Foreword

"Too High a Price. Injuries and Accidents in London" is the first report of its kind to give a comprehensive view of injury and accidents. The report was commissioned by London's Directors of Public Health from the Health of Londoners Programme (HOLP) which is an integral part of the London Health Observatory. The London Health Observatory (LHO) is one of eight regional public health observatories established following the White Paper *Saving Lives: Our Healthier Nation*.

Because local commitment and action is such a vital element of tackling injuries and accidents, we are publishing a number of accompanying documents and tools for local use in addition to the full report and executive summary. These are all available on the LHO's website (**www.lho.org.uk**) .

The good news emerging from our report is that compared with 15 European capitals, Londoners are less likely to die from all accidents, from those on the roads, or from suicide – in almost every case. But these figures hide the huge burden of disability and ill health among those who survive accidents and injury. We have for the first time shown that the costs of accidents and injury to London are nearly £20bn a year. This is an astronomical price to pay for such preventable tragedies. Moreover we have also shown that the patterns of accidents and injury in London impose further inequalities for Londoners, by gender, ethnicity, age and geography.

By taking a comprehensive view of injury, we have also been able to identify those areas where London needs to focus much more effort. Whilst Londoners have lower death rates for most types of accident, death rates from injuries due to accidental fires, poisoning, and homicide are higher than the average for England. Deaths from falls and suicide are as important in London as those from road traffic accidents. These findings should prompt action by regional government – especially the GLA's functional bodies – as well as local agencies.

Throughout our analyses we have been dogged by different definitions of accidents and injuries between agencies and even between similar units in one sector. The data are incompletely recorded and we have had to temper our interpretations with health warnings. An agreed common dataset on injuries across agencies is now long overdue. This is unlikely to happen until current strategies to reduce injury are united across agencies and government departments. The cross sector involvement needed was evident in our Expert Group (Appendix A), whose advice and help has been invaluable.

Fortunately there is strong evidence that there are effective strategies for preventing injuries and accidents – although they require commitment at every level in society from central government to individuals. We hope this report provides the ammunition needed to deliver effective action for Londoners.

Dr. Bobbie Jacobson
Director
London Health Observatory

Ms. Judith Hunt OBE
Chair
London Health Observatory

Executive summary

Background

This report was commissioned by London's Directors of Public Health from the Health of Londoners Programme (HOLP) in 2000. HOLP has since been integrated within the London Health Observatory. The work was overseen by an Expert Task Group, whose members are shown in Appendix A.

Injuries are an important public health concern in the UK: they are a recognised public health priority within the white paper *Saving Lives*: *Our Healthier Nation.* The multiagency nature of effective action is reflected in the many places accident and injury prevention appears within government and local policy. This includes transport, fire health and safety, and many other specific strategies as well as within the National Service Framework for Older People.

Our aims

The report is different from previous reports on accidents. It brings together a more comprehensive view of injuries and accidents from a range of causes, rather than focussing on one aspect of the problem. In doing this we have been able to provide a more accurate picture of the burden of ill health and disability caused by injury to Londoners.

Our overall aim has been to document and interpret the substantial burden of ill health arising from various causes of injury across London. The report brings together - for the first time - information about the differing patterns of injury across London, and between London and the rest of the country and other European capitals where possible. We have estimated the economic cost of injury to London, including costs to health and social care services, and have highlighted the opportunities for tackling injury through preventive interventions which are known to work. Many of these are already happening in parts of London. Last but not least, we have reviewed the quality and completeness of the data available to monitor injuries in London.

Providing tools for local action

In recognition of the multiagency, multi-level action needed to tackle the causes of injury and accidents, we have prepared a number of different complementary sources of information which we hope will provide useful local tools for local action. Together they bring together many different sources of data vital to an understanding of local patterns of injury. Through our website **(www.lho.org.uk**) the following are available:

- "*Too high a price. Injuries and accidents in London*
    - Full report http://www.lho.org.uk/holp/ia/ia_rept.htm
    - Executive summary http://www.lho.org.uk/holp/ia/ia_summ.htm
- The full report and findings of the analysis of the economic costs of injury and accidents to London:
    - Appendix C1: *"Valuing the costs of injuries and accidents to London"* - (available on Matrix MHA's website, http://www.matrixrcl.co.uk, or http://www.lho.org.uk/holp/ia/ia_appc1.htm
    - Appendix C2: *"Sensitivity analysis for valuing the costs to London of injuries and accidents"* (available on Matrix MHA's website, http://www.matrixrcl.co.uk or http://www.lho.org.uk/holp/ia/ia_appc2.htm
- Local datasets on injury and accidents– accessible via a mapping package at local authority level.
    - Appendix D: Borough level data http://www.lho.org.uk/holp/ia/ia_appd.htm
- Injuries: A policy overview:
    - Appendix E: *"National and London-wide policy initiatives for injury and accident reduction"* http://www.lho.org.uk/holp/ia/ia_appe.htm
- Supplementary data:
    - Appendix F: http://www.lho.org.uk/holp/ia/ia_appf.htm

