

1. INTRODUCTION

There are about 2.6 million home accidents in the UK each year where the victim visits an A&E department for treatment. In addition, there are a similar number of cases where the victim is treated by a GP; as well as millions of minor cases which are treated at home. Also, there are around 4,000 deaths from accidents at home every year. The cost of home accidents has been estimated at £30,000 million a year (including medical and other care costs, time off work, pain and suffering and other consequential costs).

The Department of Trade and Industry (DTI) commissioned this research as it has overall responsibility in Government for home safety, although many other departments, including the Department of Environment, Transport and Regions, the Department of Health and the Home Office have responsibilities which directly affect home safety.

The Consumer Affairs Directorate (CA) of the DTI monitors the number of home accidents¹. The DTI's aim is to introduce measures to reduce the numbers of home accidents in line with the targets of the Government's White Paper "Saving Lives: Our Healthier Nation". In doing so it works closely with business to ensure proposals are practicable, do not impose unnecessary burdens on companies and are implemented as quickly as possible. This is done in a number of ways:

- Collecting and collating ideas for improving the design of products, their packaging, labelling or instructions so as to reduce risks, and liaising with manufacturers so that they implement (on a voluntary basis) such changes. Business competitiveness as well as the consumer will often benefit through innovation in product safety.
- Promoting voluntary safety standards generally at a European level to continue to improve the safety of consumer products.
- Regulating, as a last resort, if voluntary compliance is not possible throughout all sectors of the relevant industry.
- Launching publicity campaigns aimed at promoting awareness, among relevant target audiences to educate consumers about the risks involved with certain activities or associated with particular products.

1.1 Aim

The purpose of this study is to take an overview of the current incidence of home accidents, and to identify the areas where there is the greatest scope for reducing them.

This study has been undertaken following the Home Safety Strategy developed by the Royal Society for the Prevention of Accidents and the Government's Green Paper "Our Healthier Nation".

The audience for this report is all those with responsibilities to help reduce home accidents. It provides the basic building block for home accidents to help deliver the targets to reduce

¹ Information on fatal domestic accidents in England and Wales is gathered from Coroners' Records via the Office for National Statistics and is stored in the DTI's Home Accidents Deaths Database (HADD). Information on non-fatal accidents is collected from the A&E departments of 18 large hospitals spread across the United Kingdom, giving a representative 5% sample. Details of these non-fatal home accidents are stored in the DTI's Home Accidents Surveillance System (HASS).

all accidents in the Government's White Paper "Saving Lives: Our Healthier Nation", which are:

- to reduce death rates from accidents by at least 20% by 2010; and
- to reduce the rate of serious injury from accidents by at least 10% by 2010

1.2 Specific Objectives

The key tasks of the study were as follows:

- a) To classify home accidents in ways which make it easier to target accident prevention initiatives:
 - activity of the victim
 - circumstances of the accident
 - articles involved
 - age of victim
 - outcome of the accident
- b) To identify broad trends in the numbers of accidents and estimate the likely number in 2010.
- c) To prioritise types of accidents by severity of injury and number of cases.
- d) To identify some of the areas which might be targeted to reduce the number of accidents to help meet the target in the white paper.

1.3 Overall Programme of Work

The work has involved three main elements:

- a) Analysis of historical data to identify trends in the numbers, type and severity of cases. Data were used from 1982 to 1996. Accidental deaths (HADD) figures were only available until 1995. The figures were taken from the annual reports published by DTI.
- b) In-depth analysis of non-fatal accidents (HASS) for 1996 and for accidental deaths (HADD) for 1995 to help identify areas for accident reduction.
- c) Detailed analysis on types of accidents, with ideas to reduce these.

1.4 Structure of the Report

This report consists of the following sections:

Section 2 - The Data and Analysis which describes the source of the data, how they were analysed, assumptions made. It also sets out definitions of the terminology used in the report.

Section 3 - Accident Trends which contains an analysis of accident trends since 1982 and extrapolation of the trends to 2010.

Sections 4 - 17 contain a detailed analysis of different types of accidents.

Section 18 - Conclusions including a summary of the main types of accidents and government actions in hand.

2. THE DATA AND ANALYSIS

This section describes the data that have been used and the general layout of the tables and figures which are used to illustrate it. Subsequent sections look at overall trends and different types of accidents in more detail.

2.1 The Source Data

The Consumer Affairs Directorate of the Department of Trade and Industry has been monitoring home accidents over many years. The data are held in two databases as follows:

Non-fatal accidents (HASS) - the Home Accidents Surveillance System which contains details of a sample of non-fatal accidents occurring in the home, including those in residential homes but not hospitals, where the victim visited the A&E department of a hospital as a result of the accident.

Accidental deaths (HADD) - the Home Accidents Deaths Database which includes all accidental deaths which occur as a result of accidents at home or in residential care homes, even if the victim actually dies in hospital but as a result of the injuries sustained in an accident at home. Fatalities should be recorded as accidental deaths (HADD) even if they occur a considerable time after the accident, so long as the accident was at least a contributory cause of death. Note that accidental deaths (HADD) includes all domestic deaths in England and Wales. The population of England and Wales is 88% that of the whole UK, so that estimates of deaths in UK were made by multiplying the accidental deaths (HADD) figures by 1.14.

In this report, cases from non-fatal accidents (HASS) are referred to as "home accidents" or "non-fatal accidents". Accidental deaths (HADD) cases are referred to as "deaths" or "fatal accidents".

For 1996, non-fatal accidents (HASS) contains information on all the relevant accidents treated by A&E departments of a sample of 18 hospitals spread across the UK. This represents 5.2% of all the cases in the UK in 1996. A multiplier of 19.2 can therefore be used to convert data for non-fatal accidents (HASS) into estimates of the national totals for 1996. In earlier years the number and location of hospitals in the sample has varied from time to time, as has the multiplier.

In tables and figures, and elsewhere throughout this report, we refer to the national total for non-fatal accidents (HASS) cases as estimated from the number of sample cases (multiplied by the appropriate factor). Because of the sample size, estimated national totals for non-fatal accidents below 1,000 cases per year should be treated with caution.

2.2 Historical Data

We have taken data from the various DTI annual reports on HASS/HADD and from our own analysis of 1996 data and tabulated the figures to identify trends by accident mechanism and in some cases by age as well.

The classifications by *accident mechanism* (the way the accidents happened) for some of the categories have changed over the years, and we have combined some of them in an effort to keep definitions consistent over the period. The classifications used in our analysis are shown in Table A.1 (see Appendix A) which illustrates how we have grouped the data. Types of accidents where the numbers are small, e.g. suffocation, explosion or drowning have also been classified under "Other". The following thirteen main types of accidents, defined by *accident mechanism*, were used for analysis of trends:

- Falls from stairs
- Falls on/from ladder
- Falls from building
- Falls on same level
- Other falls
- Cutting
- Striking
- Burns
- Choking or objects in eye, ear or nose
- Poisoning
- Electric current/radiation
- Over-exertion
- Other/unknown

Table A.2 (see Appendix A) shows the more detailed classifications for *accident mechanism* used in the current non-fatal accidents (HASS) coding system, with the numbers of cases falling into each category in 1996 (figures in Table A.2 for non-fatal accidents (HASS) are estimated national totals). The table illustrates the relative importance, in 1996, of the different components of the broader classifications used in the trend analysis. The relative importance of the components is likely to have been of the same order of magnitude in earlier years but figures are not available to confirm this.

All the changes in numbers of accidents are occurring in a population which is also changing. Table A.3 gives details of the UK population for 1987 and 1996 together with estimates for 2010 with a breakdown by age and gender. In general, the changes in the numbers of accidents is much greater than the changes in population.

Numbers are given in Tables A4 and A5 for each type of accident for non-fatal accidents (HASS) from 1982 to 1996 and for accidental deaths (HADD) from 1983 to 1995¹. The data have also been plotted in a series of charts shown in Section 3. There are a number of different ways of extrapolating data in a time series to predict values in the future. In the absence of a specific model relating values to time, we have used more straight forward

¹ Note that non-fatal accidents (HASS) figures refer to the whole UK, while accidental deaths (HADD) refers only to England and Wales. There is a 12% difference in the populations.

methods. Lines have been drawn through the data using least squares regression calculations and these have been extrapolated to 2010. Upward trends have been extrapolated using linear models. Downward trends have been extrapolated with an exponential model, as we believe this is more appropriate.

Non-fatal accidents (HASS) records the number of non-fatal accidents in the home while accidental deaths (HADD) records the equivalent cases¹ which lead to death. Table A.6 shows the ratio of deaths to non-fatal cases.

Table A.7 (Appendix A) compares the numbers of cases in 1996 with estimated numbers for 2010 as calculated from extrapolation of the trend lines, while Table A.8 shows the percentage changes in the numbers between 1996 and 2010.

The above applies to the historical data (1982 to 1996) and the trends are discussed in Section 4.

2.3 Current Data

We have also carried out a much more detailed analysis of accidents for 1996² with a breakdown by mechanism, age, activity, location and the articles involved.

Extensive tabulations of data have been created to define the target groups. The detailed tabulations were based on the following characteristics of each accident:

- severity of injury (as defined below)
- the age of the victim
- mechanism
- activity
- location
- article

The last four items are based on the non-fatal accidents (HASS)-2 codes as used by the DTI but the last three items have been re-coded to group together similar classifications. Since there can be more than one article associated with an accident table, involving this factor may have a total greater than that for other tables.

Information has been extracted from the detailed tables and included as appropriate under each type of accident in order to identify target groups of where action can be taken to reduce the number of cases. This results of this analysis are discussed in subsequent sections.

1 Note that HASS figures refer to the whole of the UK while HADD refers to England and Wales. There is a 12% difference in populations.

2 Figures for non-fatal cases are for 1996, figures for fatalities are for 1995.

2.4 Severity of Accidents

A scale of severity of accidents was needed to make the analysis more useful. For analysis of historical trends we have classified the seriousness of accidents on a 5-point scale as follows:

- **Trivial** – "Patient did not wait" or "Examined but no treatment given"
- **Minor** - "Treated; no more treatment required", "Referred to General Practitioner (GP)", "Referred to any Outpatient (OP) clinic", "Referred to OP or GP (unspec which)", "Referred to other hospital" or "Admitted for less than 1 day"
- **Serious** – "Admitted for 1, 2 or 3 days"
- **Very Serious** – "Admitted for more than 3 days" or "Transferred to a specialist hospital"
- **Fatal** - All cases from accidental deaths (HADD)

Since serious accidents are defined by the number of in-patient days, a change in policy or practice where patients are discharged more quickly will also have the effect of reducing the apparent proportion of serious accidents. Also some accidents, particularly fractures, may be serious but do not need in-patient treatment so they will be classified as minor. There is no way of resolving this for the historical data since we did not have the information to cross-relate mechanism and type of injury for individual accidents. However, in the more detailed analysis of the 1996 data we transferred cases from minor or serious to very serious where the injury was any of the following:

- Deep/major puncture wound
- Cut/laceration over 10 cm
- Major tear/avulsion/other open wound
- Burn/scald - full thickness/severe/major
- Concussion over 1 hr
- Haemorrhage of artery/vein
- Injury to nerve/spinal cord
- Fracture - closed/open/compound
- Whiplash injury
- Exhaustion/exposure

This has the effect of doubling the number of very serious cases and leaving only a few serious ones. In many cases, we have reduced the scale to three types by combining the categories as follows - trivial/minor, serious/very serious and fatal.

2.5 Age-Bands

To establish a profile of where accidents happen and to develop ideas for reducing them, we have divided the population into the five groups defined in the table below. The table also shows the number of people in UK in each group:

Table 2.1 Age-Bands Used and Populations

Description	Age-Band	UK Population - Millions					
		Male		Female		Total	
		Millions	%	Millions	%	Millions	%
Infants and Toddlers	0-4	2.1	7%	2.0	7%	4.1	7%
Children	5-14	3.9	14%	3.7	12%	7.6	13%
Adults	15-64	18.9	66%	18.7	63%	37.6	64%
Older people (65-74)	65-74	2.3	8%	2.7	9%	5.0	9%
Older people (75+)	75+	1.5	5%	2.7	9%	4.2	7%
			100%	29.8	100%	58.5	100%

Source : non-fatal accidents (HASS), analysed by Metra Martech

2.6 Gender

Some accidents are for more common for boys/men than for girls/women. Table 2.2 shows that men have 24% more accidents than women. When the statistics are normalised to take account of the gender balance in the population this increases to 28% higher. Also there are considerable differences with age.

Table 2.2 Overall Numbers of Accidents by Aged-Band and Sex

Age-Band	Thousand Cases/Year		Cases per 1,000 Population		Rate Male/ Rate Female
	Male	Female	Male	Female	
Infants and Toddlers	366	302	175	155	1.12
Children	894	578	229	156	1.49
Adults	1,712	1,208	91	65	1.40
Older people (65-74)	89	157	39	58	0.67
Older people (75+)	102	303	70	112	0.63
Total	3,163	2,548	110	86	1.28

Severity	Thousand Cases/Year		% of Total		
	Male	Female	Male	Female	
Trivial/Minor	2,622	2,036	83%	80%	
Serious/Very Serious	539	510	17%	20%	
Fatal	1.8	1.6	0.056%	0.061%	
Total	3,163	2,548	100%	100%	

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Analysis by gender has been included and accident rates calculated where appropriate in subsequent sections.

2.7 Target Accident Groups

To help prioritise target accident groups, two criteria were used. Accidents were selected where there is:

- a significant problem in terms of numbers of cases and particularly where there is an upward trend in numbers
- a real prospect of taking effective action to reduce the problem

In this context, a group of accidents is defined by combination of mechanism, activity, location, articles and age of victim. The significance of a problem is a combination of the number of cases and their severity.

Action may involve making changes to a consumer product and the associated safety controls, or publicity directed at a particularly vulnerable group.

The best approach proved to be a focus on specific areas and individual analyses have been carried out on the following topics:

- Mechanism

- Falls
- Choking
- Burns and scalds
- Fires (uncontrolled)
- Poisoning (liquids and solids)
- Carbon Monoxide poisoning
- Asphyxiation

- Activity

- Children Playing
- Food Preparation
- Gardening
- DIY

- Location

- Kitchens
- Gardens
- Bathrooms

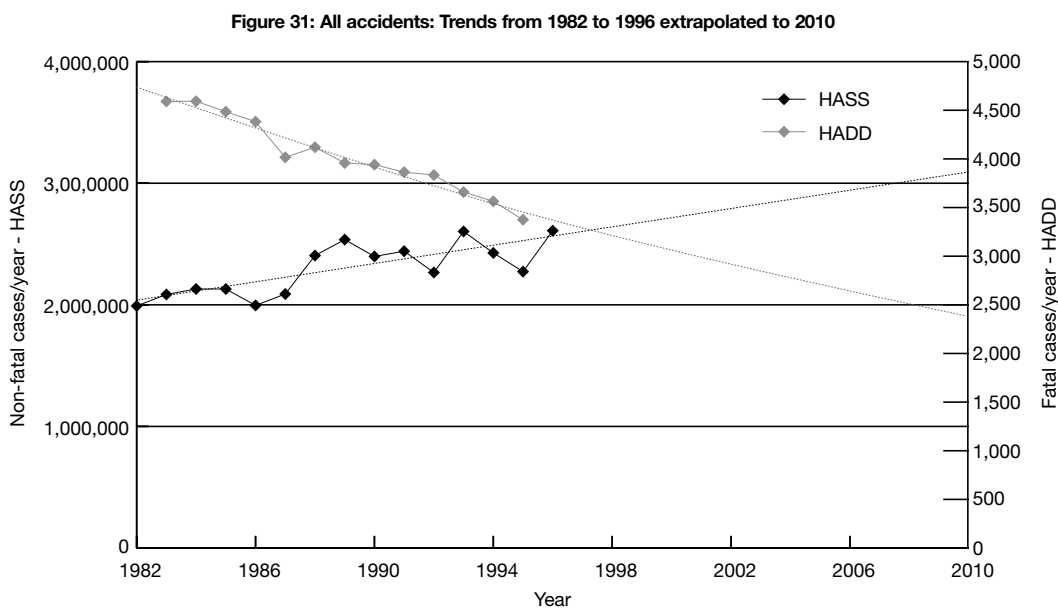
There is, of course, considerable overlap between accidents in different categories. This has been carefully taken on board in all the analyses

Section 3 describes the trends. This is followed by Sections 4 to 17 in which each of the topics listed above are discussed.

3. ACCIDENT TRENDS

3.1 Overall Trends

Figure 3.1¹ shows the overall trend in accidents. The 2010 figures are based on the assumption that past trends will continue into the future. Complex forecasting techniques such as multi-variate Box Jenkins or Kalman filter technique were not used to make general trend predictions. Instead much simpler predictions have been made (as mentioned in section 2.2). This analysis is appropriate for showing the general trend of home accidents and to help identify priorities.



Source: Metra Martech

Table 3.1 Overall Trends in Accident Cases

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
Non-fatal accidents (HASS)	2,547,801	3,059,585	+1.52%	+20.1%
Accidental deaths (HADD) ²	3,381	2,400	-2.45%	-29.0%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

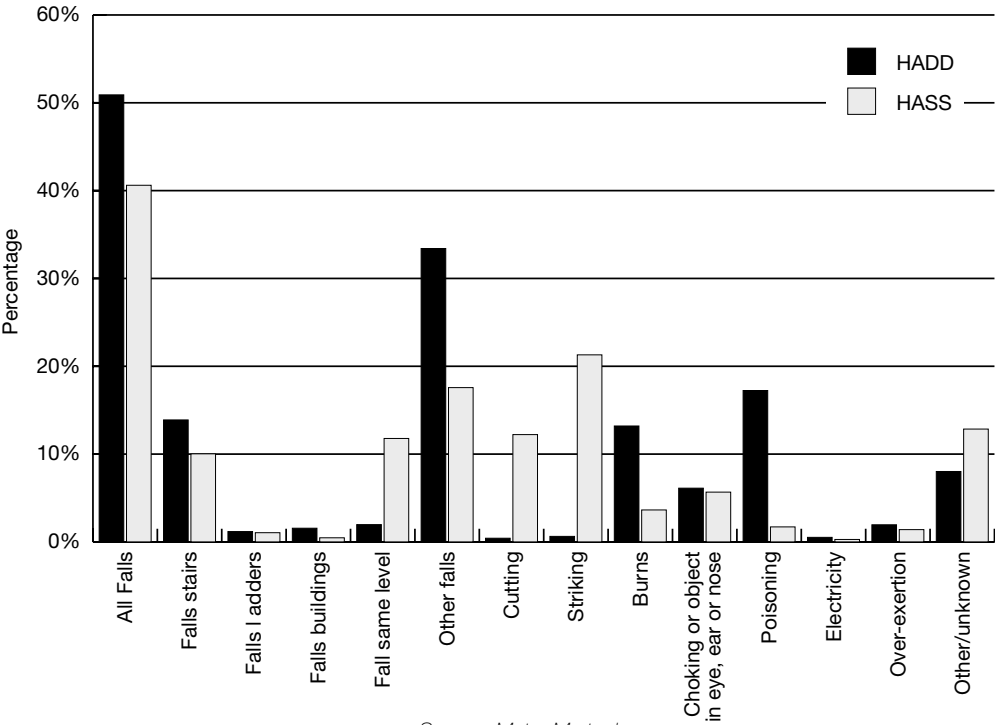
¹ In this and subsequent tables in this Section both the 1996 and 2010 numbers are calculated from the trend line equation and thus the 1996 figure may be slightly different from the actual figures shown in Tables A4 to A6 or used in subsequent sections.

² Accidental deaths (HADD) figures are for 1995 and are for England and Wales. UK figures would be about 12% higher.

Non-fatal injuries are increasing and on present trends could increase by as much as 20% by the year 2010. The trend in the number of deaths is consistently falling possibly up to 30% by 2010. If reductions are to be made on non-fatal accidents then a significant change in trends will be needed.

In 1996 there were over 2.6 million home accidents in UK and almost 4,000 accidental domestic deaths. Figure 3.2 shows the relative proportions of non-fatal and fatal accidental cases for each type of accident (see Table A.7 in Appendix A for details). The importance of falls is very clear from this chart. Over 40% of non-fatal accidents and over 50% of deaths result from falls. Most of the remaining deaths result from poisoning (17%), burns (13%) and choking (5%). Together these four categories account for 91% of accidental domestic deaths. For non-fatal accidents, apart from falls, striking and cutting accidents are important while burns and poisoning are less common.

Figure 3.2: Relative proportions Of Different Types Of Home Accidents In 1996 And Accidental Domestic Deaths In 1995



Source: Metra Martech

Figure 3.3 shows how the number of different types of accident may change if current trends continue. Almost all types of fatal accidents will decrease with the notable exception of poisonings while most types of non-fatal accidents will increase. The figures combine to give the overall increases discussed above.

Figure 3.3 : Projected Change In Number Of Accidents From 1996 to 2010

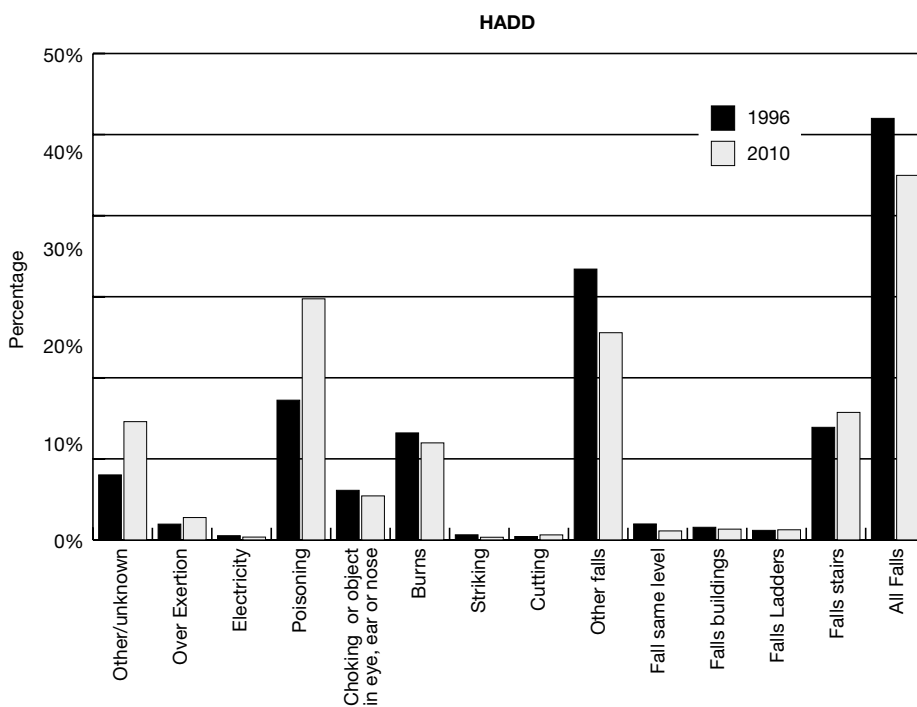
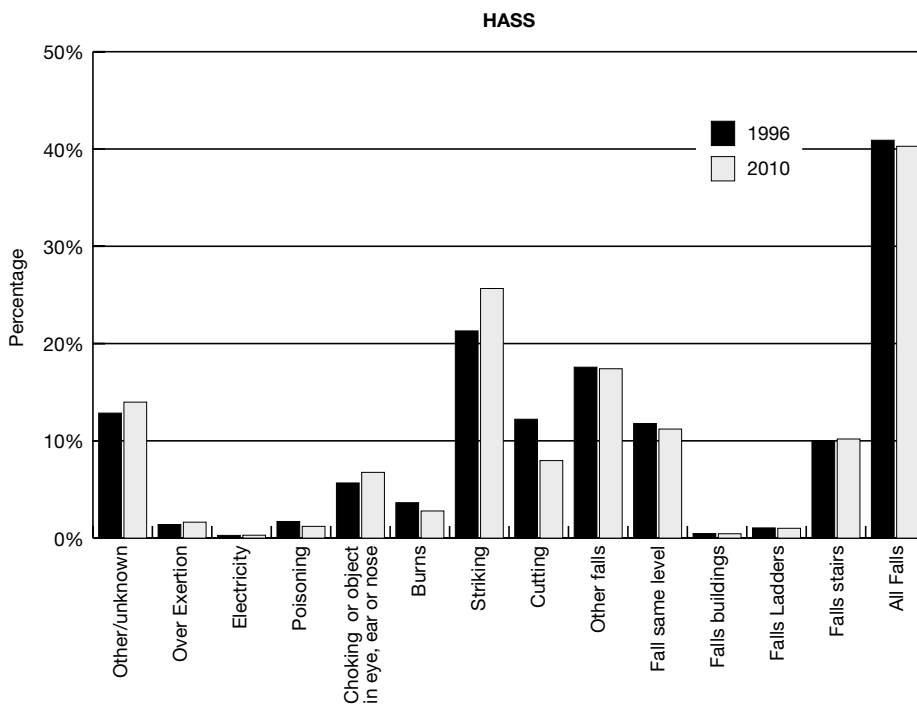


Source: Metra Martech

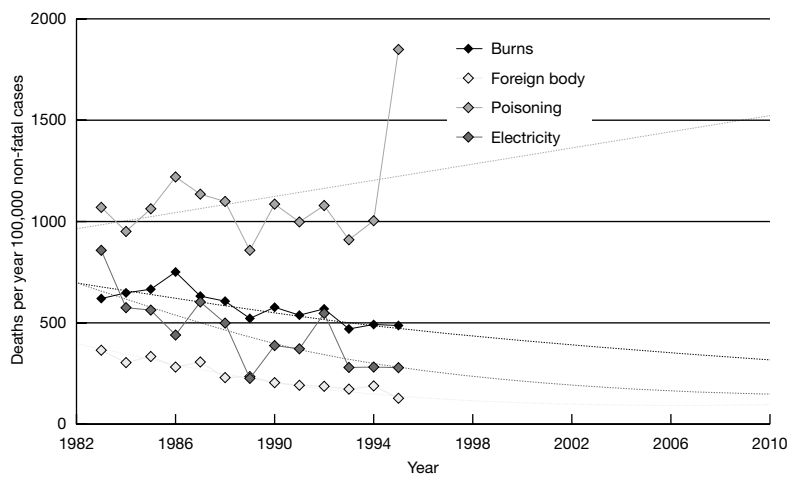
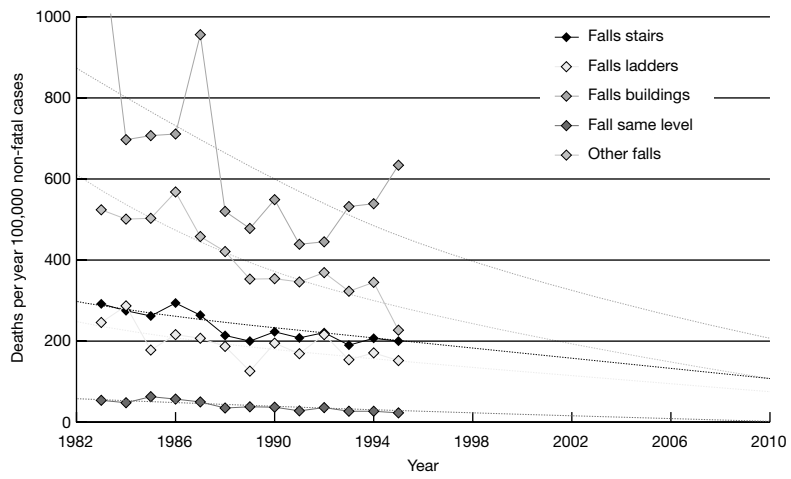
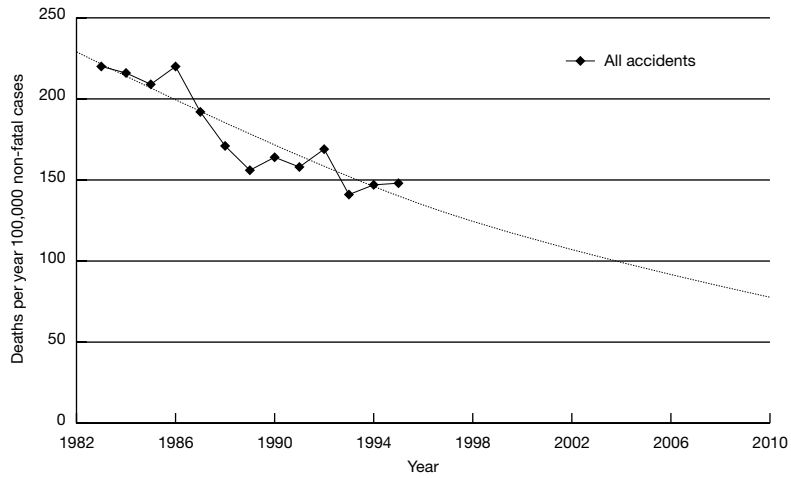
As a result of differing trends for each type of accident, the pattern will change in the future. Figure 3.4 illustrates how the patterns will change for non-fatal injuries and accidental deaths between 1996 and 2010. In both cases, falls will become less important. For non-fatal accidents, striking incidents will become more important, while among the fatal accidents, poisonings will increase from 17% of all deaths to almost 30% unless current trends change.

Figure 3.5 shows the overall ratio of accidental domestic deaths to non-fatal home accidents. Because the number of deaths has been falling while the number of accidents has been increasing, the ratio itself has shown a substantial decline of almost 4% per year from 220 deaths per 100,000 accidents in 1983 to about 150 in 1995. On current trends, the figure will have fallen to about 80 by 2010. The most likely explanation is that it results from work done in government and other agencies and by business to promote home safety, and that the emergency and health services are becoming more effective in keeping patients alive, through better training of paramedics and improved procedures in intensive care. Some of the figures show considerable deviation from the trend line, and individual projections based on these need to be treated with caution.

