STREET CLASSIFICATION	STREET NAME
London	London	Camden	Inner	Core City	Camden	1a Prestige Walking Zone	Tottenham Court Road
North East	Combined	North East Joint Transport Committee	Urban Rural	Other city	Gateshead	1a Prestige Walking Zone	West Street
South West	Unitary	North Somerset Council	Rural	Large town	Weston Super Mare	1 Primary Walking Routes	Fore Street
East Midlands	County	Leicestershire County Council	Rural Urban	Medium town	Melton Mowbray	1 Primary Walking Routes	Market Place
Yorkshire	Unitary	North Lincolnshire	Urban	Large town	Scunthorpe	2 Secondary Walking Routes	Frances Street
North West	County	Cumbria County Council	Rural	Village and small communities	Grange over Sands	2 Secondary Walking Routes	Main Street
West Midlands	Unitary	Shropshire Council	Rural	Small town	Ludlow	3 Link footways	Quarry Gardens
London	London	Sutton	Outer	Core City	Sutton	3 Link footways	Beulah Road
South East	County	East Sussex	Urban Rural	Medium town	Bexhill-on-Sea	4 Local access footways	Larkhill
East of England	Combined	Cambridgeshire & Peterborough CA	Urban Rural	Village and small communities	Gamlingay	4 Local access footways	Elizabeth Way

Pedestrian Slips, Trips and Falls

Continued

2.2 METHODOLOGY

Living Streets staff surveyed sections of street of approximately 200m where there was footway either side of the carriageway, or 100m for pedestrianised/shared space streets and streets with very wide footways.

We undertook visual surveys of the ten streets, aided by measuring equipment and photography as appropriate. The survey included a range of metrics looking at physical features and conditions that could influence slips, trips and falls, including permanent and temporary features, the level of maintenance and management, vehicle parking arrangements, damage by vegetation, and the influence of other human behaviours.

The majority of the 25 metrics were simple counts, with some split into three categories based on the size of fault: under 15mm, 15 to 25mm and over 25mm, with 15mm being the measure used by the Healthy Streets methodology, and 25mm being a commonly cited threshold for payment of compensation to injured parties. Faults of under 15mm were recorded as there is potential for these weak points to become larger over time.

Staff were briefed before undertaking the surveys. The surveys were undertaken by multiple staff members, which may affect the consistency of the recording. Several of the metrics are difficult to accurately measure or quantify and the footprint of the fault may vary from a localised issue to a much larger length or area. Additionally, some may be lateral to the general flow of pedestrians (from building to kerb) and are likely to have the greatest impact on trips, while others are along the general route of travel and may not pose the same risk; this distinction was not recorded in the survey.

2.3 FINDINGS

THE SURVEYS SHOW VARIED RESULTS ACROSS THE 25 METRICS.

There is a general trend towards more faults in lower classification streets, with some differences relating to the neighbouring land uses and activities. Typically, the land uses followed a trend alongside the hierarchy, of retail and services on higher order pedestrianised streets, and lower order streets being predominantly or wholly residential. Tottenham Court Road is an outlier in being a prestige street with central carriageway.

The design of the street also has some effect, with higher classification pedestrianised streets lacking kerb edges and the related potential faults. Some of the lower classification streets were residential and included vehicle crossovers for off-street parking; these were largely not present on higher classification streets.

The surveys are limited as they do not identify when any elements of the street were designed or installed, or when maintenance and repairs were last undertaken. This means it is impossible to relate the observations to design standards for newly installed features.

2.3.1 FOOTWAY SURFACE

A general trend was identified with higher classification streets (1a and 1) having paved surfaces, compared with lower classification streets which were typically surfaced with tarmac/bitmac. As could be expected, higher classification streets typically had wider footways, offering more space to manoeuvre around any identifiable faults or obstacles, but also providing more surface area on which faults could develop. There were significantly more small faults identified than large (over 25mm), with some large areas with faults that are low in height but may have a cumulative slip or trip impact.

All the streets surveyed had sufficient footways for the number of pedestrians, although this could be highly variable depending on the time of visit. The higher classification streets had either wider footways or a wide pedestrianised area, while lower classification streets had footways installed at typically less than 1.8m width. The effective width was narrowed due to pavement parking, installed features including fixed poles and bins, or non-fixed features, in some cases reducing widths to less than 1m.

Higher classification streets typically had fewer faults in the footway surface, including level differences, faults at the kerb edge and faulty service covers. Gateshead (1a) was a particular anomaly to this trend, with a large proportion of the surface having faults. These faults were too numerous to count but approximately 70% of pavers were uneven, cracked or broken resulting in level differences up to and beyond 25mm.

Continued

2.3.1 FOOTWAY SURFACE

A couple of the sites (Melton Mowbray and Ludlow) were outliers, with a significantly larger number of quantifiable faults than any other sites. Ludlow had significantly sized areas with small fissures and scuffed surfaces.

Many of the faults identified related to joins between difference surface types, or failure of patch repair joins. Many other faults relate to service covers. There were more kerb faults in lower classification streets, though the majority of higher classification streets had level surfaces and lacked kerbed edges. Typically, the surface faults identified appeared to be related to wear and tear and maintenance issues, however some, such as the faults in Gateshead, may be due to vehicle overrun on surfaces not designed for that loading and usage.

There was a low incidence of steep footway crossfalls, with these typically associated with vehicle crossovers on lower classification residential streets. There were few steep slopes identified though these were a consequence of geography rather than design choices. A salt/grin bin was provided on the steep section of street in Ludlow.

2.3.2 CROSSING POINTS

Most of the surveyed streets either do not require crossing points along their length (due to their pedestrianised format) or lacked crossings, relying on vehicle access dropped kerbs to provide this function. As previously noted, this was less of an issue for higher classification streets due to a lack of kerb edges and defined carriageways to negotiate. These vehicle accesses typically lack tactile paving, are not provided in pairs across the carriageway, and are not fully flush with the carriageway surface. Of those dropped kerbs that were not fully flush, more were found in the ‘over 25mm’ category than either of the smaller categories and are more likely to result in trips or falls. This results in a compromised amenity for pedestrians, not specifically from design fault, because there is no dedicated crossing point.

There was a slight trend towards lower classification streets having a greater number of junctions that were missing crossing points (with dropped kerbs and tactile paving), however this has been recorded as a count rather than as a proportion of all junctions so may reflect these streets having a higher number of junctions.

This lack of formal crossings may result in trips or falls from people stepping up/down high kerbs to cross the street. Combined with the narrow effective footway widths in many lower classification streets, some pedestrians may find it difficult to manoeuvre along the street as they are unable to cross the street to avoid pinch-points and may find themselves needing to travel along the carriageway. It may also discourage some people from walking for fear of falling.

2.3.3 VEGETATION

There was a low incidence of either damage or slip hazards related to trees and other vegetation. Those issues that were identified mainly relate to private properties rather than street trees within the highway extents. However, there were few trees within the public realm or immediately adjoining private land.

2.3.4 OTHER OBSTACLES

There were few instances of other obstacles and hazards – the ones identified were typically related to management issues, including private property impinging on the public realm, pavement parking, and temporary obstacles in the footway.

While there were a large number of fixed features identified, that could be obstacles for pedestrians, there was no clear trend related to street classification other than a clear trend of benches only being provided in higher classification streets. Streets typically either have no benches or multiple ones. While this does not directly cause slips, trips or falls, there is a secondary association from fatigue for pedestrians who have been unable to stop to rest.

There was a greater number of non-fixed obstacles on higher classification streets. The number of features may vary by the day of the week or time of day. These features were typically related to business operations and advertising and would not be expected on lower classification residential streets.

Parked vehicles were more of an issue in lower classification streets, which were typically residential.

There was a higher level of street lighting provided in higher classification streets, although surveys were undertaken in daylight hours so it was not possible to identify what proportion of the street would be well lit at night.

2.4 OBSERVATIONS BY LOCATION

2.4.1 CAMDEN – TOTTENHAM COURT ROAD

Tottenham Court Road has a busy daytime and night-time economy. It is close to an underground station, Dominion Theatre, the British Museum and the Royal National Throat, Nose and Ear Hospital. It is an important bus corridor. Carriageway space has been reclaimed along the length of the road to create wide level footways for walking as well as other uses, such as cycle storage, space for outdoor dining or loading bays for retail businesses. The street has granite setts, but no faults were identified. This 'high-yield' public realm is relatively new, is accessible, is well designed and is very well maintained and inspected on a regular, daily basis by street scene staff.

2.4.2 GATESHEAD – WEST STREET

West Street is classed as a prestige walking route. Its construction dates from at least the 1960s with more recent mixed residential, office, retail development. The Gateshead Interchange provides access to the metro, buses and shops. The area is a restricted parking zone with no loading except in marked bays. Its pedestrianised space is topped and tailed by single carriageway vehicular access and is accessible for deliveries between 6.30 and 8.30am. At the time of the audit, a number of retail premises had closed or appeared to be boarded up. Active street frontages were noticed along the adjacent Ellison Walk.

The footway condition was good in some places but was generally poor and needed comprehensive repair. A large number of faults were identified with the paving in this street despite the high-quality materials. Public realm improvements appear to have been undertaken in the past ten years to create a level surface of mixed block and flagstone paving and asphalt carriageway. The scale of damage suggests these faults could be related to faults with the design and choice of materials or could be caused by construction issues. Flagstones have been damaged by vehicular overrun and block paving is eroded. This may be due to the removal of mortar followed by water ingress and (freeze/thaw) damage.

2.4.3 WESTON SUPER MARE – HIGH STREET

This is a well-established and well maintained pedestrianised street characterised by herringbone block paving, benches and lighting columns. Most of the shops are still open and well used. Deliveries to retail premises take place on neighbouring streets. In the wake of Covid19, the council has improved wayfinding, installed a lot of tactile paving (which lights up at night), provided cycling infrastructure, and reduced vehicle access on the approach to the high street. There were few faults identified in this pedestrianised street and these mainly related to an incomplete removal of litter bins and their fixings. There is a lot of puddling on the new infrastructure, which could lead to future water damage.

2.4.4 MELTON MOWBRAY – MARKET PLACE

This is a wide commercial, pedestrianised area (restricted vehicular access between 10am and 4pm) with shops mostly on one side. As well as being a shopping destination, it is a thoroughfare for people on foot. The street lies in the historic centre of Melton Mowbray and has seen public realm investment in the past 2-3 years. The carriageway has been raised to the level of the footway and paved in a small herringbone block pattern. The original footway is paved in wide flagstones and demarcated by a narrow linear metal gully. The key trip hazard is not linked to use (e.g., deliveries), but to the recent public realm improvement: the carriageway surface is not fully level with the footway creating a slight but noticeable ridge along the former kerb length. A range of other faults were identified in this street, mainly smaller faults related to uneven paving, which could be a fault of design, construction or vehicle overrun.

2.4.5 SCUNTHORPE – FRANCES STREET

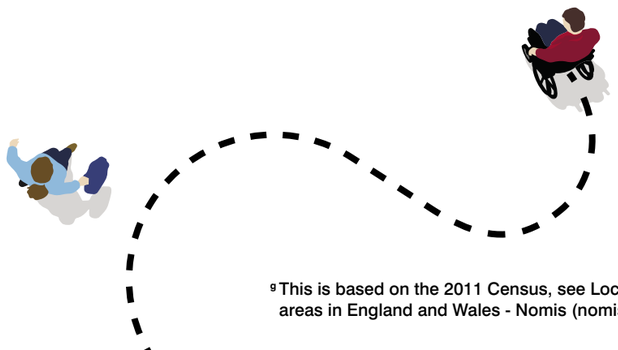
This is a long, narrow and primarily residential street in the centre of Scunthorpe. It is split into two halves – each circulating single lane traffic one direction towards the high street in the middle. The portion that was surveyed stretches from St Mary's Street to High Street. This half of Frances Street is bordered by narrow terraced properties opening directly onto the footway (wheelie bins are collected and emptied from the rear of the terraces). The footways are relatively wide and covered with an asphalt surface and sections of concrete bordering utility access points (e.g., for broadband). Parking is for permit holders only in marked bays. Buses transport passengers along Frances Street to the high street; the bus stop at the end of the street is an important dropping off and pick up point. People also walk along the street to access shops and services. Footway condition was generally good. However, there are no front gardens to absorb rainfall. It is channelled across the footway into kerbside drains; in places where the footway is not level, puddling is occurring and is likely to cause future damage to the footway surface in freezing weather. Several utility covers have been poorly fitted with faulty patch repairs against the main footway surface. Some additional issues relate to private properties, including loose cables and the impact of hanging baskets.