The health impact of injury on Londoners

Table ES.1 Standardised mortality ratios for accidents, road traffic accidents and suicide in European cities, 1996

City	Accidents	Road traffic accidents	Suicide
Amsterdam	281	144	314
Brussels	192	112	470
Copenhagen	277	194	366
Dublin	150	181	147
Lazio	292	367	122
London	101	101	101
Madrid	200	195	60
Oslo	320	105	247
Vienna	316	109	339
Stockholm	167	107	286
Lyon	250	224	238

Source: Bardsley 1999

Table ES1 compares death rates from accidents, suicide, and road traffic accidents in London with mortality in selected European cities. With the exception of suicide

mortality in Madrid, all cities have higher mortality rates than London for all these causes.

Although hospital admission rates for most types of accidental injury, as well as for assault and self-harm, are lower for Londoners than for England as a whole, there are 67,000 hospital admissions per year in London for identified causes of injury, accounting for 406,000 bed days. Half follow accidental falls – many among older people.

Londoners have lower death rates than the England average for most accidents, but higher rates from injuries due to accidental fires, poisoning and homicide. The biggest causes of death from injury are: suicide which accounts for over 700 deaths per year; falls, which kill nearly 400; and road traffic accidents (almost 300 Londoners every year).

Injury: counting the economic costs

We commissioned specific research into the economic costs of injury and the events which cause injury in London. This has identified an estimated annual cost of £19.7 billion, mostly the human costs and the costs of lost outputs. Direct costs are estimated at £290m for medical and social care, and £17m criminal justice system costs (Table ES.2). The health and social care costs of fires, falls, poisoning and other accidents are together far greater than the costs of road traffic accidents. Known omissions from this short study mean that these are underestimates. This is the first time we have had an estimate for London, based on the wide range of information sources about injury and accident events and victims.

Table ES.2 Summary of costs of injury and accidents to London (£m 2000/2001 prices)

	Cost component				
Injury cause	**Human**	**Lost outputs**	**Criminal Justice System**	**Medical and social**	**Total**
Road traffic accident	£1,115	£258	£4	£29	**£1,406**
Other transport	£303	£60	£1	£3	**£368**
Fires, falls, poisonings and other accidents	£13,528	£2,351	£10	£235	**£16,124**
Assault	£691	£164	£1	£12	**£868**
Suicide, self-harm and undetermined injury	£631	£283	£1	£10	**£924**
TOTAL	**£16,268**	**£3,116**	**£17**	**£290**	**£19,690**

Inequalities in injuries within London

The report describes inequalities in injuries by age and sex, geography, ethnicity and social class where possible for accidents, suicide and self harm as a whole and for five causes of injury whose effect on Londoners is big, or bigger than the national average. Key messages about accidents, suicide and self harm as a whole are:

- Mortality rates for accidents and suicide and undetermined injury (an ill-defined category that probably contains some suicides and homicides) vary considerably by borough and show some relationship to the level of deprivation.
- Analysis of admissions by ethnic group shows that the white population has significantly higher proportion of admissions due to accidents and self-harm than the population of London as a whole. People from the 'Black Other' ethnic group have a significantly higher proportion of admissions due to accidents than the population of London as a whole.
- People born in Ireland and the 'Rest of the World' have a higher proportion of deaths from accidents than the population of London as a whole (Figure ES.1). People born in Eastern Europe have a higher proportion of deaths from suicide and undetermined injury than the population as a whole (Figure ES.2).

Figure ES.1 Proportional mortality ratios for accidents by country of birth, London 1997-99