Figure 3.4 : Relative Proportions Of Different Types Of Accidents - 1996 And 2010



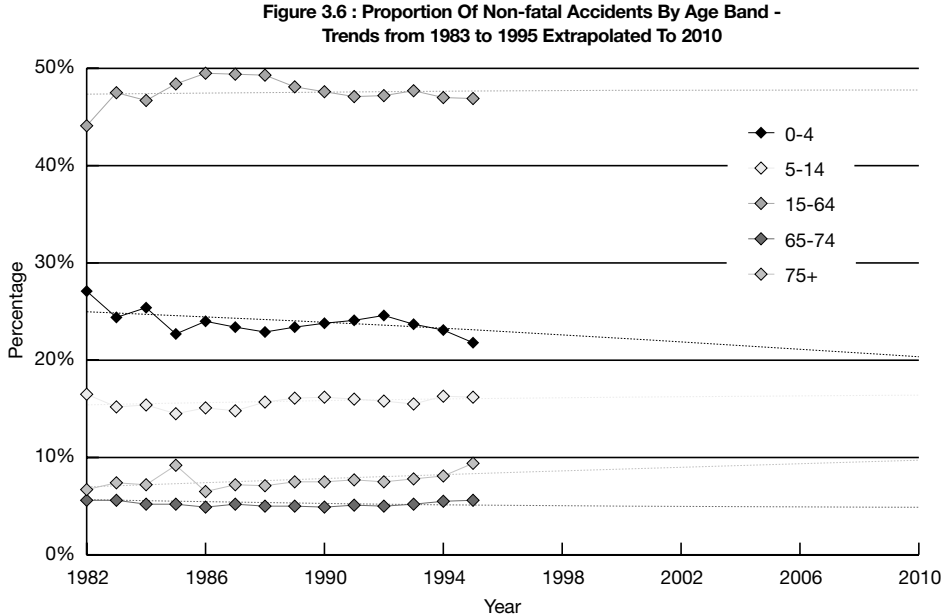
**Figure 3.5 : Deaths from Accidents At Home Per 100,000
Non-Fatal Cases - Trends from 1983 to 1995 Extrapolated to 2010**



The trend in the deaths/accidents ratio is similar for all types of falls and other accidents, except poisoning, though the latter is particularly subject to variation as is the line for falls from buildings. The number of fatal poisonings in 1995 was much higher than in earlier years and this has a major impact on the trend calculation.

3.2 Trends with Age

Figure 3.6 shows the proportion of accidents by age band. The figure shows only small changes on the proportions, though the number of cases involving small children appears to be declining and the numbers involving older people is increasing. Some of these changes are the result of changes in population distribution.



Almost half the accidents occur in the age band 15-64, but this is hardly surprising since most of the population fall in this bracket. Table 3.2 shows how the accident rates will change, on current trends for non-fatal accidents (HASS) between 1996 and 2010, taking into account the increase in the number of cases and change in population distribution.

Small children are clearly the most vulnerable. An increase in all age bands forecast but, because the increase is lowest for small children, the proportion of cases involved in this group will decline. Although the 75+ age group have a lower rate of accidents than young people, as we will see below, their accidents tend to be more serious.

Figure 3.7 : Proportion of Non-fatal domestic accidents which are serious or very serious - by age band - trends from 1983 to 1995 extrapolated to 2010

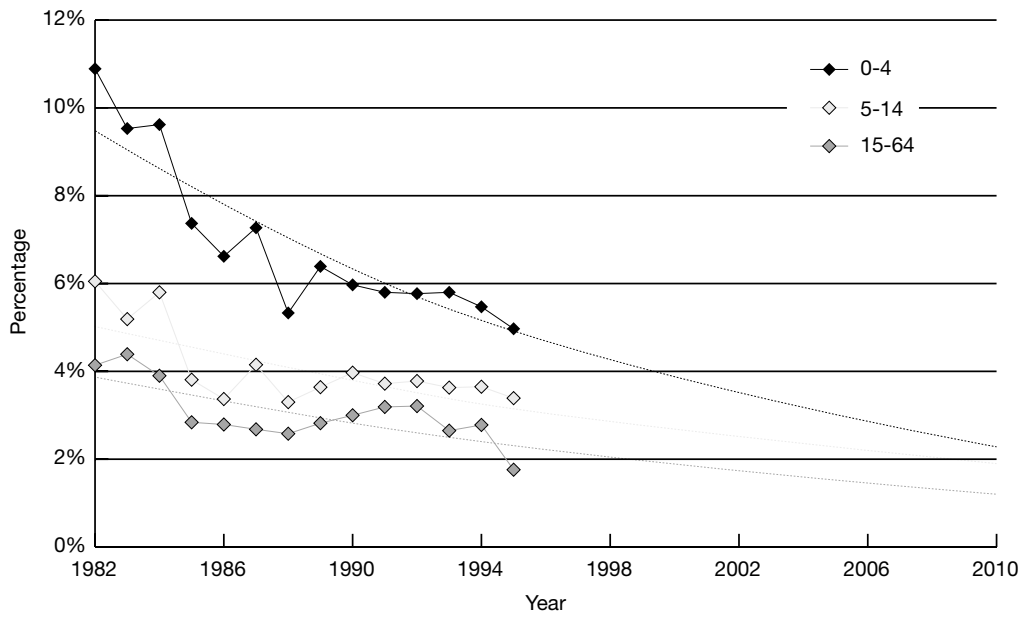
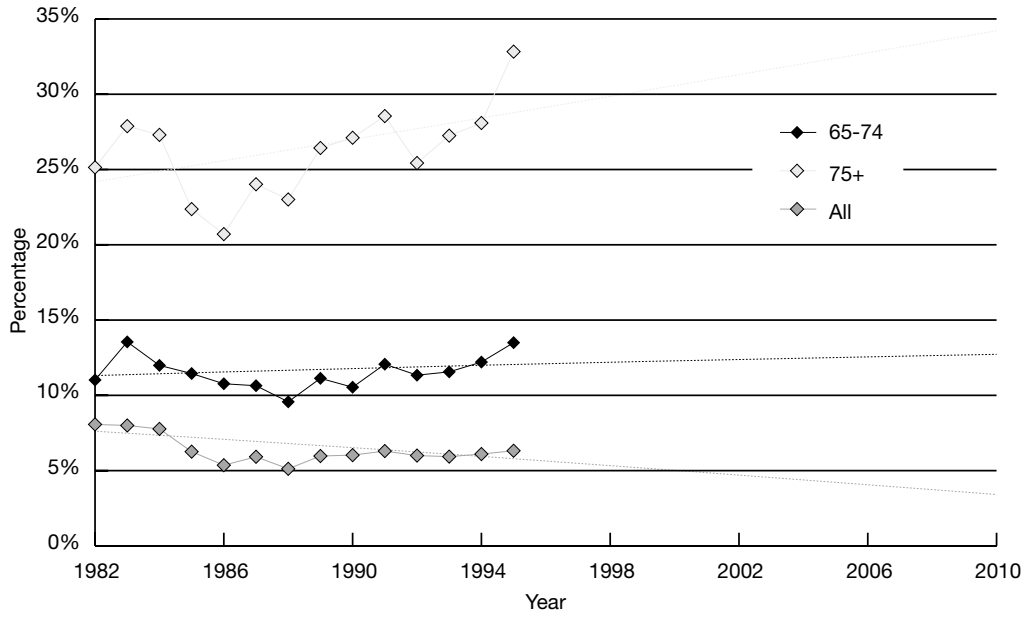


Table 3.2 Change in Accident Rates by Age Band For All non-fatal (HASS) Cases

Age Band	Annual Rate per 10 Million Population		Estimated Change 1996 to 2010
	1996	Estimated 2010	
0-4	1,580	1,874	+19%
5-14	560	766	+37%
15-64	328	387	+18%
65-74	259	308	+19%
75+	515	668	+30%
Total	446	522	+17%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Figure 3.7 shows the proportion of accidents in each age group which are classified as serious or very serious. This proportion is highest, by a long way, for the over 75s and the proportion is increasing. The proportion of serious accidents for the 65-74 age band is also increasing, but only slightly, while that in the other age bands is decreasing substantially. The effect of this on rates for serious accidents is shown in Table 3.3.

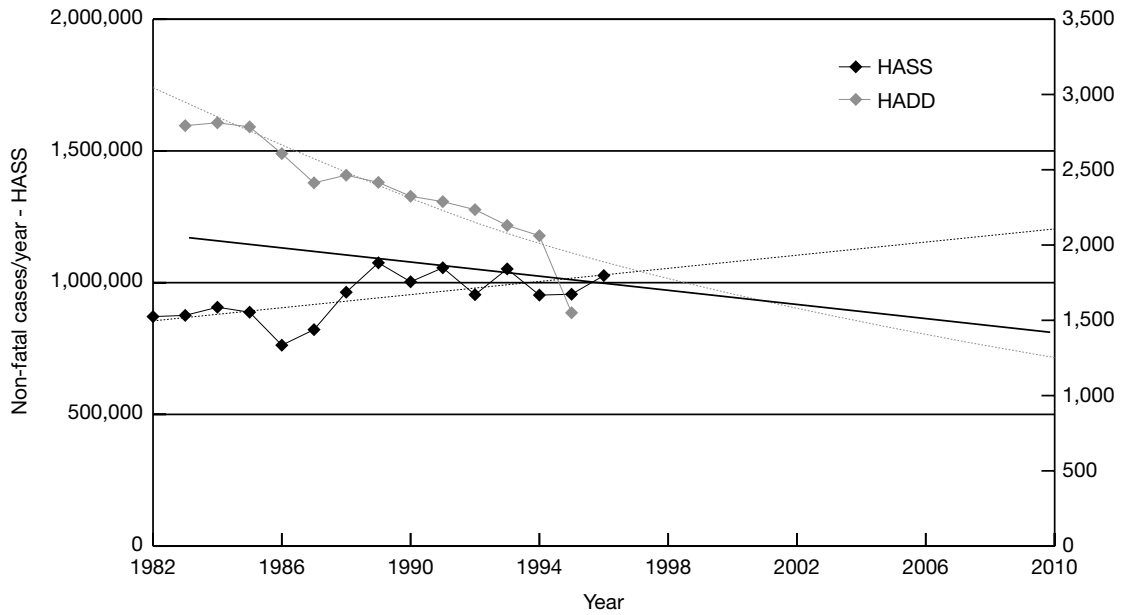
Table 3.3 Change in Accident Rates by Age Band For Serious and Very Serious non-fatal (HASS) Cases

Age Band	Annual Rate per 10 Million Population		Estimated Change 1996 to 2010
	1996	Estimated 2010	
0-4	74	41	-45%
5-14	32	28	-13%
15-64	8	5	-38%
65-74	31	39	+26%
75+	149	231	+55%
Total	25	28	+12%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

The accident rate for all those under 65 is decreasing. This decrease is due in part to improved medical techniques, which enable more patients to be effectively treated without being admitted and hence being classified as a serious case. In addition, the average age of the 75+ group is increasing, and this may result in a greater vulnerability to the consequences of an accident.

Figure 3.8 : All falls
Trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech

3.3 Falls

Table 3.4 shows the key numbers for falls of different types taken from Tables A.7 and A.8 in Appendix A. Figure 3.8 shows the overall trends. Between 1996 and 2010, non-fatal accidental falls (HASS) will increase by 17.3% while the population will have increased by only 2.7%, while accidental deaths (HADD) cases will decrease by 36%.

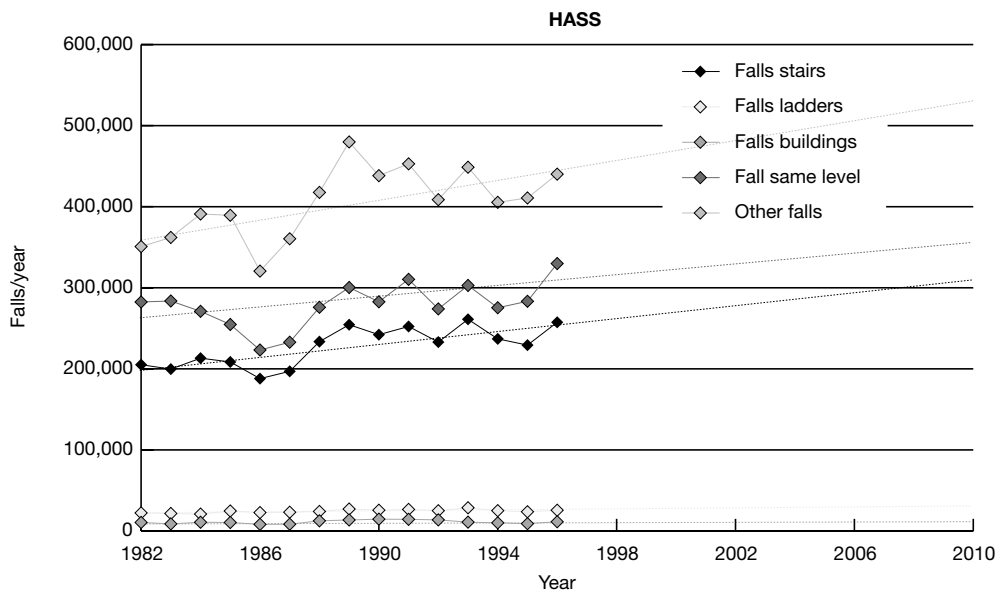
The trends for different types of falls are shown in Figure 3.9. All types of non-fatal accidental falls (HASS) are increasing, while all types of accidental deaths (HADD) are decreasing, which leads to the trends shown in Figure 3.5 where the ratio of deaths to accidents almost halved between 1982 and 1995 for all types of falls.

Table 3.4 Trends in Falls By Type Of Fall

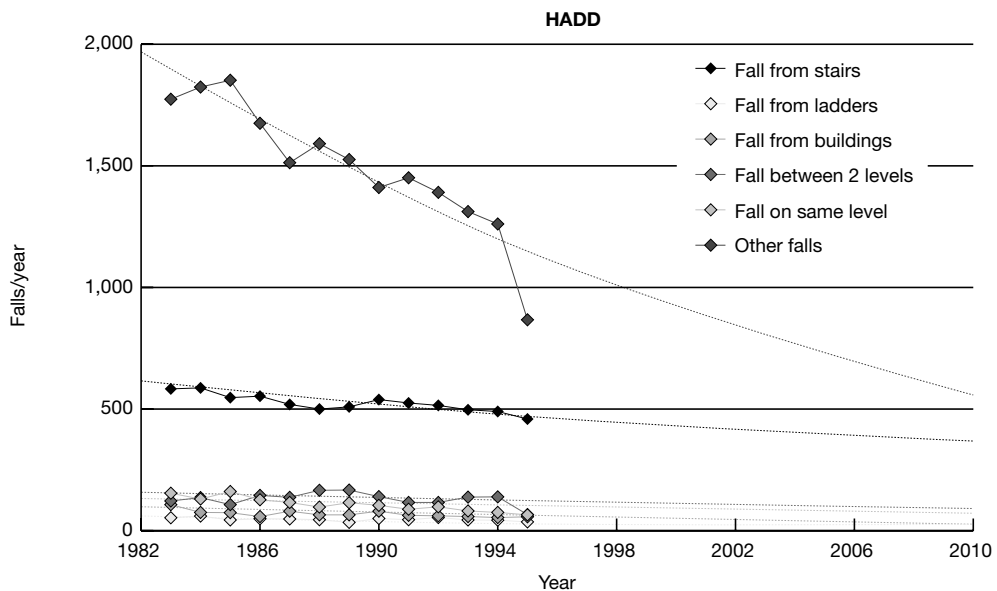
	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
non-fatal accidents (HASS)				
- Stairs	255,498	311,854	+1.68%	+22.1%
- Ladders	26,643	31,043	+1.24%	+16.5%
- Buildings	12,040	13,860	+1.13%	+15.1%
- Same level	300,170	342,976	+1.07%	+14.3%
- Other falls	447,768	532,580	+1.43%	+18.9%
All Falls	1,034,732	1,214,170	+1.31%	+17.3%
accidental deaths (HADD)				
- Stairs	470	377	-1.56%	-19.6%
- Ladders	40	30	-2.04%	-24.4%
- Buildings	53	32	-3.58%	-39.4%
- Same level	66	27	-6.56%	-60.1%
- Other falls	1,129	613	-4.36%	-45.7%
All Falls	1,897	1,209	-3.22%	-36.3%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

FIGURE 3.9 : Trends in different types of falls from 1982 to 1996 extrapolated to 2010



Source : Metra Martech



Source : Metra Martech

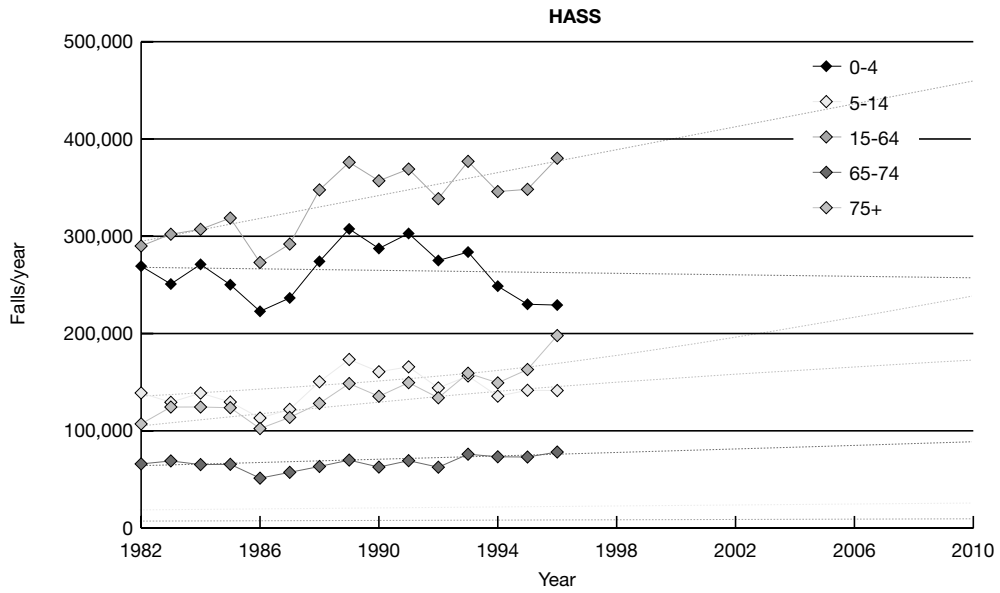
Table 3.5 shows corresponding figures, taken from Tables A9 and A10, for all falls broken down by age band. The trends are illustrated in Figure 3.10. Non-fatal falls have been increasing in all age bands except the 0-4 band. For deaths, the numbers are very small for children under 15. Apart from this, there has been a steady decline in the numbers of fatalities particularly for older people.

Table 3.5 Trends in Falls By Age Of Victim

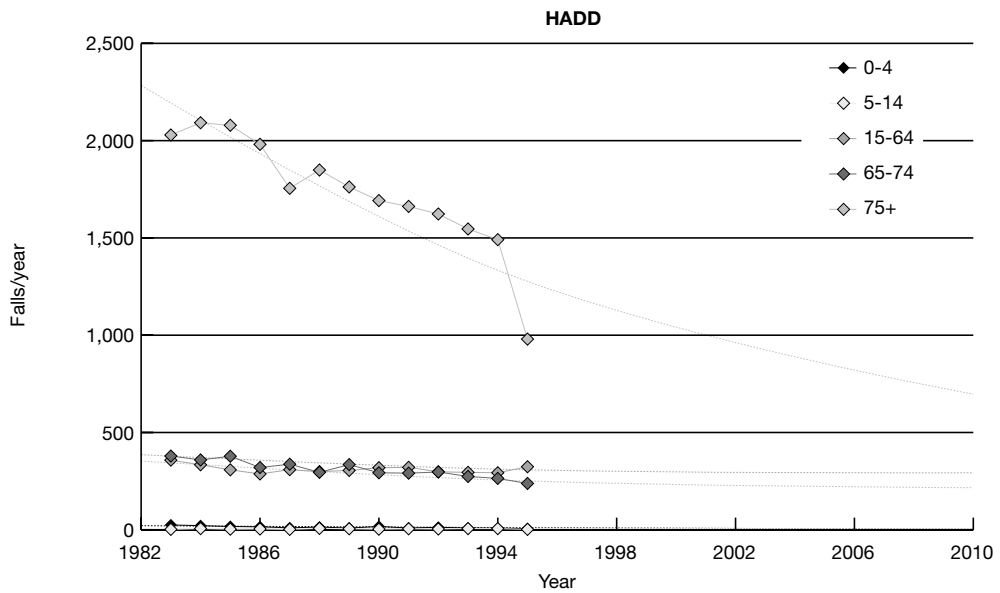
	Cases in 1996	Estimated Cases in 2010	Estimated Change per year 1996 - 2010	Cases per Million	
				1996	Estimated 2010
Non-fatal accidents (HASS)					
0-4	260,642	256,646	-1.5%	69,136	76,151
5-14	152,074	170,714	+12.3%	20,026	23,985
15-64	377,377	462,158	+22.5%	9,885	11,523
65-74	73,129	85,557	+17.0%	14,478	16,153
75+	170,032	235,371	+38.4%	40,561	52,256
All Ages	1,033,254	1,210,446	+17.1%	17,577	20,042
Accidental deaths (HADD)					
0-4	7	(2)	-	2	(1)
5-14	5	(6)	-	1	(1)
15-64	299	272	-9.2%	8	7
65-74	253	152	-39.7%	50	29
75+	1,308	674	-48.5%	312	150
All Ages	1,872	1,106	-40.9%	32	18

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

FIGURE 3.10 : Falls by age band
 trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech



Source : Metra Martech

3.4 Cutting Accidents

Table A.1 in Appendix A confirms that there have been some changes in the description used in the DTI annual HASS reports for this class of accidents. Table A.2 shows that this class of accidents includes, at least in 1996, cuts from sharp edges and puncturing of the skin. In 1996, the first of these categories was most important and accounted for almost 75% of cases.

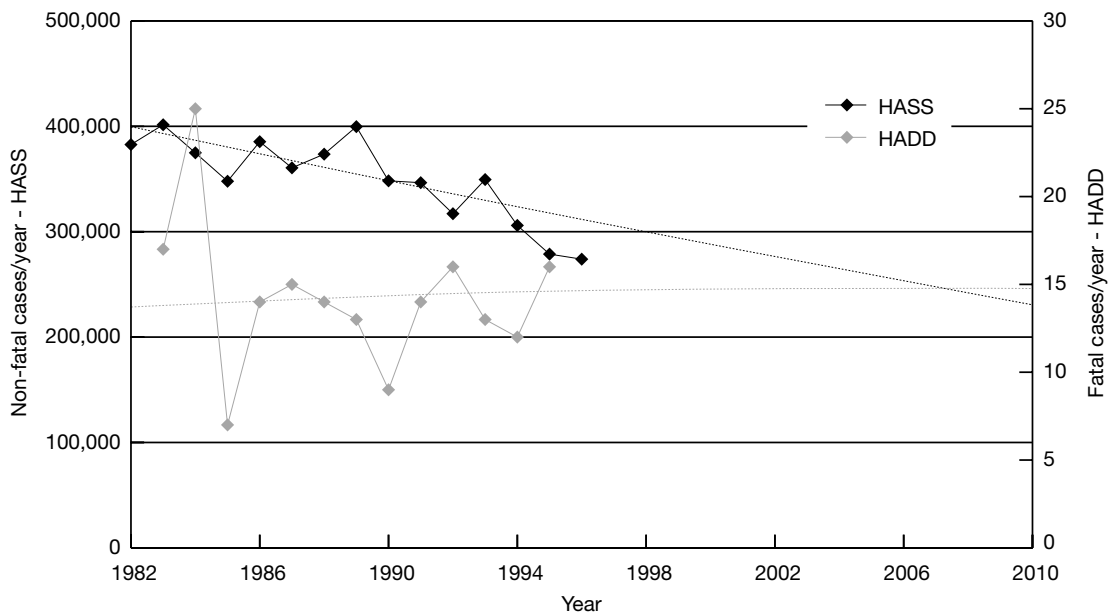
Table 3.6 shows the key numbers for this class of accident. Figure 3.11 shows the trends. The number of accidents is erratic, but apart from 1996 the general trend is downwards. The number of deaths with this class of accident is very small and no trend can be established with any certainty. Similarly, Table A.6 shows that the number of deaths per 100,000 accidents varies between 2 and 8 and no trend can be estimated.

Table 3.6 Trends in Cutting Accidents

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
Non-fatal accidents (HASS)	311,427	243,827	-1.75%	-21.7%
Accidental deaths (HADD)	14	15	-	-

Source : Metra Martech

Figure 3.11 : Cutting accidents trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech

3.5 Striking Accidents

Table A.1 in appendix A confirms that the definitions for this class of accident have been fairly consistent overall, although the sub-divisions within the class have been changed. Table A.2 shows that the class includes impact with stationary or moving objects, people or animals. All the fatalities are caused by moving or unspecified articles.

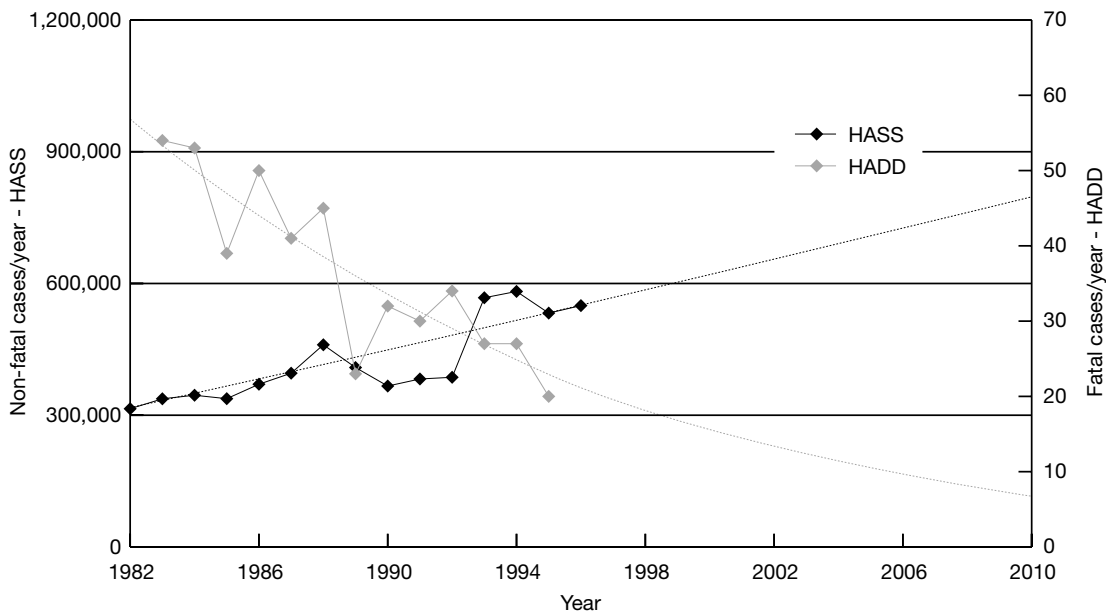
Table 3.7 shows the key numbers for this class of accident taken from Tables A.7 and A.8. Figure 3.12 shows the trends. The number of accidents is somewhat erratic but is clearly upwards for non-fatal accident cases and downwards for the fatalities. Again the number of deaths with this class of accident is very small and no trend can be established with any certainty. Similarly, it will be seen from Table A.6 that the number of deaths per 100,000 accidents varies between 4 and 16 and although the trend appears to be downwards, there is considerable uncertainty in the figures. There is no obvious reason for the trends.

Table 3.7 Trends in Striking Accidents

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
non-fatal accidents (HASS)	542,808	784,980	+3.62%	+44.6%
Accidental deaths (HADD)	12	8		

Source : Metra Martech

Figure 3.12 : striking accidents trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech

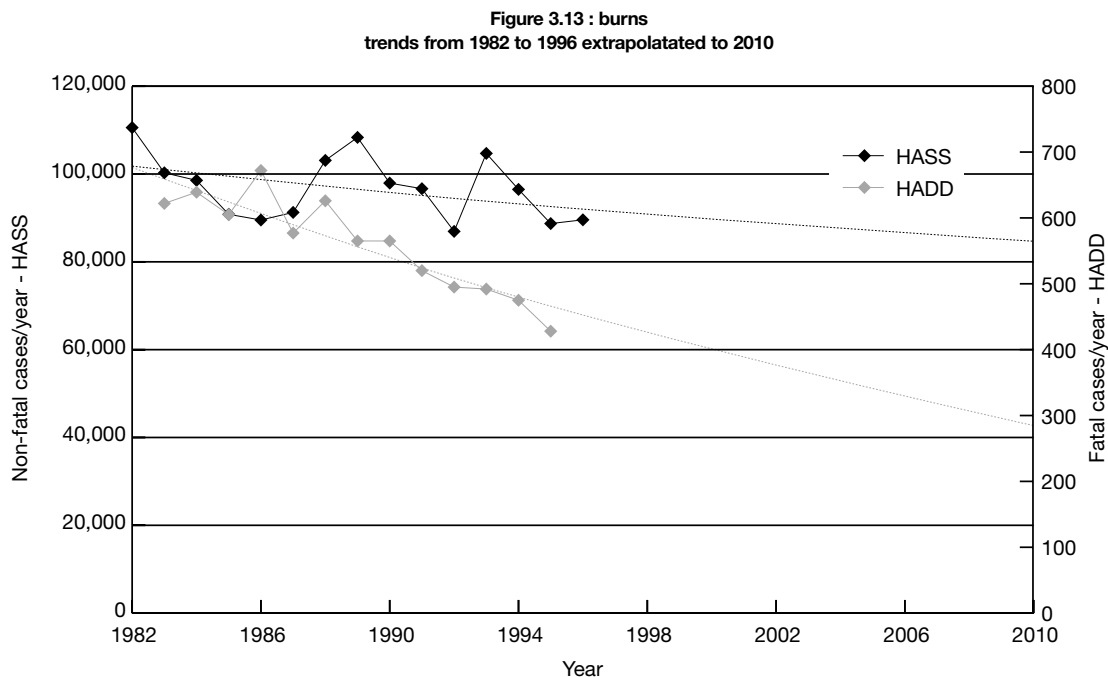
3.6 Burns

Table A.1 in appendix A confirms that the definition of burns has been consistent over the period involved. Table A.2 shows that in 1996 for non-fatal accidents, and this class of accident includes mainly scalding by hot appliance or burning by hot objects, on the other hand, burns from uncontrolled fire or flames caused most of the deaths.