2.4.6 GRANGE OVER SANDS – KENTS BANK ROAD

The village's main shopping area is located on this street. As well as retail premises and food outlets there is a church, health centre, hotel and car park. The street has a number of residential properties dating from the late 1800s with some more recent buildings, including care homes and sheltered housing accommodation (53% of the population of Grange over Sands is over 60[9]). A significant number of trip hazards were identified, mainly relating to wear and tear and multiple issues with loose utility covers. Additionally, some overhanging and encroaching vegetation was encountered that narrowed the effective footway width. The street has one footway for much of its length apart from a section closer to the village centre. Some management issues including pavement parking and footway obstructions on a short section close to the town centre were identified. This section of footway was also narrow in places with sections of less than 600mm in width. There is also a reliance on driveway dropped kerbs to provide level crossing points across the main carriageway and on some side-street junctions. There is no dropped kerb to allow pedestrians level access to the opposite footway at the point where the south-east footway stops.

2.4.7 LUDLOW – QUARRY GARDENS

The street is a quiet residential road with short cul-de-sac side roads (also named Quarry Gardens but not directly surveyed) but it provides a pedestrian route to the town centre and railway station. The street comprises post-war semi-detached houses with some short terraces and connects into Gravel Hill with its larger Victorian houses siding onto the entrance to the street. A significant number of issues were identified, mainly related to wear-and-tear with failing kerb edges potentially due to cars mounting the footway to park. There are many patch repairs which appear to be several years old and related to access to underground utilities. Surface-mounted tactile paving has been added to some sideroad junctions but are now largely failing and creating new hazards. Other obstructions on the street are related to private properties and parking, suggesting a need for enforcement. This includes overhanging vegetation and loose surface material spilling from a private parking area onto the footway; the loose material could be a particular hazard given the steep gradient of this section of street. There is also a reliance on the dropped kerbs of driveway crossovers to provide level crossing points across the main carriageway and on some side-street junctions.



[9] This is based on the 2011 Census, see Local Area Report for areas in England and Wales - Nomis (nomisweb.co.uk).

2.4.8 BEULAH STREET

Terraced homes with small front gardens border both sides of Beulah Road for most of its length. It is a cul-de-sac close to a school and a small high street. There is no off-street parking for most homes, except where front gardens have been paved over. On street pavement parking is permitted within marked bays for residential permit holders and paid for parking for visitors or those accessing local amenities. The footways have been resurfaced within the last 20 years and the carriageway (and footway) markings have been repainted recently. The footway surfaces are flat and smooth. Along sections of the road grass verges (next to the building line, not the kerb line) provide a buffer for the impermeable asphalt from rainwater run-off, reducing water damage. At the time of the audit there were many cars parked along the road, perhaps indicating that many people were working from home. Few faults were identified in this street although issues for pedestrians arise from the constrained street environment with parking accommodated partly on the footway, severely limiting the footway width.

2.4.9 BEXHILL-ON-SEA – LARKHILL

Larkhill is a residential street within a 15-minute walk of the town centre. It is fronted by a mix of detached and semi-detached houses and bungalows. Most properties have private driveways and front gardens. The footways are relatively wide, with a smooth asphalt surface. There are double yellow lines at the junction with Millfield Rise and there are no parking restrictions on the remainder of the street. Many issues were identified, predominantly maintenance and wear and tear issues resulting in a broken-up footway. The street's many vehicle crossovers present the only opportunity to cross the street at anything below kerb-height, but its dropped kerbs are not flush with the footway presenting a potential trip hazard.

2.4.10 GAMLINGAY – ELIZABETH WAY

This is a residential cul-de-sac in a village setting. Built in the 1970s, there is a mix of terraced and detached properties. Some have driveways and garages. There are three areas of communal garaging. The issues identified mainly related to wear and tear – the tarmac surface has cracked over time and is exposed to freeze/thaw damage. Vehicle overrun at crossovers to the shared garages has eroded the surface and created the only deep potholes. Cars parked on the pavement create access issues along stretches of the footway. The absence of drop kerbs at junctions is indicative of the period in which this residential street was built when design guidance was not aiming to be 'inclusive'. The dropped kerbs that are present were installed as vehicle crossovers and are not flush with the carriageway, so they also present a trip hazard.

2.5
SUMMARY

THE TEN STREETS REVIEWED IN THIS CHAPTER REPRESENT A SMALL SAMPLE FROM ACROSS ENGLAND.

They were selected from each of the English regions and Greater London, administered by a mix of highway authority types, in urban and rural settings and settlement types, and according to the street classification set out in the national code of practice. In general, the reviews found that pavements on the higher classification streets were more likely to be paved and subject to damage from vehicle overrun. Pavements on lower classification streets were more cluttered, damaged by vehicle overrun and repaired less frequently. The absence of dropped kerbs and use of vehicle crossovers to cross the road may increase the risk of falls too.

Tottenham Court Road is an example of a prestige walking route. Its wide level footways, high quality materials and frequent inspections meant that no faults were detected. In contrast, the condition of West Street in Gateshead (another prestige walking route) was generally poor and in need of repair despite the use of high-quality materials. The block paving was eroded, possibly because of the effects of weather. Water ingress and the effects of freeze/thaw could lead to future damage.

Street design and the choice of materials can have a significant unintended impact. Urban realm improvements to the Market Place in Melton Mowbray (a primary walking route) introduced a noticeable ridge along the former length of the kerb – something that could easily be missed by pedestrians. The consequences might be minor for someone who is young and fit, but more serious for an older, less agile person. The high street in Weston Super Mare (another primary walking route) was generally well maintained. However, there were issues here too with the quality of recent works: trip hazards from incomplete removal of fixings and puddling on new infrastructure.

"PAVEMENTS ON LOWER CLASSIFICATION STREETS WERE MORE CLUTTERED, DAMAGED BY VEHICLE OVERRUN AND REPAIRED LESS FREQUENTLY."

The weather and wear and tear of footway surfaces also used by vehicles (for access and for loading) present an ongoing maintenance challenge. On streets further down the footway hierarchy this was evident by eroded vehicle crossovers and damaged utility covers. Loose materials spilling from private parking areas, overhanging vegetation, wheelie bins and cars parked on pavements provided additional obstructions. On secondary walking routes, link footways and local access footways had dropped kerbs to allow vehicular access and provided alternative crossing points for pedestrians. Most fell into the 'over 25mm' category and were more likely to result in trips and falls.

Although it is not currently possible to gain an accurate picture of where or why pedestrians are falling, it is known that poor maintenance increases the risk and incidence of falls. As pressure on road maintenance budgets continues to increase, the findings of the visual street surveys in this chapter should provide some pause for thought. Trips hazards were present across all street classifications because of a deterioration in footway condition, compounded in the case of more recent improvements by choice of materials, construction, and design.

The findings summarised above are supported by the much more comprehensive assessment of the nation's footways carried out in 2019 and again in 2021 by Gaist[42] on behalf of the Department of Transport. In 2019, a small but significant percentage of footways were found to be functionally or structurally impaired, presenting uneven surfaces and potential trip hazards for pedestrians. Two years later, analysis of images of 35,101 miles of footway in rural, semi-urban, urban and ultra-urban settings concluded that footway condition has continued to decline across all settings. Gaist estimates that the total cost to 'of all maintenance operations that would need to be carried out to either address poor condition on a footway or to preserve the footway in its current condition and prevent further deterioration' in England (excluding London) ranges from £1.649bn and £1.742bn with a mean estimate of £1.695bn.

3.0 LOCAL AUTHORITY SURVEY

3.1 INTRODUCTION

THE AIM OF THIS SURVEY WAS TO UNDERSTAND (AS FAR AS POSSIBLE) THE SCALE OF THE PROBLEM OF PEDESTRIAN TRIPS AND FALLS AND THE COST TO LOCAL AUTHORITIES FROM PERSONAL INJURY CLAIMS.

A series of questions were drafted and loaded onto the SurveyMonkey platform. Further editing to improve the ease of data collection led to a lengthier more detailed survey with 20 questions covering both highways and legal local authority functions.

An invitation to participate in the survey (via weblink) was sent to 169 chief highway officers in England and 339 chief legal officers in England using Goveval, the UK Parliamentary and local government database. It was further advertised via the Local Government Technical Advisers Group[h] and on Basecamp via the Local Cycling and Walking Infrastructure Plans (LCWIP) programme group[i].

The survey was open for four weeks and generated 26 responses – three of these were automatically discounted because respondents only answered questions 1-3. The response rate was around 14% of the highway authorities contacted.

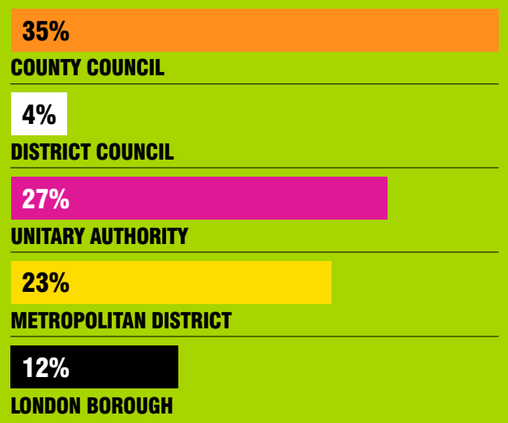
3.2 THE RESULTS

QUESTION 2: WHAT IS YOUR LOCAL AUTHORITY STRUCTURE?

Questions 1 and 3 asked respondents the name of their local authority and their contact details. Those responses are not reported here. Question 2 asked 'what is your local authority structure?'. Despite the small number of responses, there is a quite even distribution of authority types. County councils represent a larger share than the national average (in England there are 25 county councils, 56 unitary councils, 36 metropolitan councils and 32 London boroughs[43]).

One district council also responded to the survey. Here the respondent skipped the questions relating to reported footway faults, reported footway falls and footway monitoring and reporting processes. However, they did provide information on the number of personal injury claims their council had received and settled. This illustrates how district councils may be liable for falls on footways and footpaths that they own and have the responsibility to maintain.

Q2: What is your local authority structure?



Answer choice	Total Percentage	Number of Responses
County council	35%	9
District council	4%	1
Unitary authority	27%	7
Metropolitan district	23%	6
London borough	12%	3

Total respondents = 26

[h] LGTAG – the Local Government Technical Advisers Group
[i] This is a group hosted by the department for transport for local authorities to access resources and ask questions on how best to prepare and implement LCWIPs.

QUESTION 4: FOR THE YEARS 2018, 2019 AND 2020 HOW MANY FOOTWAY FAULTS WERE REPORTED?

Twenty-one respondents answered this question. As shown above, the response from the district council omitted information on footway faults and falls. A second respondent (this time from a metropolitan district council), perhaps for reasons of time and convenience, did the same. In this small sample the reported number of footway faults ranged from 31,400 in 2018 to 35,496 in 2020, with a peak in 2019 of 36,478. The average annual number of faults per authority ranged from 1,495 to 1,690 across the three-year period (although this is highly subjective). If it is assumed that the 35,496 faults reported in the survey represent 14% of the total number of faults reported to highways authorities in England, a very crude calculation suggests that over 2.5 million faults were reported in England in 2020[j].

Q4: For the years 2018, 2019 and 2020 how many footway faults were reported?

Answer choice	Average number	Total number	Number of Responses
2018	1,495	31,400	21
2019	1,737	36,478	21
2020	1,690	35,496	21

Total respondents = 21

QUESTION 5: FOR THE YEARS 2018, 2019 AND 2020 HOW MANY FOOTWAY FALLS WERE REPORTED?

The aim of this question was to separate the number of reported footway faults from the number of footway faults that caused a fall. Sixteen responses were received in total, showing that not all highway authorities record information on pedestrian falls that do not result in a personal injury claim. The average number of reported falls per authority ranged from 135 in 2018 falling to 115 in 2020. The number of falls peaked in 2019. Assuming that the 6,437 falls over three years reported by sixteen respondents represent 9% of highways authorities, it is possible that over 71,500 falls were reported in England for the same period[k].

Q5: For the years 2018, 2019 and 2020 how many footway falls were reported?

Answer choice	Average number	Total number	Number of Responses
2018	135	2,153	16
2019	153	2,441	16
2020	115	1,843	16

Total respondents = 16

[j] If 14% of the footway faults reported = 35,496, then 1% = 2535 and 100% = 2,535,429.
[k] If 9% of footway falls reported = 6,437, then 1% = 715 and 100% = 71,522

Pedestrian Slips, Trips and Falls

QUESTION 6: FOR THE YEARS 2018, 2019 AND 2020 HOW MANY PERSONAL INJURY CLAIMS WERE MADE FOR PEDESTRIAN TRIPS AND FALLS ON PUBLIC FOOTWAYS?