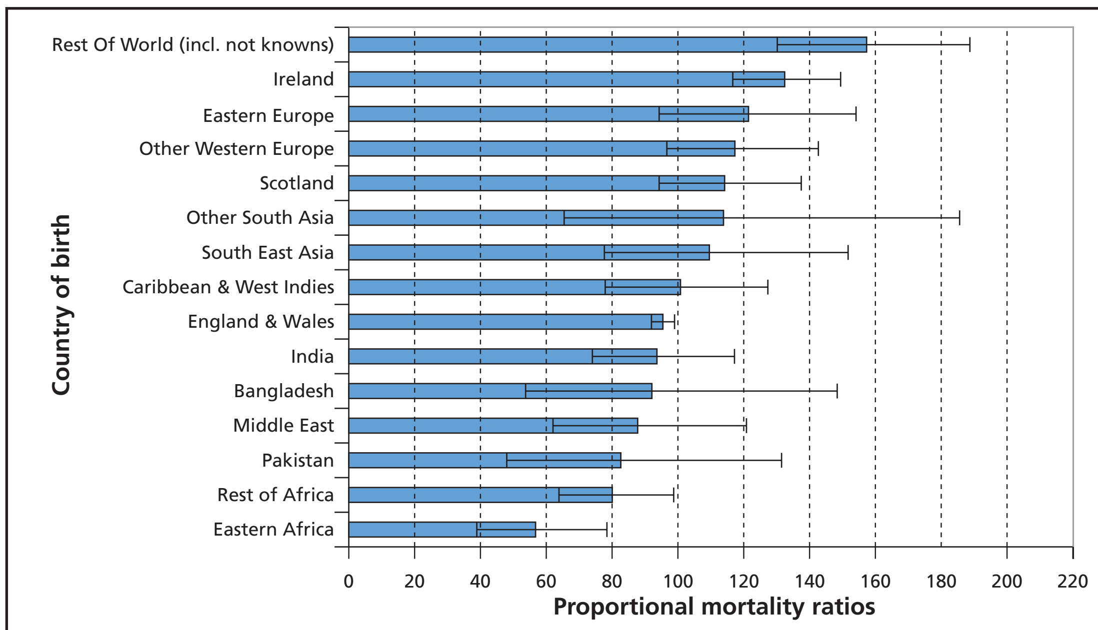
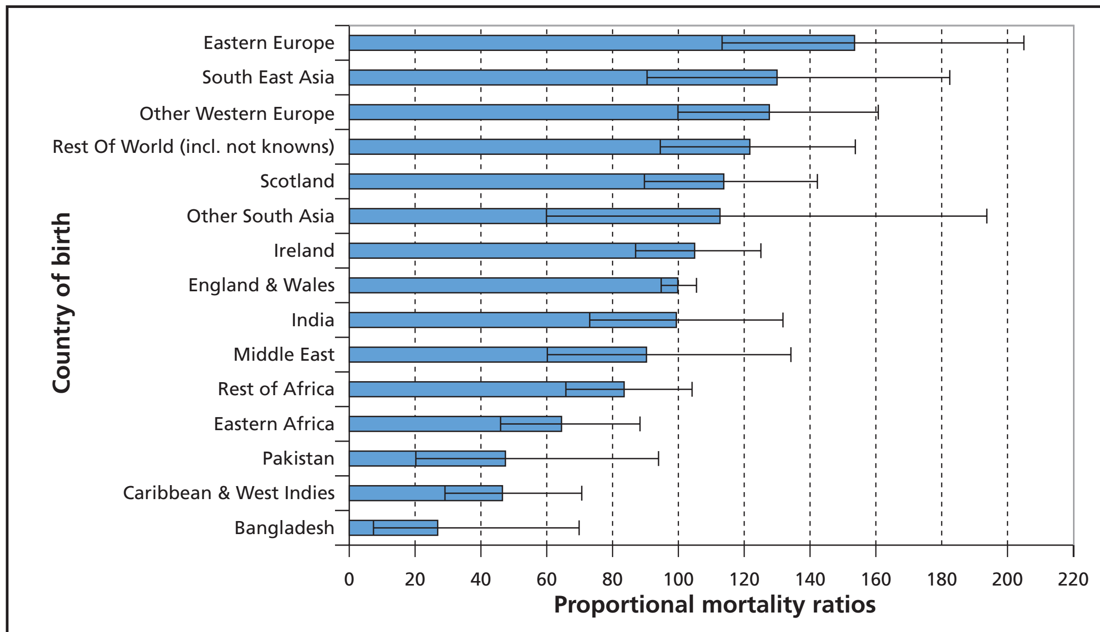


Figure ES.2 Proportional mortality ratios for suicide and undetermined injury by country of birth, London 1997-99



Source: ONS

- Men aged 20-74 in unskilled manual occupations (social class V) have a higher proportion of deaths due to accidents and suicide and undetermined injury than men aged 20-74 in London as a whole. Those in managerial occupations (social class II) have a low proportion of deaths due to suicide and undetermined injury and this group and those in skilled non-manual occupations (social class IIIn) have a low proportion of deaths due to accidents.