Table 3.8 shows the key numbers, taken from Tables A.9 and A.10, for this class of accident broken down by age. The overall trends are shown in Figure 3.13. Figures for non-fatal accidents and fatal cases show a substantial decline totalling 7.9% and 34.6% respectively. Figure 3.14 shows trends in different age bands. Table 3.8 also shows that for non-fatal cases, the incidence is greatest among the under 5s though declining significantly.

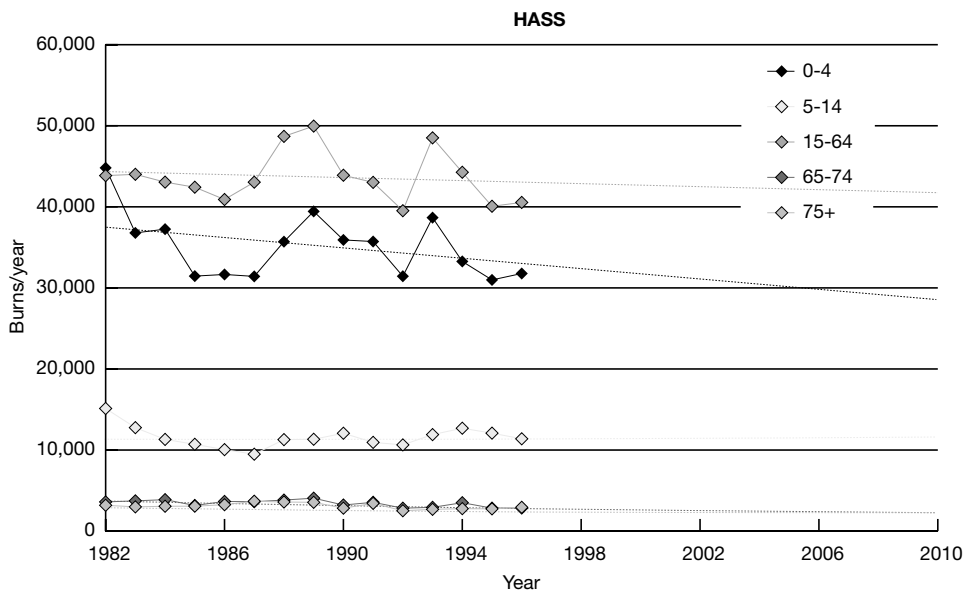
Figure 3.14B shows data from the Home Office fire statistics. These figures relate only to uncontrolled fires. Deaths show a downward trend of 4% per year, which would lead to a further reduction of 50% between 1996 and 2010. Non-fatal cases show an upward trend of 3.5% per year which would give an overall increase of over 50%.

For the record, the Home Office data for casualties are much higher than non-fatal accidents from HASS figures. This is because the total includes all cases where the brigade recommends that they seek treatment. Some go to their GP and others treat themselves.

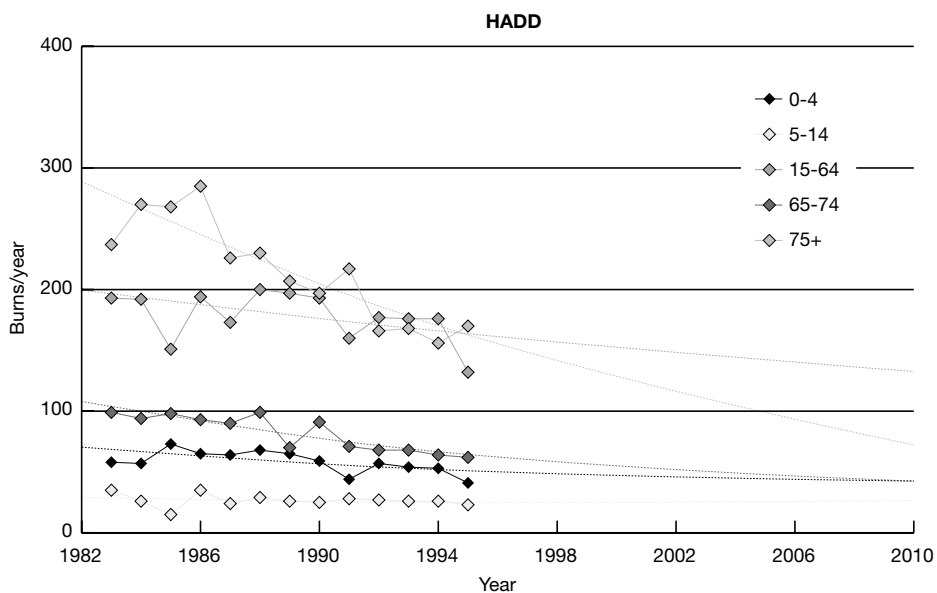


Source : Metra Martech

FIGURE 3.14 : Burns by age band
 trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech



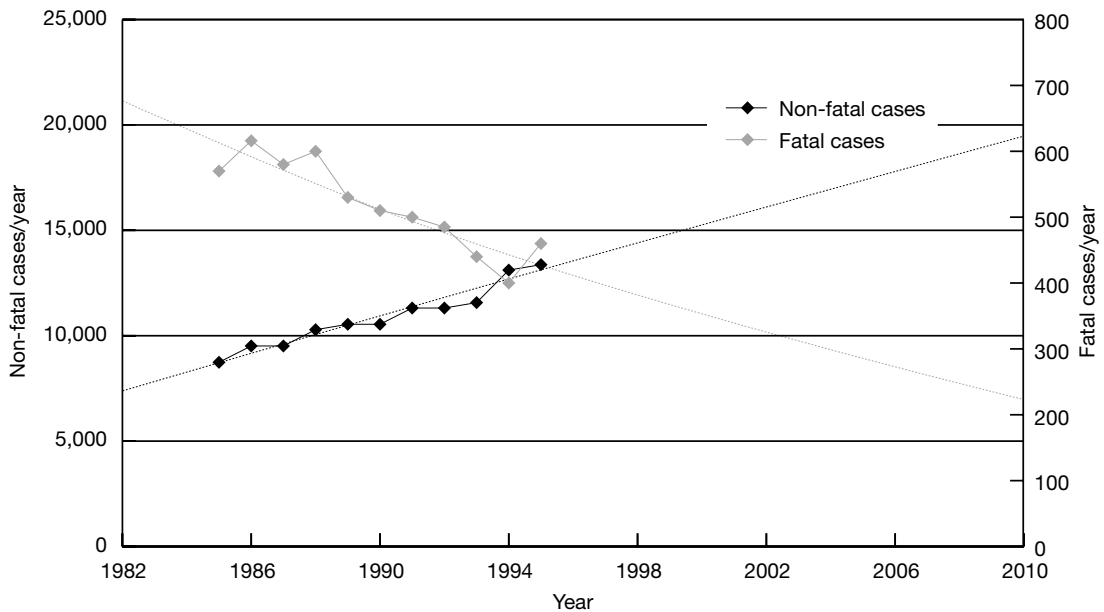
Source : Metra Martech

Table 3.8 Trends in Burns By Age Of Victim

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year 1996 - 2010	Cases per Million	
				1996	Estimated 2010
Non-fatal accidents (HASS)					
0-4	32,437	28,013	-13.6%	8,604	8,312
5-14	11,290	10,850	-3.9%	1,487	1,524
15-64	42,920	41,559	-3.2%	1,124	1,036
65-74	2,994	2,322	-22.4%	593	438
75+	2,824	2,394	-15.2%	674	532
All Ages	92,465	85,139	-7.9%	1,573	1,410
Accidental deaths (HADD)					
0-4	49	33	-33.4%	13	10
5-14	25	23	-7.4%	3	3
15-64	162	131	-19.1%	4	3
65-74	63	33	-46.9%	12	6
75+	160	80	-50.2%	38	18
All Ages	459	300	-34.6%	8	5

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Figure 3.14B: Trends in casualties in uncontrolled fires in England and Wales - Home Office fire statistics



Source : Metra Martech

3.7 Choking, or objects in eye, ear or nose

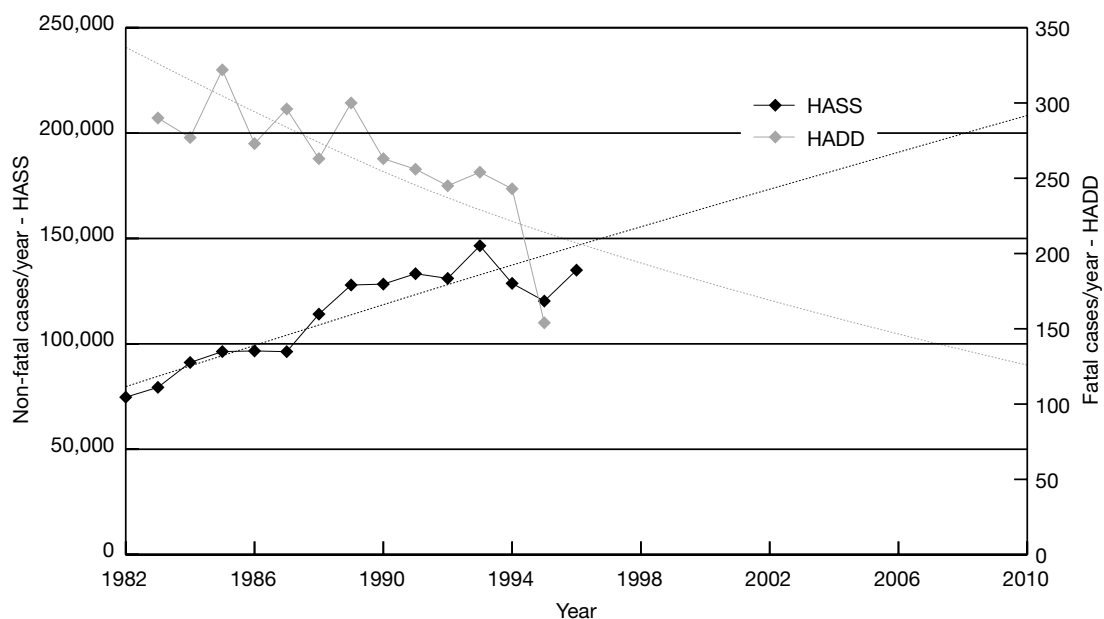
Table A.1 in appendix A confirms that the definitions for this class of accident have been consistent. Table A.2 shows that this category includes objects in the eye, ear, nose, other orifice, stomach and throat. For non-fatal accidents all these areas are significant, though eye injuries are particularly important. Almost all the deaths result from choking.

Table 3.9 shows the key numbers for this class of accident taken from Tables A.7 and A.8. Figure 3.15 shows the trends, which are clearly upward for non-fatal cases and downwards for the fatalities. The number of deaths with this class of accident is substantial. Table A.6 shows that the number of deaths per 100,000 accidents is currently about 150 and with a steady downward trend.

Table 3.9 Trends in Foreign Body Accidents

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
Non-fatal accidents (HASS)	144,479	206,852	+3.48%	+43.2%
Accidental deaths (HADD)	207	130	-3.31%	-37.2%

Figure 3.15: Foreign body accidents
Trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech

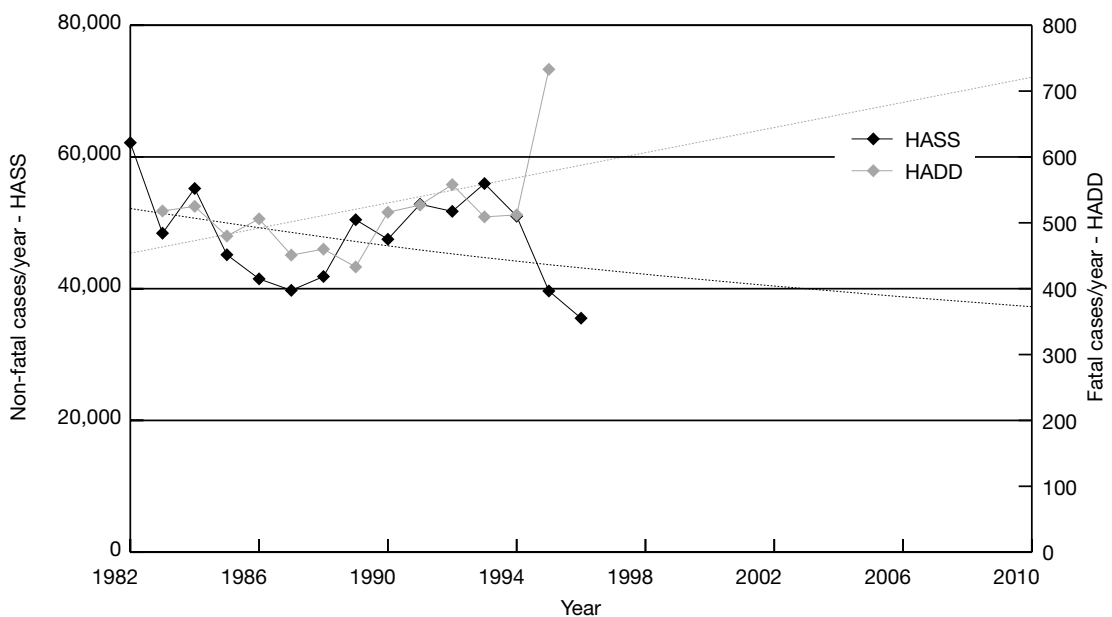
3.8 Poisoning

Table A.1 in appendix A shows that the definition of poisoning looks to have been consistent over the period involved. Table A.2 shows that in 1996 for non-fatal accidents (HASS) most cases involve poisoning by solids and liquids. However, most deaths involve poisoning by "unspecified substance". The number of non-fatal cases is relatively low but there are substantial numbers of deaths.

Table 3.10 shows the key numbers, taken from Tables A.9 and A.10, for this class of accident broken down by age. The overall trends are shown in Figure 3.16. Figures for non-fatal accidents (HASS) show a significant decline totalling 11.6%. Deaths, on the other hand, show substantial increases of nearly 30%, though there are particularly erratic figures for the most recent years.

Figure 3.17 shows the breakdown of cases by age band. Eighty percent of non-fatal accidents (HASS) are among under 5s, and these have shown a substantial decrease probably due to the introduction of CRCs (Child-Resistant Closures). There has, however, been an increase in all other age bands. Deaths are increasing overall but this is entirely due to the increase in the 15-64 age band and the numbers are declining for all other ages. It is not always easy for coroners to distinguish between accidental overdose and suicide which is commonest at the lower end of the 15-64 age band. The cases recorded here are only those designated as accidental deaths.

Figure 3.16: Poisoning
Trends from 1982 to 1996 extrapolated to 2010



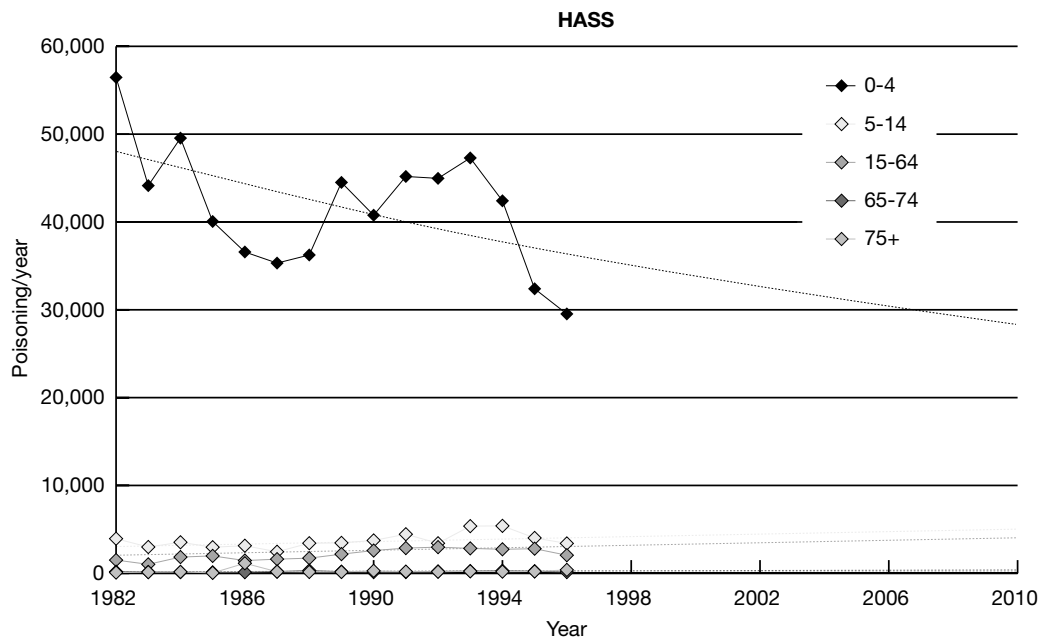
Source : Metra Martech

Table 3.10 Trends in Poisoning By Age Of Victim

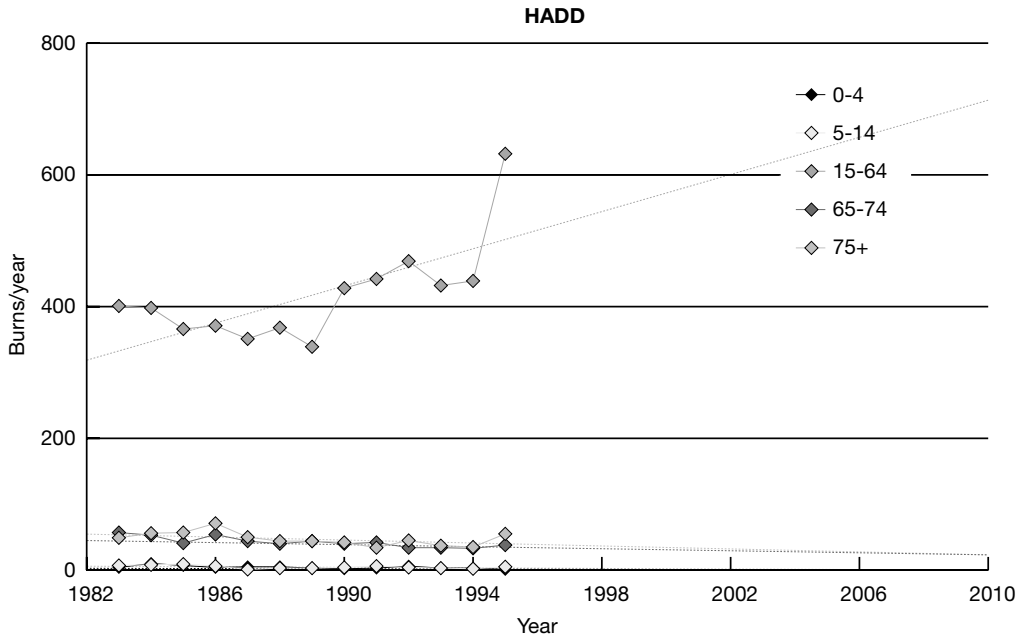
	Cases in 1996	Estimated Cases in 2010	Estimated Change per year 1996 - 2010	Cases per Million	
				1996	Estimated 2010
Non-fatal accidents (HASS)					
0-4	36,051	27,689	-23.2%	9,563	8,216
5-14	4,371	5,697	+30.3%	576	800
15-64	2,906	4,425	+52.2%	76	110
65-74	213	315	+47.8%	42	59
75+	274	624	+127.2%	65	138
All Ages	43,816	38,749	-11.6%	745	642
Accidental deaths (HADD)					
0-4	2	0	-78.1%	1	0
5-14	3	1	-58.6%	0	0
15-64	496	693	+39.7%	13	17
65-74	33	19	-44.0%	7	4
75+	39	25	-36.8%	9	5
All Ages	573	738	+28.7%	10	12

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

FIGURE 3.17 : Poisoning by age band
Trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech



Source : Metra Martech

3.9 Electric Current and Radiation.

Accidents with electricity are combined in the DTI HASS annual reports with cases involving radiation (i.e. sunburn). Table A.2 in appendix A shows that in 1996, 60% of non-fatal accidents (HASS) involved the latter. The trends plotted in Figure 3.18 are very erratic and show high peaks for 1989, 1993 and 1995.

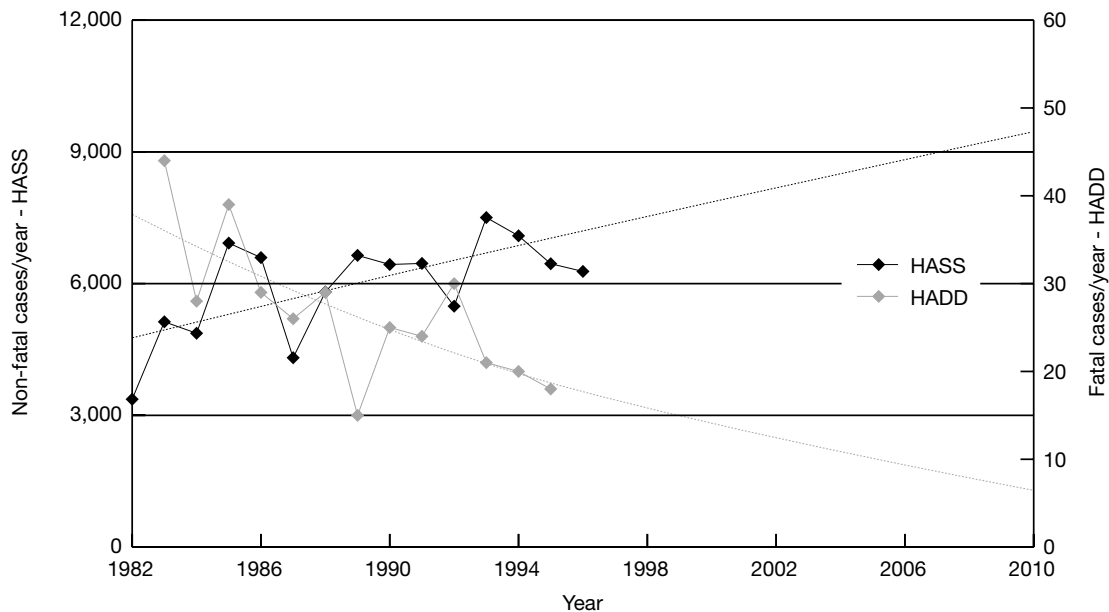
Table A.2 indicates that accidental deaths (HADD) are all due to electricity. The data are much less erratic, with a consistent downward trend indicating a fall of over 50% by 2010. This is likely to be due to the increased use of Residual Current Devices (RCDs) and general improvements in design of equipment, despite the use of more and more electrical devices.

Table 3.11 Trends in Accidents with Electricity and Radiation

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
Non-fatal accidents (HASS)	7,047	9,214	+2.38%	+30.8%
Accidental deaths (HADD)	18	8	-5.35%	-55.6%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Figure 3.18: Electric current and radiation
Trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech

3.10 Over Exertion

Table A.1 in appendix A suggests that the definitions for this class of accident have been consistent. Table 3.12 shows the key numbers taken from Tables A.7 and A.8. Figure 3.19 shows the trends, which are clearly upward for non-fatal cases. This may reflect an increased interest in taking exercise and keeping fit.

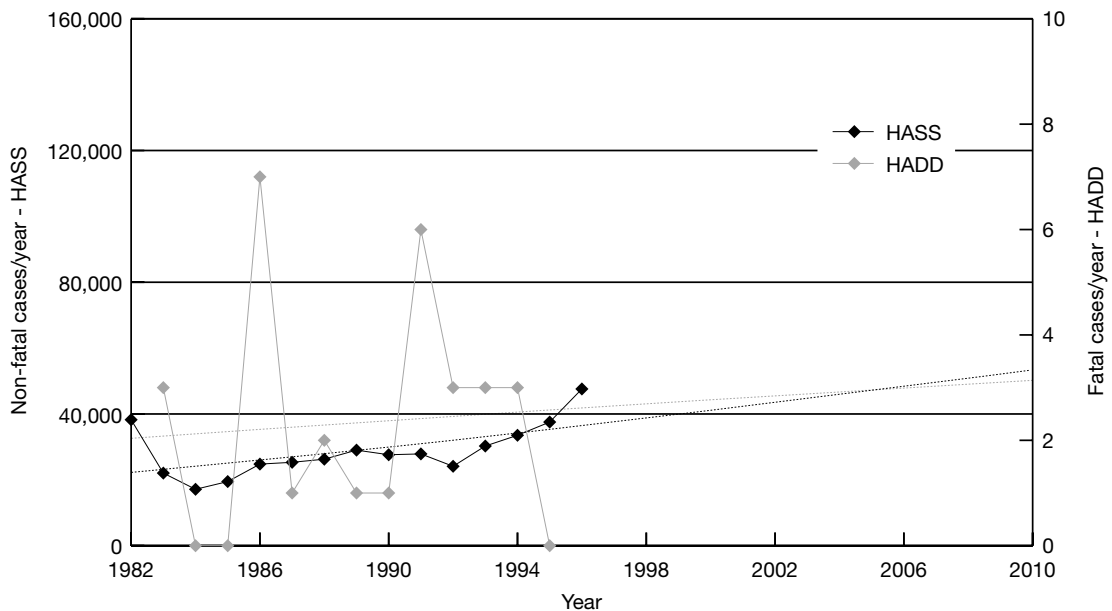
The number of deaths is small, erratic and shows no clear trend.

Table 3.12 Trends in Cases of Overexertion

	Cases in 1996	Estimated Cases in 2010	Estimated Change per year	Estimated Change 1996 - 2010
Non-fatal accidents (HASS)	35,786	50,185	+3.31%	+40.2%
Accidental deaths (HADD)	66	66	+0.05%	+0.7%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Figure 3.19: Overexertion
Trends from 1982 to 1996 extrapolated to 2010



Source : Metra Martech

3.11 Summary of Trends

We have classified accidents into groups according to the projected changes in numbers between 1996 and 2010, as discussed above, and the number of cases in 1996.

The results of the classification are shown in Table 3.13. This highlights areas of concern. In particular it shows an overall trend of hospital treated injuries increasing.

Table 3.13 Summary of Trends

Mechanism	Hospital Treated Injuries (HASS)		Deaths (HADD)	
	Trend 1996-2010	Number of Cases 1996	Trends 1996-2010	Number of Cases
All Falls	up 15% to 25%	>200,000	down 25%	>300
0 to 4	+5% to -5%	>200,000	+5% to -5%	<50
5 to 14	up 5% to 15%	100,001 to 200,000	+5% to -5%	<50
15 to 64	up 15% to 25%	>200,000	down 5% to -15%	151 to 300
65 to 74	up 15% to 25%	10,001 to 100,000	down 25%	151 to 300
75+	up 25%	100,001 to 200,000	down 25%	>300
Stairs	up 15% to 25%	>200,000	up 15% to 25%	>300
Ladders	up 15% to 25%	10,001 to 100,000	up 15% to 25%	<50
Buildings	up 15% to 25%	10,001 to 100,000	down 25%	50 to 150
Same Level	up 5% to 15%	>200,000	down 25%	50 to 150
Other Falls	up 15% to 25%	>200,000	down 25%	>300
Cutting	up 15% to 25%	>200,000	+5% to -5%	<50
Striking	up 25%	>200,000		<50
Burns	up 5% to 15%	10,001 to 100,000	up 25%	
0 to 4	up 5% to 15%	10,001 to 100,000	down 25%	<50
5 to 14	+5% to -5%	10,001 to 100,000	+5% to -5%	<50
15 to 64	+5% to -5%	10,001 to 100,000	up 15% to 25%	151 to 300
65 to 74	up 15% to 25%	<10,000	down 25%	50 to 150
75+	up 15% to 25%	<10,000	down 25%	151 to 300
Choking or object in eye, ear or nose	>25%	100,001 to 200,000	down 25%	151 to 300
Poisoning	up 5% to 15%	10,001 to 100,000	up 25%	151-300
0 to 4	up 15% to 25%	10,001 to 100,001		<50
5 to 14	up 25%	<10,000		<50
15 to 64	up 25%	<10,000	up 25%	>300
65 to 74	up 25%	<10,000	down 25%	<50
75+	up 25%	<10,000	down 25%	
Electricity/Radiation			down 25%	<50
Over exertion	up 25%	10,001 to 100,000	5% to -5%	50 to 150
Other	up 25%	100,001-200,000	up 25%	151 to 300

Source : Metra Martech

4. FALLS

4.1 Overall Numbers

In 1996 just over one million people visited hospital as the direct result of a fall - this is approaching an average of 20,000 per week, and numbers are increasing, as we have seen in Section 3.3, at more than 1% per year. In addition, there are about 1,500 deaths but this number has been decreasing at around 3% per year. Falls account for 38% of all non-fatal accidents at home, 45% of serious and very serious accidents, and 46% of accidental deaths at home. The average person will visit hospital once or twice in their lifetime as the result of a fall. Any strategy designed to reduce the overall number of home accidents must focus on falls.

In the discussion which follows, numbers refer to the cases per year in 1996, unless otherwise stated. Table 4.1 shows the numbers of falls by age of victim and severity. Table 4.2 shows the rates of falls taking into account the different numbers of people in different age bands. Although the majority of falls are trivial or minor, a fifth of them are serious or very serious.