The number of reported personal injury claims ranged from 1,853 in 2018, falling to 1,467 in 2020; this reflects an overall drop in claims recorded by the Department for Work and Pensions Compensation Recovery Unit[l]. The average number of falls claims per authority in 2018 was 81, in 2019 was 79 and in 2020 was 64. This could suggest that fewer people were out walking. Indeed, the National Travel Survey for England shows that the average number of trips walked per person per year has declined recently (262 in 2018, 250 in 2019 and 236 in 2020), but the number of trips of more than a mile has increased[44].

Extrapolating either the total number of claims or the average number of claims for 2020 to an England level (e.g., by assuming that the total number of claims is equivalent to 14% of the whole) suggests that there are more than 10,000 personal injury claims in England per year. This seems a reasonable estimate. In 1987, a short article in the British Medical Journal reported that "over 10,000 claims for compensation for injuries sustained as a direct result of tripping over broken, uneven, or loose paving stones were made against local authorities in England and Wales… and this figure seems to be rising"[45]. Similarly, a Freedom on Information request by the AA revealed that in the 12 months ending 31 May 2018, 10,329 injury claims were made by pedestrians to local authorities[46]. This is set against an overall fall in walking since the 1980s – walking trips fell from 350 per person in 1985 to 200 in 2015[47 m], while walking stages fell from 328 per person in 2002 to 281 per person in 2020[48].

Q6: For the years 2018, 2019 and 2020 how many personal injury claims were made for pedestrian trips and falls on public footways

Answer choice	Average number	Total number	Number of Responses
2018	81	1,853	23
2019	79	1,807	23
2020	64	1,467	23

Total respondents = 23

[l] See Compensation Recovery Unit performance data - GOV.UK (www.gov.uk)

[m] National Travel Survey reporting has since changed. Revised figures for 2015 give 219 trips per person per year, with subsequent years showing an increase in trips per person per year peaking in 2018. NTS0303 shows that in 2020, the walking trips fell to an average 236 per person per year.

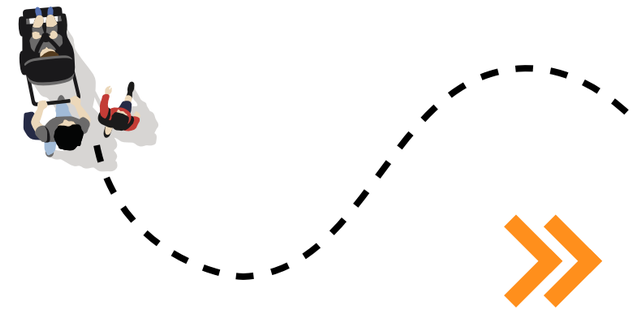
QUESTION 7,8,9: THINKING ABOUT FOOTWAY FALLS RESULTING IN PERSONAL INJURY CLAIMS, WHEN DID THE FALLS OCCUR?

The following questions have been grouped together because they ask the same question, aiming to show variation by season for the years 2018 to 2020. As above, there were 23 responses; the table shows 22 responses for some seasons and years (e.g. summer 2020) and this is where there were no claims submitted during that particular time period.

Perhaps surprisingly in the results is that the least number of pedestrian falls occurred during winter. However, as has been previously noted, falls due to snow and ice vary considerably each winter season[49] and may reflect fewer people going out walking except for when they have to. As discussed in the literature review, researchers have shown how the weekly rate of emergency hospital admissions for falls on snow and ice is inversely related to the mean weekly temperature – the same study estimated that during 'the Big Freeze of 2009-10'[n], the cost of emergency admissions to hospital for falls on snow and ice between 1 December 2009 and 28 February 2010 was £42 million (although the true healthcare costs would have been considerably higher)[50].

Answer choice		Average number	Total number	Responses
2018	Spring (March, April, May)	20	451	23
	Summer (June, July, August)	23	498	22
	Autumn (September, October, November)	21	469	22
	Winter (December, January, February)	18	418	23
2019	Spring (March, April, May)	21	487	23
	Summer (June, July, August)	20	454	23
	Autumn (September, October, November)	20	451	23
	Winter (December, January, February)	18	421	23
2020	Spring (March, April, May)	15	323	22
	Summer (June, July, August)	17	402	23
	Autumn (September, October, November)	18	401	22
	Winter (December, January, February)	14	322	23

Total respondents = 23



[n] See Winter of 2009–10 in Great Britain and Ireland - Wikipedia

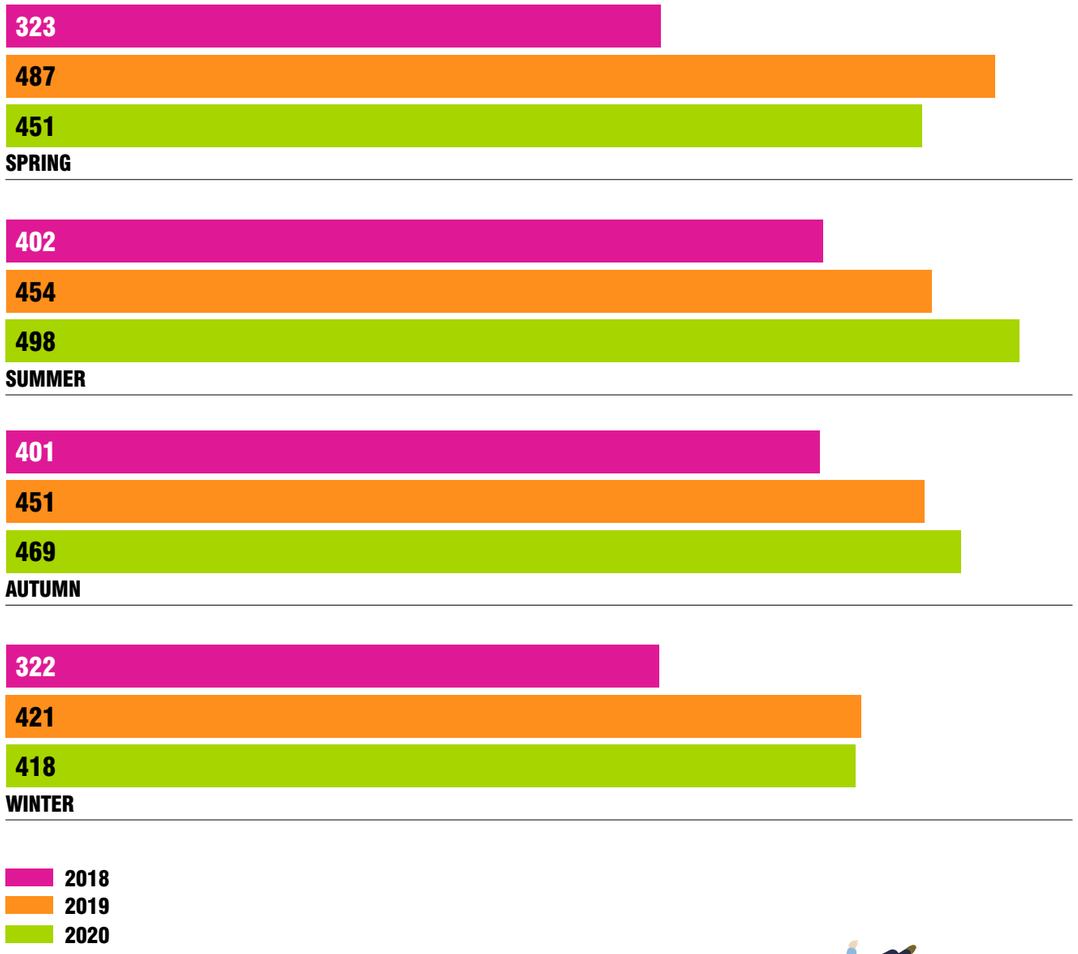
Continued

QUESTION 7,8,9: THINKING ABOUT FOOTWAY FALLS RESULTING IN PERSONAL INJURY CLAIMS, WHEN DID THE FALLS OCCUR?

Alongside the risk of ice and snow, wet and decaying leaves can also create a slip hazard – by hiding a footway defect or themselves creating a slip risk[51]. The results do not identify autumn as a particularly dangerous time either. The biggest observable difference by season is in the summer of 2018, spring of 2019. In 2020, the highest number of personal injury claims are observed in equal numbers in summer and autumn.

Although we know that autumn leaves and winter weather can increase the risk of pedestrian falls, the results of this survey show that for the period 2018 to 2020 this was not a significant factor. The next two questions show that the condition of the footway asset appears to be the main cause of falls resulting in personal injury claims.

Q7-9 Reported footway falls by season and year

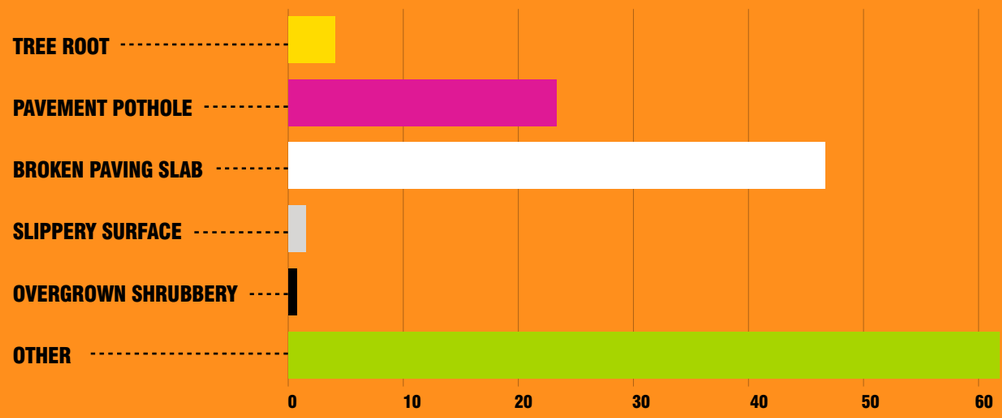


QUESTION 10: THINKING ABOUT PEDESTRIAN FALLS ON PUBLIC FOOTWAYS RESULTING IN PERSONAL INJURY CLAIMS IN THE PAST THREE YEARS, WHY DID THEY OCCUR?

QUESTION 11: PLEASE LIST WHAT 'OTHER' FOOTWAY FAULTS CAUSED PEDESTRIAN FALLS RESULTING IN PERSONAL INJURY CLAIMS IN THE PAST THREE YEARS (2018-2020)?

On the face of it, question 10 is a straightforward question. It offers a short selection of potential footway faults – the most obvious of which are pavement potholes and broken paving slabs. Indeed, the 20 responses received show that these are responsible for falls more often than, for example, tree roots or overgrown shrubbery. However, the greatest number of personal injury claims result from 'other' causes. Why did the survey not list other causes? In part, the aim of the question was to show that, on balance, pedestrian falls can be caused by a wide variety of footway faults besides the obvious surface defects. Secondly, as responses to question 11 demonstrate, the way this information was recorded varied widely from one local authority to another.

Q10: Thinking about pedestrian falls on public footways resulting in personal injury claims in the past three years, why did they occur?



The following table shows how the 21 respondents to question 11 submitted a wide range of defects. These have been compiled into broad, but specific, categories together with the potential slip or trip hazard. These categories are broad, because as can be seen in the third column the way defects were described and grouped together in response to the question was not consistent – except for utility covers (although this might be included with the category of ironworks). Since maintenance of utility covers (e.g., for gas or water) remains the responsibility of utility companies, it makes sense for these to be reported separately.

Sometimes each particular defect was listed (e.g., a claim resulting from a piece of timber left on the footway) and sometimes faults were grouped together (e.g., one authority reported 15 personal injury claims because of falls resulting from 'bollards/steps/stairs'). More generic terms included 'surface defect – uneven surface' and 'footway – surface defect'. Some respondents provided the number of claims for each defect and others did not – perhaps indicating the ease with which this information can be accessed or even whether it is collated at all.

Q11: A compilation of the 'other' footway faults that caused pedestrian falls resulting in personal injury claims between 2018 and 2020?