Figure ES.3 Age-specific admission rates for road traffic accidents, males London 1997/98 and 1998/99

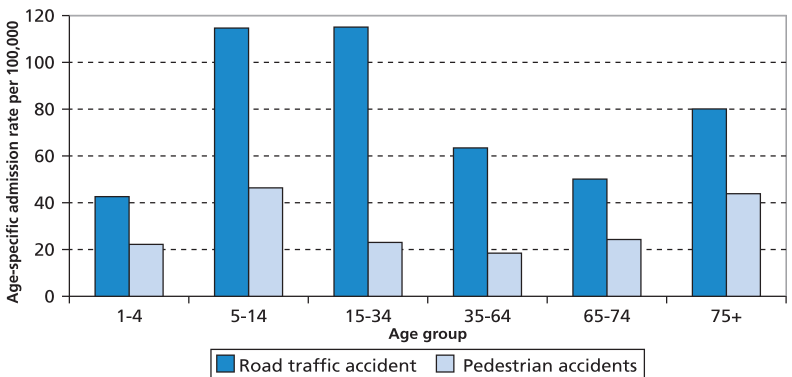
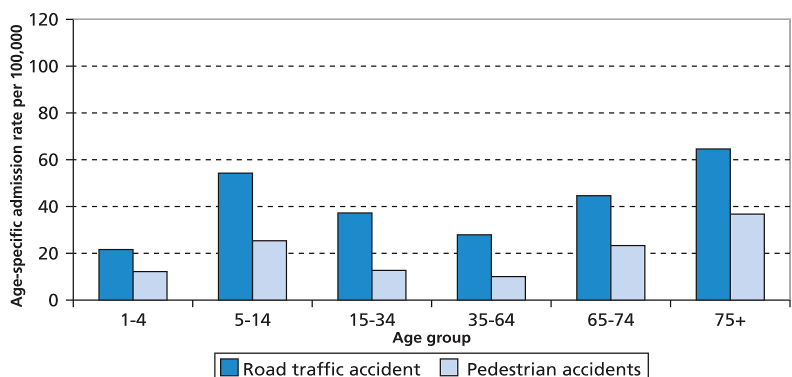


Figure ES.4 Age-specific admission rates for road traffic accidents, females London 1997/98 and 1998/99



Source: Hospital Episode Statistics

Figure ES.5 Age-specific mortality rates for road traffic accidents, males London 1997/98 and 1998/99

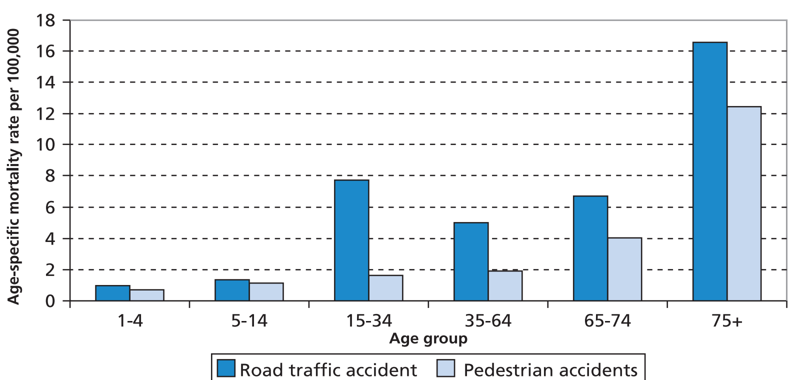
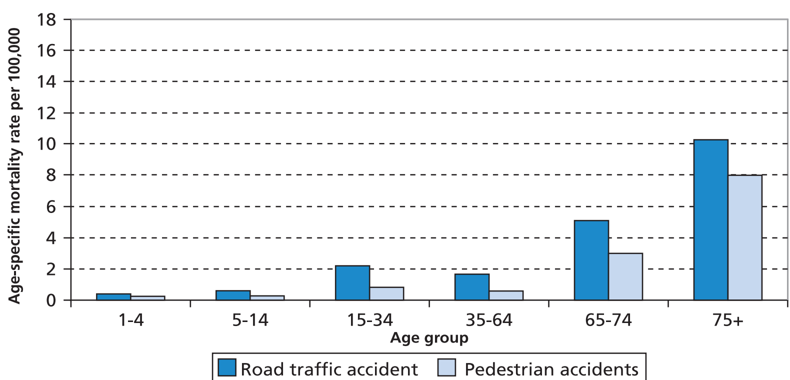


Figure ES.6 Age-specific mortality rates for road traffic accidents, females London 1997/98 and 1998/99