Table 4.1 Number Of Accidents Involving Falls

Age Band	Thousands of Non-Fatal Cases per Year								Fatal Cases Actual Number
	Trivial		Minor		Serious/ Very Serious		Total		
0-4	46	20%	157	68%	28	12%	231	100%	6
5-9	9	10%	66	73%	16	18%	91	100%	1
10-14	4	7%	41	76%	9	17%	54	100%	1
15-19	3	8%	30	81%	4	11%	37	100%	1
20-29	7	7%	77	81%	11	12%	95	100%	18
30-49	12	7%	123	76%	26	16%	161	100%	148
50-64	5	5%	70	69%	26	26%	101	100%	157
64-75	3	4%	48	61%	28	35%	79	100%	238
75+	8	4%	100	51%	90	45%	198	100%	981
Total	97	9%	712	68%	238	23%	1,047	100%	1,551

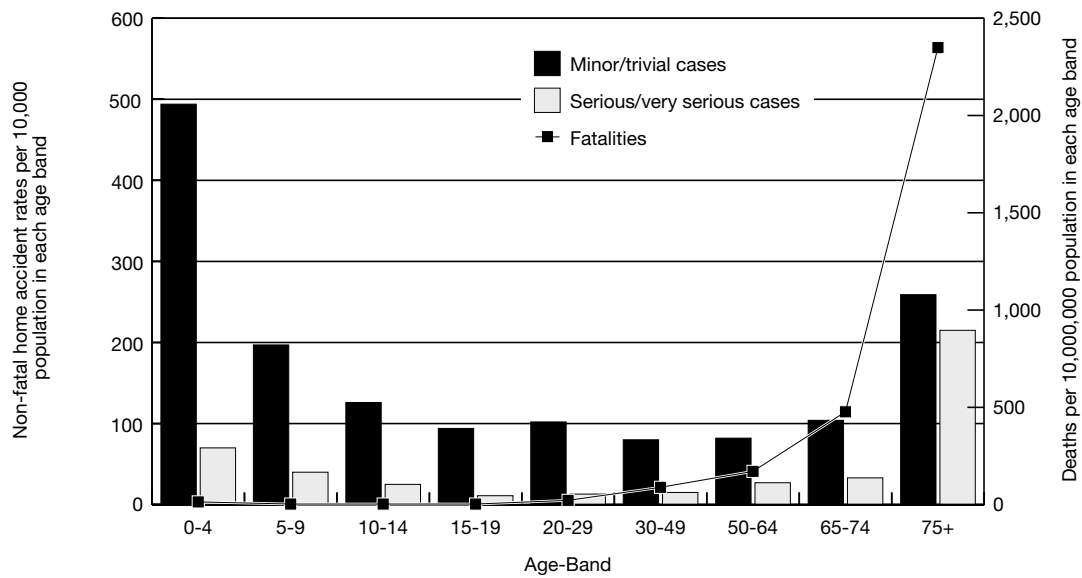
Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.2 Rate Of Accidents Involving Falls

Age Band	Non Fatal Cases per 10,000 people, in age band per year				Fatal Cases per 10,000,000 people in age band per year
	Trivial	Minor	Serious/ Very Serious	Total	
0-4	110	384	70	564	14
5-9	23	174	40	237	3
10-14	11	115	25	151	3
15-19	8	86	11	105	3
20-29	8	94	13	115	22
30-49	6	74	15	95	89
50-64	5	77	27	109	171
64-75	5	99	53	157	477
75+	17	240	215	472	2,349
Total	16	124	40	180	265

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Figure 4.1: Falls - Variation of accident rates with age



Source : Metra Martech

Figure 4.1 shows the variation of accident rates with age. Infants and toddlers are the most likely to have falls, with about 12% of them being serious. Non fatal accident rates decline up to the age of 15 and are then about constant up to 64 when they begin to increase again. More important, falls are more likely to be serious among Older People. For those over 75, the total non-fatal accident rate from falls is similar to that for children, but nearly half of the cases are serious compared to only 14% for infants and toddlers or children. Figure 4.1 also shows the dramatic increase with age in the death rate from falls. But only about half the falls involve people over 30, this group accounts for 98% of fatalities.

Absolute numbers are more important than rates in reducing the total number of accident cases, and in the following discussion we have concentrated largely on the numbers but with reference to rates where appropriate. The population figures in Table 2.1 or the more detailed figures in Table A.3 (in appendix A) will, however, enable the number of cases to be converted to rates.

In non-fatal accidents (HASS) and accidental deaths (HADD), falls are categorised into one of six different types plus "Unspecified Falls". Table 4.3 shows the number of each type in each of the age bands as already defined in Table 2.1.

Table 4.3 Thousands Of Each Type Of Fall in Each Age Band

	Infants/ Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
On same level	69	50	111	29	71	330
On stairs	43	27	150	16	21	257
From ladder	1	1	19	3	2	26
From building	3	4	4	-	-	11
Two levels	79	37	33	8	25	182
Trip/stumble	1	3	14	2	1	21
Unspecified	35	23	63	21	78	220
Total	231	145	394	79	198	1,047

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

The proportions of each type of accident in each age band are shown in Table 4.4 and the severity of each type in Table 4.5.

Table 4.4 The Proportion Of Each Type Of Fall in Each Age Band

	Infants/ Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
On same level	30%	35%	28%	37%	36%	32%
On stairs	19%	18%	38%	20%	11%	25%
From ladder	0.4%	0.7%	5%	3%	0.5%	2%
From building	1%	2%	1%	1.4%	0.5%	1%
Two levels	34%	26%	9%	10%	13%	18%
Trip/stumble	0.4%	1.4%	3%	1.4%	0%	2%
Unspecified	15%	16%	16%	27%	40%	21%
Total	100%	100%	100%	100%	100%	100%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

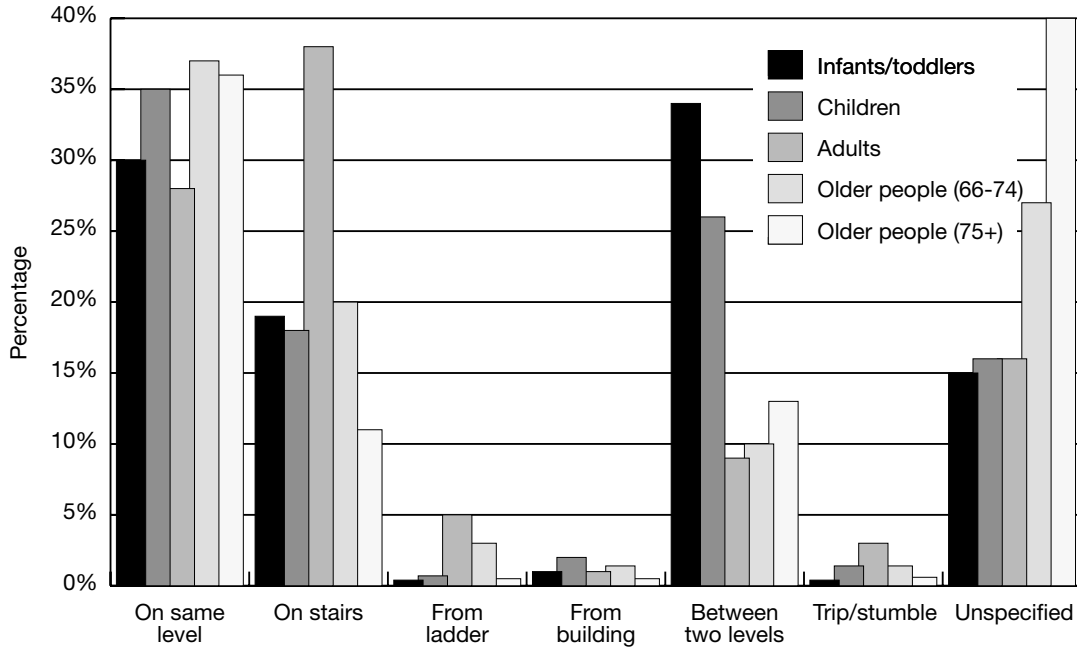
The patterns of type, age and severity are illustrated in Figures 4.2 and 4.3. Overall, "Falls on the Same Level" are easily the most common, but they are generally less severe and seldom fatal. Falls on stairs are 10 times more likely to lead to a death, and falls from ladders are almost as dangerous.

Table 4.5 The Level Of Severity Of EachType Of Fall

	Trivial/ Minor	Serious/ Very Serious	Fatal
On same level	78%	22%	0.02%
On stairs	82%	18%	0.18%
From ladder	76%	24%	0.14%
From building	73%	27%	0.52%
Two levels	78%	22%	0.04%
Trip/stumble	90%	10%	-
Unspecified	68%	32%	0.40%
Total	77%	23%	0.15%

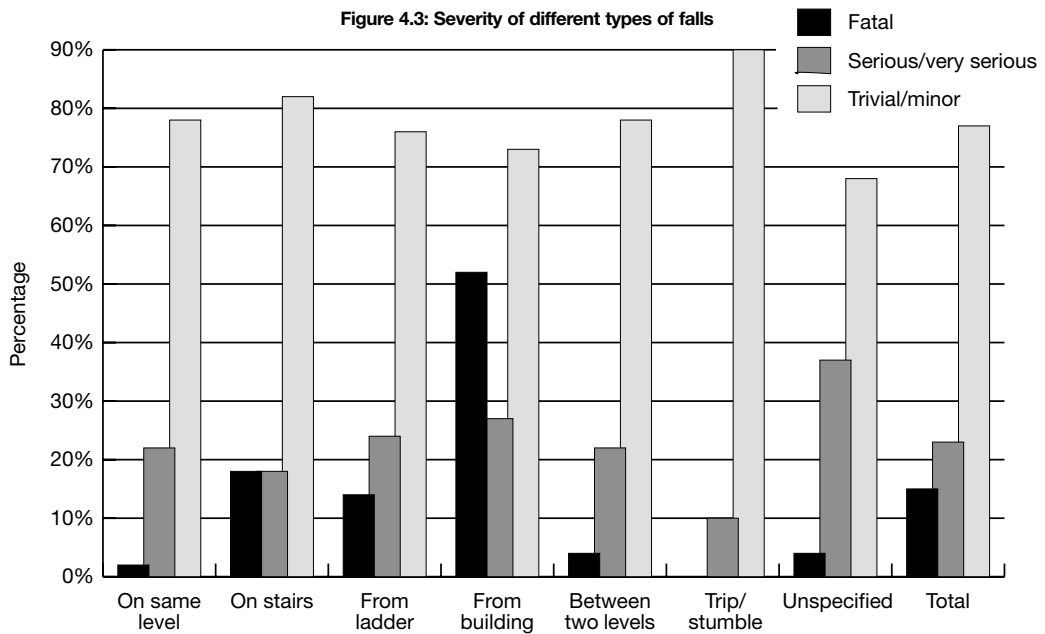
Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Figure 4.2: The proportion of different types of fall by age-band



Source : Metra Martech

Figure 4.3: Severity of different types of falls



Note: Percent of fatalities has been multiplied by 100

Source : Metra Martech

In the following sections, we have looked at the profile of falls in each of the five age bands and then at how the numbers might be reduced. In particular, we have looked at the commonest activities at the time the fall occurred, the most frequent locations and any articles involved in the case. We have then assessed where action could be taken which would reduce the overall numbers, bearing in mind the severity. In the tables for "Activity" and "Location", categories are listed in the same order for each age band, but only those categories relevant to a particular band are shown. The "Articles" are listed for each age band in descending order of the total for all the types of falls relevant to that age band.

The data are incomplete and we have made adjustments to allow for this. 25% of falls are of "Unspecified Type", "Activity" is defined in only 60% of the cases and "Location" in only 70% of instances. Where appropriate, we have allowed for these "Unspecified" cases by spreading them across the other categories on a pro rata basis, unless there is a good reason for distributing them in any other way.

The proportion of "Unspecified" cases is higher with the fatal cases than with the non-fatal ones. For example, the activity at the time of the accident is defined in only about 10% of fatal cases.

4.2 Infants and Toddlers

Infants and toddlers are involved in about 230,000 falls per year - this means that the average child has an almost 25% chance of being taken to hospital as the result of a fall at home before his or her fifth birthday. About 12% of these falls are serious (or very serious) but very few are fatal. Table 4.6 shows the types of falls involved. It is clear that three types of falls are particularly important for Infants and Toddlers.

Table 4.6 Infants and Toddlers - Types Of Fall and Severity

Types of Fall	Trivial/ Minor	Serious/ Very Serious	Fatal
On same level	64,000	4,000	0
On stairs	38,000	5,000	1
From ladder	-	-	0
From building	2,000	-	1
Two levels	66,000	12,000	2
Trip/stumble	1,000	-	0
Unspecified	31,000	4,000	2
Total	203,000	25,000	6

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.7 shows that most of the falls to infants or toddlers happen during normal activities such as playing and walking.

Table 4.7 Infants and Toddlers - Activity When Falling

Activity	On Same Level		On Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Walking	14,000	1,100	16,000	1,900	2,000	200
Playing	33,000	2,500	7,000	900	27,000	4,300
Resting/sitting/watching	1,000	-	-	-	17,000	2,500

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.8 shows that the majority of accidents to infants and toddlers occur in living areas where supervision can be expected to be greatest. Substantial numbers also occur in bedrooms where the level of supervision is likely to be lower, but only a few in the bathroom. Some accidents occur in the garden or outside the house.

Table 4.8 Infants and Toddlers - Where Falls Happen

Location	On Same Level		On Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Lounge/living room	26,000	1,500	-	-	16,700	1,900
Kitchen/utility room	5,100	400	-	-	8,500	1,200
Hall/lobby	4,200	-	-	-	-	-
Bedroom	3,800	-	-	-	21,000	3,400
Bathroom	2,800	-	-	-	1,100	-
Stairs inside	-	-	28,000	4,100	-	-
Stairs outside	-	-	2,600	-	-	-
Garden	8,600	900	1,500	-	7,600	1,600
Yard/path/drive	3,600	200	-	-	1,900	-

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.9 shows the variety of objects involved in falls. The listed items cover two thirds of all the falls for infants and toddlers. There are more than a hundred and fifty other articles involved, each in small numbers of cases. Apart from falling on the stairs, children fall on, from or over all the common household items. Perhaps surprisingly, there are only a small number of falls from bed, and few of these are serious. There are also only a few falls in the bath.

Table 4.9 Infants and Toddlers - Objects Involved in Falls

Article	On Same Level	On Stairs	Between 2 Levels
Stairs or steps	2,100	47,000 ¹	900
Floor	7,400	-	24,000
Mat/carpet	6,400	-	16,000
Chair	5,100	-	5,300
Concrete surface	3,200	-	4,400
Table	6,900	-	3,000
Door	8,200	-	1,500
Water Heater/Radiator	3,100	-	1,900
Toy	1,800	-	1,200
Lawn	1,400	-	2,400
Bed	1,000	-	4,000
Fireplace	3,000	-	1,000
Storage chest	-	-	3,500
Bath	1,700	-	-
Babies seat	-	-	1,200

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Accident Reduction

There are 232,000 accidents involving infants and toddlers of which 28,000 (see Table 4.1) are serious (or very serious). The only obvious target for reduction is falls on stairs of which there are a total of 44,000 including 6,000 serious and very serious cases.

There are substantial numbers of falls on the same level, many of which involve floors, mats and carpets. There are 69,000 cases in total, of which 5,000 may be serious or very serious. Most of these occur in the normal course of life, walking, running or playing and they will be difficult to prevent. A proportion will occur because carpets are worn or poorly laid and children have tripped over objects which have been left lying around. Many of those things will, of course, have been left by the children themselves.

The other area of concern is falls between 2 levels. Here children fall off almost any object you can think of onto the floor or other surface. There are 78,000 such falls of which 12,000 are serious (or very serious).

There were 6 fatal falls in this age band.

¹ In Table 4.6 the number of falls involving Infants and Toddlers on Stairs is given as 43,000. In Table 5.6 the total for trivial/minor and serious/very serious cases is 44,000. This difference arises because of rounding. In Table 4.9, Stairs is given as the article involved in 47,000 cases. This figure is higher than in the earlier tables because, although Stairs are mentioned as one of the articles, it was not primarily a fall on stairs. Similar differences occur between tables in many of the following sections.

4.3 Children

Children between 5 and 14 are involved in 145,000 falls per year. One in 40 children visits hospital each year because of a fall at home, and they have a 1 in 4 chance of visiting hospital because of such a fall sometime during their childhood. 17% of falls are serious or very serious, a higher proportion than with the previous group, but only 1 fatality was reported in 1995.

Children fall in the same places as infants and toddlers. There are three types of falls at home among children that need to be examined, as shown in Table 4.10.

Table 4.10 Children - Types Of Fall and Severity

Type of Fall	Trivial/Minor	Serious/Very Serious	Fatal
On same level	43,000	7,100	
On stairs	23,000	3,500	
From ladder	500	200	1
From building	2,500	900	1
Two levels	29,000	8,400	0
Trip/stumble	2,400	200	0
Unspecified	18,000	4,300	0
TOTAL	118,400	24,600	2

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.11 Children - Activity When Falling

Activity	Same Level		From Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Walking	9,800	1,100	13,000	1,500	-	-
Playing	22,000	3,000	2,500	-	1,600	-
Running	900	-	-	-	-	-
Resting/sitting/watching	-	-	-	-	-	-

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.11 shows that most falls happen when children are indulging in everyday activities.

Table 4.12 shows the location where accidents happen. The location is not defined for about a third of the cases. There are no specific locations which appear more hazardous than any other. Accident frequencies tend to reflect the amount of time children spend doing various activities. However, that there are substantial numbers of falls in the garden or driveway where children are likely to be less closely supervised.

Table 4.12 Children - Where Falls Happen

Activity	On Same Level		On Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Lounge/living room	8,400	600	-	-	3,600	800
Kitchen/utility room	3,200	300	-	-	1,700	300
Hall/lobby	2,200	200	-	-	-	-
Bedroom	3,600	400	-	-	9,800	1,700
Bathroom	1,900	100	-	-	-	-
Stairs inside	-	-	17,700	2,600	-	-
Stairs outside	-	-	1,500	100	-	-
Garden	14,200	2,600	-	-	11,200	3,000
Yard/path/drive	5,900	900	-	-	1,600	200

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.13 shows the articles involved in accidents. Almost all are ordinary parts of any home, and few of the accidents are caused by objects or toys, which might be thought of as dangerous, apart from stairs. Most other accidents involve falling or tripping on a flat surface. There are a few cases where children fall from a bed and very few where they fall from a swing.

Table 4.13 Children - Objects Involved in Falls

Activity	On Same Level		On Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Stairs or steps	-	-	28,100	4,000	-	-
Floor	6,100	1,200	-	-	6,900	1,800
Mat/carpet	4,900	700	-	-	5,000	1,200
Lawn	4,800	1,200	-	-	4,600	1,600
Concrete surface	4,800	700	-	-	-	-
Path/drive	2,500	300	-	-	-	-
Surface	1,800	400	-	-	-	-
Bed	-	-	-	-	2,300	400
Swing	-	-	-	-	700	300

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Accident Reduction

It is difficult to identify types of accidents where significant reductions could be made. In the main, the accidents to children occur when they are participating in normal, and not specifically hazardous, activities. Playing with friends or just moving about, children fall over and injure themselves when they hit a hard surface or some other object. Reducing accidents of this type needs to be done in such a way which does not adversely affect healthy physical activity which is of great benefit to children's overall health and development.

There are 27,000 accidents involving children on stairs, 13% of which are serious or very serious. The accident rate is slightly lower in the age range 5-9 than for 10-14 but the proportion of serious accidents is slightly higher.

As with the younger age group, there are substantial numbers of accidents involving mats or carpets. There are around 10,000 cases of which 20% of which are serious or very serious. Raising public awareness of this hazard may reduce accidents at all ages.

4.4 Adults (Up to 64 years)

There were almost 400,000 falls at home in 1996 which led to a visit to hospital by an adult. 17% of these falls were serious or (very serious), and there were 325 fatalities. More than 1 in 100 adults visit hospital each year because of a fall, so that the average person has a 50/50 chance of visiting hospital at least once for this reason between the ages of 16 and 64.

Almost 40% of the cases are falls on stairs. Also falls on stairs account for almost three quarters of the fatalities after excluding unspecified cases.

Table 4.14 Adults - Types Of Fall and Severity

Type of Fall	Trivial/Minor	Serious/Very Serious	Fatal
On same level	92,000	19,000	8
On stairs	127,000	23,000	159
From ladder	15,000	4,000	12
From building	3,000	1,300	32
Two levels	28,000	5,600	8
Trip/stumble	13,000	1,500	-
Unspecified	50,000	13,000	105
Total	328,000	67,400	324

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.15 Adults - Activity When Falling

Activity	Same Level	On Stairs	Between 2 Levels	From Building	From Ladder
Unknown activity	24,000	62,000	10,800	2,100	-
Walking	52,000	87,000	-	-	-
Resting/relaxing	1,000	-	-	-	-
Bathing/dressing	7,800	-	1,300	-	-
DIY	-	-	-	-	5,200

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.15 shows the activity when falls occurred. The totals do not tie up with those in Table 4.14 because "Activity" is only recorded in non-fatal accidents (HASS) for some of the cases and is seldom recorded for the fatalities in accidental deaths (HADD).

Where the activity is recorded, nearly all of them occur while walking or moving about, though a significant number occur while bathing or dressing.

Nearly all the ladder accidents, where the activity is defined, occur during DIY activities and 20% of these cases are serious or (very serious).

Most of the falls from buildings are classified as "Location Unspecified" and less than 10% are categorised under "Activity" as happening during DIY.

Table 4.16 Adults - Where Falls Happen

Location	Same Level	On Stairs	Between 2 Levels	From Building	From Ladder
Unspecified location	13,000	23,000	4,800	1,000	6,700
Stairs	1,200	109,000	-	-	-
Garden/lawn	20,000	-	4,400	600	2,800
Yard/drive/path	15,000	-	1,900	-	1,600
Living room	14,000	-	3,200	-	1,400
Kitchen	12,000	-	2,300	-	600
Bathroom	8,900	-	1,700	-	-
Bedroom	5,700	-	6,600	-	-
Hall	4,400	-	-	-	-

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.16 shows where accidents to adults happen. They happen in all the ordinary places around the house, but substantial numbers happen outside the house in the garden or drive.

Table 4.17 Adults - Objects Involved in Falls

Article	Same Level	On Stairs	Between 2 Levels	From Building	From Ladder
Stairs	3,500	174,000	600	-	-
Hard Surface	31,000	3,400	2,700	3,500	5,400
Floor	24,000	2,800	8,900	-	3,100
Lawn	7,000	-	1,100	-	900
Mat/Carpet	13,000	3,400	4,500	-	1,100
Fence	2,900	900	1,200	-	400
Door	4,500	2,000	600	-	300
Barg	5,800	-	700	-	-
Table	1,800	-	900	-	300
Ladder	-	-	-	-	9,500
Roof	-	-	-	-	-
Chair	-	-	4,600	-	-
Bed	-	-	1,600	-	-

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.17 shows the articles involved in adult falls. It shows mostly what would be expected from the activities and locations discussed above. Most of the articles are surfaces of one sort or another, which indicate what caused the injury but not what initiated the fall, except in the case of Mat/Carpet which may have caused a trip.

Accident Reduction

Reducing the numbers of falls among adults appears to be a particularly difficult problem.

Allowing for unspecified cases there are about 180,000 falls each year on stairs, mostly walking and only a few when carrying something. Of the stair falls, 15% are serious or (very serious). There are at least 159 fatalities, but the number is more likely to be around 230 after adjusting for "unspecified falls". 70% of these falls involve people over 30, almost in line with population, and the figure is very similar for serious (and very serious) accidents. However, 95% of fatalities involve people over 30. A publicity campaign to reduce accidents on stairs may have an impact on the number of fatalities in this age band (but, whilst beyond the scope of this study other factors such as consumption of alcohol may come into play here.)

Falls from leaning ladders run at 19,000 per year, and 24% are serious (or very serious). There has already been extensive publicity in this area by the DTI. Sustaining this together with incremental improvements in ladder safety standards, for example on safety instruction and to include ladder safety devices will help to reduce accidents in this area.

There are 4,000 falls from buildings or structures in this age band, but 30% of them are serious (or very serious). A detailed examination of the records shows that many of these cases involve a DIY element, despite not have been classified as this under "Activity". Descriptions such as "fell from garage roof while fixing it" or "fell from porch while painting" are frequent. Some of the cases are "falling out of loft" or "jumping off a wall". Very few cases involve falling out of windows. These falls are similar to ladder falls and publicity on this could well be linked to ladder safety. Many of the accidents would have been prevented if a ladder had been used properly in the first place.

Most of the remaining accidents, about 200,000 of them annually, happen when people are involved in ordinary activities and they trip, slip or fall, mostly on a flat surface in the house or garden.

4.5 Older People (65-74)

In 1996, Older People (65-74) had almost 80,000 falls or one fall every 60 years, only a little greater than the rate for the population as a whole. However, 34% of these accidents are serious (or very serious) compared to 23% for falls at all ages. Furthermore, there are 238 fatalities; that is to say that 15% of the deaths come from the 8.5% of the population in this band. Successful reduction of accidents in this age band will have a greater impact on falls as a whole than in the younger age groups considered so far.

Table 4.18 Older People (65-74) - Types Of Fall and Severity

Type of Fall	Trivial/Minor	Serious/Very Serious	Fatal
On same level	19,000	9,800	10
On stairs	11,000	5,000	87
From ladder	2,300	900	14
From building	200	100	8
Two Levels	5,200	2,900	9
Trip/stumble	1,400	100	0
Unspecified	12,000	8,600	110
Total	51,100	27,400	238

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.19 Older People (65-74) - Activity When Falling

Activity	On Same Level		On Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Walking	14,000	4,400	9,000	2,600	600	100
Bathing /dressing	1,600	500	-	-	-	-
Gardening	1,100	400	-	-	-	-
Resting/relaxing	-	-	-	-	1,900	600

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Neglecting the unspecified falls, 50% of falls among Older People (65-74) are on the same level, 28% are on stairs and 14% are between 2 levels. Perhaps surprisingly, 5% of falls in this age band are from ladders. 31% of stair falls are serious (or very serious) and 36% of those between 2 levels are in this category. After allowing for unspecified falls, 79% of the fatalities are stair falls.

As in other age bands, most falls happen during ordinary activities, in particular simply while walking. Only a few occur while bathing or dressing or gardening. A very small proportion happen while lifting or carrying anything.

Table 4.20 Older People (65-74) - Where Falls Happen

Location	On Same Level	On Stairs	Between 2 Levels
Stairs inside	-	8,800	-
Stairs outside	-	1,500	-
Garden/lawn	5,900	-	-
Path/drive	3,400	-	-
Living room	3,300	-	800
Kitchen	2,900	-	900
Bathroom	2,100	-	-
Bedroom	1,900	-	2,000

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Of the falls in defined locations, a substantial number occur in the garden or drive.

The articles specified as being involved in falls are mostly surfaces on which people hit themselves after falling. Very few of the objects mentioned were the cause of the accident and were only passively involved. Mats and carpets are mentioned in a smaller proportion of cases in this age band than with the younger groups of people. This is perhaps surprising. These figures do not suggest that there is any particular tendency to trip over mats or carpets.

There are few accidents where a bath is specifically mentioned.

Table 4.21 Older People (65-74) - Objects involved in Falls

Article	On Same Level	On Stairs	Between 2 Levels
Stairs	-	20,000	-
Floor	7,000	-	3,100
Mat/carpet	3,800	-	1,300
Path/drive	2,500	-	-
Hard surface	3,700	-	-
Slippery surface	1,900	-	-
Bath	1,100	-	-
Lawn	1,100	-	-
Chair/seat	-	-	1,100

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Accident Reduction

The primary target should be to reduce the number of falls on stairs, and this is an age group less inclined to take risks and more likely to listen to advice than the younger population. A campaign among the general public, plus raising of safety awareness among health visitors and social workers could have a substantial impact. However, preventing accidental falls is a complex area and there are a number of complementary messages including those concerned with healthy lifestyle as well as attending to potential trip hazards and taking more care.

There are a small number of ladder accidents among Older People (65-74), and in the process of reducing numbers among younger adults there will be a knock on effect among Older People (65-74).

4.6 Older People (75+)

In 1996 Older People (75+) had almost 200,000 falls, or one every 20 years, compared to one every 100 years for the population as a whole, and three times the rate for Older People (65-74). Furthermore, 45% of these accidents are serious (or very serious) and there are 981 fatalities, 63% of the deaths from only 7.1% of the population. Successful reduction of accidents in this age band will have the greatest impact of all on falls as a whole, and fatalities in particular. A great many of the deaths are in "Unspecified Falls". Distributing

them pro rata across the other types of fatal falls suggests there may be 630 deaths from falls on stairs among Older People (75+).

Table 4.22 Older People (75+) - Types Of Fall and Severity

Type of Fall	Trivial/Minor	Serious/Very Serious	Fatal
On same level	41,000	30,000	47
On stairs	13,000	8,200	212
From ladder	1,100	600	10
From building	100	100	15
Two levels	14,000	11,000	46
Trip/stumble	700	200	0
Unspecified	38,000	40,000	651
Total	107,900	90,100	981

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

As in younger age bands, most falls, apart from those on stairs, occur when walking and there are very few specific activities which might have caused the accident. Many falls may involve tripping or stumbling over objects, but examination of the accident descriptions does not reveal any particularly common items which are involved. There is a higher proportion of accidents which involve bathing and dressing than among Older People (65-74), but this still accounts for only 6% of falls.

Table 4.23 Older People (75+) - Activity When Falling

Activity	On Same Level		On Stairs		Between 2 Levels	
	All	S&VS	All	S&VS	All	S&VS
Walking	35,000	14,000	11,000	3,800	1,900	900
Bathing/dressing	4,100	1,700	-	-	2,600	1,300
Gardening	1,800	400	-	-	-	1
Resting/relaxing	1,500	400	-	-	10,000	4,500

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 4.24 Older People (75+) - Where Falls Happen

Location	On Same Level	On Stairs	Between 2 Levels
Stairs inside	-	10,200	-
Stairs outside	-	2,300	-
Living room	10,000	-	1,500
Garden	7,800	-	-
Kitchen	6,500	-	600
Bedroom	8,400	-	12,000
Yard/drive	4,300	-	-
Bathroom	4,600	-	1,000
Hall/lobby	3,500	-	-

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Most falls at home among Older People (75+) happen inside, but there is also a proportion in the garden or drive.