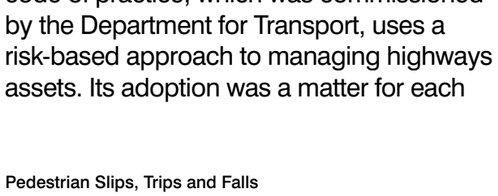
DEFECT	POTENTIAL SLIP OR TRIP HAZARD	SOMETIMES DESCRIBED AS
Utility covers	Collapsed, damaged, sunk, raised, uneven, missing or rocking	Utility lids
Ironwork	Collapsed, damaged, sunk, raised, uneven, missing or rocking	Drains, footway drainage, manhole covers, cellar grates, cross gutters, utility covers
Kerbs	Low, high, rocking, damaged, missing	Kerbs, broken kerbstones, damaged kerbstones
Signs/street furniture	Raised surfaces (e.g., from stumps following the removal of assets), obstruction caused by street furniture, damaged street furniture	Signs, street furniture, street lighting, footway fence, bollards
Debris/spillage	Uneven surfaces, obstruction, slip hazard	Transient objects (e.g., gravel, timber, a pipe and a lump of concrete), transient substances, flooding
Transient defects	Obstruction	Goods in the highway, temporary tarmac ramps for roadwork schemes
Surface defect	Uneven surfaces, damaged, raised or rocking	Uneven flagstones, steps, defective slabs, defective tarmac, defective brick/cobbles, general surface defects, missing blocks, damaged concrete, 'other surface defect'
Tree pits	Damaged, sunk, raised or uneven surfaces	Tree pits, ironwork (covering the tree pit)
Steps/stairs	Low, high, rocking, damaged, missing	Steps, stairs
Water	Damaged footway surfaces, obstructions or slippery surfaces	Ingress of water, flooding, ice
Street work reinstatements	Uneven surfaces	Utility reinstatements, utility works

QUESTION 12: HOW OFTEN ARE FOOTWAYS AND FOOTPATHS INSPECTED ON FOOT?

There were only 15 responses to this question. This is probably because the survey requires information from local authorities' legal departments (regarding personal injury claims) as well as their highways teams. Respondents were asked to agree with one or more statements that footways are inspected on foot: when a fault is reported, when road works are taking place, busy routes are inspected on a regular basis, or most footways are never inspected. Respondents were also given the opportunity to provide additional clarification.

The statements offer a limited number of options and were intended as a prompt – in case each authority employed a different approach. The responses confirm that most reported faults/defects are inspected on foot, while busy walking routes are inspected more regularly which casts doubt on the assumption that most footways are never inspected. What information did the additional comments provide?

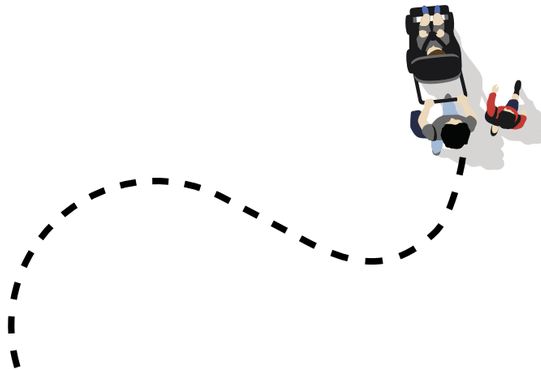
Q12: How often are footways and footpaths inspected on foot?



Answer choice	Response %	Number of Responses
When a fault is reported	80	12
When road works are taking place	20	3
Busy routes are inspected on a regular basis	93.33	14
Most footways are never inspected	13.33	2

Total respondents = 15

The 15 respondents who answered this question all provided additional information. Most (11) cited levels of frequency, ranging from monthly, three monthly, six monthly and annually. The most frequent level of inspection was fortnightly (one authority) and the least frequent stated that 'most footways are never surveyed, but all footways are condition surveyed every four years'. The explanation for the similarity in responses is straightforward – as stated by respondents themselves, each of these authorities has implemented the UK Road Liaison Group's 'Well Managed Highway Infrastructure' (WMHI) code of practice[52]. The code of practice, which was commissioned by the Department for Transport, uses a risk-based approach to managing highways assets. Its adoption was a matter for each authority to decide "based on their own legal interpretation, risks, needs and priorities"[53]. However, it is worth highlighting that in line with the code of practice footway inspections focus on safety, not the condition of the footway asset. Although some authorities do collect this data, there has been no requirement on local authorities to collect this information since the footway deterioration performance indicator was scrapped in 2007[54].



QUESTION 13: WHAT WERE THE REPORTED INJURIES? (PLEASE LIST THE INJURIES + THE NUMBER OF INCIDENCES)?

There were 20 responses to this question. Of these, five respondents stated that no data on injuries was held or specified in a recordable format on their claims system. One respondent stated that they only recorded whether a claimant was injured or not. The remaining responses recorded injuries, but with no consistency. They varied from lists of very detailed specific injuries to more generic categories. For example, respondents differentiated between:

- **the number of and specific location of injuries – such as, collarbone, head, thumb, arm, leg, foot, shoulder, lower back, knee, hip, wrist, hand, mouth, teeth, loss of sight or hearing**
- **the number and types of injury – such as, fractures, dislocations, bruising, shock/concussion, soft tissue damage, death (in one response)**
- **specific or types of injury, but didn't provide the number of incidents**
- **categorising types of injury together with the number of incidents – such as, bruising/sprains/strains or broken/fractured**
- **incidences of multiple injuries from one fall**

Based on the numbers provided (where provided), the most injured part of the body is the ankle. The most frequent types of injuries are breaks/fractures, sprains/strains and bruising. Without knowing the age and health of the individuals injured it is not possible to know what impact these injuries had. However, we do know that fall-related injuries are the leading cause of accident-related mortality for older adults[55].

QUESTION 14: HOW MANY CLAIMS WERE SETTLED IN THE PAST THREE YEARS (2018 TO 2020)?

Twenty-two respondents replied to this question. By adding up the numbers of claims reported by each respondent for each year, the answer from this sample is that:

- **354 claims were settled in 2018**
- **288 claims were settled in 2019**
- **194 claims were settled in 2020**

A closer look at the number of claims settled by individual authorities shows that, for most, the drop in claims over the three-year period is a consistent trend. One metropolitan district authority settled over a hundred claims in each of the above years. Another authority, a county council, settled 51 claims in 2018, 13 claims in 2019 and five claims in 2020. Over half the respondents (representing metropolitan districts, unitary authorities, county councils, London boroughs) reported that their authority settled fewer than 10 claims per year (13). This low number could reflect the size of the area under their administration. Six respondents (representing a unitary authority, a London borough and county councils) reported that their authorities settled under 30 claims per year; two respondents (including the county council mentioned above) reported more than 50 claims settled in one year.

Comparing the number of claims settled to the number of claims made shows that fewer than 20% of personal injury claims succeeded (19% in 2018, 15% in 2019 and 13% in 2020). Highways authorities employ 'Section 58' of the Highways Act 1980 to defend against claims by demonstrating that they have done all that was reasonably necessary to make the road safe for users. Nevertheless, there will be costs incurred by the pedestrian injured (e.g., in terms of recovery time) and the potential health care costs covered by local authorities.

QUESTION 15: HOW MUCH WAS PAID OUT OVER THE PAST THREE YEARS?

Twenty-two respondents replied to this question. The survey was not set up to calculate the average value of a falls claim. However, it is possible to look at the responses made by individual authorities (note that all prices are from the quoted year). For example, for rural county council X, the average cost of claims was less than £6,000, but varied each year:

- **in 2018, 16 claims cost council X £88,916 – an average of £5,557 per claim**
- **in 2019, 24 claims cost council X £107,478 – an average £4,478 per claim**
- **in 2020, 13 claims cost council X £21,648 – an average £1,665 per claim**

By adding up the total claims settled (it is assumed that this includes compensation and legal fees) reported by all 22 respondents for each year, the answer to question 15 is that:

- **In 2018, claims settled = £2,034,538**
- **In 2019, claims settled = £1,614,393**
- **In 2020, claims settled = £949,518**

If it is assumed that 22 authorities represent 13% of the 169 highway authorities in England, then it is possible to calculate a rough estimate of claims payments at a national level (this extrapolation assumes the sample is representative of England). These range from £15.6 million in 2018 to £7.3 million in 2020. This is in sharp contrast to the £2,110,995 paid out in injury compensation reported by the AA in 2018[56]. The AA's freedom of information requested elicited 365 responses from local authorities across the UK. Of these, 207 councils made payments. Some of the discrepancy between the results of this survey and the AA's FoI request might be due to the inclusion of third-party solicitor costs – but there is a significant difference. Furthermore, these figures should not be read as the total cost of pedestrian trips and falls because of the number of people not making claims.

QUESTION 16: OF THE CLAIMS SETTLED IN THE PAST 3 YEARS, HOW MANY WERE THE RESULT OF LEGAL ACTION (E.G., A 'NO WIN – NO FEE' CLAIMS COMPANY) AND HOW MANY WERE PAID DIRECTLY?

The results of question 14 suggest that a total of 836 claims (354 + 288 + 194) were settled across three years (2018 to 2020) by 22 authorities. However, the response to question 16 introduces quite a large discrepancy – a total number of 746 claims, 93 fewer than above. Closer inspection of individual responses shows that this is due to four responses: one respondent who had answered question 14 skipped this question, two other respondents said that zero cases had been settled via legal action or paid directly, and a fourth respondent reported that 23 out of 69 had been settled either via legal action or directly. This last response provides a clue to the discrepancy – most claims are settled out of court, but occasionally court action may be required if negotiations break down between the claimant's solicitor and the local authority's insurers° or solicitors. There may also be a timing issue; a fall in one year is likely to have the claim settled in a later year.

°While many authorities essentially self-insure, their insurers may still handle the claim. For more information see *Personal Injury Claim Settlement Process | National Accident Helpline (national-accident-helpline.co.uk).*

Out of the 746 personal injury claims for pedestrian falls on pavements, over two thirds (69%, 520) were settled as a result of legal action. This is perhaps no surprise given the widespread advertising of 'no-win, no-fee' claims companies. Direct payments are likely to occur where there is clear liability and where the settlement falls below the insurance excess of the local authority's public liability insurance (see the response to question 17).

Q16: Of the claims settled in the past 3 years, how many were the result of legal action?

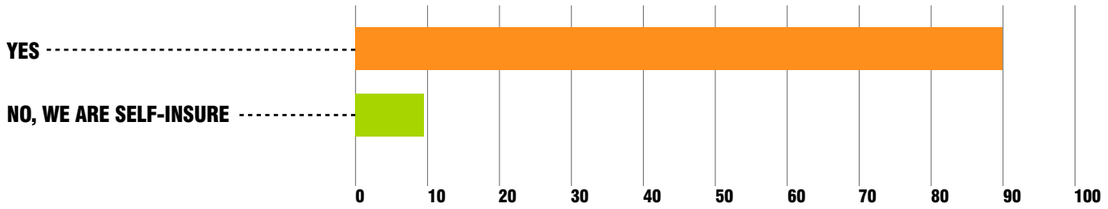
Answer choice	Average number	Total number	Number of Responses
Result of legal action	26	520	20
Paid directly	11	226	21

Total respondents = 21

QUESTION 17: IS YOUR LOCAL AUTHORITY COVERED BY PUBLIC LIABILITY INSURANCE FOR INJURIES CAUSED BY PEDESTRIAN TRIPS AND FALLS ON FOOTWAYS?

Out of 20 responses to this question, 18 local authorities are covered by public liability insurance and two self-insure. The most frequently used insurers are Zurich Municipal, QBE, Maven, Protector and Gallagher Bassett. Examples given of the excess per claim included: £250,000, £300,000, £500,000, £805,000 and 'very high deductibles, catastrophe type' cover. This means that, except in the most severe cases, most claims fall below the threshold and local authorities are effectively self-insured for pedestrian trips and falls on footways.

Q17: Is your local authority covered by public liability insurance for injuries caused by pedestrian trips and falls on footways?



QUESTION 18: ARE THERE PROCESSES IN PLACE TO REPORT FALLS TO PUBLIC HEALTH TEAM ADULT SERVICES AND HIGHWAYS MAINTENANCE?

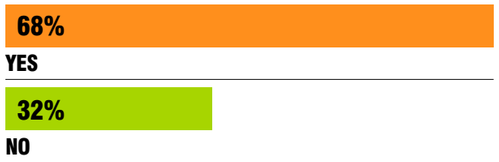
This question was intended to tease out whether local authorities had processes in place for cross-referral (e.g., from Adult Services through to Highways) for reporting trips and falls from footway defects. If, for instance, an older person tripped and fell outside sheltered accommodation would there be a mechanism for reporting the incident? At first glance most authorities (15 of 22 respondents) appear to have such processes in place. However, 17 respondents provided further comments to explain their reporting processes – in each case about how a member of the public could report the footway fault and its referral to the Highways team. Some respondents provided additional information on the process for lodging a personal injury claim.

There are numerous ways to report a fault: by phone, letter, email, online form on council websites, external sites (e.g., Fix my Street, although not all councils use this tool), on social media platforms and (in some cases) in person. The fault is then logged on a customer relationship management (CRM; e.g., CONFIRM) system, generating a report which is sent to the relevant team and an automated reply to the complainant. A visual check is then carried out to categorise the fault.