Source: ONS

Road traffic accidents

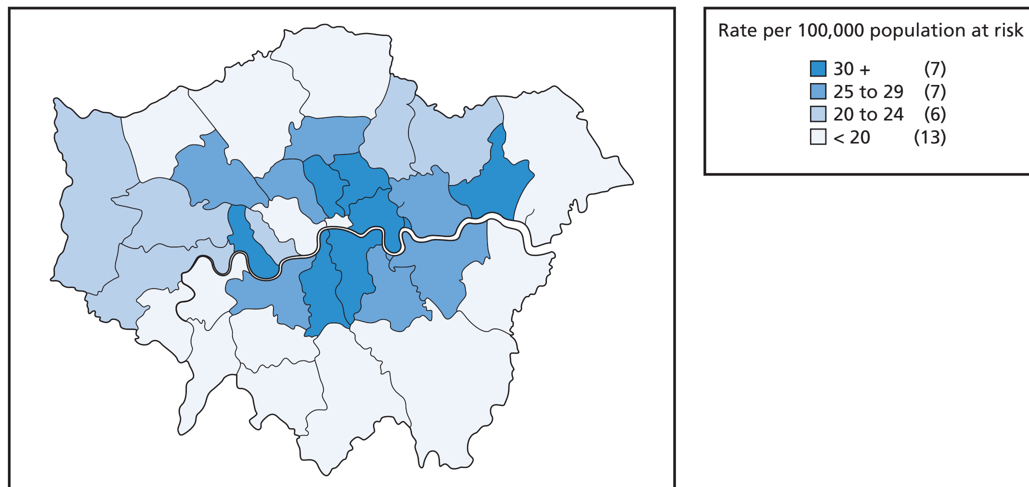
- The highest road traffic accident (RTA) rates and casualty rates are in central London, however, **residents** of these boroughs have low accident rates.
- Of London drivers involved in accidents in London, three-quarters are men; the majority are young adults.
- Pedestrian casualties are more likely to be killed or seriously injured than other casualties; 31% are aged 3-18 years.
- Ambulance call outs to RTAs are mostly for younger age groups (5-39). Over half involve patients with minor or no injury.
- Hospital admissions for RTAs are highest for residents of outer east London, Hillingdon and Kingston.
- Hospital admission rates among pedestrians are high in Inner London boroughs and in people aged 5-14 or 75+ (Figure ES.3 and ES.4).
- Half of the admissions are for fractures; other head and facial injuries account for a further quarter.
- Mortality from RTAs is generally higher in outer than inner London boroughs, except for pedestrian deaths. It increases with age, with a peak in young adults, especially males (Figure ES.5 and ES.6).
- There are marked social class differences in deaths for different types of road users.
- Trends in road traffic casualties as reported to the Police in London are mostly downwards, except for a rise in motorcyclist casualties.

Preventing road traffic accidents London-wide and borough Road Safety Plans need to include: environmental improvements on the roads; speed reduction measures and enforcement; reducing risk in drivers (alcohol and drugs, age–related risks); safety equipment provision (for example cycle helmets, child car seats), and appropriate road user training.

Fires

- Inner London boroughs have the highest rate of ambulance call outs for fire incidents (this includes some non-accidental fires). Hackney and Lambeth have the highest rates of all (Map ES.1).
- The age-standardised admission rate is slightly lower in London than for England as a whole. The age-standardised mortality rate from accidental injuries due to smoke, fire and flames for London is slightly greater in 1997-99 than for England as a whole.

Map ES.1 Ambulance call outs for fire incidents 1998-2000



Source: London Ambulance Service NHS Trust

- Within London, admission rates for accidental injuries caused by smoke, fire and flames are highest in Inner London boroughs such as Hackney, Tower Hamlets, Newham, Lambeth, Southwark, Lewisham and Greenwich. Admissions are lowest in Outer London boroughs in the east and the south. Admission rates by borough show a positive relationship with the level of deprivation in the borough.
- Mortality rates from accidental fires increases with age and are highest in the 75+ age group.
- There is evidence that the social, physical or mental condition of a person immediately prior to a fire has a significant impact on the outcome (fire death).
- Older people who are alone at the time of the fire, people who have a disability, or those who are under the influence of alcohol are most likely to die if a fire breaks out.

Preventing fires Community Fire Safety Plans offer local opportunities. Specific interventions include: action on housing standards; home safety checks and modifications; functioning smoke alarms; and advice and information targeted to vulnerable groups.

Poisonings

- Poisonings can be divided into two groups:

    - accidental poisonings

    - intentional/undetermined self-poisonings

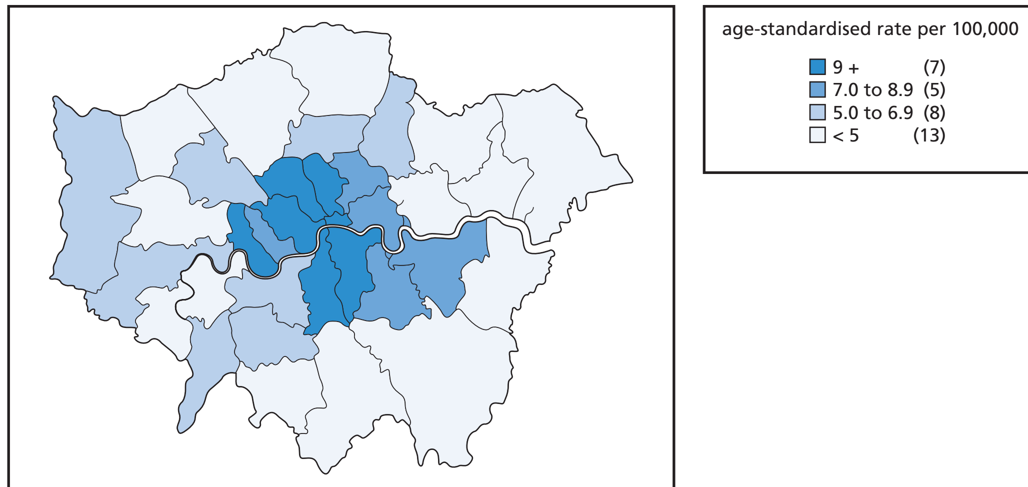
- Poisoning can be due to drugs, alcohol, gases and vapours, food or other poisonous substances. Drug poisonings in this report include all poisonings due to all types of drugs including illegal drugs, prescribed medicine and those