As with the other age groups, the articles involved in accidents are predominantly the surfaces onto which people fall rather than the object which causes the fall. There are a considerably high proportion of references to mats or carpets, and this suggests that some cases result from a trip over the edge of a mat. The accident descriptions confirm that this sometimes happens, but it is not possible to quantify the incidence.

Table 4.25 Older People (75+) - Objects Involved in Falls

Article	On Same Level	On Stairs	Between 2 Levels
Stairs	-	27,000	-
Floor	25,000	-	13,300
Mat/carpet	15,000	-	3,900
Hard surface	8,200	-	-
Path/drive	3,600	-	-
Door	3,000	-	-
Chair/seat	2,400	-	1,900
Table	2,100	-	600
Slippery surface	1,800	-	-
Bed	-	-	4,000

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Accident Reduction

As for Older People (65-74), there is much that can be done to reduce the risk of falling in the 75+ age group, varying from a healthy lifestyle (exercise, diet) to identifying practical changes to the home environment and to their behaviour.

4.7 Overall Reduction of Falls

By far the most serious problem with falls are those which occur to older people. There are many steps which can be taken to help prevent such falls.

The recent DTI campaign conducted in collaboration with the Health Education Authority provides a wealth of advice. Also a recently published report by Newcastle University (ref URN 99/805) sponsored by the DTI sets out many of the key interventions which have proved successful in this area. [The Newcastle report is available from the DTI Orderline (0870 1502 500).]

Ladders

Promote safety when using ladders and steps, and encourage their use when climbing on to roofs etc to avoid falls from buildings. This campaign needs to be focussed at adults but this will also cover Older People (65-74) who have some accidents in this category. The campaign can be combined with other DIY cases as discussed elsewhere and with falls from buildings (The latest DTI work in this area has followed this route).

5. CHOKING

5.1 Trends

In the analysis of trends discussed earlier, the data for choking was aggregated with all data for objects in eye, ear, nose, stomach etc. The trend in these type of accidents was upward for non-fatal accidents while that for fatalities was down, but this trend does not necessarily apply to choking alone. There is a downward trend of about 5% per year for both fatal and non-fatal cases but we cannot tell if this applies to older age groups.

Choking currently accounts for only 1 in 160 home accidents overall, but it also accounts for 1 in 20 fatal accidents.

5.2 Age-Bands

Table 5.1 shows the numbers of cases in each age-band. If the airway is blocked, death occurs within three minutes, but if the object is removed the victim usually recovers quickly and completely. Cases are spread across all age bands except, perhaps surprisingly, there was only one death among children. Accidents rates are remarkably constant except for a somewhat higher rate among infants & toddlers. The death rate is much higher among Older People 75+ although, since overall death rates are high in this age band, choking only accounts for 1 in 25 of these deaths.

Table 5.1 Choking Accidents - By Severity and Age

Age Band	Trivial/ Minor	Serious/ Very Serious	Total Non-Fatal	Cases per 10 million	Fatal	Deaths per 10 million
Infants & Toddlers	1,500	200	1,700	4,100	18	50
Children	1,200	100	1,300	1,700	1	1
Adults	6,500	900	7,400	2,000	61	19
Older People (65-74)	800	100	900	1,800	20	45
Older People (75+)	800	100	900	2,100	53	143
Total	10,800	1,400	12,200	2,100	153	30

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

5.3 Activity and Location

Over 90% of all choking accidents occur when eating or drinking. For those over 15, the proportion is 95% but for infants & toddlers and children, the proportion is about 70% with most of the remainder happening while children are playing, though toys are rarely involved.

For adults, most of the accidents happen indoors. The pattern is similar for the younger age groups except that some occur when children are playing outdoors.

5.4 Articles

The articles causing choking accidents are shown in Table 5.2. The overwhelming majority of cases are caused by food. For those under 15, food accounts for 82% of cases where the article is known. For those over aged 15 and over, the proportion is almost 100%

Table 5.2 Choking Accidents - Articles Involved

Article	All Non-Fatal Cases			Fatalities
	0-14	15+	Total	
Vomit	-	-	-	70
Food - not specified	400	2,100	2,500	41
Meat/poultry	100	1,900	2,000	3
Fruit	100	300	400	3
Bakery	100	400	500	1
Sweet	400	100	500	1
Fish	700	3,400	4,100	-
Money	400	-	400	-
Other/Unknown	800	1,000	2,000	34

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

For fatalities, food is again the main cause, though the type of food is usually not specified. From the description in the accident text, we estimated that 70 of the cases were caused by regurgitation of stomach contents and inhalation of vomit (very few non-fatal cases were caused by this).

The proportion of fatal cases caused by vomit in different age bands was as follows:

Infants & Toddlers	28%
Children	-
Adults	54%
Older People (65-74)	35%
Older People (75+)	45%

Many of the deaths occurred while the victim was asleep or alone.

5.5 Accident Reduction

Choking occurs at all ages and is usually related to food. The first step is to look into the victim's mouth and clear the airway of any blockage, in line with the ABC of resuscitation. (The NHS Home Healthcare Guide has advice on this). Also see section 18.1.

The serious or very serious cases frequently involve an object wedged in the throat or passing down the airway into the lung and this would still need medical removal. Many of the minor and trivial cases are the result of a scratch at the back of the throat, mainly meat or fish bones, which the victim feels is more serious. They will still need reassurance that there is nothing to remove. Reduction in such cases will be difficult to achieve, since so many of them involve food.

6. BURNS AND SCALDS

This section includes burns and scalds from controlled sources and excludes those in uncontrolled fires which are dealt with in Section 7.

6.1 Trends

The historical data on burns, included in the discussion of trends in Section 3, includes accidents from both controlled and uncontrolled heat source. However, most of the non-fatal cases discussed in Section 3.6 are caused by controlled heat sources, and since the trend identified there was downward, it seems probable the burns and scalds from controlled source are on a downward trend. If current trends continue, the number of cases is likely to decrease by 6-8% by 2010.

Burns and scalds currently account for 1 in 30 non-fatal accidents and 1 in 50 fatalities.

6.2 Age-Bands

Table 6.1 shows the number of cases in each age-band. The rate of non-fatal cases is much higher among Infants & Toddlers and falls steadily with age. Surprisingly, Older People are least at risk overall, but they have a higher proportion of serious accidents and fatalities are much more likely among and Older People (75+). Fatalities are also more likely among Infants & Toddlers and Older People (65-74) than among Adults.

Table 6.1 Burns and Scalds - By Severity and Age

Age Band	Trivial/ Minor	Serious/ Very Serious	Total Non-Fatal	Non-Fatal Cases per 10 million	Fatal	Deaths per 10 million
Infants & Toddlers	26,500	4,900	31,400	76,000	5	12
Children	9,900	900	10,800	14,000	1	1
Adults	35,600	3,000	38,600	10,000	13	3
Older People (65-74)	2,200	200	2,400	4,800	8	16
Older People (75+)	1,900	600	2,500	6,000	36	86
Total	76,100	9,600	85,700	15,000	63	11

6.3 Activity and Location

The activities when accidents happen are shown in Table 6.2. For Adults and Older People, half the non-fatal accidents occur while cooking and 11% while bathing. For Older People (75+), a further 19% happen when resting. For Infants & Toddlers, almost half the accidents happen while playing.

The pattern for fatalities is very different, with the majority occurring while the victim is bathing or resting. In the latter cases, the victim, usually old, is almost invariably asleep in a chair too close to a fire.

Table 6.2 Burns and Scalds - activity when accidents occur

	Infants & Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
Non-Fatal						
Cooking	1%	21%	49%	52%	50%	32%
Playing	47%	22%				17%
Bathing	13%	15%	10%	12%	11%	11%
Washing/cleaning	1%	1%	3%	2%	2%	2%
Resting	9%	6%	5%	4%	19%	7%
Other	29%	36%	32%	29%	17%	31%
Fatal						
Cooking			17%		7%	8%
Playing	100%			67%		
Bathing			50%		50%	58%
Washing/cleaning					7%	4%
Resting			17%	33%	36%	27%
Other			17%			

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Over half the non-fatal burns and scalds, not surprisingly, occur in the kitchen as would be expected from the high proportion which occur while cooking. The spread across locations is shown in Table 6.3. The pattern with fatalities is different, with a much higher proportion in living rooms, particularly among Older People (75+) many of whom, as we have seen above, die while sleeping in front of the fire. The figures for locations and activities are entirely consistent.

Table 6.3 Burns and Scalds - Where Accidents Happen

	All Non-Fatal Cases	All Fatalities	Fatalities Under 75	Fatalities Older People (75+)
Kitchen	54%	20%	28%	13%
Living room	14%	38%	21%	52%
Bathroom/toilet	5%	32%	42%	26%
Bedroom	4%	2%	-	3%
Other location	23%	8%	9%	6%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

6.4 Articles

Table 6.4 shows the articles involved in burns and scalds. Most non-fatal cases are caused by hot liquids, particularly hot drinks, but also oil and fat associated with eating or drinking. However, these objects do not generally cause fatalities.

Fatal accidents are almost always caused either by (controlled) fires, where the victim sits too close and falls asleep, or by serious scalds from a hot bath.

The articles listed here are the source of heat, not necessarily the article which catches fire. Clothing fires, for example, are not covered here but are included in the following section on uncontrolled fires.

Table 6.4 Burns and Scalds - Articles Involved

Article	All Cases				Fatalities
	0-14	15-64	65+	Total	
Hot drink	16,000	6,000	1,200	23,200	1
Hot liquid from kettle/cup	8,600	5,100	900	14,600	2
Oil/fat	1,200	8,400	600	10,200	-
Hot water (unspecified source)	3,900	4,500	800	9,200	-
Frying pan/hot liquid	1,900	5,100	700	7,700	-
Cooker/oven/grill	3,900	2,900	300	7,100	2
Iron	5,000	1,100	100	6,200	-
Fire/heater	2,500	1,600	500	4,600	25
Water heater/radiator	1,700	800	100	2,600	-
Bath	1,900	300	100	2,300	19
Gas	100	200	100	400	15

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

6.5 Accident Reduction

The pattern for non-fatal and fatal burns and scalds is very different. 95% of the non-fatal cases involve people under 65 but children are particularly vulnerable. Over half the cases happen in the kitchen and over 70% involve eating, drinking or cooking or kitchen-type activities such as ironing. Accidents to children particularly involve hot drinks - in the case of infants & toddlers these are usually someone else's drinks. A campaign related to safety in the kitchen, as discussed in a later section, should have an impact on the numbers of non-fatal cases (DTI's burns and scalds campaign in 1998 was associated with the kitchen for this reason).

Fatal accidents to infants & toddlers involve hot baths as do at least a third of accidents to Older People (75+).

The other target should be older people, particularly in the over 75 age group, who may be sitting too close to, and possibly falling asleep in front of (controlled) fires. Efforts here should also save some cases related to uncontrolled fires as discussed in the next section.

7. UNCONTROLLED FIRES

This section includes cases where injuries were caused by uncontrolled fires, that is fires where something is burning which should not normally be ignited. In some cases this can lead to full house fires. Burns from kettles, cookers or gas fires etc, which are intended to be hot, are included in the previous section on burns and scalds. However, burns from clothing fires, for example, which might have been ignited by a gas cooker are covered here.

7.1 Trends

The trends covered in Section 4.6 include burns and scalds from controlled heat as well as uncontrolled fires. In 1995 and 1996, most of the fatalities were in uncontrolled fires whereas most of the non-fatal cases were from controlled heat. The trend for deaths is downwards at about 2% per year which would give a decrease of 35% if it continues from 1996 to 2010 at the same rate. We cannot say anything about the trend in the number of non-fatal casualties from fires from our analysis of non-fatal accidents (HASS).

Data on casualties in fires were also available from Home Office fire statistics, and the trends in this were also analysed in Section 3. Non-fatal casualties are increasing at 3.5% per year. Fires currently account for 1 in 10 fatalities but only 1 in 1,200 non-fatal casualties.

7.2 Age-Bands

The number of non-fatal cases in the Home Office figures in 1995 is almost 13,000 compared to the 5,000 cases from non-fatal accidents (HASS). This is because the Home Office figures include all cases where the brigade recommends that the victim seeks treatment. Some of them will treat themselves and others will go to their GP, so only a proportion of cases, usually the more serious ones, will get to A&E. It is only these which will be recorded on non-fatal accidents (HASS).

Table 7.1 shows the number of cases in each age-band based from non-fatal accidents non-fatal accidents (HASS) and accidental deaths (HADD) figures. The rate of non-fatal cases is similar at all ages. Fatalities are much more likely among Infants & Toddlers and Older People and especially those aged 75 and over.

Table 7.1 Uncontrolled Fires - by Severity and Age

Age Band	Trivial/ Minor	Serious/Very Serious	Total Non-Fatal	Non-Fatal Cases per 10 million	Fatal	Deaths per 10 million
Infants & Toddlers	200	100	300	700	36	90
Children	300	100	400	1,000	22	30
Adults	2,000	500	2,500	700	122	30
Older People (65-74)	200	100	300	600	54	100
Older People (75+)	200	100	300	700	135	320
Total	2,800	900	3,800	700	369	60

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

7.3 Activity and Location

The information on activity and location when accidents happen is not very specific. Table 7.2 shows that most accidents happen indoors at home but specific locations are only detailed in about half the cases. Not surprisingly, the kitchen is the commonest location which is specified.

Information on Activity was less complete still, with 70% of people involved in "Unknown" or "Other" activities. Details of activity are not included as no useful conclusions can be drawn from the available data.

Table 7.2 Uncontrolled Fires - Location Where Accidents Occur (HASS/HADD)

	Infants & Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
Non-Fatal						
At home - unspec	51%	64%	49%	35%	54%	50%
Kitchen	12%	16%	18%	55%	20%	20%
Bedroom	13%	3%	11%	3%	4%	9%
Lounge	18%	3%	4%	7%	13%	6%
Other	6%	13%	17%		10%	14%
Fatal						
At home - unspec	54%	82%	48%	57%	51%	54%
Kitchen	9%	9%	11%	9%	14%	11%
Bedroom	20%	5%	23%	19%	14%	17%
Lounge	9%		10%	13%	17%	12%
Other	9%	5%	8%	2%	5%	6%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

According to the Home Office fire statistics, the origin of fires is as follows:

Kitchen	48%
Living/dining room	14%
Bedroom	14%
Bathroom	2%
Unspecified	2%

Although these figures cover all fires, not just those involving casualties, they mirror the HASS/HADD data. The kitchen is clearly the place in the house where fires are most likely to happen.

7.4 Articles

The information on articles is also sparse and apart from "Fire" or "Smoke and Fumes", relevant articles are specified in only 35% of cases. The numbers of cases for each of the main articles are given in Table 7.3 but note that the numbers in the sample are very small.

The numbers are, in general, too small to allow meaningful cross tabulations except for fatalities with bedding and clothing. The split by age is shown in Table 7.4 and it is clear that those over 75 are most at risk from these items, which are almost certainly involved in some of the other fires where the article is not specified.

Table 7.3 Uncontrolled Fires - Articles Involved

Article	Non-Fatal	Fatal
Frying pan/hot liquid	340	2
Garden bonfire	260	-
Petrol/spirit/solvent	230	-
Match/lighter	130	2
Clothing	70	33
Bedding	50	14
Fire/heater	90	1
Cooker	10	1

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 7.4 Uncontrolled Fires - Selected Articles Involved in Fatalities

Age Band	Bedding	Clothing
Infants & Toddlers	1	1
Children	1	-
Adults	3	4
Older People (65-74)	3	7
Older People (75+)	6	21
Total	12	33

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

The Home Office fire statistics include information which gives a useful insight into the source of ignition and spread of fires, and this information is summarised in Table 7.5.

Sources of ignition have been grouped according to the type of fuel, with an additional grouping of Cookers and Space Heaters. The data list various causes which we have grouped under three headings. Fault in Appliance, which also includes a fault in the fuel supply or leads. Misuse which includes carelessness and children playing. Placing articles too close to heat source is kept as a separate category, although strictly it is a form of misuse.

Smoking and matches are a very important source of ignition for fires. The material first ignited is upholstery in 50% of cases and bedding in 20%.

There are also substantial numbers of fires started by electrical appliances. Some of these involve faults but most of them involve cookers or space heaters and usually result because articles are placed too close. The pattern with gas and solid fuelled appliances is similar.

Overall, 44% of cases are caused by cookers and only 2% of these are the result of a faulty appliance. 83% of the fires started by cookers which involve non-fatal casualties were concerned with burning fat. For fatalities the figure was 63%.

Overall 9% of fires are started by space heaters and only 12% of them involve faulty appliances. Misuse and placing articles too close to them is the cause. The article first ignited is often clothing (24%) or bedding (6%) but furnishing, carpets and curtains account for 36% of cases.

Accidents with candles cause 6% of the fatalities.

Table 7.5 Uncontrolled Fires - Source of Ignition and Cause of Fire Based on Home Office Fire Data

	% of casualties resulting source of ignition		% of casualties caused by factor for from each source of ignition		
	Fatal cases	Non-Fatal cases	Fault in appliance	Misuse	Articles placed too close to heat
Smoking Materials	48%	28%			
Tobacco	40.5%	19.9%		100%	
Matches	7.4%	8.2%		100%	
Electricity	18%	43%			
Cookers	5.1%	28.4%	2%	95%	3%
Space heaters	6.5%	3.1%	10%	28%	62%
Water heaters		0.3%	56%	37%	7%
Wiring/plugs/sockets	1.5%	3.8%	94%	6%	
Electric blanket	3.2%	2.5%	74%	26%	
Other appliances	1.7%	4.9%	64%	26%	10%
Gas/LPG	11%	19%			
Cookers	5.7%	14.7%	1%	96%	
Space heaters	4.4%	3.2%	14%	32%	3%
Central heating		0.2%	86%	14%	54%
Water heaters		0.3%	33%	27%	
Other appliances	0.4%	0.3%	30%	70%	40%
Solid/Other fuels	5%	4%			
Cookers	0.2%	0.9%	5%	90%	5%
Central heating		0.1%	100%		
Space heaters	4.6%	2.7%	7%	73%	20%
Water heaters		0.1%	28%	62%	10%
Other appliances		0.3%	25%	75%	
Candles	6%	3%			100%
Other/unspecified	13%	3%			
Total	100%	100%	11%	83%	6%
Cookers	11%	44%	2%	95%	3%
Space heaters	16%	9%	12%	42%	46%

Source : Metra Martech Analysis of Home Office Data

7.5 Accident Reduction

From Home Office fire statistics, 89% of fires result from behavioural factors, such as placing articles too close to fire hazards and only 11% from (product) faults. We have selected four target areas where publicity might be focused to reduce casualties. The numbers of cases in the four areas are summarised in Table 7.6.

Table 7.6 Uncontrolled Fires - Targets For Accident Reduction

	Non-Fatal Cases	Fatal Cases
Carelessness with:		
Smoking materials	3,000	290
Cookers	1,000	177
Space heaters	1,600	39
Candles	300	52
	100	22
Other	800	79
Total	3,800	369

Source : Metra Martech

A newly created National Community Fire Safety Centre will be targeting the main causes of uncontrolled fires through education and publicity methods. This includes running high profile national television campaigns and the development of a Toolbox which will provide Fire Brigades with materials to address a wide range of target audiences and include a variety of topics e.g. smoke alarms, escape behaviour and how to avoid chip pan fires. Also, the DTI is pressing for a new control to make all cigarette lighters child resistant and is working with business to improve warnings on matches. DTI also has run a campaign on clothing fires.

Whilst the amount of data on accidents and social class is limited, there is evidence from the Office of National Statistics that the death rate for children in house fires in Social Class 5 is 16 times higher than that for Social Class 1.

8. POISONING

This section covers poisoning by solids and liquids.

8.1 Trends

The trend in poisoning cases has been discussed in Section 3. The figures are somewhat erratic but overall there is a small decrease in non-fatal accidents (HASS) cases but an increase in accidental deaths (HADD). The apparent increase for deaths is 2% per annum but this is strongly influenced by an unusually high figure for 1995. If this figure is ignored, then the number of deaths is more or less constant.

The trend analysis includes analysis by age-band. The fall in non-fatal accidents (HASS) cases is driven entirely by a substantial drop in the number of cases involving Infants & Toddlers which suggests that the more widespread use of CRCs has been successful. The number of cases in other age bands, however, is increasing.

The increase in the number of deaths is driven entirely by the increase among Adults with decreases in all other age-bands. The increase for Adults is influenced by the high figure for 1995 which we believe reflects some change in reporting procedures, rather than any real change in trend.

Overall, poisoning accounts for 1 in 150 non-fatal accidents but 1 in 5 deaths.

8.2 Age-Bands

Table 8.1 shows numbers of cases in each age-band. Two features are immediately apparent from this Table; the very high rate of non-fatal cases among Infants & Toddlers (and to a lesser extent among primary and secondary age children) and the high rate of fatalities among Adults. Because of these factors we have included a more detailed breakdown by age band for non-fatal and fatal cases as shown in Tables 8.2 and 8.3.

Table 8.1 Poisoning - By Severity and Age

Age Band	Trivial/ Minor	Serious/Very Serious	Total Non-Fatal	Non-Fatal Cases per 10 million	Fatal	Deaths per 10 million
Infants & Toddlers	20,000	9,500	29,500	70,000	1	2
Children	1,400	1,500	2,900	4,000	4	5
Adults	800	200	1,000	300	593	800
Older People (65-74)	-	-	-	-	28	60
Older People (75+)	-	-	-	-	36	80
Total	22,200	11,200	33,400	6,000	662	110

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 8.2 Poisoning - Detailed Age Breakdown For Non-Fatal Cases

Age Band	Cases per 10m Population			% Serious/ Very Serious	Non-Fatal Cases
	Male	Female	Total		
0	26,000	18,000	22,000	24%	1,700
1	122,000	112,000	117,000	32%	8,800
2	175,000	138,000	157,000	36%	12,000
3	72,000	63,000	67,000	34%	5,100
4	28,000	19,000	24,000	33%	1,800
5	12,000	8,800	11,000	30%	800
6	6,900	4,200	5,600	26%	400
7	3,000	5,200	4,000	26%	300
8	3,400	-	1,800	58%	130
9	1,000	500	800	17%	60
0-9	45,000	37,000	41,000	32%	31,000
10-14	3,200	5,700	4,400	50%	1,700
15-19	600	1,000	800	58%	300
Over 20	250	310	280	18%	1,300

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 8.3 Poisoning - Detailed Age Breakdown For Fatal Cases

Age Band	Cases per 10m Population			Male/ Female Rates	Fatal Cases
	Male	Female	Total		
0-4	5	0	3	-	1
5-9	-	-	-	-	0
10-14	5	5	5	1.0	4
15-19	109	58	84	1.9	30
20-24	314	96	208	3.2	80
25-29	333	57	200	5.8	93
30-34	336	107	202	3.2	100
35-39	213	111	163	2.0	71
40-44	231	108	170	2.1	66
45-49	178	85	132	2.1	56
50-54	96	152	124	0.7	44
55-59	126	98	112	1.3	34
60-64	86	49	68	1.8	19
65-74	59	50	54	1.2	28
+75	66	88	81	0.8	36
All ages	150	72	110	2.0	662

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

For non-fatal cases, the vulnerable group are Infants & Toddlers, and within the group, 1, 2 and 3 year olds are particularly at risk. These are children at the age when they are first becoming mobile and exploratory but before they have learnt what is not safe and often when parents find it difficult to predict precisely how the developing children will behave. As we have found in other studies of accidents and children, boys have a higher accident rate than girls and in this case are 22% more likely to have a non-fatal poisoning accident.

From three onwards there is a steady decline in the accident rate up to 10 years, but then there is an increase for the 10-14 band with over 50% serious (or very serious). The overall rate falls for 15-19 and then remains fairly steady through the rest of the Adult range.

The fatal accidents show a completely different pattern, being very low up to the age of 14, rising to a maximum at 30-34 and then declining steadily with age. Death rates from poisoning for men are double the rates for women overall. The ratio is almost 6:1 between the ages of 25 and 29 but become almost 1:1 from 50 onwards.

8.3 Activity and Location

There is incomplete information on the activity when accidents happen. For 44%, it is given as unknown, and for 40%, it is playing - not surprising since so many children are involved. The activity is given as unknown in 99% of the Fatal cases.

8.4 Articles/Products Involved

Table 8.4 shows the relative significance of different articles involved in non-fatal poisoning cases at different ages as well as the number of cases and relative rates at different ages. More than one article is recorded for only 5% of the cases.

As discussed earlier, most cases (80%) involve children under 5. Medicines account for almost half the cases overall and are particularly important for children between 2 and 4. Household chemicals account for 1 in 5 cases and are particularly prominent among very young children.

The overall rate goes down steadily with age up to 9 and then shows an increase in the 10-14 age band. This is due to poisoning by alcohol which accounts for 41% of cases in this band as young teenagers begin to experiment with drinking.

There are strong arguments for preventive activity for non-fatal poisoning to be concentrated on the under 5s.

Table 8.4 Poisoning - Articles Involved in Non-Fatal Cases

Article	Age-Band									
	0	1	2	3	4	5-9	10-14	15-19	20+	Total
Medicines	30%	38%	64%	67%	62%	52%	41%	30%	24%	51%
Household Chemical	24%	28%	17%	13%	15%	11%	4%	21%	29%	18%
Petroleum/solvents	3%	10%	8%	3%	7%	5%	1%	3%	9%	6%
Toiletries/cosmetics	11%	8%	4%	3%	3%	2%	3%	0%	5%	5%
Vegetation/hedges	16%	5%	2%	5%	5%	15%	2%	12%	4%	5%
Alcoholic drinks	0%	0%	1%	1%	0%	3%	44%	21%	15%	5%
Garden Chemicals	9%	5%	3%	2%	4%	2%	2%	3%	7%	4%
Other	14%	9%	5%	8%	10%	14%	11%	15%	10%	10%
Total %	106%	104%	103%	102%	105%	105%	107%	106%	104%	104%
Total Cases	1,800	8,800	11,700	5,000	1,900	2,000	3,100	600	1,900	37,000
Rate per 100,000	230	1,180	1,580	640	250	54	87	17	4	60

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

The age distribution is very different with the fatal cases, but medicines still play an important part and two articles are involved together in a substantial number of the cases. In particular, there are combinations of medicines with each other or with alcohol.

The articles involved are summarised in Table 8.5. 83% of the articles involved are medicines, particularly painkillers but tranquillisers (including anti-depressants and sleeping pills) are also significant. A single medicine is involved in 72% of cases. Mixing medicines accounts 8% of cases. And medicines mixed with alcohol a further 8% of cases. Alcohol is involved in a total of 16% of cases, half of them in combination with a medicine.

Table 8.6 shows the articles involved in fatal cases at different ages. The only significant difference between age bands is the increase in the proportion of cases involving alcohol from 5% in the 15-29 band to 26% in the 45-64 band.

Solvent abuse deaths are reported by coroners to St George's Medical School who monitor numbers of deaths. In 1996, they recorded 40 cases within the home and a similar number outside the home. The deaths from solvent abuse can be termed strictly 'accidental' but are very different in nature to the other data recorded here as they involve clear abuse. There are included purely for the sake of completeness.

Table 8.5 Poisoning - Articles Involved in Fatal Cases

	Numbers	Percentage
Painkiller	313	40%
Tranquilliser	175	23%
Other Medicine	150	20%
Alcohol	100	13%
Household chemical	26	3%
Petroleum/solvent	4	1%
Total Articles Recorded	768	100%
Painkiller alone	259	39%
Painkiller + Alcohol	11	2%
Painkiller + Tranquilliser	18	3%
Painkiller + Other Medicine	15	2%
Tranquilliser alone	121	18%
Tranquilliser + Alcohol	19	3%
Tranquilliser + Other Medicine	17	3%
Other Medicine alone	101	15%
Other Medicine + Alcohol	17	3%
Alcohol alone	53	8%
Household chemical	26	4%
Petroleum/solvent	4	1%
Total Fatal Poisoning Cases	661	100%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 8.6 Poisoning - Articles Involved in Fatal Cases in Different Age-Bands

	0-14	15-29	30-44	45-64	65	Total
Medicine alone	4	166	173	91	47	481
Alcohol alone	0	3	21	26	3	53
Medicine + Alcohol	0	8	16	17	6	47
Medicine + Medicine	0	20	15	10	5	50
Household Chemical	0	4	12	8	2	26
Petroleum/Solvent	1	2	0	1	0	4
Total	5	203	237	153	63	661
Medicine alone	80%	82%	73%	59%	75%	73%
Alcohol alone		1%	9%	17%	5%	8%
Medicine + Alcohol		4%	7%	11%	10%	7%
Medicine + Medicine		10%	6%	7%	8%	8%
Household Chemical		2%	5%	5%	3%	4%
Petroleum/Solvent	20%	1%		1%		1%
	100%	100%	100%	100%	100%	100%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

8.5 Accident Reduction

There are two targets for accident reduction: non-fatal accidents among very young children and fatalities among the adults. The two groups have to be approached very differently.

Non-Fatal Accidents

There are 30,000 accidents among Infants & Toddlers involving poisoning. A third of the accidents are serious (or very serious) but there was only 1 death in the age-band in 1995. 60% of the accidents involved medicines and 20% household chemicals such as bleach or lavatory cleaner. There has been a downward trend in the accidents, presumably as a result of the increased use of CRCs and bubble packs.

Continued publicity is needed to make parents more aware and more careful with medicines and chemicals. DTI has TV adverts in circulation and places leaflets in GPs surgeries and advice in the mother and baby press periodically to help reduce the hazards of household chemicals. Also a good deal has been done to minimise the risk of medicines- See conclusions section, table 18.1.

There are also about 1,400 cases of alcohol poisoning among children in the 10-14 age-band. This is part of a much of a much wider concern on under-age drinking which the Government is tackling through its initiatives on alcohol (see conclusions section).

Fatal Accidents

The combination of alcohol with medicines can lead to an accidental overdose. Combinations of drugs which the consumer does not realise are dangerous also cause accidental death.