Interviews with highways officers from four local authorities[p] carried out as background research for this project clarified the process further. The control room allocates the report to the relevant team (e.g., sent to hand-held devices or a phone call if it is urgent) to inspect the fault. For example, a pothole would be checked for depth to decide if these are 'actionable defects' with the potential to cause an accident. Emergency repairs are carried out within 2 to 24 hours and urgent repairs within 28 days (it depends on the CRM parameters). Reports of defective apparatus (e.g., utility covers) are passed on to the relevant utility company. Non-urgent repairs may be added to a plan of work for the year ahead or added to a 'wish list'.

However, the issue of interest here is the potential for cross-referral between council services. When asked if this took place, the officers interviewed discussed how parish and district councils often report falls and faults on behalf of residents. Elected members know how to 'work the system' and may report a fault directly to a known highways officer. Nevertheless, it will still be logged and dealt with according to protocol. In one council, the leadership are keen to encourage cross-service reporting, but this may be a 'nice to have' while services are stretched.

Q18: Are there processes in place to report falls to public health team adult services and highways maintenance?



Answer choice	Response %	Number of Responses
Yes	68	15
No	32	7

Total respondents = 22

[p] Interviews were conducted in confidence with officers from four local authorities where street reviews were carried out.

QUESTION 19: THANK YOU FOR ANSWERING OUR SURVEY. IS THERE ANYTHING ELSE YOU WOULD LIKE TO TELL US ABOUT FOOTWAY FALLS IN YOUR HIGHWAY AUTHORITY AREA?

Several respondents provided clarification to the answers that they had given to previous questions. However, one respondent had this to say:

> "An ageing highway network and reducing budgets/investment will continue to see increases in falls as generally significant investment is required to 'fix' issues for the long term, particularly where flags or blocks are involved or historic surfaces in busier areas. While most authorities work to 20mm as an actionable defect, this may create a challenge to the infirm or elderly. Without significant investment, however, any significant improvement nationally remains unachievable for local authorities, particularly balancing the needs of carriageway repairs (for vehicles and cyclists) with footway repairs. (Reference National AIA ALARM Survey)[q]."

Alongside budget constraints, one issue was raised consistently through interviews with the highways officers. They were all were having trouble recruiting and retaining staff.

[q] See ALARM-survey-2021-FINAL.pdf (asphaltuk.org)

3.3
SUMMARY

BASED ON THE RESPONSES FROM THIS SURVEY, A CRUDE CALCULATION SUGGESTS THAT OVER 2.5 MILLION FOOTWAY FAULTS WERE REPORTED IN ENGLAND IN 2020.

The survey asked about the number of reported falls and the number of personal injury claims resulting from pedestrian falls on a footway. Some local authorities only record the falls that result in personal injury claims. More than half of reported falls resulted in a personal injury claims.

Fewer than 20% of claims were settled and it is estimated that the cost of falls ranged from approximately £15.6 million in 2018 to £7.3 million in 2020 in England. Local authorities aim for a 'Section 58 defence' to defend against claims by demonstrating that they have done all that was reasonably necessary to make the road safe for users. Nevertheless, healthcare costs (that are not factored into decisions about footway maintenance) may still be incurred by local NHS Trusts and local authorities in support of older injured residents.

There is no direct link between highways teams and public health functions within local authorities. Interviews with highway officers suggest that parish councillors fill an important gap reporting falls and following up on repairs and care on behalf of older residents.

There is no consistency in the way local authorities categorise falls injuries or footway faults to enable comparison across the country. However, there is consistency in the way that faults are dealt with in line with the risk-based approach set out in the Department for Transport's Well Managed Highway Code of Practice. This also supports an authority's ability to use the Section 58 defence against personal injury claims.

4.0
HOSPITAL ADMISSIONS DATA

4.1 INTRODUCTION

THE AIM IN THIS CHAPTER IS TO REVIEW, AS FAR AS POSSIBLE, THE METHOD AND MONTH OF ADMISSION, LOCATION AND DEMOGRAPHIC INFORMATION OF HOSPITAL ADMISSIONS FOR PEDESTRIAN FALLS OUTSIDE ON PAVEMENTS, ALONGSIDE THE LOCAL AUTHORITY SURVEY RESULTS.

In the previous chapter, the local authority survey collected information for England on reported footway (pavement) faults, reported falls on pavements (including the season in which falls occurred) and personal injury claims resulting from pedestrian falls. The hospital admissions data discussed in this chapter is for the United Kingdom, although as will be seen the majority of records are for England.

There are three potential data sources: accident and emergency attendance, outpatient attendance and admissions for patient care (where a patient is expected to stay overnight). Each had its limitations:

- Accident and Emergency – historically the data is much simpler and unlikely to record more than the injury type (e.g., an abrasion) in a 'public place'. This could be anything from a pedestrian fall to a brawl outside a pub. Since 2020, the Emergency Care Data Set (ECDS) collects much finer grained data – but, depending on local practice, may not be in full use yet (leading to inaccurate reporting).
- Outpatient Attendance – this is where some people with pedestrian falls injuries (e.g., fractures) are likely to be treated after referral by a GP or from A&E. However, filling in the diagnosis is not mandatory, and according to NHS DARS, only 4.5% of data fields with the information on how or where a fall may have occurred are filled in. For this reason, there was no point looking at it.
- Admitted Patient Care – lists the external causes for hospital admission. The data is published and available in the public domain to a '3-character level' – for example, W01 'Fall on same level from slipping, tripping and stumbling'. The list of external causes is comprehensive and available as finer grained '4-character' data. For example, W014 should be able to identify falls on same level from slipping, tripping and stumbling on the pavement (not just falls outside).

Although location data is available at postcode level, it is not released because of patient confidentiality (GDPR). Also, the location data is probably the postcode of residence for the patient, not the location of the fall. It is possible to access admissions data at Lower Super Output Area, Middle Layer Super Output Area or local authority level. However, this means it is currently not possible to identify particular streets where falls occur. After discussion with the NHS DARS service, it was agreed to cross reference the local authority of residence with the location of the care provider as a proxy for location.

4.2 TABULATION REQUEST

The hospital admissions data request for this project filters patient information for falls on the pavement for the following categories:

- W004 - Fall on same level involving ice and snow
- W014 - Fall on same level from slipping, tripping and stumbling
- W034 - Other fall on same level due to a collision with, or pushing by, another person
- W054 - Fall involving a wheelchair
- W104 - Fall on and from stairs and steps
- W174 - Other fall from one level to another
- W184 - Other fall on same level
- W194 - Unspecified fall

The information requested was presented in three tables for the period 2018 to 2020.

1. Admissions for falls outside on pavements by local authority of residence
2. Admissions for falls outside on pavements by primary care provider and location
3. Admissions by month and year, sex, age, ethnicity, admission status (elective, emergency) and primary diagnosis code.

It shows the total numbers of admissions for overnight stays in hospital resulting from pedestrian falls by local authority of residence and place of treatment (this will show if a fall occurred away from the location of residence). The third table provides an overview of the season when falls occurred and whether or not this was an emergency admission, and a national breakdown of patient profile by sex, age and ethnicity.

The questions asked in this chapter are:

- Does the hospital admissions data reflect the expected age profile?
- Is there a difference between the males and females?
- Is ethnicity a significant factor?
- What are the typical injuries? and
- How easy is the information to interpret?

4.3 HOW THE DATA WAS ANALYSED

The hospital admissions data was analysed using Excel and Excel Power Query. Suppressed values (below 8) in the local authority data were set at 4. It was then combined with local authority mid-2019 population data from ONS in order to calculate admission rates[57]. Further comparison was carried using UK ethnic group population data from the 2011 UK Census table KS201UK (from ONS via NOMIS), to calculate admission rates by ethnic group[58]. The NHS and the 2011 UK census use different ethnic group categories. The NHS categories, which are more detailed, were converted to UK census categories as shown in table 4.1 below.

Table 4.1: Conversion of NHS to UK census categories of ethnicity

NHS	UK CENSUS
British (White)	White
Irish (White)	White
Any other white background	White
Bangladeshi (Asian or Asian British)	Asian / Asian British: Bangladeshi
Indian (Asian or Asian British)	Asian / Asian British: Indian
Pakistani (Asian or Asian British)	Asian / Asian British: Pakistani
Chinese (other ethnic group)	Asian / Asian British: Chinese
Any other Asian background	Asian / Asian British: Other Asian
African (Black or Black British)	Black / African / Caribbean / Black British
Caribbean (Black or Black British)	Black / African / Caribbean / Black British
Any other Black background	Black / African / Caribbean / Black British
White and Asian (mixed)	Mixed / Multiple ethnic group
White and Black African (Mixed)	Mixed / Multiple ethnic group
White and Black Caribbean (mixed)	Mixed / Multiple ethnic group
Any other mixed background	Mixed / Multiple ethnic group
Any other ethnic group	Other Ethnic Group

4.4 RESULTS

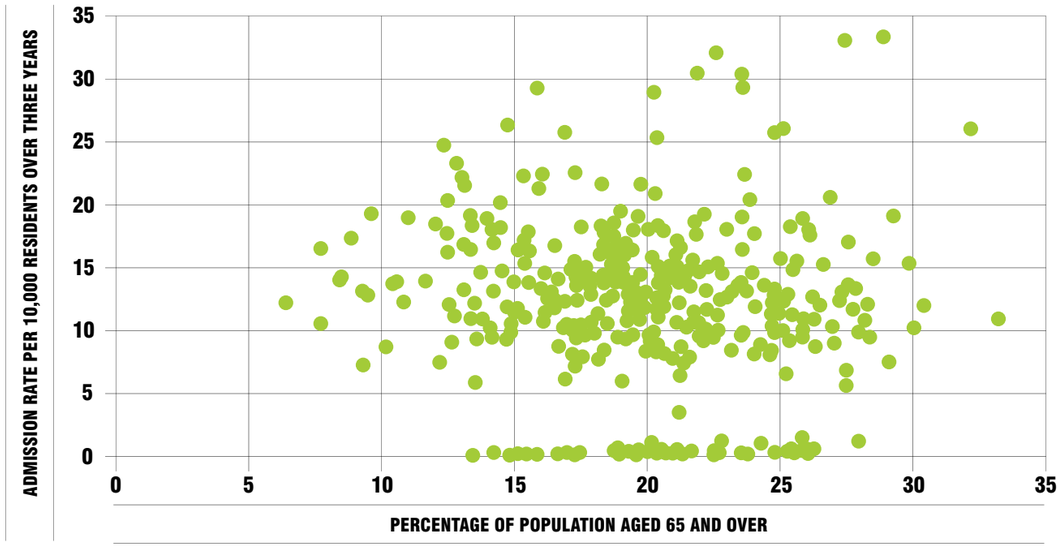
4.4.1 WHERE DO WE SEE THE HIGHEST ADMISSIONS?

The four local authorities with the highest resident admission rates for trips and falls are all in a small area on the south coast: Arun, Chichester, Worthing and Adur. One explanation could be that a single hospital (in Worthing) codes diagnoses as trips and falls. Does this outlier represent reality? It is hard to tell without enquiring about the hospital's diagnostic coding process. It could also reflect an above average proportion of older people who are fit enough to walk more.

The 57 local authorities that report the lowest percentage of resident admissions for trips and falls are all outside England. In fact, for the period 2018–2020 a total of 82,235 falls admissions were recorded in England (comparable to the 76,000 admissions for 2007–2009 discussed in chapter 2), whereas only 2,165 admissions are recorded for Scotland, Wales and Northern Ireland together – this seems very unlikely and suggests a difference in the way that England codes diagnoses, compared with Scotland, Wales and Northern Ireland.

Chart 4.1 below shows that there is no observable relationship between the age profile of a local authority population and rates of hospital admissions between 2018 and 2020[r]. This may suggest that different admission rates in local authorities could be explained more by differences in street maintenance than to differences in risk from an ageing population.

Chart 4.1: Local authority trips and falls admission rate by percentage of population 65 and over



[r] Hospital admissions data was compared to the most recent Local authority census data (2011).

Location data for admitted patients does not reveal where a pedestrian was injured. The data request for this project included patient local authority of residence and the postcode of the hospital trust providing care – based on the (unsubstantiated) assumption that most pedestrian falls occur close to home. However, the results were inconclusive; sometimes the number of admissions by local authority of residence were the same as the number of admissions by postcode of the hospital trust providing treatment, but it varied. The variation could be because a fall occurred away from where a person lives or because people were being admitted to a hospital which serves a wide area.