available over the counter, regardless of whether they are accidental or intentional in cause.

- Approximately seven times as many accidental poisonings seen in sample Accident and Emergency departments (A&E) occur in the home than outside the home. Eighty-seven percent of all these poisonings in the home occur in children under the age of five. Young children also have the highest rates of admission to hospital for accidental poisonings, but low mortality rates.
- The majority of accidental poisoning admissions (86%) and intentional/undetermined self-poisonings (97%) are due to drugs, rather than alcohol, gases and vapours, food or other poisonous substances.
- Young adults aged 15-34 have the highest number of ambulance call outs for overdoses, with females having higher call outs than males. Hospital admission rates for poisoning are also high in this age group. In males, deaths from accidental poisoning and drug poisoning are the highest in this age group.
- For those aged 75+, deaths from intentional / undetermined self-poisonings are high and drug poisoning deaths are high in females.
- Boroughs in south east London and central north London have the highest admission rates for accidental poisonings. The geographic distribution of intentional/undetermined self-poisoning admissions is almost the inverse of the map of accidental poisoning admissions. Boroughs with the highest rates are mainly in north east and inner west London.
- Camden, Islington and Hackney have significantly higher mortality rates from accidental poisoning than London as a whole. The boroughs of Lambeth, Southwark, Hammersmith and Fulham, Camden, Islington and Westminster all have very high drug poisoning death rates, significantly higher than the average for London as a whole (Map ES.2)
- The 'Black Other' ethnic group has a higher proportion of total admissions that are due to accidental poisonings than all Londoners as a whole.

Preventing poisoning Partnerships need to address both accidental and deliberate self-harm, especially from drugs. Specific interventions include: information and advice to families and older people about medicine use and storage; child-proof containers and storage for medicines and toxic products; reducing alcohol and drug overdosing; prescribed drugs audit; and eye treatment for older people.