The Medicines Control Agency leads work in reducing accidents in this area and the steps being taken are mentioned elsewhere in this report (see conclusions section table 18.1).

9. CARBON MONOXIDE

This section covers poisoning by carbon monoxide from faulty heating appliances and poisoning by carbon monoxide from internal combustion engines when this happens at home. It does not include poisoning by carbon monoxide resulting from (uncontrolled) house fires.

9.1 Poisoning by Heating Appliances

In a previously published DTI study (Poisoning by Carbon Monoxide from Domestic Heating Appliances - 1995) analysis of deaths data showed that there had been an average of 50 deaths per year resulting from carbon monoxide from faulty domestic appliances between 1985 and 1992. This study also estimated that there were 170 non-fatal cases which were serious enough to result in a hospital visit but it was also recognised that there are probably many non-fatal cases where the victim recovers once they get into fresh air and where the cause is never identified. There was no significant trend in deaths though there was possibly a slight upward trend in the number of non-fatal cases.

We have carried out a further analysis of the deaths but there were insufficient data for any analysis of the non-fatal accident (HASS) figures. Table 9.1 shows the type of appliance, fuel, cause of accident and age distribution for the fatal cases with a comparison of the data between 1985-92 with that for 1995. The results of the two analyses are reasonably consistent bearing in mind the size of the 1995 sample.

Gas fuelled fires and central heating boilers cause the majority of the deaths but solid fuel is also significant. Most accidents are readily preventable if flues are cleaned regularly and equipment maintained properly.

Table 9.1 shows the age distribution of the victims. Most of them are older people who tend to stay at home keeping themselves warm and with little ventilation. The death rate for those over 65 is three times the average for the rest of the population.

Table 9.1 Carbon Monoxide Poisoning by Appliances - Fatal Cases

	Number of Cases		% excluding Unspecified	
	1985-92	1995	1985-92	1995
APPLIANCE				
Fire/Heater	168	13	52%	48%
CH Boiler	96	9	30%	33%
Water Heater	21	4	7%	15%
Cooker/Stove/Grill	37	1	11%	4%
Unspecified	50	18		
FUEL				
Gas	205	16	68%	62%
Solid	69	8	23%	31%
Oil	5		2%	
Paraffin	9		3%	
LPG	14	2	5%	8%
Not known	70	19		
CAUSE				
Blocked flue	76	11	30%	45%
Fault in flue	59	2	23%	8%
Poor ventilation	16	4	6%	17%
Poor maintenance	26	3	9%	13%
Fault in appliance	113	2	44%	8%
Misuse	2	3	1%	13%
Unspecified	18	20		
Total	372	45	100%	100%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 9.2 Carbon Monoxide Poisoning by Appliances - Age Distribution Of Victims

	Number of Cases		% excluding Unspecified		Rate per million per year
	1985-92	1995	1985-92	1995	
AGE OF VICTIM					
0-4	17	0	5%	0%	5
5-14	13	0	3%	0%	2
15-25	50	8	13%	18%	9
26-40	57	8	15%	18%	6
41-64	96	5	26%	11%	8
65-74		7		15%	
75+	138	17	37%	40%	18
Unspecified	1				
Total	372	45	100%	100%	100%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

9.2 Accidental Poisoning by Car Exhaust Fumes

In 1995, there were 11 fatalities where the victim was poisoned by carbon monoxide from a vehicle exhaust. All the victims were male and 8 of them were between 35 and 45, the others were 67, 70 and 81.

In two cases, the victim fell asleep with the engine running after drinking. This is a good example of how alcohol can be seen as increasing the risk of an accident. There are no details for four cases, but in the remaining five cases, the victim appears to have been working on his car with the garage door closed or the door blew to and he did nothing about it.

9.3 Accident Reduction

The cure for deaths by poisoning with carbon monoxide from heating appliances is regular maintenance by a qualified engineer, particularly cleaning of the flue, and correct ventilation. Increased use of CO detectors may also help although such warning devices should not be seen as an alternative to regular maintenance/safety checks. There has already been considerable effort on CO safety awareness by the DTI and other government departments. Most recently DTI has targeted publicity to the regions of the country where death rates are highest.

We believe most adults are aware that car exhausts contain carbon monoxide, which is potentially dangerous, but clearly some people do not realise just how easily it can creep up on them and the relatively low level that can be fatal. Some publicity efforts on car maintenance perhaps alongside DIY, may prove helpful.

10. ASPHYXIATION

There is a group of accidents, often described as suffocation, which are defined in the non-fatal accidents (HASS) code as follows:

600	Strangulation - external neck constriction
610	External blocking of mouth and nose
620	Choking or object in the throat
630	Drowning/near drowning/submersion
640	Chest compression preventing breathing
688	Other suffocation/choking/asphyxiation
699	Unspecified suffocation/choking/asphyxiation

Choking has already been dealt with in Section 5. The remaining categories included 157 deaths in 1995 and a separate analysis of these cases was therefore considered useful.

This group of accidents accounts for 1 in 20 accidental home deaths and 1 in 15,000 non-fatal cases.

10.1 Accident Types

From the accident description we reclassified the accidents into 15 types which are the basis of the analysis below. The results are summarised in Table 10.1.

Table 10.1 Asphyxiation - Types of Accident and Severity

	Trivial/ Minor	Serious/Very Serious	Fatal
Smoke or fumes from uncontrolled fire	2,450	620	-
Drowning in swimming pool	140	40	3
Drowning in bath	140	10	31
Drowning elsewhere	70	130	22
Solvent/chemical fumes	90	40	-
Constriction of neck (not hanging)	80	-	13
Fumes from cooking/chip pan	50	40	-
Hanging	-	40	42
Fumes from appliance	50	10	-
Sexual gratification experiment	-	-	24
Postural asphyxiation	-	-	20
Object in nose	40	-	-
Other	20	10	2
Total	3,130	930	157

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

The only significant number of non-fatal accidents is caused by smoke or fumes from uncontrolled fires. These have been dealt with elsewhere so that we have not considered non-fatal accidents any further in this section.

10.2 Fatal Cases

Table 10.2 shows the distribution of fatal accidents per year by age band, type and gender. Three quarters of the victims are male. This is possibly due to younger males indulging in riskier behaviour than females.

Table 10.2 Asphyxiation - Type and Age Band

	0-4	5-14	15-29	30-64	65-74	75+	Total
Hanging	1	10	6	17	-	1	35
Sexual gratification experiment	-	-	12	11	1	-	24
Drowning in bath	6	1	2	9	-	-	18
Drowning in swimming pool	1	-	-	-	1	-	2
Drowning elsewhere	4	-	1	5	1	2	13
Postural asphyxiation	5	1	1	5	1	1	14
Constriction of neck (not hanging)	5	3	1	1	2	-	12
Other	1	-	-	1	-	-	2
Total Male	23	15	23	49	6	4	120
Hanging	2	1	1	3	-	-	7
Sexual gratification experiment	-	-	-	-	-	-	-
Drowning in bath	3	-	1	5	-	4	13
Drowning in swimming pool	-	-	-	1	-	-	1
Drowning elsewhere	3	-	-	3	2	1	9
Postural asphyxiation	2	1	1	1	-	1	6
Constriction of neck (not hanging)	1	-	-	-	-	-	1
Other	-	-	-	-	-	-	-
Total Female	11	2	3	13	2	6	37
Total	34	17	26	62	8	10	157

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

10.3 Accident Reduction

Many drownings are in the bath. Children can drown in the bath due to inadequate supervision and half of the adult cases involve alcohol. Some reduction may be achieved with promotion of greater supervision for children and more care with alcohol as discussed elsewhere. There is also a continuing handful of cases each year where toddlers drown in garden ponds or paddling pools, which are addressed through DTI's garden safety campaigns.

Postural asphyxiation is where the victim falls or lies in such a way that they cannot breathe. There are 20 such cases 7 of which involve children, usually in bed. Half of those involving Adults also involve alcohol.

There are 13 cases involving constriction of the neck, tangling with child's harness or dressing gown cord etc, and 8 of them involve children.

Although those deaths due to hanging and sexual gratification are defined as 'accidental death' their underlying causes lie well beyond the traditional areas of accident prevention.

11. CHILDREN PLAYING

In this section we consider accidents only to children under 14. The analysis covers a range of activities at home. 90% of the accidents are described simply as "Children Playing" but we have also included "Jumping", "Play Fighting", "Swimming" etc.

11.1 Age-Band

Table 11.1 shows that there are nearly 220,000 accidents each year involving children playing, that is 1 in 11 of all accidents, but 1 in 3 of accidents involving children of 14 and under. This is hardly surprising since children spend a great deal of their time playing.

There are similar numbers of children in the three age groups shown, but the numbers of cases decline with age. The level of severity is similar in all three age groups with 90% trivial or minor.

The number of fatalities is 1 in 6 of all fatalities involving children of 14 and under. Two thirds of the fatalities involve children of 4 or under.

Boys are 40% more likely than girls to have non-fatal accidents. The non-fatal cases have a similar level of severity for both genders but boys are twice as likely to be killed. Boys tend to be associated with more risky behaviour as mentioned elsewhere.

Table 11.1 Playing - By Age Band and Severity

Age Band	Trivial	Serious	Fatal
0-4	114,000	13,000	15
5-9	54,000	5,000	6
10-14	27,000	3,500	6
Total	195,000	21,500	27
	90%	10%	11
Male	59%	57%	67%
Female	41%	43%	33%
Total	100%	100%	100%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

11.2 Location

The breakdown of cases by location is shown in Table 11.2. For Infants & Toddlers, 78% of accidents happen inside the home. For the older age groups, over 40% happen outside in the garden or drive.

Table 11.2 Playing - Location When Accidents Occur

	0-4	5-9	10-14
Home indoors	78%	58%	58%
Home outdoors	22%	42%	42%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

11.3 Articles involved

Table 11.3 shows the articles involved in playing accidents. The article is not specified in many of the cases. Where it is specified, it shows that accidents happen during normal play and do not involve any specifically dangerous article.

Table 11.3 Playing - Article Involved

	0-4	5-9	10-14
Concrete/asphalt surface	5%	15%	14%
Other surface + path/pedestrian pavement	5%	12%	11%
Child or person < 16	4%	8%	12%
Fence	3%	5%	6%
Floor	7%	5%	5%
Lawn/playing field	7%	6%	7%
Door	7%	3%	2%
Mat/carpet	6%	3%	2%
Other/unspecified	56%	45%	41%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Children just fall over or run into each other. Many of these accidents will also have been classified as falls as discussed earlier. As children get older they are more likely to be outside and injure themselves on a hard surface.

The fatalities happen for a variety of reasons without any obvious pattern. Two children started a fire using matches or a lighter. A girl climbed on the cooker and ignited her clothes. A wall fell on another child. One boy of 3 decided to bathe his 7 month old sister and drowned her. One boy of 2 drowned in a hole being dug for a post. Seven cases involved a child becoming entangled in a rope or belt during play and being asphyxiated.

Of the 18 cases studied involving Infants & Toddlers, the low level of supervision by adults looks to be a common factor.

11.4 Accident Reduction

Almost all the accidents happened while children are playing in a normal manner and it will be difficult to reduce the number of cases. Half of them involve falls, and actions to reduce these have been discussed in an earlier chapter. A further 30% involve striking against or being struck by something. All these falling and striking accidents occurred during normal play. Preventing these types of accident is not straightforward as restricting normal play could have a detrimental effect on child development.

Some accidents are caused by inadequate supervision. DTI is currently researching the role of adult supervision in accident prevention for younger children.

12. FOOD PREPARATION

This section includes accidents which happen when the victim is preparing hot or cold food. In the case of children, it also includes cases where someone else is preparing the food.

There were about 62,000 non-fatal cases per year or 1 in 40 of all non-fatal accidents. Food Preparation accounts for 1 in 120 of the fatalities.

12.1 Age Bands

Table 12.1 shows that accidents occur across a wide spread of ages but concentrating on those in the age range 20 to 49. Women are on average 50% more likely to have accidents than men and the disparity between men and women increases with age only partly due to changing demographics. 65% of the fatalities involved men.

Only 5% of these accidents are serious (or very serious) and there were 26 fatal cases.

Table 12.1 Food Preparation - Age Bands and Severity

	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Total	% Serious/ Very Serious	% Female
0-4	600	20		620	1%	3%	30%
5-9	1,800	80		1,880	3%	4%	45%
10-14	3,100	130	1	3,231	5%	4%	46%
15-19	4,600	170	2	4,772	8%	4%	54%
20-29	12,700	420	5	13,125	21%	3%	59%
30-39	11,900	510	3	12,413	20%	4%	66%
40-49	9,300	460	1	9,761	16%	5%	67%
50-64	8,100	490	2	8,592	14%	6%	68%
65-74	4,100	290	3	4,393	7%	7%	69%
75+	3,300	490	9	3,799	6%	13%	77%
Total	59,500	3,060	26	62,586	100%	5%	57%

Source: Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

12.2 Injuries

Almost 90% of the injuries are cuts/lacerations or burns/scalds with the latter somewhat more likely to be serious.

Table 12.2 Food Preparation - Injuries

	Trivial/ Minor	Serious/ Very Serious	Total	% of Total	% Serious/ Very Serious
Cuts/lacerations	36,000	1,200	37,200	60%	3%
Burns/scalds	17,100	1,300	18,400	29%	7%
Other	6,400	600	7,000	11%	9%
Total	59,500	3,100	62,600	100%	5%

Source: Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

All the fatalities were the consequence of an uncontrolled fire started while cooking. About half them resulted from asphyxiation and half from burns and scalds.

12.3 Articles Involved

Knives are the cause of 42% of non-fatal accidents and 19% are associated with cooking oil or frying, particularly of chips. Out of the 26 fatalities, 12 resulted from the use of a chip pan, 7 from some other saucepan and 5 from clothes catching fire. Alcohol was mentioned in three cases in addition to the cooking appliance.

Table 12.3 Food Preparation - articles Involved

Article	Cases	% of Total Cases
Knife	26,300	42%
Oil/fat/frying pan/chip pan	11,800	19%
Drinking glass	10,300	16%
Tin can	9,000	14%
Hot liquid/kettle	6,500	10%
Food processor kitchen tool	3,600	6%
Dish/plate...	3,400	5%
Total	70,900	*113%

Source: Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

From the description of the accidents on the database, the most common accident seems to happen when people are cutting vegetables or meat with a knife which slips and cuts their finger. About 2,000 accidents happen while people are trying to separate items of frozen food, usually with a knife. Opening tin cans, particularly corned beef, is another frequent source of injury. The latter are both packaging related accidents.

Also, when washing dishes, some accidents occur by people cutting themselves on broken glass or china.

Apart from the serious fires where fat catches fire, there are many injuries where hot fat splashes onto exposed skin, particularly the hands, resulting in a burn.

12.4 Accident Reduction

These accidents mostly happen in the course of very mundane activities. Some accidents with knives will be difficult to prevent.

A key area to tackle is the danger of hot fat in chip pans etc and telling people what to do when it ignites. The Home Office continue to promote safety awareness in this area (see Table 18.1).

Targeting clothing fires, which caused 8 Fatalities while preparing food, has been discussed elsewhere.

Improved product packaging for food items to aid both openability and disposal are also likely to be beneficial. DTI has been promoting safer packaging and has published a good deal of research over the last few years, much of it carried out in collaboration with industry.

The remaining 80% of cases happen in a much less dramatic way during very ordinary cooking activities and will be more difficult to focus on. However, general safety awareness should bring some reduction with it. For example, DTI's 1998 publicity campaign to help prevent burns and scalds to young children focused on the kitchen.

13. GARDENING

This section covers all accidents while gardening. These cases are also included in section 16 which covers all accidents in the garden.

There are 51,000 accidents while gardening, almost 1 in 50 of all (non-fatal) accidents. There are only 5 Fatalities or 1 in 700 of all accidental domestic deaths.

13.1 Age-Bands

Details of cases are shown in Table 14.1. Of the 51,000 accidents, 10% are serious (or very serious) but the proportion of serious case increases substantially with age.

85% of the accidents involve people over 30 and 61% involve men. The proportion of men is higher in the younger age bands.

Table 13.1 Gardening - Age Band and Severity

Age Band	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Cases	% Serious/ Very Serious	% Male Victims
0-19	2,500	120	0	2,700	5%	5%	-
20-29	4,200	230	0	4,430	9%	5%	71%
30-49	17,000	1,200	1	18,200	35%	7%	67%
50-64	13,200	1,300	2	14,500	28%	10%	62%
65-74	6,000	1,000	1	7,000	13%	17%	57%
75+	3,700	1,000	1	4,800	9%	27%	52%
Total	46,600	4,800	5	51,330	100%	10%	61%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

13.2 Articles

The articles involved in gardening accidents are summarised in Table 13.2. Accidents, in the main, involve very ordinary garden objects including plants themselves or paths etc. Very few involve chemicals or insecticides, but there are a significant number, which involve electric strimmers.

Table 13.2 Gardening - Articles Involved

	Trivial/Minor	Serious/Very Serious
Hedge/bush etc	6,300	250
Garden strimmers	5,300	450
Tool, garden	4,900	150
Dust, fine particle	3,599	0
Tree	3,000	300
Lawn etc	2,200	600
Brick/stone etc	2,100	300
Bee/wasp etc	2,200	100
Concrete surface	1,400	600
Lawnmower	1,500	300
Other/unspecified	14,000	1,750
Total	46,600	4,800

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

There were 5 fatalities. One was caused when a garden strimmer ignited the grass and the machine. Two involved using petrol on a bonfire. All three of these people died of burns. One person died from extensive lacerations when he fell into a lawn mower and the fifth fell from a tree while cutting branches and was hanged by the rope used to aid the work.

13.3 Injuries

The types of injuries are mainly cuts and lacerations, abrasions and scratches etc. The majority of the serious (or very serious) cases are fractures, usually sustained in a fall, and more common among older people. Falls are considered elsewhere.

Table 13.3 Gardening - Injuries

	Trivial/Minor	Serious/Very Serious
Cut/laceration	16,000	600
Abrasion/scratch	4,000	200
Bruise/contusion	4,000	150
Choking, or object in eye, ear or nose	2,000	80
Puncture or wound	2,000	60
Fracture	-	2,800
Unspec tenderness/swelling	12,000	500
Other	6,600	210
Total	46,600	4,800

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

13.4 Accident Reduction

These accidents are mostly minor. Greater use of protective gloves would certainly save some of the cuts and abrasions and some of the other injuries. Protective shoes might also help.

The nature of the fatalities will vary from year to year. Discouraging the use of accelerants on already ignited fires may have some benefit here, for example injuries from barbecues. DTI promote a range of tool hire messages many of which would help reduce cuts to hands and face. Also DTI are currently researching barbecue accidents, as this is an area which has shown a steady increase over the past few years, as barbecues have gained in popularity.

14. DIY

In this section, we consider DIY accidents in the home. These are classified on the database in two broad groups, "Electrical repairs/maintenance/DIY" and "Other DIY/carpentry/repairing/decorating". We attempted to break this down into sub-groups such as painting and decorating, carpentry, plumbing, electrical repairs, roof repairs etc. In practice, we found that many of the accidents were described as "hit thumb with hammer" or "lacerated hand with Stanley knife" so that it was not possible to classify them in this way. We found that it was more useful to classify cases by mechanism and type of injury, although ladders have been shown separately, as they are a significant group.

There are 85,000 DIY accidents which result in a trip to A&E every year, and this accounts for 1 in 30 of all (non-fatal hospital treated) home accidents. There are at least an equal number requiring GP treatment, and a further number treated at home. There were 7 deaths or 1 in 500 of all accidental domestic fatalities, excluding ladder accidents.

There are 16,000 falls from all kinds of ladder per year, or 1 in 160 non-fatal accidents. There were 35 fatalities in 1995 associated with falls from ladders, 1 in 100 of all accidental domestic deaths. (However the average annual death rate for ladders over the last 10 years in the UK is around 50).

14.1 Age-Band

Table 14.1 shows the number of DIY accidents (excluding ladder accidents) by age-band. 86% of the accidents involve victims between 20 and 64.

Only 9% of cases are serious (or very serious) but the proportion increases with age and rises to 72% for those over 75.

85% of the victims are male and the proportion is almost independent of age. Three quarters of the victims are men between 20 and 64.

All the deaths are in the age range 31 to 74 and 6 out of 7 of them are men.

Table 14.1 DIY - Age & Severity

Age Band	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Cases	% Serious/ Very Serious	% Male Victims
0-14	1,500	150	0	1,650	2%	9%	76%
15-19	3,300	150	0	3,450	4%	4%	86%
20-29	16,500	1,100	0	17,600	21%	6%	83%
30-49	34,400	3,300	3	37,700	45%	9%	86%
50-64	15,000	1,700	2	16,700	20%	10%	85%
65-74	4,700	950	2	5,650	7%	17%	90%
75+	1,600	450	0	2,050	2%	22%	82%
Total	77,000	7,800	7	84,800	100%	9%	85%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Table 14.2 and shows the number of ladder accidents by age-band. Almost two thirds involve Adults with only small numbers in the other age-bands. 19% are serious (or very serious), with the proportion increasing with age. There are 35 fatalities but none with Children or Infants & Toddlers.

65% of the victims are men, and the proportion is constant with age, except for a decline among Older People (75+) where the proportion of women in the population is higher.

Table 14.2 Ladders - Age & Severity

	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Cases	% Serious/ Very Serious	% Male Victims
Infants & Toddlers	800	100		900	3%	11%	68%
Children	1,100	300		1,400	9%	22%	60%
Adults	8,800	1,600	12	10,400	66%	15%	66%
Older People (65-74)	1,000	500	14	1,500	10%	33%	64%
Older People (75+)	1,000	500	9	1,500	10%	33%	51%
Total	12,700	3,000	35*	16,000	100%	19%	65%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

*The average death rate over 16 years is higher at around 50

14.2 Articles

The articles involved in the non-fatal accidents, excluding ladders, are shown in Table 14.3. The common ones are exactly what one would expect for DIY cases. Knives cut fingers and dust particles get in eyes, but only a small proportion are serious. Falling onto surfaces or being hit by falling bricks/blocks are less common but tend to be more serious.

6,700 of the accidents involved electrically powered articles but this includes the article being repaired (e.g. a washing machine) as well as the tool being used to repair it. There were 4,200 accidents involving power tools including electric drills, circular saws, sanders etc. Overall 11% of these were serious (or very serious) but circular saws are more hazardous with half the 500 cases being serious or very serious.

Table 14.3 DIY - Articles Involved

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Knife	13,000	500	13,500	16%	4%
Dust/particle	10,400	400	10,800	13%	4%
Screwdriver etc	4,300	500	4,800	6%	10%
Saw	3,600	400	4,000	5%	10%
Brick/concrete block etc	3,000	800	3,800	4%	21%
Ladder	3,200	400	3,600	4%	11%
Floor	3,000	600	3,600	4%	17%
Hammer	2,900	300	3,200	4%	10%
Concrete surface	2,100	600	2,700	3%	22%
Screw	2,100	150	2,250	3%	7%
Metal bar etc	2,000	200	2,200	3%	9%
Window	2,000	100	2,100	2%	5%
Drill	1,700	200	1,900	2%	10%
Other	23,700	2,650	26,350	31%	10%
Total	77,000	7,800	84,800	100%	9%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

Three of the seven deaths involved electrocution when the victim was repairing equipment without turning it off (a heating unit and 2 washing machines). One man fell from a ladder while clearing guttering. Three men fell from furniture (not steps or ladders) while decorating.

The accident descriptions provide little useful information on precisely how the accident happened. Where there is any comment, it usually describes the injury not the action leading to it.

Also, ladder fatalities are very significant. The youngest victim of a ladder fatality was 43 and only 4 of them were under 56. In depth DTI research on ladders and step-ladders provides a deeper insight into how such accidents happen. The activity at the time of the accidents is usually unknown. Where it is specified it is, not surprisingly, DIY and decorating. The location is usually "Home - unspecified indoors or outdoors" but 20% of cases are specified as "Garden" or "Drive/yard" suggesting that DIY was being carried out on the outside of the house.

14.3 Mechanism

The common mechanisms are consistent with the above. Cuts, dust in the eye, falls from ladders and striking against, or being struck by, objects are all common. Falls from ladders are likely to be serious.

Electric shock is not very common but is more likely to be serious than other DIY injuries.

Table 14.4 DIY Accidents - Mechanism

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Cut/tear by sharp edges	24,000	1,000	25,000	30%	4%
Object body in eye	11,000	500	11,500	14%	4%
Struck by object	9,700	1,500	11,200	13%	13%
Fall from ladder	5,400	1,600	7,000	8%	23%
Skin puncture	5,200	400	5,600	7%	7%
Struck against object	4,000	500	4,500	5%	11%
Fall between levels	2,900	600	3,500	4%	17%
Pinch or crush	1,800	200	2,000	2%	10%
Electric shock	500	170	670	1%	25%
Other	12,500	1,330	13,830	16%	10%
Total	77,000	7,800	84,800	100%	9%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

14.4 Injuries

The injuries are consistent with the above, with cuts and lacerations predominating though few of them are serious.

There are a significant number of fractures and these tend to be serious. The numbers are consistent with the numbers of serious falls of one type and another.

Table 14.5 DIY Accidents - Injury

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Cut/laceration	32,900	1,700	34,600	41%	5%
Fracture	3,000	4,000	7,000	8%	57%
Bruise/contusion	6,500	400	6,900	8%	6%
Object in eye	6,600	200	6,800	8%	3%
Abrasion/scratch	4,000	300	4,300	5%	7%
Tenderness/swelling	15,000	500	15,500	18%	3%
Other	9,000	700	9,700	11%	7%
Total	77,000	7,800	84,800	100%	9%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

14.5 Accident Reduction

The target audience for safety messages is men aged 20 to 64, although getting the message through to women may also be effective if they encourage men to work more safely.

It will be very difficult to focus a message on knives and other cutting implements, which are a ubiquitous part of DIY, but the numbers are such that attention needs to be drawn to the hazard. There are, however, several areas which could be more effectively targeted.

DTI continues to promote DIY safety in March/April each year, with leaflets and TV adverts, and has produced millions of separate advice booklets on step ladders and leaning ladders.

15. THE KITCHEN

Many of these accidents have been covered in earlier sections, particularly section 12 on Food Preparation, but this section considers all cases whether or not related to food. It provides a useful background to any safety initiative aimed at the kitchen.

There are nearly 250,000 accidents specified as being in the kitchen, 1 in 10 of all accidents in the home. There were also 63 deaths, 1 in 50 of all domestic fatalities. These cases do not include those where the location is not specified, or where it is simply given as "home – indoors".

15.1 Age-Band

Table 15.1 shows the number of accidents by age-band. Almost 60 % of cases involve Adults. 14% of cases are serious or very serious but the proportion is higher for Infants & Toddlers and for Older People.

Almost 60% of the victims are female and the proportion increases with age, reflecting first of all that women spend more time in the kitchen and secondly that in the older age-bands there are fewer men. For Infants & Toddlers, nearly 60% of cases are boys, once again boys show up as being more accident prone.

Deaths are predominantly among Adults.

Table 15.1 The Kitchen - Age & Severity

Age Band	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Cases	% Serious/ Very Serious	% Female Victims
Infants & Toddlers	40,000	7,200	5	47,200	19%	15%	43%
Children	22,800	2,900	3	25,700	10%	12%	49%
Adults	128,000	16,100	21	144,100	58%	11%	62%
Older People (65-74)	12,000	2,700	9	14,700	6%	18%	71%
Older People (75+)	11,500	6,900	25	18,400	7%	38%	79%
Total	214,300	35,800	63	250,000	100%	14%	59%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

15.2 Articles

The most common articles, out of the 600 mentioned, involved in non-fatal kitchen accidents are shown in Table 15.2. Falling onto floor surfaces are the most common and kitchen floors tend to be hard. These also tend to be the most serious. Knives and glasses both cause substantial numbers of cuts. Hot fat causes many injuries but they tend to be less serious. Tin cans cause a large number of minor cuts.

Table 15.2 The Kitchen - Articles

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Floor surface	30,100	9,900	40,000	17%	25%
Knife	31,400	3,700	35,100	15%	11%
Glass	14,900	550	15,450	6%	4%
Hot fat/chip pan	9,400	700	10,100	4%	7%
Kettle/saucepan	7,700	800	8,500	4%	9%
Tin can	7,700	300	8,000	3%	4%
Hot tea/coffee	5,200	250	5,450	2%	5%
Cooker	4,400	570	4,970	2%	11%
Corned beef tin	3,300	20	3,320	1%	1%
Other	100,200	19,010	119,210	48%	8%
Total	214,300	35,800	250,200	100%	10%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

There were 63 fatal accidents in the kitchen as detailed in Table 15.3. 52 of them are related to fires or explosions related to a cooker, usually gas. 15 of them explicitly involve a chip pan but many of the other 21, where the detailed origin is not stated, may also have involved a chip pan. 14 deaths result from clothes ignited by a cooker.

The victims are predominantly Adults (16-64), particularly when incidents involve chip pans, and Older people where clothing fires were involved.

Up to the age of 64, 20 of the 28 victims were male even though they spend less time in the kitchen. Among older people, two thirds of victims are female which reflects their proportion of the population.

Table 15.3 The Kitchen - Fatalities

	Infants & Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
Fire from chip pan	2	1	10	2		15
Other cooker fire		1	2	2	5	10
Fire of unknown origin			5		6	11
Clothes ignited by cooker	2		1	2	9	14
Explosion from unlit gas		1	1		2	4
Fell				3	2	5
Other	1		2		1	4
Total	5	3	20	9	25	63

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

15.3 Mechanism

As far as non fatal injuries are concerned, cuts with knives, tins and broken glass are the most common, but are very seldom serious. Falls are also common, usually onto the floor and are more often serious. Burns from hot fat and liquids are frequent, and a relatively high proportion are serious (or very serious).