4.4.2 HOW MANY PEDESTRIAN FALLS RESULT IN HOSPITAL TREATMENT?

More than 30,000 people were admitted to hospital annually in the United Kingdom in 2018 and 2019 because they fell on a pavement. As discussed above, the majority of those falls were in England. Although the lockdown restrictions of 2020 led to an increase in walking for leisure and exercises[s], there was a significant decrease in the number of hospital admissions for outdoor falls injuries – down from circa 30,000 to 23,378 emergency and elective admissions (see table 4.2 below).

Table 4.2: Emergency and elective hospital admissions for pedestrian falls on a footway 2018–2020

Year	Emergency admissions	Total admissions	Total
2018	28,034	1,990	30,024
2019	28,320	2,021	30,341
2020	21,931	1,447	23,378

Table 4.3 shows the average cost of admitted patient care to the NHS for Finished Consultant Episodes – where the unit cost is the total cost (measured by the number of attendances, bed days, episodes, tests or other unit of activity) divided by total activity[59]. The unit cost of Accident and Emergency presentations is not included because that data was not available for analysis. Taking the figures from 2019 as an example, the following costs can be estimated for pedestrian falls on footways:

- the minimum cost of emergency (non-elective) short stay admission = £22.7 million (28,320 emergency admissions x £802)
- the maximum cost of emergency admissions = £98.7 million (28,320 x £3,519)
- the cost of elective admissions = £9.3 million (2,021 x £4,612)

Table 4.3: National Schedule of NHS costs 2019-20 – NHS trust and NHS foundation trusts[60]

Description	Unit cost
Elective inpatients	£4,612
Non elective inpatients	£3,519
Non elective short stay	£802

[s] The National Travel Attitudes Survey, Wave 4, published October 2020, centres around travel attitudes in relation to the coronavirus pandemic and travel restrictions. The survey was conducted between May and July 2020 and had a sample size of 2,688 individuals; 39% of respondents reported walking more than before the pandemic.

Continued

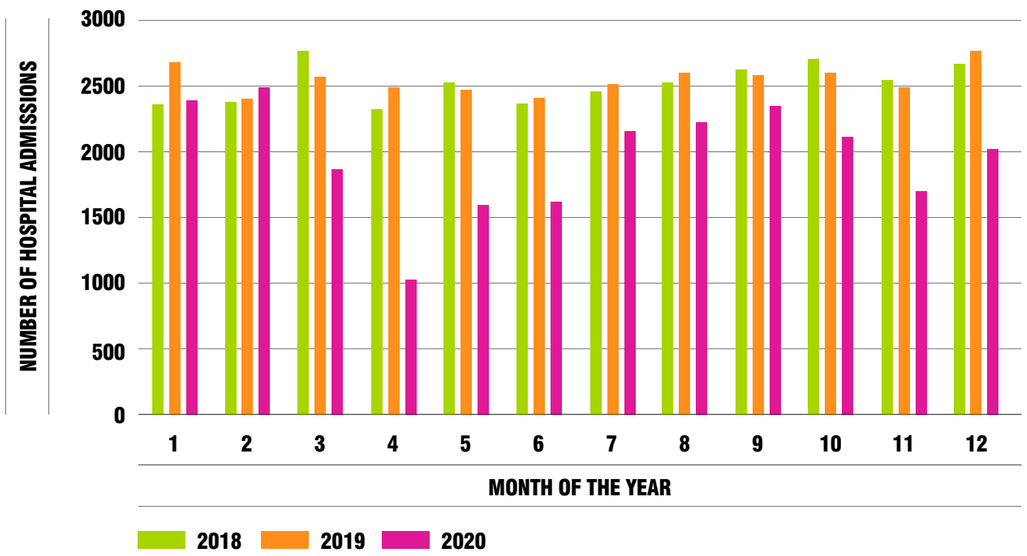
4.4.2 HOW MANY PEDESTRIAN FALLS RESULT IN HOSPITAL TREATMENT?

The local authority survey demonstrated more variation in the number of falls reported in the three-year period, with the lowest number in 2020. However, the number of personal injury claims made against local authorities for falls on footways followed a similar pattern to hospital admissions. Although the number of falls fell, the number of footway faults reported over the same period increased in 2019 and remained high in 2020.

Question 6 of the survey asked how many personal injury claims were made in 2018, 2019 and 2020? There were a total of 1,853 claims in 2018 and 1,807 claims in 2019, falling to 1,467 claims in 2020. Extrapolating the average number of claims for 2020 to an England level it was estimated that there were over 10,000 personal injury claims in England per year (this assumes that the survey sample is representative of England). When compared with the 30,000 hospital admissions in 2018 and 2019, pedestrian falls and falls injuries appear to be under-reported. Of course, not every person who falls will make a personal injury claim and not every fall is the result of a footway fault; a person's ability, cognition, health and lifestyle are all contributory factors.

Chart 4.2 below shows that the number of falls resulting in hospital admissions peaked slightly in March 2018 and January 2019, but otherwise remained constant across the seasons. This correlates with the distribution of falls reported by the local authority survey. In 2020, the pattern changed. There was a noticeable drop in falls admissions alongside the imposition of the first coronavirus lockdown from the end of March to June of that year. Restrictions were reimposed in September 2020 and a second national lockdown introduced on 5 November[61]. During this period people could leave home to meet one person from outside their support bubble outdoors.

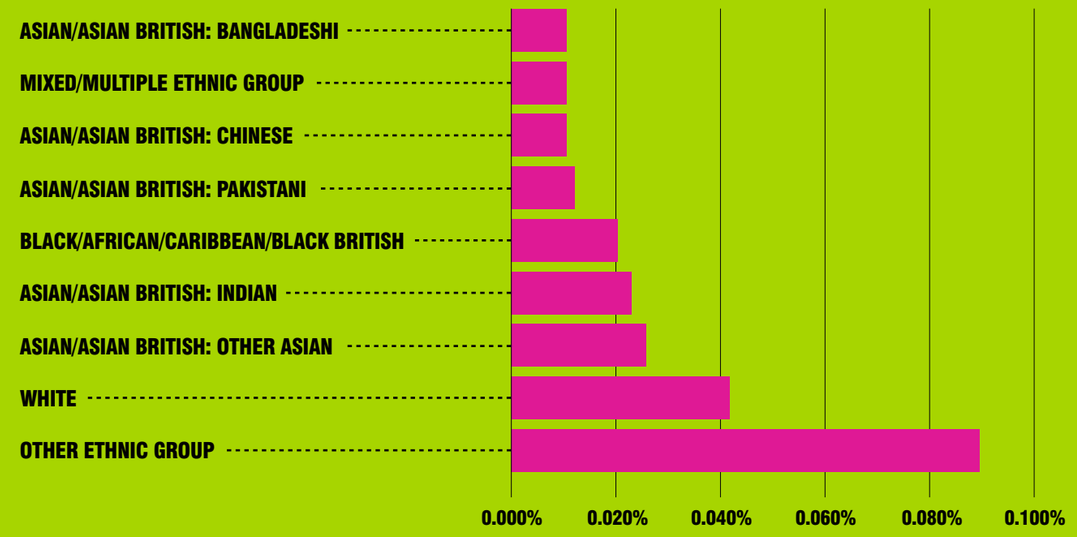
Chart 4.2: Hospital admissions for pedestrian falls by month and year



4.4.3 DO FALLS VARY WITH ETHNICITY?

Chart 4.3 shows that there are some big differences between trips and falls injury rates among different ethnic groups. However, it is not possible to tell from the data if this reflects different injury rates (e.g., as a result of living in an area with poor walking infrastructure) and/or different hospitalisation rates. People in the 'any other' ethnic group have by far the highest rate of admissions for trips and falls. This is almost certainly a reflection of patients being miscoded to that ethnic group.

Chart 4.3: Percentage population admitted annually



4.4.4 HOW DO ADMISSIONS VARY WITH AGE AND SEX?

Chart 4.4 shows that, as expected, the number of hospital admissions increases steadily with age, rising more rapidly over the age of 65 with the greatest number of admissions for men and women in the 80–84 age band. More women fall than men because there are more women than men. However, chart 4.5 shows the prevalence of falls as a percentage of the female population and the male population. Here the data suggests that the propensity to fall outdoors is consistent across both sexes for most of the life course. This differs from previous research which suggests that the prevalence for falls (without differentiating between indoors or outdoors) is higher for women[62] and may reflect greater fitness among women walking outdoors. Over the age of 90 the prevalence of women's falls drops, while the likelihood of falling continues to increase for men – this may be that as women survive longer and live alone in older age, they feel less confident walking alone outdoors.

Chart 4.4: Number of pedestrian falls injuries by age group (2018-2020)

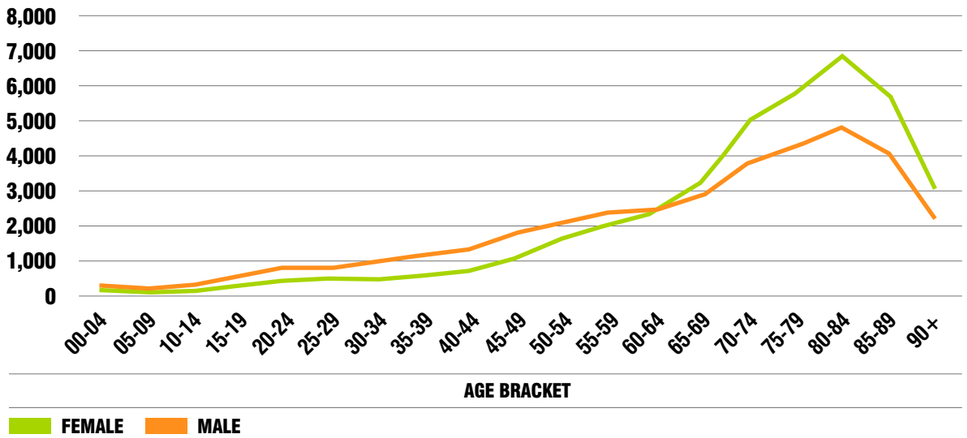
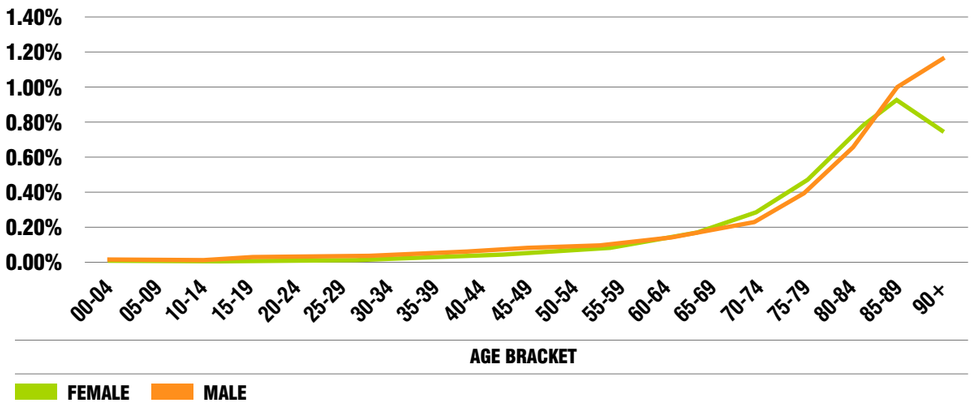


Chart 4.5: Percentage of population group injured (2018-2020)



The local authority survey revealed that the most injured part of the body from a pedestrian fall is the ankle, and the most frequent types of injuries are breaks/fractures, sprains/strains and bruising. Table 4.3 and chart 4.6 show the distribution of pedestrian injuries from falls outdoors by age and sex. Charts 4.7 and 4.8 present the same information separately for males and females over the age of 50.

The most frequent type of injury is the same for both sexes up until the age of 49. For women between the age of 55 and 69 years of age, the most frequent injury was a fracture of the forearm and over the age of 70, it was a fracture of the femur (a hip injury). Bone fractures are more common in women after the menopause because of a reduction in bone mineral density[63]. For men aged 50 and over, the most frequent injury resulting in a hospital stay was an open wound of the head. This is followed closely by a fracture of the femur (as discussed in relation to chart 4.8 below).