Map ES.2 Age-standardised mortality rates for drug poisoning deaths 1997-1999

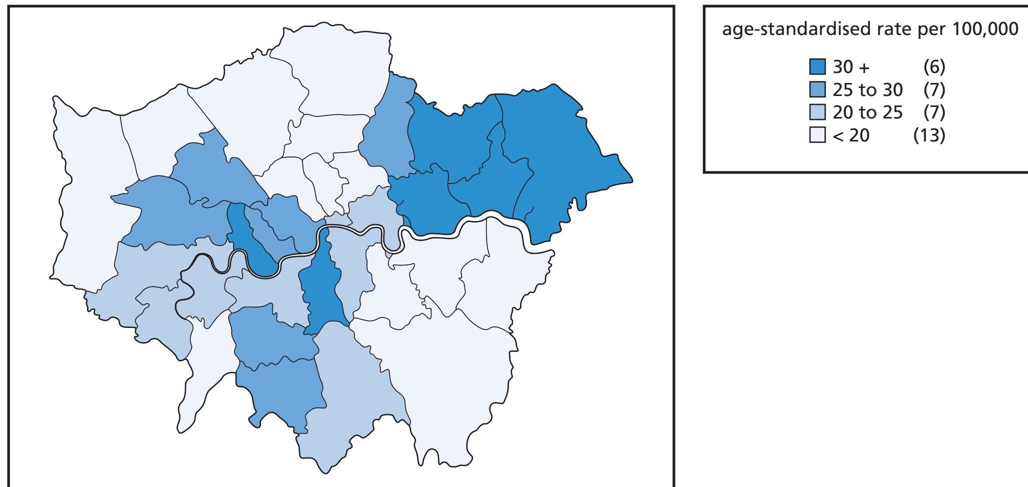


Source: ONS

Falls

- Roughly equal numbers of people seen in sample Accident and Emergency Departments (A&E) who have fallen, fell at home or outside the home. However, the majority of fatal falls occur in the home.
- Accidental falls occur at all age groups but the highest number of ambulance calls, admission rates, and death rates are seen in the older age groups. Young children have a high number of attendances at A&E after falling and high ambulance call outs and admission rates for falls from a height.
- There is no clear geographic pattern in ambulance call outs for falls although Inner London boroughs have a greater call out rate for falls from a height.
- There are some similarities in the geographic pattern of mortality and admissions for accidental falls. A group of boroughs in North East London show high rates of mortality and admissions in those aged 65 and over. Part of the reason for this may, in part, be artefactual as hospitals in that area record a very high proportion of admissions with an accident code, while other parts of London under-record accidents. However, as mortality from falls in this area is also high, it is unlikely that this accounts for all of the excess (Map ES.3).
- The most common types of injuries from people picked up by ambulances for falls are minor cuts, injuries and bruising (22%) followed by fractures (15%). Fractures are the most common type of injury for those admitted following accidental falls.
- People who have fallen from a height and are picked up by ambulance are more likely to have injuries such as head injuries and multiple injuries, and head and face injuries on admission than those who fall on the level.

Map ES.3 Age-standardised mortality rates for accidental falls, 1997-1999, aged 65 and over



Source: ONS

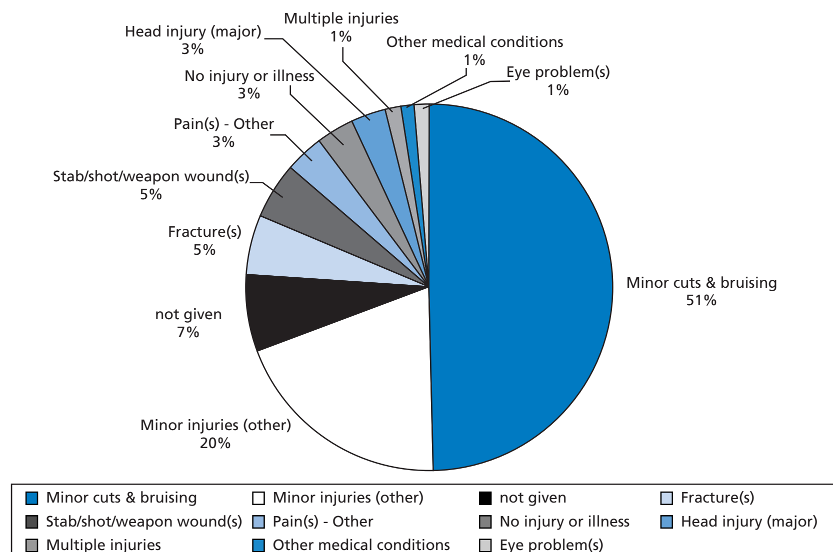
Preventing falls Accident prevention partnerships for children and adults and the falls prevention measures set out in the National Service Framework for Older People should provide the opportunity for change. Specific prevention measures include environmental checks and modifications in home, work and care settings. For older people, effective measures include appropriately selected exercise programmes, dietary supplements and specific drug therapies; risk assessment and follow-up for the vulnerable including those who have experienced a fall; and hip protectors, when acceptable, for very frail people in care homes.

Assault

- Ambulance call outs for assault, hospital admissions for assault and deaths from homicide are highest in the young adult age groups (15-34).
- Boroughs with the highest ambulance call-outs for assaults and homicides are concentrated mainly in Inner London.
- Metropolitan Police data show that Hackney, Newham, Lambeth and Southwark have the highest rates of violence against the person and Bromley, Harrow and Richmond the lowest.
- Admission rates for assault by London borough show the highest rates in Camden, Islington, Barking & Dagenham, Newham, Hammersmith and Fulham, Lambeth, Southwark and Haringey.
- Boroughs with high rates from police statistics but lower rates from hospital data reflect injuries to non-resident populations.
- People from the ‘Black Other’ ethnic group have a higher than average proportion of total admissions that are due to assault.

- A large proportion of London residents who die from homicide have no occupation stated on their death certificate.
- The death rate from homicide is highest amongst residents of Hammersmith and Fulham, followed by Camden, Lewisham, Southwark and Islington. Metropolitan Police Service data show different boroughs having the highest murder rate, which reflects the fact that their statistics are presented according to the borough in which the crime was first reported.
- The majority of ambulance call-outs for injuries from assault record minor injuries. More than 1,600 call outs per year are for more serious injuries such as stab or other weapon wounds, major head injury, or multiple injuries (Figure ES.7).

Figure ES.7 Ambulance call outs for assaults by type of injury 1998-2000



Source: London Ambulance Service NHS Trust

- Head and face injuries are the most common reason for admission after assault, accounting for 34% of all admissions. Only 7% of those admitted have superficial injuries.

Preventing assault Community safety partnerships, particularly in high risk areas, strategies to prevent domestic and racial violence, and multi-agency procedures to protect children and vulnerable adults, should be in place. Specific interventions include: problem drinking interventions; registers, surveillance, targeted interventions and support to children, families and vulnerable adults; limiting access to weapons; and behaviour therapy and behavioural staff training in institutional settings.