Table 15.4 The Kitchen - Mechanism

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Cut/tear by sharp edges	72,000	2,100	74,100	31%	3%
Fall	34,600	5,500	40,100	17%	14%
Burn or Scald	21,100	4,200	24,300	10%	17%
Struck by object	11,300	1,000	12,300	5%	8%
Skin puncture	4,400	150	4,550	2%	3%
Object ear/nose	3,900	300	4,200	2%	7%
Object in eye	3,100	100	3,200	1%	3%
Choking	1,700	170	1,870	1%	9%
Other	62,200	22,280	84,480	34%	26%
Total	214,300	35,800	250,000	100%	10%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

15.4 Accident Reduction

Kitchens are hazardous places with almost a quarter of a million accidents per year. Although only 14% are serious or very serious, there are 63 deaths with most of the latter involving fires. Kitchens are used for much more than cooking, and less than half the accidents are directly related to the preparation or eating of food.

Although 60% of the victims are women, any safety message needs to be directed equally at men as they are the ones who have the more serious, and particularly the fatal, accidents. The victims are of all ages, though the proportion of Infants & Toddlers is higher than their proportion of the population.

DTI's published reports, on burns and scalds, and clothing fires provide a valuable insight into such accidents. DTI's 1998 publicity campaign on burns and scalds was targeted on accidents in the kitchen. Publicity materials from this campaign are still in circulation.

16. THE GARDEN

In this section, we consider all accidents in the garden. This includes the garden itself with paths and drive plus greenhouse, garage and potting shed. Many of these have been considered in earlier sections, particularly in section 13, on Gardening, but this section considers all cases outside the house whether or not related to the activity of gardening.

There are nearly 465,000 accidents specified as being in or around the garden, 1 in 5 of all accidents. There were also 46 deaths, 1 in 75 of all domestic fatalities. These cases do not include those where the location is not specified or where it is simply given as "home - unspecified indoors or outdoors".

16.1 Age-Band

Table 16.1 shows the number of accidents by age-band. Almost half the cases involve Adults but almost a quarter involve Children and 14% Infants and Toddlers. A relatively small proportion involve Older People.

18% of cases are serious or very serious, with the proportion about constant at 17% up to the age of 64, but rising for Older People, especially those over 75.

Almost 60% of the victims are male and the proportion declines with age, reflecting first of all that men probably spend more time in the garden, and secondly that in the older age-bands there are more women. For Infants & Toddlers, the figure once again show boys to have a higher accident rate than girls.

Deaths are predominantly among Adults.

Table 16.1 The Garden - Age & Severity

	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Cases	% Serious/ Very Serious	% Male Victims
Infants & Toddlers	57,100	9,700	5	66,800	14%	15%	61%
Children	84,300	18,100	4	102,400	22%	18%	61%
Adults	192,400	36,200	20	228,600	49%	16%	62%
Older People (65-74)	25,100	9,200	9	34,300	7%	27%	46%
Older People (75+)	21,300	10,800	8	32,100	7%	35%	36%
Total	380,200	84,000	46	464,200	100%	18%	58%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

16.2 Articles

The most common articles, out of the 600 mentioned, involved in the non-fatal garden accidents are shown in Table 16.2. Falling onto hard surfaces, drives, paths etc are the most common and these also tend to be the most serious. Only a small percentage of cases are caused by specifically garden items. Vegetation, including plants, branches, twigs etc, accounts for only 4% of cases. Garden tools, including knives, lawnmowers and strimmers, account for only 2% of cases.

Table 16.2 The Garden - Articles Involved

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Hard surface	105,400	30,380	135,780	29%	22%
Stairs/steps	29,600	6,600	36,200	8%	18%
Lawn	22,000	7,700	29,700	6%	26%
Vegetation	16,900	2,340	19,240	4%	12%
Dust, grit etc	14,000	410	14,410	3%	3%
Dog/cat	9,600	600	10,200	2%	6%
Garden tool	7,700	800	8,500	2%	9%
Insect	7,900	110	8,010	2%	1%
Other	167,100	35,060	202,160	44%	17%
Total	380,200	84,000	464,200	100%	14%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

There were 46 fatal accidents in and around the garden, as detailed in Table 16.3. 11 of them were poisoning by carbon monoxide from car exhausts in the garage. These have been discussed in Section 9. Seven of the cases involved drowning, 5 of them being small children.

Two boys were entangled in swings, and two more were crushed by falling walls. Three men were struck by branches of tree they were attending to.

Others include three men who died in sexual gratification experiments (mentioned elsewhere in this report) in the garage, and two people who collapsed in the garden and died of exposure.

Of the 46 cases only 6 were women.

Table 16.3 The Garden - Fatalities

	Infants & Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
Car exhaust in garage			7	2	2	11
Drowning	5		2			7
Fall/crushing		2		1	2	5
Hanging		2	1	1		4
Bonfire ignited clothes			1	1	1	3
Struck by tree/branch			2	1		3
Electricity			1	1	1	3
Other			6	2	2	10
Total	5	4	20	9	8	46

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

16.3 Mechanism

Analysis of the mechanism showed that 44% of accidents involve falls, 20% are concerned with striking by or against objects and 12% involve cuts and lacerations or skin puncture. Other mechanisms were also consistent with the articles discussed above and add nothing further to the conclusions.

16.4 Accident Reduction

There are large numbers of non-fatal accidents in and around gardens. These involve mainly those under 65, and 60% of the victims are men.

The question of falls has been discussed in Section 6 and in the context of the garden, will be difficult to reduce. As discussed in earlier sections, it will be difficult to reduce cuts and abrasions except where specific activities are involved. The use of protective gloves while gardening may help.

Garden safety needs to be focused on those under 65, but the greatest opportunity for saving accidents in the garden relates to the fatalities, and there are several areas which might be more effectively targeted. The Royal Society for the Prevention of Accidents have recently promoted garden safety awareness for adults.

DTI has already conducted two garden safety campaigns on the hazards associated with children, in particular highlighting the potential dangers from garden ponds, power tools and barbecues. One feature of accidents to children in the garden is a significant increase during the school summer holidays, which makes this a good time to draw attention to the problem.

17. THE BATHROOM

In this section, we consider accidents in the bathroom or toilet. Many of these accidents have already been considered in earlier sections, particularly sections concerned with falls and drowning.

There are nearly 76,000 accidents in the bathroom or toilet, 1 in 30 of all accidents. There were also 70 deaths, more than 1 in 50 of all domestic fatalities. These cases do not include those where the location is not specified or where it is simply given as "home – indoors".

17.1 Age-Band

Table 17.1 shows the number of accidents by age-band. Half the cases involve Adults but almost 30% involve Children and 15% Infants and Toddlers. A relatively small proportion involve Older People.

19% of cases are serious (or very serious), with the proportion fairly constant at 9-13% up to the age of 64, but rising dramatically to 31% and 43% respectively for Older People.

Overall, 46% of the victims are male, but this starts at 58% for Infants & Toddlers (boys always have a higher accident rate) and fall to 27% for Older People (75+) reflecting the changing demographics.

Half the deaths are among Adults but with a substantial number of Infants & Toddlers.

Table 17.1 The Bathroom - Age & Severity

	Trivial/ Minor	Serious/ Very Serious	Fatal	Total	% of Cases	% Serious/ Very Serious	% Male Victims
Infants & Toddlers	12,500	1,900	12	14,400	19%	13%	58%
Children	7,100	700	1	7,800	10%	9%	52%
Adults	33,100	4,900	35	38,000	50%	13%	45%
Older People (65-74)	4,000	1,800	4	5,800	8%	31%	44%
Older People (75+)	5,600	4,200	18	9,800	13%	43%	27%
Total	62,300	13,500	70	75,800	100%	19%	46%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

17.2 Articles

The most common articles, out of the 400 mentioned, involved in the non-fatal bathroom accidents are shown in Table 17.2. The bath is the most common article and 60% of these accidents are falls in the bath, 22% an impact with the bath and 10% burns or scalds. Accidents in the bath itself tend to be serious with 28% of them serious (or very serious).

Table 17.2 The Bathroom - Articles Involved

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Bath	17,300	3,300	20,600	28%	16%
Floor	4,800	3,000	7,800	10%	38%
Shower	3,300	500	3,800	5%	13%
Cotton wool bud	2,700	40	2,740	4%	1%
Hand basin	1,900	300	2,200	3%	14%
Tap	1,700	100	1,800	2%	6%
Radiator	1,000	200	1,200	2%	17%
Razor	1,000	0	1,100	1%	0%
Unknown	6,100	2,500	8,600	12%	29%
Other	22,400	3,560	25,960	34%	14%
Total	62,300	12,000	74,300	100%	18%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

There are 70 fatal accidents in the bathroom as detailed in Table 17.3. 29 of them involved drowning, 9 with Infants & Toddlers (probably linked to poor supervision), 3 with Older People (linked to infirmity) and 16 with Adults, at least 6 of which were linked to alcohol.

In 17 cases, the victim died from scalds. Older People seem to be particularly vulnerable.

In 7 cases, the victim fell in the bathroom. Again this tends to be Older People. Bathroom floors can be slippery when wet and are usually hard.

In two cases, the victim died from CO poisoning from a faulty water heater.

Of the 70 cases, 36 were men and 24 women, but while most of the Adults were men, all but one of the Older People (75+) were women.

Table 17.3 The Bathroom - Fatalities

	Infants & Toddlers	Children	Adults	Older People (65-74)	Older People (75+)	Total
Drowned in bath	9	1	16		3	29
Scalded in bath	3		3	3	8	17
Fell in bathroom			3		4	7
CO from heater			2			2
Electrocuted			2			2
House fire			1		2	3
Collapsed			3		1	4
Other			5	1		6
Male	8	1	23	3	1	36
Female	4		12	1	17	34
Total	12	1	35	4	18	70

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

17.3 Mechanism

Analysis of the mechanism showed that 42% of accidents involve falls, 17% are concerned with striking by or against objects, and 10% involve cuts and lacerations and only 4% result from burns or scalds.

Table 17.4 The Bathroom - Mechanism of Injury

	Trivial/ Minor	Serious/ Very Serious	Total	% of Cases	% Serious/ Very Serious
Falls	24,550	6,660	31,210	42%	21%
Striking against object	11,000	1,900	12,900	17%	15%
Cuts/lacerations	6,700	400	7,100	10%	6%
Burns/scalds	2,100	600	2,700	4%	22%
Other	17,950	3,940	21,890	29%	18%
Total	62,300	13,000	75,800	100%	18%

Source : Metra Martech Analysis of non-fatal accidents (HASS) and accidental deaths (HADD)

17.4 Accident Reduction

There are almost 76,000 accidents in bathrooms. These involve Infants & Toddlers and adults of all ages.

Scalding is common, and could be much reduced by lowering the thermostat setting for the delivery of hot water or by fitting anti-scald devices to taps. Anti-slip mats could be used in baths and on bathroom floors, particularly where Older People are involved. Similarly, grab handles by baths reduce the risk of falling.

DTI burns and scalds safety materials, whilst concentrating on the kitchen, do highlight the bathroom as a second potential risk area. Also the recent DTI falls campaign makes references to the dangers in the bathroom.

18. CONCLUSIONS

The research has identified the key areas, activities and mechanisms associated with home accidents. It shows that the Government's activity on regulations, safety standard and codes of practice should continue to have a downward pressure on accidents, in particular dealing with new hazards as they emerge. However, the research also shows a key area to be that of enabling people to help themselves. One way to achieve this is to ensure consumers are more aware of risks in the home and how to cope with them. Too frequently consumers underestimate the level of risk and accidents result. This can happen due to lack of knowledge, or by an inability to see how risk can easily be reduced by small changes in behaviour.

More vulnerable groups such as older people and children feature strongly in the statistics. There is also evidence as mentioned in the Acheson Report and re-enforced in the Government's White Paper "Saving Lives - our Healthier Nation" that health inequalities also extend to accidents. Published DTI research on burns and scalds reflects this, as does published material on fires in the home, particularly involving children.

The key areas for action to reduce home accidents in the future are shown in Table 18.1, along with reference to actions in hand by Government, and the proportion of accidents which relate to each topic. The table includes those areas where there are substantial numbers of deaths or non-fatal accidents, and where this is a reasonable prospect of effective action. The areas listed collectively account for 90% of accidental deaths and nearly 60% of non-fatal home accidents which require hospital treatment. The table provides a useful checklist for all those involved in home safety as well as list of the actions the Government has in hand. (The data for the table are based on 1996 for non-fatal and 1995 for fatal).

Table 18.1 Overview of Major Home Accidents

Area of Concern	Actions in Hand	% All Fatal	% All Non-Fatal
Falls - particularly in older people	<p>DTI, in partnership with the HEA, launched (May 1999) a 3-year strategy to cut the number of falls amongst older people and has published research on Falls. DETR and DTI are doing research on stairs and falls. Also DETR are preparing a Home Safety Design Guide aimed at designers. The Guide will also include an audit method of assessing the designed-in safety of homes.</p> <p>Also:</p> <ol style="list-style-type: none"> 1. The HEA has recently compiled a DH funded survey of accident prevention initiatives aimed at older people in England and has published a directory of initiatives together with a more detailed book of detailed case studies. 2. DH is currently funding a project to develop a set of guidelines for primary care teams on the prevention of falls in older people. 3. DH has commissioned the HEA to develop a framework for practice to prevent falls in this age group by promoting physically active lifestyles. The framework will be evidence-based and consist of a guide to planners of falls prevention programmes at local level and an information directory to co-ordinate action across the country. 4. Following on from the new NHS White Paper, the Department of Health is drawing up a series of National Service Frameworks (NSFs) which will set national standards of service for the NHS and reduce unacceptable variations. An NSF for older people is currently under preparation and will feature falls prevention. 	52	42
Accidental Poisoning - by medicines	<p>To tackle the problem of accidental paracetamol and aspirin overdose, the Government introduced legislation, which came into force on 16 September 1998, restricting the pack sizes of paracetamol and aspirin. The maximum pack size available over the counter of these products is 16 tablets/capsules in general retail outlets and 32 in pharmacies. The aim is to reduce residual quantities of these analgesics in the home and thereby reduce the risk of serious toxicity in overdose. These measures have been supplemented by a statutory requirement for paracetamol products to carry warnings on overdose and the importance of not taking them with other medicines containing paracetamol. The Medicines Control Agency is monitoring the impact of the new pack sizes on public health and will review the effectiveness of the measures once sufficient data has been collected.</p> <p>All medicine labelling in the UK is required to include the warning statement 'Keep out of the reach of children'. A new guideline from the European Commission on Readability on the labelling of medicinal products for human use, has expanded this warning to 'Keep out of the reach and sight of children'.</p> <p>Child-Resistant Closures. UK legislation requires that all solid oral dosage forms of aspirin and paracetamol be supplied with child-resistant packaging. In addition, there is an ethical requirement placed on pharmacists to dispense all medicines in containers with child-resistant closures.</p>	20	-
Uncontrolled Fires	<p>A newly created National Community Fire Safety Centre will be targeting the main causes of uncontrolled fires through education and publicity methods. This includes running high profile national television campaigns & the development of a Toolbox which will provide Fire Brigades with materials to address a widerange of target audiences and include a variety of topics e.g. smoke alarms, escape behaviour and how to avoid chip pan fires. DTI is pressing for a new control to make all cigarette lighters child resistant and is working with business to improve warnings on matches. DTI also has run a campaign on clothing fires. The DTI 1988 Furniture Flammability regulations are continuing to produce benefits and save lives in house fires.</p>	11	-
DIY - including ladders	<p>DIY guide circulated via DIY stores and by the DTI. Also DTI is very active in improving European safety standards on a wide range of DIY equipment through the circulation of research and direct representation.</p>	1	5
Choking on Food and Drink	<p>The NHS Home Healthcare Guide has two sections which address the management of choking in the home. In addition the second edition gives advice on the ABC of resuscitation which supports the management of choking. The Guide was launched to mark NHS50 and over two million copies have been issued. NHS Direct - this now covers 40% of the population and there is immediate help available over the telephone for a number of emergencies, including choking. 999 Ambulance Service - many services now operate a policy of keeping the caller on line and giving advice on the management of the emergency until the ambulance arrives. The operators are trained in giving first aid advice over the phone, which includes advice on choking as well as other emergencies.</p>	5	-

Area of Concern	Actions in Hand	% All Fatal	% All Non-Fatal
Packaging Accidents	DTI research developed with the industry is now in wide circulation helping to provide safer packaging.	-	4
Burns and Scalds - particularly among pre-school children	DTI research published in June 1999 - TV adverts and leaflets in circulation. 1998 DTI campaign supported by DSS to help target vulnerable families on low incomes.	2	2
Clothing Fires	DTI regulations control nightwear and DTI safety campaign targeted at vulnerable groups - older women and teenage girls - TV adverts still running.	1	-
Garden Accidents	DTI run annual garden safety campaigns and leaflets and TV adverts are circulated every year in the summer months.	-	2
Drowning - garden ponds and baths	Recent DTI garden safety initiatives have drawn attention to garden ponds and drain hazards. And DTI has recently started new research into drowning in the home and garden.	2	-
CO Poisoning - faulty appliances and car	DTI, HSE and DETR all active. DTI running TV adverts, targeting consumers via fuel bills and also targeted areas of the country where death rates are highest.	2	-
Poisoning by household chemicals, toiletries and medicines of pre-school children	DTI posters and leaflets available plus TV advert in use. Leaflets are periodically put in GPs surgeries.	-	1
Solvent abuse*	HEA runs campaigns to reduce problem - there is legislation (regulating the sale of products to under 18s), and butane gas lighter refills are banned from sale to those under 18. DTI action to improve warning labels is being taken forward by industry (published note: a similar number of incidents occur outside the home and measures in hand will also reduce these).	1	-
Electric Blankets	DTI research in Autumn 1999, and ran a safety campaign at the same time.	0.4	1

Source : non-fatal accidents (HASS), analysed by Metra Martech

The above table simply highlights main actions taken by central Government. Added to this are the efforts of many in local authorities (e.g. Trading Standards, Environmental Health, the Fire Service and, those directly involved in health care), as well as the efforts of the voluntary sector (the Royal Society for the Prevention of Accidents and the Child Accident Prevention Trust) and business (for example the fuel industry's efforts on CO).

The 40% of non-fatal accidents not covered by Table 18.1 consist of mostly minor injuries.

Table 18.2 Other Home Accidents

Type of Accident	% All Non-Fatal
In the kitchen - Serious and Fatal cases are already covered under Burns & Scalds and Clothing Fires. The rest are cuts on knives and tins, some falls and a miscellany of other causes.	10
In the bathroom - Serious and Fatal cases are already covered under Falls and Drowning.	3
Knives - mostly minor cuts some of which are included in Kitchen and DIY.	2
Cut/laceration/puncture - mostly minor involving knives, broken bottles, needles etc or anything sharp, jagged or pointed.	13
Pinch/crush - mostly minor, fingers in doors etc.	3
Walking into things - walking into furniture, doors, walls, trees etc,- mostly minor.	12
Dropping - usually small objects onto themselves or other people, mostly minor.	6
Bumping into/hitting - each other (particularly children while playing).	2
Foreign body - nose, ear, eye or stomach, mostly minor. Choking is a separate issue.	5
Pets/animals - mostly minor bites or scratches mainly by dogs but some by cats.	4
Bite/sting - by insect, usually minor.	3

Source : non-fatal accidents (HASS), analysed by Metra Martech

18.1 Immediate Conclusions

The key immediate conclusions of the research are that:

- i) Most home accidents happen when people are doing ordinary, everyday things such as going up or down stairs, cooking, gardening or when children are playing. Only a small proportion of accidents occur when doing obviously hazardous things such as climbing ladders.
- ii) Accidents usually happen as a result of complex interaction between many factors: social and economic circumstances; immediate personal circumstances (e.g. alcohol consumption, tiredness), safety awareness and knowledge, as well as the mechanism of the accident itself. The underlying causes are often difficult to determine and are in any case outside the scope of this study. However, human behaviour seems to be the most common immediate cause of home accidents, with faulty products and poor design having an ever decreasing influence. Addressing behavioural factors directly through safety awareness efforts should therefore have a measurable effect on reducing accident rates. Reductions could also be made by addressing the more underlying factors which increase the chance of accidents.
- iii) If present trends continue, home accident deaths will decline, but non-fatal injuries will rise.

Whilst analysis of the statistical data made it very difficult to assess the role high consumption of alcohol may have played in home accidents, the issue of alcohol and accidents is part of the government's developing alcohol strategy. (Also, DTI research on fireworks shows that alcohol consumption has a role in the potential number of firework

injuries and has led the 1999 firework safety campaign to tackle the problem of people drinking alcohol whilst lighting fireworks).

18.2 Overall Home Accident Reduction

The DTI will continue to use a blend of promoting industry codes of practice, voluntary safety standard, and if necessary, but as a last resort, formal regulations. Work to promote safety built in at the design stage will also continue, with emphasis on promoting the huge amount of ergonomics data produced over the last few years, for children, adults, and anticipating new ergonomics data shortly, for older people and, in due course, disabled people.

The DTI's safety awareness programme will continue to involve as many partners in the work as possible. The new tool kits for firework safety, the resource pack for falls and the regional activity on carbon monoxide are all recent developments in line with this aim.

In future, all DTI consumer product safety research, publicity standards making and general policy development will draw on this research to ensure efforts are being applied to the most important areas. New research planned on drownings and the DTI's three year commitment for tackling falls in older people are good examples of how this new approach is already being put into practice.

The DTI will also continue to promote a joined-up Government approach to reducing home accidents, to ensure that the worrying upwards trends in non-fatal accidents can be tackled as well as the more welcome decreasing trends in home accident deaths.

APPENDIX A - DATA ON TRENDS

Table A.1 CORRELATION OF ACCIDENT MECHANISMS BETWEEN 1982 AND 1996

Classification used in Trend Analysis	non-fatal accidents (HASS)			accidental deaths (HADD)
	1982 - 1988	1989 - 1992	1993 - 1996	1983 - 1995
Fall from stairs	Fall from stairs	Fall from stairs	Fall on/from stairs	Fall from stairs
Fall on/from ladder	Fall from ladder	Fall on/from ladder	Fall from ladder	Fall from ladders
Fall from building	Fall from building	Fall from building	Fall from building	Fall from building
Fall on same level	Fall on same level	Fall on same level	Fall on same level	Fall on same level
Other fall	Other fall Fall between two levels	Other fall Fall between two levels	Other fall	Other fall Fall between two levels
Cutting	Cutting/piercing	Cutting/piercing	Cut/tear (sharp) Puncture	Cutting/piercing
Striking	Struck by object/person Struck by falling object	Struck - moving object Struck - static object Struck - unspecified	Struck - moving object Struck - static object Struck - other	Struck - moving object Struck - static object Struck - unspecified
Burn	Burn from controlled source Burn involving uncontrolled fire	Burn involving uncontrolled fire Burn - hot liquid/gas accident Burn - hot object/controlled heat	Thermal effect	Burn involving uncontrolled fire Burn - hot liquid/gas accident Burn - hot object/controlled heat
Foreign Body	Foreign body	Foreign body	Foreign body	Foreign body
Poisoning	Poisoning from inhalation /ingestion	Poisoning from inhalation/ingestion	Suspected poisoning	Poisoning from inhalation /ingestion
Electricity and Radiation	Electric current Radiation	Electric current Radiation	Electric/radiation	Electric current
Over Exertion	Over exertion	Over exertion	Acute over exertion	Over exertion
Other	Other Unknown Animal bite/sting Suffocation/choking Explosion Drowning	Other Unknown Animal bite/sting Jamming/pinching Cold burn/ exposure Chemical burns Suffocation/choking Explosion Drowning	Other Bite/sting Chemical effect Pinch/crush (blunt) Suffocation Struck - explosion	OtherUnknown Bite/sting Jamming/pinching Cold burn/ exposure Chemical burns Suffocation/choking ExplosionDrowning

Table A.2 NUMBERS OF ACCIDENTS AND DETAILED MECHANISM IN 1996(HASS) and 1995(HADD)

Code	Description	HASS non-fatal accidents	HADD accidental deaths	HASS non-fatal accidents	HADD accidental deaths
Falls					
120	Fall on/from stairs/steps	257,434	459	24.2%	29.6%
130	Fall on/from ladder/stepladder	25,613	36	2.4%	2.3%
140	Fall from building/structure	11,386	57	1.1%	3.7%
110	Fall on same level(slip/trip/stumble)	329,875	65	31.0%	4.2%
160	Other fall from one level to another	182,726	66	17.2%	4.3%
170	Slip/trip no fall involved	20,563	0	1.9%	0.0%
199	Unspec fall	220,454	868	20.7%	56.0%
150	Fall off/with (motor)cycle/horse/etc	16,416	0	1.5%	0.0%
		1,064,467	1,551	100.0%	100.0%
Cutting					
310	Cut/tear by sharp edge(s)	273,926	16	82.3%	69.6%
320	Skin puncture by foreign body/spike/shot	59,078	7	17.7%	30.4%
		333,005	23	100.0%	100.0%
Striking					
210	Struck by/against moving object	145,056	9	26.4%	45.0%
220	Struck against stationary object	301,478	0	54.9%	0.0%
230	Struck by/against moving person/animal	50,842	0	9.3%	0.0%
240	Struck against stationary person/animal	1,651	0	0.3%	0.0%
299	Unspec striking accident	50,573	11	9.2%	55.0%
		549,600	20	100.0%	100.0%
Burn					
900	Burn/scald by hot liquid/steam/gas	56,909	24	62.7%	5.6%
910	Burn by hot object/appliance	23,866	8	26.3%	1.9%
920	Burn by controlled fire/flame	4,646	27	5.1%	6.3%
930	Any injury from uncontrolled fire/flames	4,147	369	4.6%	85.4%
950	Burn from explosion of gas,firework,etc	1,171	4	1.3%	0.9%
		90,739	432	100.0%	100.0%
Choking or object in eye, ear or nose					
500	Foreign body in eye	53,549	0	39.7%	0.0%
510	Foreign body in ear/nose/other orifice	48,019	2	35.6%	1.3%
520	Foreign body in stomach/digestive system	20,870	0	15.5%	0.0%
620	Choking on foreign body in throat/etc	12,538	152	9.3%	98.7%
		134,976	154	100.0%	100.0%
Poisoning					
700	(Suspected) poisoning by solid	14,266	14	40.2%	1.9%
710	(Suspected) poisoning by liquid	18,682	80	52.6%	10.9%
720	(Suspected) poisoning by gas	1,325	71	3.7%	9.7%
730	Allergic reaction	288	0	0.8%	0.0%
799	(Suspected) poisoning by unspec form	960	568	2.7%	77.5%
		35,520	733	100.0%	100.0%

Table A.2 NUMBERS OF ACCIDENTS AND DETAILED MECHANISM IN 1996(HASS) and 1995(HADD) (continued)

Code	Description	HASS non-fatal accidents	HADD accidental deaths	HASS non-fatal accidents	HADD accidental deaths
	Electricity				
1000	Shock or burn from electric current	2,611	18	41.5%	100.0%
1010	Radiation effect(inc sunburn, arc-eye)	3,667	0	58.2%	0.0%
1020	Effect of sound waves/noise	19	0	0.3%	0.0%
		6,298	18	100.0%	100.0%
	Over exertion				
1100	Acute over exertion	47,597	0	100.0%	
	Other				
400	Any attack by animal/insect	73,402	3	21.1%	0.7%
300	Pinch/crush between blunt surfaces	80,698	3	23.2%	0.7%
800	Corrosion,chemical burn by solid	768	0	0.2%	0.0%
810	Corrosion,chemical burn by liquid	4,070	0	1.2%	0.0%
820	Corrosion,chemical burn by gas	154	0	0.0%	0.0%
830	Corrosion,chemical burn by unspec form	422	0	0.1%	0.0%
888	Other chemical effect	672	0	0.2%	0.0%
940	Exposure/hypothermia/cold burn	192	65	0.1%	14.6%
988	Other thermal effect	595	0	0.2%	0.0%
999	Unsp thermal effect	1,171	0	0.3%	0.0%
9088	Other mechanism	47,827	11	13.8%	2.5%
600	Strangulation-external neck constriction	58	3	0.0%	0.7%
610	External blocking of mouth & nose	19	6	0.0%	1.4%
640	Chest compression preventing breathing	19	0	0.0%	0.0%
688	Other suffocation/choking/asphyxiation	3,590	65	1.0%	14.6%
699	Unspec suffocation/choking/asphyxiation	749	29	0.2%	6.5%
200	Struck by blast/objects from explosion	384	1	0.1%	0.2%
630	Drowning/near drowning/submersion	134	55	0.0%	12.4%
630	Unknown mechanism	132,845	203	38.2%	45.7%
		347,770	444	100.0%	100.0%
	TOTAL	2,609,971	3,375		