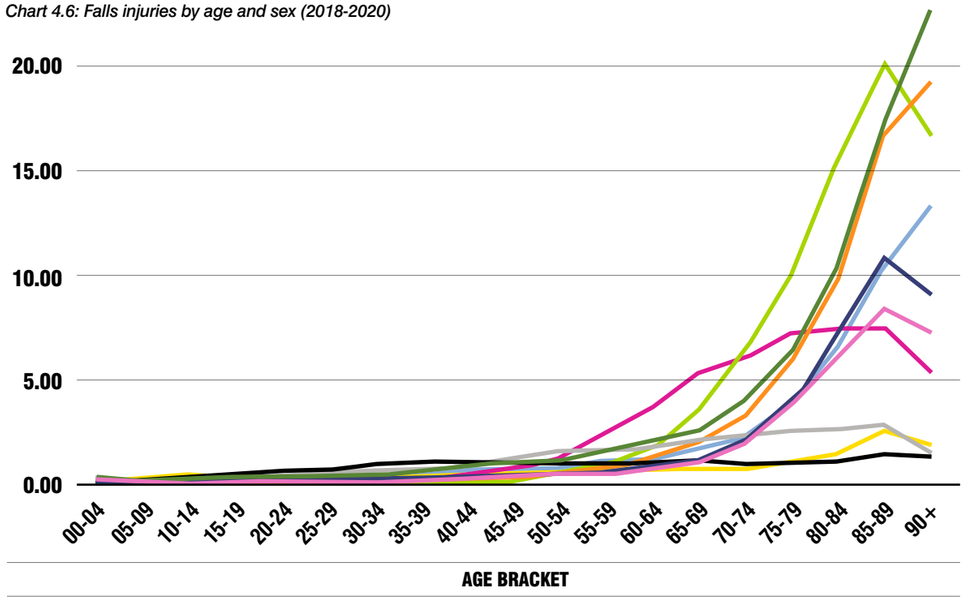
Table 4.4: Falls injuries by age and sex – 3-year admission rates per 10,000 of the population

AGE	INJURY									
	FRACTURE OF FEMUR		FRACTURE OF FOREARM		FRACTURE OF LOWER LEG, INCLUDING ANKLE		OPEN WOUND OF HEAD		SUPERFICIAL INJURY OF HEAD	
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
0 – 4	0.02	0.03	0.10	0.06	0.01	0.03	0.29	0.46	0.31	0.37
5 – 9	0.01	0.01	0.26	0.33	0.04	0.03	0.14	0.22	0.07	0.12
10 – 14	0.02	0.04	0.21	0.56	0.13	0.13	0.05	0.07	0.07	0.11
15 – 19	0.03	0.06	0.10	0.29	0.32	0.50	0.13	0.38	0.20	0.36
20 – 24	0.05	0.07	0.16	0.28	0.62	0.72	0.22	0.47	0.29	0.38
25 – 29	0.04	0.09	0.18	0.27	0.71	0.75	0.15	0.43	0.16	0.23
30 – 34	0.04	0.08	0.26	0.28	0.71	1.00	0.18	0.56	0.19	0.33
35 – 39	0.07	0.13	0.36	0.35	0.81	1.07	0.20	0.68	0.22	0.48
40 – 44	0.12	0.23	0.46	0.43	1.02	1.16	0.36	0.92	0.37	0.73
45 – 49	0.23	0.37	0.74	0.58	1.26	1.16	0.48	1.13	0.44	0.76
50 – 54	0.62	0.60	1.39	0.46	1.62	1.09	0.57	1.25	0.59	0.82
55 – 59	1.03	0.84	2.51	0.54	1.73	1.19	0.66	1.52	0.55	1.22
60 – 64	1.83	1.22	3.74	0.80	1.79	1.04	0.76	2.15	0.71	1.26
65 – 69	3.61	2.07	5.40	0.88	2.19	1.19	1.17	2.64	1.09	1.75
70 – 74	6.35	3.35	6.13	0.81	2.43	1.03	2.17	4.11	2.04	2.34
75 – 79	10.03	5.98	7.27	1.11	2.63	1.11	3.84	6.41	3.87	3.96
80 – 84	15.62	9.85	7.51	1.49	2.68	1.21	7.27	10.51	5.97	6.70
85 – 89	20.10	16.80	7.57	2.61	2.85	1.55	10.91	17.43	8.43	10.41
90+	16.78	19.23	5.46	1.96	1.60	1.45	9.18	22.70	7.33	13.34

Continued

4.4.4 HOW DO ADMISSIONS VARY WITH AGE AND SEX?

Chart 4.6: Falls injuries by age and sex (2018-2020)



Charts 4.7 and 4.8 show the different injury profiles for women and men over the age of 50. For women, there is a greater spread across the different injury types. Fractures of the lower leg (including the ankle) increase slightly with age. Over the age of 65, fractures of the femur begin to rise more sharply, and over the age of 75 open head wounds and superficial wounds to the head also rise more steeply. At the same time, fractures to the forearm plateau. Incidences of all injury types drop in the 90+ age bracket.

For men, an open head wound, very closely followed by fracture of the femur, are the two most frequent injuries. The next most frequent injury to increase with age is a superficial head wound. Fractures of the forearm and of the lower leg remain constant in number increasing only slightly across all age groups.

Chart 4.7: Female injuries 50+ (2018-2020)

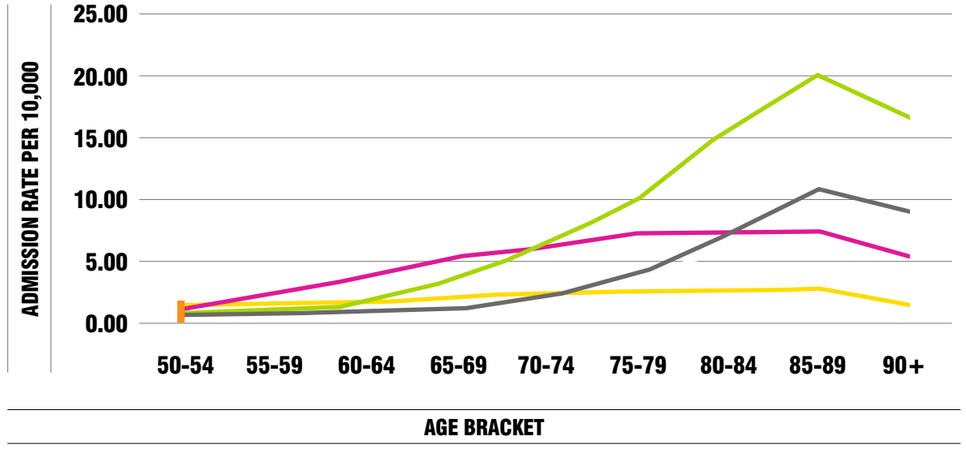
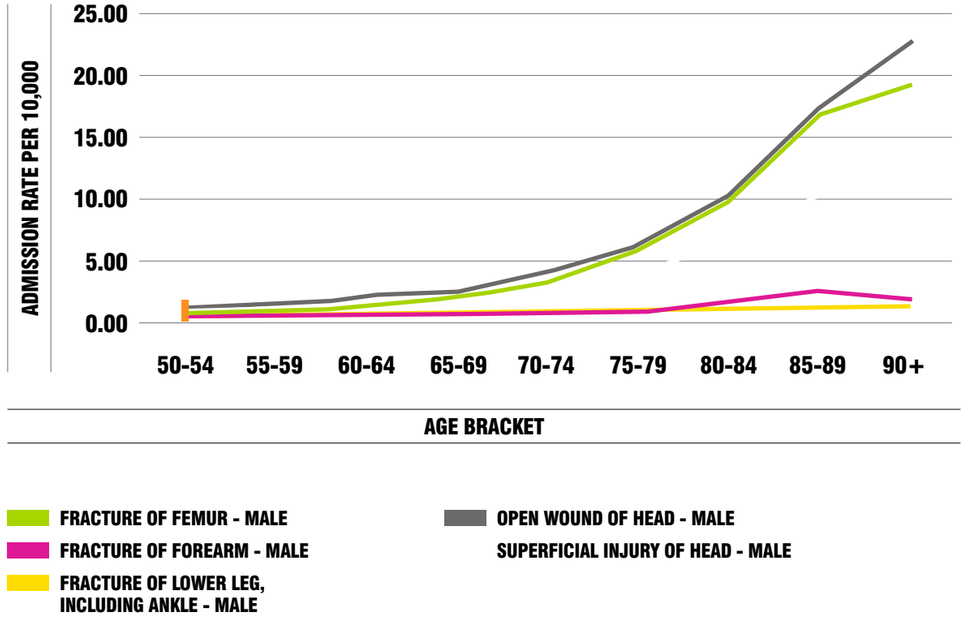


Chart 4.8: Male injuries 50+ (2018-2020)



4.5
SUMMARY

THE HOSPITAL ADMISSIONS DATA REVIEWED IN THIS CHAPTER IS FOR THE UK.

However, the 57 local authorities reporting the lowest percentage of resident admissions for trips and falls are all outside England. For the period 2018–2020, a total of 2,165 admissions are recorded for Scotland, Wales and Northern Ireland combined – suggesting that there is a difference in the way that England codes diagnoses. Although there appears to be a falls hotspot in Arun, Chichester, Worthing and Adur, this is likely to be a coding anomaly. Despite having an older than average population, nationally there is no observable relationship between the age profile of a local authority population and rates of hospital admissions.

There were over 30,000 hospital admissions for an overnight stay resulting from footway falls injuries in England in 2018 and 2019. This dropped slightly in March 2020 with the Covid19 lockdown restrictions. The data reviewed in this chapter did not include A&E presentations where the patient was sent home (e.g., with a sprained ankle) or outpatient attendance (from a GP referral) from falls injuries. The minimum cost of emergency (non-elective) short stay admissions in 2019 based on the unit cost of a Finished Consultant Episode was £22.7 million. The maximum potential cost of emergency admissions in 2019 was £98.7 million and the cost of elective admissions was £9.3 million.

Hospital attendance did not vary by season for the years surveyed. This follows the same pattern as the local authority survey results and reflects the mild winters of 2018-2020. There is a noticeable drop with the first lockdown of March 2020, even though more people reported walking for exercise.

It is not possible to tell if differences in admissions by ethnicity reflect different injury rates (e.g., as a result of living in an area with poor walking infrastructure) and/or different hospitalisation rates. Observable differences with the 'any other ethnic group' are likely to be due to patients being miscoded to that ethnic group.

As expected, admissions increase significantly with the age of the population. The injury profile remains the same by sex until the age of 50. The most frequent injury resulting in hospital admissions is a fracture of the lower leg, including the ankle. Over the age of 54, the most frequent injury resulting in hospital admission for women is a fractured forearm and over 70 a fractured femur (hip) – which is linked to lower bone mineral density from the menopause. For men over 50, the most frequent injury resulting in hospital admission is an open wound to the head followed closely by a fractured femur.

5.0
DISCUSSION AND RECOMMENDATIONS

5.1 THE UNDERREPORTING OF OUTDOOR FALLS

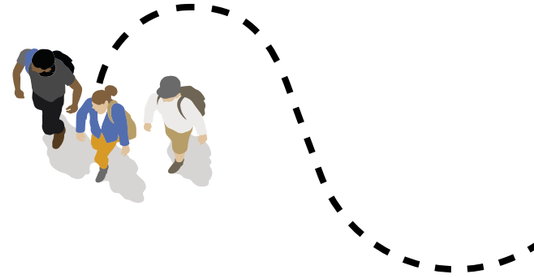
FALLS HAPPEN TO PEOPLE OF ALL AGES, BUT OLDER PEOPLE ARE DISPROPORTIONATELY AFFECTED.

People aged 65 and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year[64]. This has been estimated to cost the NHS more than £2.3 billion per year[65]. Costs are set to rise with an ageing population – by 2030, one in five people in the UK will be over 65 and the fastest growing age group will be 85+ years[66]. However, the focus is predominantly on falls indoors (e.g., in healthcare settings). At a time when keeping physically active is more important than ever – to 'reduce the risk of illness in both the short and long-term, preserve memory and cognitive ability and reduce the risk of falls'[67]– the number and cost of falls outdoors are an underreported problem.

Compared to older people who fall indoors, older pedestrians are more likely to be healthy for their age. However, foot problems, lower-extremity neuromuscular symptoms, the use of walking aids, cigarette smoking, alcohol consumption and being on medications all increase the odds of indoor and outdoor falls. Other causes include trip hazards, such as poor paving, lighting or tree roots or navigating kerbs and crossings. In winter, hospital admissions for slips and falls on icy pavements are inversely related to the mean weekly temperature – recent mild winters have eased the burden.

It has been estimated that 10% of people over 65 experience a fall from walking outdoors each year. There are over 10 million people over the age of 65 in England (accounting 18.5% of the population; 18.6% of the UK population), this suggests that annually there could be more than one million outdoor falls among older adults. A key source of reliable information on outdoor falls injuries are hospital episode statistics. These record the 'external cause' for patient admissions. Of course, this is just the tip of the iceberg because not all falls result in injury, not all injuries result in hospital treatment and not all hospital treatment requires an overnight stay.