Gaps in the information

These include:

- Under-reporting
- Lack of common or shared information from Accident & Emergency departments
- Different reporting thresholds and definitions in the various reporting systems
- Incomplete ethnic monitoring, and sometimes use of inappropriate categories
- Incomplete cause coding in hospital datasets
- Incomplete information about costs, and about cost-effectiveness of interventions.

Recommendations

National

1. Cross-government commitment is needed to overcome the fragmentation evident in injury prevention and reduction policy. A renewed national drive to unite relevant government departments is needed to galvanise local action.
2. The full costs of injury should be taken into account by all agencies at national, regional and local levels when prioritising resources for prevention.
3. A national strategy to reduce alcohol-related harm is overdue.
4. The limit on blood alcohol for drivers on the public highway should be reduced from 80mg/100ml to 50mg/100ml.

Pan London action

5. Injury prevention should be an explicit goal in a pan-London strategy to reduce alcohol-related harm.
6. A review of fire prevention in central London is needed.
7. Transport and other resources from regional government and other sources should target areas and groups in London where inequalities are highest.
8. A protocol for collecting agreed data even in the case of a major emergency or serious injury should be agreed.

Local agencies

9. Local Strategic Partnerships(LSPs), and Primary Care Trusts (PCTs) - which in London are mostly coterminous with local authority areas – should review whether the prevention of injury- including falls and poisoning - has sufficient priority within their Health Improvement and Modernisation Plans, and their Community and Community Safety Plans.
10. PCTs and other NHS Trusts should participate in crime and disorder reduction partnerships and support local needs assessment related to injury and risk. This includes, for example, domestic violence, alcohol and drug use.
11. Strategic Health Authorities should ensure that effective accident and injury prevention programmes reflect local need and that effective prevention programmes are in place at PCT level.

Needs assessment, monitoring, evaluation and research

12. Local needs assessment of injury should take advantage of the full range of information sources
13. The collection of standardised Accident and Emergency data on injury should be prioritised. The emphasis should be on informing injury prevention strategies.
14. The investigation and reporting of 'accidental' injury should be geared to finding preventable causes within physical and organisational systems, and not exclusively to attaching blame to individuals.
15. Ethnic monitoring should be incorporated in all injury datasets, in line with the requirements of the Race Relations (Amendment) Act 2000, and as an integral part of public sector bodies' implementation plan for the Act. Census-linked categories should be used.
16. Ways should be developed to harmonise and map the severity level of injuries between different injury reporting systems.
17. The quality of 'external cause' coding of hospital admissions for injury should be monitored and improved.
18. More research is needed on links between ethnicity, socio-economic differentials and injury.
19. Further research is needed into the costs of injury.

Appendix A. Accident and Injury Expert Group

Chris Boulton	Divisional Officer	London Fire Brigade
Ian Caunce (co-chair to July 2001)	Principal Road Traffic Engineer	London Borough of Barnet
Dr Nicola Christie	Post Graduate Medical School	University of Surrey
Belita Clahar	Public Safety Section Manager	LB Camden; Association of Road Safety Officers
Dr Tim Coats	Senior Lecturer and Consultant, A& E	Royal London Hospital
Graham Cobbing	Senior Research Officer	London Accident Analysis Unit, Transport for London
Dr Colin Cryer	Senior Research Fellow	Centre for Health Services Studies, University of Kent
Rosie Dempster	Senior Research Officer	London Accident Analysis Unit, Transport for London
Justine Fitzpatrick	Public Health Analyst	London Health Observatory
Madeline Garraway	Public Health Adviser	Health Development Agency
Mary Halter	A&E Development	London Ambulance Service
Ian Hughes	Senior Divisional Officer	London Fire Brigade
Janet Kirrage	Road Safety Education Manager	London Accident Analysis Unit, Transport for London
Caroline Lowdell	Policy Analyst (to March 2002)	London Health Observatory
Steve Lumb	Divisional Officer	London Fire Brigade
Dr. Jenny Mindell	Deputy Director(from Dec 2001)	London Health Observatory
Dr. Alisdair Reid	Specialist Registrar	Communicable Disease Surveillance Centre
Professor Ian Roberts	Dept Epidemiology and Public Health	London School of Hygiene & Tropical Medicine
Piers Simey	Health Promotion Adviser	Merton, Sutton and Wandsworth Health Authority
Dr Ruth Wallis (Chair)	Director of Public Health	Lambeth Primary Care Trust
Heather Ward	Principal Research Fellow	Centre for Transport Studies, University College London
Graham Webb	Road Policing Policy	Metropolitan Police
Anita West	Senior Sister, A&E / HEMS	Royal London Hospital