Table A.3 POPULATION DATA FOR UNITED KINGDOM

Age Band	Sex	Population in Thousands			Proportion of Population			Mean Change/year		Overall Change	
		1987	1996	2,010	1987	1996	2010	'87-'96	'96-'10	'87-'96	'96-'10
0-4	Male	1,871	1,932	1,727	3.3%	3.3%	2.9%	0.37%	-0.76%	3.3%	-10.6%
	Female	1,780	1,838	1,643	3.1%	3.1%	2.7%	0.36%	-0.76%	3.3%	-10.6%
	Total	3,651	3,770	3,370	6.4%	6.4%	5.6%	0.36%	-0.76%	3.3%	-10.6%
5-14	Male	3,595	3,897	3,654	6.3%	6.6%	6.0%	0.93%	-0.45%	8.4%	-6.2%
	Female	3,404	3,697	3,464	6.0%	6.3%	5.7%	0.96%	-0.45%	8.6%	-6.3%
	Total	6,999	7,594	7,117	12.3%	12.9%	11.8%	0.95%	-0.45%	8.5%	-6.3%
15-64	Male	18,758	19,253	20,323	32.9%	32.8%	33.7%	0.29%	0.40%	2.6%	5.6%
	Female	18,672	18,924	19,783	32.8%	32.2%	32.8%	0.15%	0.32%	1.3%	4.5%
	Total	37,430	38,177	40,107	65.7%	64.9%	66.4%	0.22%	0.36%	2.0%	5.1%
65-74	Male	2,238	2,307	2,508	3.9%	3.9%	4.2%	0.34%	0.62%	3.1%	8.7%
	Female	2,829	2,744	2,788	5.0%	4.7%	4.6%	-0.34%	0.12%	-3.0%	1.6%
	Total	5,067	5,051	5,297	8.9%	8.6%	8.8%	-0.04%	0.35%	-0.3%	4.9%
75+	Male	1,281	1,457	1,733	2.2%	2.5%	2.9%	1.53%	1.35%	13.7%	18.9%
	Female	2,525	2,735	2,772	4.4%	4.7%	4.6%	0.92%	0.10%	8.3%	1.3%
	Total	3,806	4,192	4,504	6.7%	7.1%	7.5%	1.13%	0.53%	10.1%	7.4%
75-84	Male	1,096	1,184	1,355	1.9%	2.0%	2.2%	0.89%	1.03%	8.1%	14.4%
	Female	1,943	1,939	1,884	3.4%	3.3%	3.1%	-0.02%	-0.20%	-0.2%	-2.8%
	Total	3,038	3,123	3,239	5.3%	5.3%	5.4%	0.31%	0.26%	2.8%	3.7%
85+	Male	185	273	462	0.3%	0.5%	0.8%	5.27%	4.96%	47.4%	69.4%
	Female	582	796	888	1.0%	1.4%	1.5%	4.08%	0.82%	36.7%	11.5%
	Total	768	1,069	1,350	1.3%	1.8%	2.2%	4.36%	1.88%	39.3%	26.3%
TOTAL	Male	27,742	28,846	29,945	48.7%	49.1%	49.6%	0.44%	0.27%	4.0%	3.8%
	Female	29,210	29,938	30,450	51.3%	50.9%	50.4%	0.28%	0.12%	2.5%	1.7%
	Total	56,953	58,784	60,395	100.0%	100.0%	100.0%	0.36%	0.20%	3.2%	2.7%

Table A.4 ESTIMATED TOTAL OF NON-FATAL DOMESTIC ACCIDENTS FROM - HASS - 1982 TO 1996

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
All Falls	871,224	875,793	906,775	887,843	762,654	821,750	963,758	1,075,363	1,003,340	1,056,495	954,311	1,052,248	952,827	956,081	1,064,468
Falls stairs	205,102	199,683	213,167	208,507	187,955	196,941	233,563	254,443	242,135	252,282	233,007	261,124	236,985	229,268	257,434
Falls Ladders	22,274	21,582	20,874	24,682	22,713	23,167	24,087	27,084	25,612	26,600	25,004	28,652	25,075	23,709	25,613
Falls buildings	10,515	8,734	10,767	10,471	8,161	8,369	12,506	13,597	14,582	14,364	13,715	10,909	10,022	8,994	11,386
Fall same level	282,491	283,720	270,960	254,754	223,251	232,848	275,946	300,358	282,701	310,384	273,920	302,872	275,362	283,322	329,875
Other falls	350,841	362,075	391,007	389,430	320,575	360,424	417,656	479,881	438,309	452,865	408,665	448,692	410,788	440,160	440,160
Cutting	382,673	401,464	374,847	347,849	385,397	360,581	373,571	399,672	348,266	346,503	317,070	349,490	305,957	278,733	333,005
Striking	314,737	337,398	345,495	337,658	370,584	395,724	460,391	408,566	366,457	382,527	386,383	567,499	581,889	532,570	549,600
Burns	110,567	100,276	98,552	90,816	89,525	91,258	103,101	108,336	97,929	96,653	86,932	104,693	96,493	88,713	90,739
Choking, or object in eye, ear or nose	74,696	79,373	91,161	96,342	96,641	96,295	114,108	127,917	128,340	133,285	131,052	146,540	128,698	120,301	134,976
Poisoning	62,160	48,421	55,212	45,150	41,486	39,749	41,847	50,471	47,504	52,820	51,737	55,962	51,006	39,649	35,520
Electricity	3,367	5,130	4,869	6,923	6,593	4,312	5,809	6,643	6,436	6,460	5,486	7,505	7,089	6,453	6,298
Over Exertion	38,254	22,048	17,130	19,479	24,783	25,323	26,270	29,024	27,621	27,873	24,117	30,267	33,529	37,547	47,597
Other/unknown	133,127	215,222	236,486	318,265	217,522	254,016	316,332	330,480	371,795	338,371	308,756	289,353	263,547	213,035	347,769
Total	1,990,804	2,085,126	2,130,527	2,150,323	1,995,186	2,089,007	2,405,185	2,536,472	2,397,689	2,440,987	2,265,845	2,603,559	2,421,035	2,273,081	2,609,972

Source : Meitra Martech

Table A.5 DEATHS IN HOME ACCIDENTS - FROM HADD - 1983 TO 1995

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All Falls	2,793	2,812	2,785	2,607	2,413	2,464	2,416	2,324	2,288	2,235	2,130	2,062	1,551
Falls stairs	583	587	547	553	519	500	509	539	525	515	497	490	459
Falls Ladders	53	60	44	49	48	45	34	50	45	54	44	43	36
Falls buildings	107	75	74	58	80	65	65	80	63	61	58	54	57
Fall same level	154	130	161	127	116	97	115	104	88	98	81	75	65
Other falls	1,896	1,960	1,959	1,820	1,650	1,757	1,693	1,551	1,567	1,507	1,450	1,400	934
Cutting	17	25	7	14	15	14	13	9	14	16	13	12	23
Striking	54	53	39	50	41	45	23	32	30	34	27	27	20
Burns	622	639	605	672	577	626	565	565	520	495	492	475	432
Choking, or object in eye, ear or nose	290	277	322	273	296	263	300	263	256	245	254	243	154
Poisoning	518	525	480	506	451	460	433	516	527	558	509	512	733
Electricity	44	28	39	26	26	29	15	25	24	30	21	20	18
Over Exertion	3	0	0	7	1	2	1	1	6	3	3	3	0
Other/unknown	250	234	208	225	196	217	192	206	199	218	210	210	424
Total	4,591	4,593	4,485	4,383	4,016	4,120	3,958	3,941	3,864	3,834	3,659	3,564	3,375

Source : Meitra Martech

Table A6 DEATHS IN HOME ACCIDENTS (from HADD) PER 100,000 ACCIDENTS (from HASS) - 1983 TO 1995

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All Falls	319	310	314	342	294	256	225	232	217	234	202	216	162
Falls stairs	292	275	262	294	264	214	200	223	208	221	190	207	200
Falls Ladders	246	287	178	216	207	187	126	195	169	216	154	171	152
Falls buildings	1,225	697	707	711	956	520	478	549	439	445	532	539	634
Fall same level	54	48	63	57	50	35	38	37	28	36	27	27	23
Other falls	524	501	503	568	458	421	353	354	346	369	323	345	227
Cutting	4	7	2	4	4	4	3	3	4	5	4	4	8
Striking	16	15	12	13	10	10	6	9	8	9	5	5	4
Burns	620	648	666	751	632	607	522	577	538	569	470	492	487
Choking, or object in eye, ear or nose	365	304	334	282	307	230	235	205	192	187	173	189	128
Poisoning	1,070	951	1,063	1,220	1,135	1,099	858	1,086	998	1,079	910	1,004	1,849
Electricity	858	575	563	440	603	499	226	388	372	547	280	282	279
Over Exertion	14	0	0	28	4	8	3	4	22	12	10	9	0
Other/unknown	116	99	65	103	77	69	58	55	59	71	73	80	199
Total	220	216	209	220	192	171	156	164	158	169	141	147	148

Source : Meitra Martech

Table A7 CASES PER YEAR IN 1995 OR 1996 WITH PROJECTIONS TO 2010 FOR HASS AND HADD

	HASS				HADD			
	Cases per Year		% of Total		Cases per Year		% of Total	
	1996	2010	1996	2010	1996	2010	1996	2010
All Falls	1,034,732	1,214,170	40.90%	40.28%	1,897	1,209	52.00%	44.97%
Falls stairs	255,498	311,854	10.03%	10.19%	470	377	13.89%	15.73%
Falls Ladders	26,643	31,043	1.05%	1.01%	40	30	1.18%	1.25%
Falls buildings	12,040	13,860	0.47%	0.45%	53	32	1.56%	1.33%
Fall same level	300,170	342,976	11.78%	11.21%	66	27	1.97%	1.11%
Other falls	447,768	532,580	17.57%	17.41%	1,129	613	33.41%	25.56%
Cutting	311,427	243,827	12.22%	7.97%	14	15	0.42%	0.62%
Striking	542,808	784,980	21.30%	25.66%	21	8	0.63%	0.33%
Burns	92,736	85,254	3.64%	2.79%	446	287	13.20%	11.97%
Choking, or object in eye, ear or nose	144,479	206,852	5.67%	6.76%	207	130	6.12%	5.43%
Poisoning	43,680	37,044	1.71%	1.21%	583	714	17.24%	29.74%
Electricity	7,047	9,214	0.28%	0.30%	18	8	0.52%	0.35%
Over Exertion	35,786	50,185	1.40%	1.64%	66	66	1.95%	2.76%
Other/unknown	327,330	427,675	12.85%	13.98%	271	350	8.02%	14.59%
Total	2,547,801	3,059,585	100.00%	100.00%	3,381	2,400	100.00%	100.00%

Source : Meitra Martech

Table A.8 PROJECTED CHANGE IN NUMBER OF CASES FROM 1996 TO 2010 FOR HASS AND HADD

	Change per Year		Overall Change - 1996 to 2010	
	HASS	HADD	HASS	HADD
All Falls	1.31%	-3.2%	17.3%	-36.3%
Falls stairs	1.68%	-1.6%	22.1%	-19.6%
Falls Ladders	1.24%	-2.0%	16.5%	-24.9%
Falls buildings	1.13%	-3.6%	15.1%	-39.4%
Fall same level	1.07%	-6.6%	14.3%	-60.1%
Other falls	1.43%	-4.4%	18.9%	-45.7%
Cutting	-1.75%	0.2%	-21.7%	3.4%
Striking	3.62%	-7.1%	44.6%	-63.0%
Burns	-0.60%	-3.1%	-8.1%	-35.6%
Choking or object in eye, ear or nose	3.48%	-3.3%	43.2%	-37.0%
Poisoning	-1.18%	1.7%	-15.2%	22.5%
Electricity	2.38%	-5.3%	30.8%	-52.7%
Over Exertion	3.21%	0.1%	40.2%	0.7%
Other/unknown	2.37%	2.2%	30.7%	29.1%
Total	1.52%	-2.4%	20.1%	-29.0%

Source : Metra Martech

Table A.9 FALLS, BURNS AND POISONINGS PER YEAR IN 1995 OR 1996 WITH PROJECTIONS FOR 2010 - HASS AND HADD - BY AGE BAND

	HASS				HADD			
	Cases per Year		Cases per Million		Cases per Year		Cases per Million	
	1996	2010	1996	2010	1996	2010	1996	2010
Falls								
0-4	260,642	256,646	69,136	76,151	7	2	2	1
5-14	152,074	170,714	20,026	23,985	5	6	1	1
15-64	377,377	462,158	9,885	11,523	299	272	8	7
65-74	73,129	85,557	14,478	16,153	253	152	50	29
75+	170,032	235,371	40,561	52,256	1,308	674	312	150
All Falls	1,033,254	1,210,446	18,927	21,657	1,872	1,106	32	18
Burns								
0-4	32,437	28,013	8,604	8,312	49	33	13	10
5-14	11,290	10,850	1,487	1,524	25	23	3	3
15-64	42,920	41,559	1,124	1,036	162	131	4	3
65-74	2,994	2,322	593	438	63	33	12	6
75+	2,824	2,394	674	532	160	80	38	18
All Burns	92,465	85,139	7,226	6,643	459	300	8	5
Poisoning								
0-4	36,051	27,689	9,563	8,216	2	0	1	0
5-14	4,371	5,697	576	800	3	1	0	0
15-64	2,906	4,425	76	110	496	693	13	17
65-74	213	315	42	59	33	19	7	4
75+	274	624	65	138	39	25	9	5
All Poisonings	43,816	38,749	745	642	573	738	10	12

Source : Metra Martech

Table A.10

PROJECTED CHANGE IN NUMBER OF FALLS, BURNS AND POISONINGS FROM 1996 TO 2010
FOR HASS, LASS AND HADD - BY AGE

		Change per Year		Overall Change - 1996 to 2010	
		HASS	HADD	HASS	HADD
Falls					
	0-4	-0.11%		-1.5%	
	5-14	0.83%		12.3%	
	15-64	1.46%	-0.6%	22.5%	-9.2%
	65-74	1.13%	-3.3%	17.0%	-39.7%
	75+	2.35%	-4.3%	38.4%	-48.5%
All Falls	1.14%	-3.4%	17.1%	-40.9%	
Burns					
	0-4	-1.04%	-2.7%	-13.6%	-2.7%
	5-14	-0.28%	-0.5%	-3.9%	-0.5%
	15-64	-0.23%	-1.4%	-3.2%	-1.4%
	65-74	-1.80%	-4.1%	-22.4%	-4.1%
	75+	-1.17%	-4.5%	-15.2%	-4.5%
All Burns	-0.59%	-2.8%	-7.9%	-2.8%	
Poisoning					
	0-4	-1.87%		-23.2%	
	5-14	1.91%		30.3%	
	15-64	3.05%	2.3%	52.2%	39.7%
	65-74	2.83%	-3.8%	47.8%	-44.0%
	75+	6.04%	-3.0%	127.2%	-36.8%
All Poisonings		-0.87%	1.7%	-11.6%	28.7%

Source : Metra Martech

APPENDIX B - SUMMARY DATA

Table B1 ANNUAL INCIDENCE OF NON-FATAL AND FATAL ACCIDENTS BY AGE OF VICTIM

Mechanism	All Non-Fatal Accidents (000s)					Serious & Very Serious Accidents (000s)					Fatal Accidents							
	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total
Fall on same level	81	59	132	39	118	429	6	9	23	14	54	100	-	-	12	19	140	170
Fall on stairs	51	32	178	22	34	317	7	4	28	7	15	64	2	-	235	162	630	1,029
Fall from ladder	1	1	22	4	3	31	0	0	5	1	1	8	-	1	18	26	30	75
Fall from building	3	4	5	0	0	13	1	1	2	0	0	4	2	1	47	15	45	109
Fall between two levels	93	44	40	11	42	230	14	10	7	4	20	57	3	-	12	17	137	168
Trip/stumble	1	3	17	2	1	24	0	0	2	0	0	3	-	-	-	-	-	-
Choking	2	1	7	1	1	12	0	0	1	0	0	1	18	1	61	20	53	153
Burns & Scalds	31	11	38	2	2	84	5	1	3	0	0	8	5	1	13	8	36	63
Uncontrolled Fires	0	0	3	0	0	4	-	-	1	-	0	1	36	22	122	54	135	369
Poisoning - Solid/Liquid	29	3	1	-	0	33	9	2	0	-	-	11	1	4	593	28	35	661
CO from Appliance	-	-	1	-	-	1	-	-	-	-	-	-	2	1	17	8	17	45
CO from Exhaust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	1	11
Drowning in Bath	-	-	-	-	-	-	-	-	-	-	-	-	9	1	17	-	4	31
Hanging	-	-	-	-	-	-	-	-	-	-	-	-	3	11	27	-	1	42
Sexual Gratification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	1	-	24
Drowning (excl Bath)	1	1	3	-	-	5	-	-	1	-	-	1	8	-	10	4	3	25
Other Asphyxiation	-	-	-	-	-	-	-	-	-	-	-	-	14	5	11	2	3	35
Striking by/against object	110	119	267	22	29	547	7	13	35	4	7	66	3	3	5	3	7	21
Cutting/piercing	49	63	270	18	12	412	3	4	14	1	1	24	1	2	13	2	8	26
Choking or object in eye, ear or nose	35	17	63	4	2	121	3	1	4	0	0	9	-	-	2	-	-	2
Electrocution	-	-	1	-	-	1	-	-	-	-	-	-	-	1	12	4	1	18
Chemicals burns	2	1	4	-	-	7	1	-	-	-	-	1	-	-	-	-	-	-
Hypothermia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	9	45	65
Unknown/Other	52	55	187	20	43	356	6	7	18	4	9	44	-	1	138	21	53	213
Total	542	415	1,238	146	287	2,628	62	52	143	37	108	402	106	55	1,407	404	1,383	3,355

Source: Metra Martech

Table B.2 PROPORTION OF EACH TYPE OF ACCIDENT IN EACH AGE-BAND

Mechanism	All Non-Fatal Accidents					Serious & Very Serious Accidents					Fatal Accidents					Total		
	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64		65-74	75+
Fall on same level	15%	14%	11%	27%	41%	16%	9%	17%	16%	39%	50%	25%	-	-	1%	5%	10%	5%
Fall on stairs	9%	8%	14%	15%	12%	12%	11%	8%	20%	20%	14%	16%	1%	-	17%	40%	46%	31%
Fall from ladder	0%	0%	2%	3%	1%	1%	0%	0%	3%	4%	1%	2%	-	2%	1%	6%	2%	2%
Fall from building	1%	1%	0%	0%	0%	0%	1%	2%	1%	0%	0%	1%	1%	2%	3%	4%	3%	3%
Fall between two levels	17%	11%	3%	8%	15%	9%	23%	20%	5%	11%	19%	14%	3%	-	1%	4%	10%	5%
Trip/stumble	0%	1%	1%	1%	1%	1%	0%	0%	1%	0%	0%	1%	-	-	-	-	-	-
Choking	0%	0%	1%	1%	0%	0%	0%	0%	1%	0%	0%	0%	17%	2%	4%	5%	4%	5%
Burns & Scalds	6%	3%	3%	2%	1%	3%	8%	1%	2%	0%	0%	2%	5%	2%	1%	2%	3%	2%
Uncontrolled Fires	-	0	0%	0	0	0%	-	0	0%	-	0	0%	34%	40%	9%	13%	10%	11%
Poisoning - Solid/Liquid	5%	1%	0%	-	0	1%	15%	3%	0	-	-	3%	1%	7%	42%	7%	3%	20%
CO from Appliance	-	0%	-	-	0%	-	-	-	-	-	-	2%	2%	1%	2%	1%	1%	1%
CO from Exhaust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	0%	0%	0%
Drowning in Bath	-	-	-	-	-	-	-	-	-	-	-	-	8%	2%	1%	-	0%	1%
Hanging	-	-	-	-	-	-	-	-	-	-	-	-	3%	20%	2%	-	0%	1%
Sexual Gratification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2%	0%	-	1%
Drowning (excl Bath)	0%	0%	0%	-	-	0%	-	-	1%	-	-	0%	-	0%	1%	1%	0%	1%
Other Asphyxiation	-	-	-	-	-	-	-	-	-	-	-	-	13%	9%	1%	0%	0%	1%
Striking by/against object	20%	29%	22%	15%	10%	21%	12%	24%	24%	10%	7%	16%	3%	5%	0%	1%	1%	1%
Cutting/piercing	9%	15%	22%	12%	4%	16%	5%	8%	10%	3%	1%	6%	1%	4%	1%	0%	1%	1%
Choking or object in eye, ear or nose	7%	4%	5%	3%	1%	5%	5%	2%	3%	0	0	2%	-	-	0%	-	-	0%
Electrocution	-	-	0%	-	-	0%	-	-	-	-	-	-	-	2%	1%	1%	1%	1%
Chemicals burns	0%	0%	0%	-	-	0%	2%	-	-	-	-	0%	-	-	-	-	-	-
Hypothermia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	2%	3%	2%
Unknown/Other	10%	13%	15%	14%	15%	14%	9%	14%	13%	11%	8%	11%	-	2%	10%	5%	4%	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Metra Martech

Table B.3

PROPORTION OF VICTIMS IN EACH AGE-BAND FOR EACH TYPE OF ACCIDENT

Mechanism	All Non-Fatal Accidents					Serious & Very Serious Accidents					Fatal Accidents							
	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total
Fall on same level	19%	14%	31%	9%	27%	100%	6%	9%	23%	14%	54%	100%	-	-	7%	11%	82%	100%
Fall on stairs	16%	10%	56%	7%	11%	100%	11%	7%	44%	11%	23%	100%	0%	-	23%	16%	61%	100%
Fall from ladder	2%	3%	72%	14%	9%	100%	1%	3%	59%	16%	14%	100%	-	1%	24%	35%	40%	100%
Fall from building	24%	31%	40%	3%	3%	100%	14%	26%	39%	4%	4%	100%	1%	1%	43%	14%	41%	100%
Fall between two levels	41%	19%	17%	5%	18%	100%	25%	18%	12%	7%	35%	100%	2%	-	7%	10%	81%	100%
Trip/stumble	5%	13%	68%	8%	6%	100%	4%	8%	62%	5%	12%	100%	-	-	-	-	-	-
Choking	14%	11%	60%	7%	8%	100%	0	0	62%	7%	10%	100%	12%	1%	40%	13%	35%	100%
Burns & Scalds	37%	13%	45%	3%	3%	100%	57%	8%	30%	0	4%	100%	8%	2%	21%	13%	57%	100%
Uncontrolled Fires	-	0	68%	0	0	100%	-	0	71%	-	0	100%	10%	6%	33%	15%	37%	100%
Poisoning -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solid/Liquid	88%	9%	3%	-	0	100%	85%	14%	0	-	-	100%	0%	1%	90%	4%	5%	100%
CO from Appliance	-	-	100%	-	-	100%	-	-	-	-	-	-	4%	2%	38%	18%	38%	100%
CO from Exhaust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73%	18%	9%	100%
Drowning in Bath	-	-	-	-	-	-	-	-	-	-	-	-	29%	3%	55%	-	13%	100%
Hangling	-	-	-	-	-	-	-	-	-	-	-	-	7%	26%	64%	-	2%	100%
Sexual Gratification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96%	4%	-	100%
Drowning (excl Bath)	20%	20%	60%	-	-	100%	-	-	100%	-	-	100%	32%	-	40%	16%	12%	100%
Other Asphyxiation	-	-	-	-	-	-	-	-	-	-	-	-	40%	14%	31%	6%	9%	100%
Striking by/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
against object	20%	22%	49%	4%	5%	100%	11%	19%	53%	6%	11%	100%	14%	14%	24%	14%	33%	100%
Cutting/piercing	12%	15%	66%	4%	3%	100%	14%	17%	60%	5%	3%	100%	4%	8%	50%	8%	31%	100%
Choking or object in	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
eye, ear or nose	29%	14%	52%	3%	2%	100%	33%	13%	48%	0	0	100%	-	-	100%	-	-	100%
Electrocution	-	-	100%	-	-	100%	-	-	-	-	-	-	0%	6%	67%	22%	6%	100%
Chemicals burns	29%	14%	57%	-	-	100%	100%	-	-	-	-	100%	-	-	-	-	-	-
Hypothermia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17%	14%	69%	100%
Unknown/Other	15%	15%	52%	6%	12%	100%	13%	17%	41%	10%	20%	100%	0%	0%	65%	10%	25%	100%
Total	21%	16%	47%	6%	11%	100%	15%	13%	36%	9%	27%	100%	3%	2%	42%	12%	41%	100%

Source:Metra Martech

Table B.4 PROPORTION OF SERIOUS AND FATAL ACCIDENTS FOR EACH TYPE OF ACCIDENT

Mechanism	% of Non-Fatal Accidents which are Serious or V.Serious						Fatalities per Million Non-Fatal Accidents					
	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total
Fall on same level	7%	14%	18%	36%	46%	23%	-	-	90	473	1,189	397
Fall on stairs	13%	13%	16%	33%	43%	20%	29	-	1,322	7,327	18,293	3,240
Fall from ladder	17%	29%	21%	30%	39%	26%	-	1,197	791	6,023	10,724	2,398
Fall from building	19%	27%	31%	36%	54%	32%	489	247	9,179	36,502	133,562	8,393
Fall between two levels	15%	23%	18%	38%	48%	25%	32	-	298	1,517	3,281	733
Trip/stumble	9%	8%	11%	7%	25%	12%	-	-	-	-	-	-
Choking	0	0	12%	11%	16%	12%	10,588	769	8,243	22,222	55,789	12,490
Burns & Scalds	15%	7%	7%	-	14%	10%	160	94	347	3,478	16,364	752
Uncontrolled Fires	-	-	20%	-	-	19%	-	-	48,800	-	-	99,730
Poisoning - Solid/Liquid	32%	52%	-	-	-	33%	35	1,379	658,889	-	-	20,276
CO from Appliance	-	-	-	-	-	-	-	-	17,000	-	-	45,000
CO from Exhaust	-	-	-	-	-	-	-	-	-	-	-	-
Drowning in Bath	-	-	-	-	-	-	-	-	-	-	-	-
Hanging	-	-	-	-	-	-	-	-	-	-	-	-
Sexual Gratification	-	-	-	-	-	-	-	-	-	-	-	-
Drowning (excl Bath)	-	-	33%	-	-	20%	8,000	-	3,333	-	-	5,000
Other Asphyxiation	-	-	-	-	-	-	-	-	-	-	-	-
Striking by/ against object	7%	10%	13%	17%	25%	12%	27	25	19	136	244	38
Cutting/piercing	7%	6%	5%	6%	7%	6%	20	32	48	112	672	63
Choking or object in eye, ear or nose	8%	7%	7%	8%	10%	7%	-	-	32	-	-	17
Electrocution	-	-	-	-	-	-	-	-	12,000	-	-	18,000
Chemicals burns	-	-	-	-	-	-	-	-	-	-	-	-
Hypothermia	-	-	-	-	-	-	-	-	-	-	-	-
Unknown/Other	11%	13%	10%	21%	21%	12%	-	18	738	1,061	1,240	598
Total	11%	13%	12%	25%	38%	15%	196	133	1,137	2,767	4,819	1,277

Source: Metra Martech

Table B.5 SELECTED TYPES OF FATAL AND NON-FATAL ACCIDENTS

Type	All Non-Fatal Accidents (000s)						Serious & Very Serious Accidents (000s)						Fatal Accidents					
	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total	0-4	5-14	15-64	65-74	75+	Total
Fall on same level	75	51	108	25	64	318	6	9	23	14	54	100	-	-	12	19	140	170
Fall on stairs	44	28	150	15	20	260	7	4	28	7	15	64	2	-	235	162	630	1,029
Fall from ladder	1	1	18	3	2	24	0	0	5	1	1	8	-	1	18	26	30	75
Fall from building	2	3	4	0	0	10	1	1	2	0	0	4	2	1	47	15	45	109
Fall between two levels	79	34	33	7	22	175	14	10	7	4	20	57	3	-	12	17	137	168
Trips/stumble	1	3	15	2	1	22	0	0	2	0	0	3	-	-	-	-	-	-
Choking	2	1	7	1	1	11	0	0	1	0	0	1	18	1	61	20	53	153
Burns & Scalds	27	10	35	2	2	76	5	1	3	0	0	1	5	1	13	8	36	69
Uncontrolled Fires	0	0	2	0	0	3	-	0	1	-	0	1	36	22	122	54	135	369
Poisoning - Solid/Liquid	20	1	1	0	0	22	9	2	0	-	-	11	1	4	593	28	35	661
CO from Appliance	-	-	1	-	-	1	-	-	-	-	-	-	2	1	17	8	17	45
CO from Exhaust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	1	11
Drowning in Bath	-	-	-	-	-	-	-	-	-	-	-	-	9	-	17	2	4	31
Hanging	-	-	-	-	-	-	-	-	-	-	-	-	3	1	27	-	1	42
Sexual Gratification	-	-	-	-	-	-	-	-	-	-	-	-	9	11	27	-	1	42
Drowning (excl Bath)	1	1	2	-	-	4	-	-	1	-	-	1	8	-	10	4	3	25
Other Asphyxiation	-	-	-	-	-	-	-	-	-	-	-	-	14	5	11	2	3	35
Playing	114	81	-	-	-	195	13	8	-	-	21	21	15	12	-	-	-	27
Sports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Preparation	1	5	47	4	3	60	-	-	2	-	-	2	-	1	13	3	3	17
Gardening	-	1	34	6	4	45	0	0	3	1	1	5	-	-	3	1	1	5
DIY	-	1	0	69	6	76	0	0	6	1	1	8	-	-	5	2	-	7
The Kitchen	40	23	128	12	12	215	7	3	16	3	7	36	5	3	21	9	25	63
The Garden	57	84	192	25	21	380	10	18	36	9	11	84	12	4	20	9	8	46
The Bathroom	13	7	33	4	6	62	2	1	5	2	4	14	12	1	35	4	18	70
Alcohol	0	0	1	-	-	1	-	-	-	-	-	-	-	-	97	5	6	108
Medicines	11	1	1	-	-	13	8	1	-	-	-	9	-	5	555	27	45	632
Knives	1	7	51	3	1	63	0	0	2	0	0	2	-	-	-	-	-	-
Ladders	1	1	9	1	1	13	0	0	2	1	1	3	-	-	12	14	9	35
Pets	9	22	59	6	4	99	1	1	3	1	0	5	-	-	-	-	-	-
Striking by/against object	103	107	232	18	22	482	7	13	35	4	7	66	3	3	5	3	7	21
Cutting/piercing	46	59	256	17	11	389	3	4	14	1	1	24	1	2	13	2	8	26
Choking or object in eye, ear or nose	32	16	58	4	2	112	3	1	4	0	0	9	-	-	2	-	-	2
Electrocution	-	-	1	-	-	1	-	-	-	-	-	-	-	1	12	4	1	18
Chemicals	1	-	4	-	-	6	1	-	-	-	-	1	-	-	-	-	-	-
Hypothermia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	9	45	65
Unknown/Other	47	47	169	16	34	313	6	7	18	4	9	44	-	1	138	21	53	213
Total	727	596	1,650	238	237	3,448	103	84	217	54	132	590	143	81	2,168	478	1,495	4,365

Source: Metra Martech