The falls injury data requested from the NHS covered United Kingdom emergency and elective admitted patient care – admission requiring an overnight stay. It revealed an average of 30,000 admissions in 2018 and 2019 dropping almost a third with lockdown restrictions in 2020. The coding of external cause codes (e.g., W004 for a fall on the same level involving ice and snow) varied significantly between England and the rest of the UK.



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5.1 THE UNDERREPORTING OF OUTDOOR FALLS

Out of a total of 84,549 admissions between 2018 to 2020, the majority (97% or 82,235) were attributed to England, whereas Scotland, Wales and Northern Ireland with a combined population of 10.5 million people (15.6% of the UK population) recorded only 2,165 admissions in the same period. Most Scottish local authorities show zero admissions for outdoor falls across three years, which seems unlikely. This identifies a significant gap in information on outdoor falls in the devolved administrations.

Information on footway faults and falls is held within local authorities, but it is not collected consistently and is not available nationally. In England, the location of each reported footway fault is logged on a Customer Relationship Management (CRM) system. Some authorities will log the location of each reported fall as well as the location of pedestrian falls resulting in personal injury claims. However, as the survey results demonstrated, the way that footway faults and injuries are recorded varies across local authorities rendering a national comparison difficult.

The local authority survey asked: how many pedestrian falls were reported between 2018 and 2020, and how many personal injury claims were made for pedestrian falls injuries in the same period? There were 16 responses to the question on reported falls and 23 responses to the question about claims. It is possible that someone making a claim did not report their fall and it is possible that some highway authorities do not record pedestrian falls if they do not result in a personal injury claim. The 16 respondents (representing 9% of highway authorities in England) reported 6,437 falls over the three years. A simple extrapolation suggests that over 71,500 falls were reported in England in the same period. While it is a crude approximation (it assumes that the sample is representative of England and not all of the reported falls will have required hospital treatment), it is a similar order of magnitude to the 82,235 recorded hospital admissions in England for pedestrian falls outdoors on a pavement.

It would be useful to be able to cross reference hospital trust admissions data with local authority data to be able to check the number of falls. As well as gaining a more accurate understanding of the scale of pedestrian falls, it would be a useful check against fraudulent claims (£13.8 million in public liability claims was recovered by the Department of Work and Pensions' Compensation Recovery Unit 2018-2020[68]).

5.2 ADOPTING A RISK-BASED APPROACH

IN 2016, THE DEPARTMENT FOR TRANSPORT ENDORSED A NEW CODE OF PRACTICE, 'WELL MANAGED HIGHWAY INFRASTRUCTURE', AND REQUIRED ITS ADOPTION BY LOCAL AUTHORITIES.

A key recommendation was that 'a risk-based approach should be adopted for all aspects of highway maintenance, including setting levels of service, inspections, resilience, priorities and programmes'. Crucially, the code allowed for the adoption of local levels of service (as opposed to national standards) based on local needs, priorities and affordability. A practical outcome of this risk-based approach is that high risk, high use footways are inspected more often and repaired more quickly. Conversely, low use, low risk footways are inspected less often and potentially repaired less urgently.

With diminishing transport budgets, footway maintenance drops in priority – compared to the newsworthiness of carriageway potholes, for example – and footway condition suffers. Table 5.1 shows the funding formula allocations for highways maintenance from 2022 to– 2025. As with the 2021–2022 allocations, the formula does not take into account footway and cycle infrastructure assets. Yet the estimated total cost to bring up and keep footways in England (excluding London) in good condition is £1.695 billion[69].

Highways authorities must do their best to make up the shortfall, but evidence suggests that spending varies considerably. The Department for Transport (DfT) encourages local authorities to spend 15% of their local transport budget on active travel[70]. In their report to Parliament in 2020[71], DfT's local authority survey results showed that an average 13% of local transport budgets – from 2 to 40% – were spent on walking and cycling in the previous four years (from 2015/16). There was no obvious difference between urban and rural areas – although urban areas will have more footway infrastructure, for example. This underlines the need for a better understanding of how much is spent and where.

Table 5.1: Highways maintenance and Integrated Transport Block funding formula allocations, 2022 to 2025[72]

Highways element	Percentage funding allocation
A roads	27.47%
B and C roads	27.47%
U(nclassified) roads	27.47%
Bridges	15.38%
Lighting columns	2.20%
Cycleways and footways	**0%**

Continued

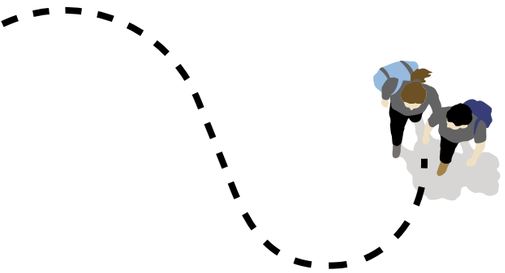
5.2 ADOPTING A RISK-BASED APPROACH

It is not surprising that the street reviews in chapter 2 revealed trips hazards across all street classifications in urban and rural areas across England. Pavements on higher classification streets were more likely to be paved and subject to damage from heavy goods vehicles. Pavements on lower classification streets were more cluttered, damaged by vehicles parked on pavements or using crossovers, as well as being repaired less frequently.

Section 41 of the Highways Act (1980) places a duty on highways authorities to maintain the highway. Personal injury claims made against a council for pedestrian falls can be defended under Section 58 of the Act – whereby the authority will not be liable if it can demonstrate that it has taken 'such care as in all the circumstances is reasonably required to secure that the part of the highway to which the action relates was not dangerous to [pedestrian] traffic'[73]. In other words, if it has done what it said it would do in its Highways Asset Management Plan. Clearly, this is a successful strategy because the local authority survey showed fewer than 20% of claims made for pedestrian falls injuries were successful.

While some of the unsuccessful claims may prove fraudulent, the majority represent people who have fallen on a pavement and hurt themselves. They may still need treatment to recover and impose a health and/or social care cost on the local authority and the National Health Service. The key question is: does the benefit of a successful Section 58 defence outweigh the wider cost to the public purse of falls care and rehabilitation? A 2013 study[74] explored the system-wide cost of falls treatment for older people in Torbay. Its findings suggest that savings made on the roads budget are offset by costs elsewhere in the local authority budget:

- **"On average, the cost of hospital, community and social care services for each patient who fell were almost four times as much in the 12 months after admission for a fall as the costs of the admission itself."**
- **Over the 12 months that followed admission for falls, costs were 70% higher than in the 12 months before the fall.**
- **Comparing the 12 months before and after a fall, the most dramatic increase was in community care costs (160%), compared to a 37% increase in social care costs and a 35%increase in acute hospital care costs.**
- **While falls patients… accounted for slightly more than 1% of Torbay's over-65 population, in the 12 months that followed a fall, spending on their care accounted for 4% of the whole annual inpatient acute hospital spending, and 4% of the whole local adult social care budget."**



The risk inherent in the current approach to highways asset management is that it does not take into account, for example, local authority-funded social care (e.g., domiciliary care, day care and care homes). In the previous chapter, a maximum cost of emergency admissions for pedestrian falls in the UK (mostly England) in 2019 alone was calculated at £98.7 million. Taking the Torbay results as a guide, a fourfold increase in hospital, community and social care services post admission brings the bill to an additional £394.8 million[1]. In contrast, results of the local authority survey suggest that annual personal injury claims payments in England ranged from approximately £15.6 million in 2018 to £7.3 million in 2020.

The case for bringing up and keeping footways in good condition at a total cost of £1.695bn is substantially strengthened by reductions in health and social care costs of up to £500m a year. However, there are some caveats. The population of Torbay is not representative of England as whole; there was a 20.6% increase in people aged 65 years and over between the 2011 and 2021 census[75] who are more likely to fall and suffer injuries from a fall. Similarly, even if all pavements were well maintained, some falls would still happen so the benefits are likely to be less.

Another question that perhaps needs to be answered is around the prompt treatment of pedestrian falls injuries. Is there scope for providing advice and treatment options at the point when a fall is reported? Could this save costs, without being an admission of liability?

As suggested in the literature review, if data on pedestrian falls was available, it could change priorities for road maintenance spending. The risk assessment tool developed in 2006 and updated in 2018 for the Footway and Cycle Track Management Group could be a starting point. In 2006, the authors called for correlation with accident and emergency records; in both the 2006 and 2018 revisions they underlined the need for standard information. As well as differences in the way that hospitals code patient admissions and local authorities record falls, claims data is of variable quality. At least five companies – Zurich Municipal, QBE, Maven, Protector, and Gallagher Bassett – provide public liability cover for local authorities in England. Although they essentially 'self-insure' against pedestrian falls injury claims, claims will often be processed by the insurance company which leads to more differences in the way that information is recorded and located.

However, without the inclusion of system-wide healthcare costs, none of these additions would allow the calculation of the full cost of pedestrian falls – and the consequent benefits of prevention.

[1] This would bring cost up to a maximum of £0.5bn (£493.5 million). The minimum cost calculated in section 4.4.2 is £22.7m; a midpoint estimate equates to £258.1 million ((£493.5 – £22.7) / 2 +£22.7 = £258.1).

5.3 MAINTAINING HEALTH AND INFRASTRUCTURE

THE HOSPITAL ADMISSIONS DATA CLEARLY SHOWS THE INCREASE IN THE RATE OF ADMISSIONS FOR PEDESTRIAN FALLS INJURIES WITH AGE.

For women, this appears to rise from the age of 55 while admissions for men remain relatively constant and behind the curve until the age of 65. This difference may be due to the female menopause. The injury profile is distinct between the sexes, with the more frequent presentation of head injuries for males versus fractures for females. Nevertheless, fractures of the femur (or of the hip) rise steeply for both sexes. Hip fractures are a frequent cause of morbidity and mortality in older people – and are expensive to treat[76].

The prevention of injury is better than the cure. Indoor falls prevention strategies focus on removing obstacles and strengthening people's core strength and balance[77]. However, people who fall outdoors are already fitter and more active because they walk. Therefore, emphasis must shift to minimising external trip and slip hazards. Healthy ageing requires well maintained footways. The street reviews in chapter 2 demonstrate the deterioration in footway condition. When footway condition is poor, older pedestrians will, understandably, be more cautious and avoid walking outdoors for fear of falling. It is a vicious circle leading to loss of independence, loss of fitness and an increased risk of falls.

5.4 CONCLUSIONS AND RECOMMENDATIONS

THIS REPORT HAS SHOWN THAT PEDESTRIAN FALLS ARE A SIGNIFICANT AND UNDERREPORTED PROBLEM, EXACERBATED BY AN AGEING POPULATION AND DETERIORATING FOOTWAY CONDITIONS.

The following recommendations aim to improve the evidence available on the scale and location of pedestrian falls and their true cost. This could change the priority given to spending on footway maintenance, save public funds and improve the quality of life of millions of people.

1. Standardise and improve data collection across healthcare settings and local authority CRM networks:

a) Devolved administrations should review the coding of falls outdoors for hospital admissions. The new Emergency Care Data Set introduced in 2020 may mitigate the deficiencies in current data collected outside England.

b) The Department for Transport should establish a standard classification of footway faults, and of fall causes and falls injuries consistent with the external cause codes and primary diagnoses recorded for admitted patient care. This would allow comparison across NHS and local authority datasets.

c) Highways authorities should record the location of all pedestrian falls reported to them; this would include the subset of falls leading to personal injury claims. This is a matter of best practice for all local authorities.

d) Highways authorities should make falls location and injury data publicly available and consider its use as a performance measure.

2. Prevention is better than cure. Integrate costs to transport and health budgets to set funding priorities that deliver the best value for money:

e) The Department for Transport and Department of Health and Social Care should carry out a system-wide analysis of the healthcare costs for outdoor falls in older patients – making sure to capture the cost of local authority funded social care. Use this to establish a common methodology for local authorities to carry out their own assessments and/or provide baseline care costs.

f) The Department of Transport should sponsor the update of the UK Road Liaison Group's 'Asset Management Guidance for Footways and Cycle Routes' to include the health and social care costs of pedestrian falls as well as the costs of injury claims.

g) Active Travel England should work with local authorities and other bodies to develop a nationally consistent dataset of footway infrastructure.

3. Prompt treatment for falls injuries and rehabilitation helps people back on their feet sooner and could reduce health and social costs in the long term.

h) Further research could explore support options for pedestrians injured on footways as soon as injuries are reported, irrespective of the outcomes of personal injury claims.

i) Most pedestrians will not make claims but might benefit from support in regaining confidence in walking outside.

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