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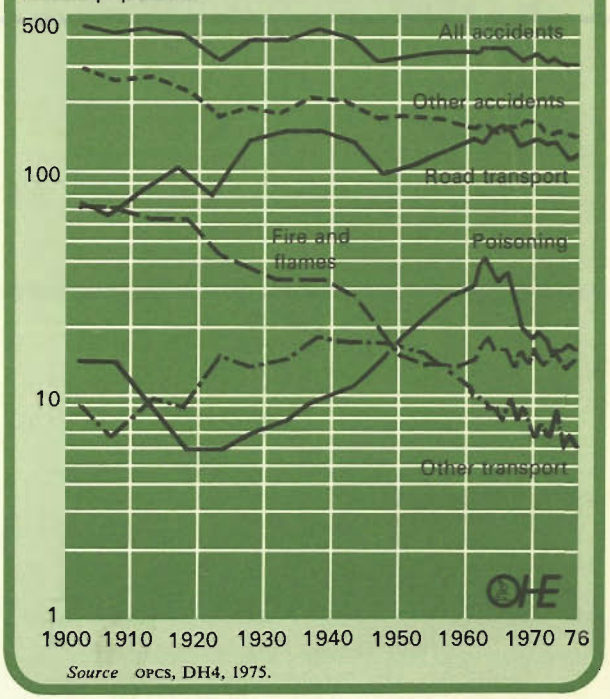
ACCIDENTS

On each day in 1976 in England and Wales approximately forty-one people died and thousands more were either severely or slightly injured as a result of accidents.[1] Such occurrences generate substantial social and economic costs which are borne not only by accident victims themselves but also by their relatives and the community as a whole. A growing appreciation of the extent of these burdens and of the potential for preventing a significant proportion of accidental injuries and fatalities has in recent years drawn much public and professional attention to the problem. Yet the resources available for intensifying any attempts to reduce the occurrence of accidents are scarce. In this context one of the principal aims of this paper is to identify those areas in which the toll of accidents is particularly great.

A statistical description of the general pattern of accidental mortality and morbidity can create a misleading impression, not least because important sub-trends are unavoidably obscured (Figure 1). The sum of the 8,390 male and 6,679 female accidental deaths in England and Wales in 1976 was of a similar order of magnitude to that recorded throughout the twentieth century. However, population growth has ensured a decline in the accidental death rate – by about 36 per cent since the beginning of this century to a level of 306 per million population in 1976. In the latter year accidents accounted for 2·5 per cent of all deaths although this proportion is considerably higher for children and young adults (Figures 2 and 3). An analysis of the types of accidents which resulted in death in 1976 (Figure 4) clearly demonstrates the hazards of motor vehicles for males and of falls for women.

Measuring the morbidity generated by accidents is not so straightforward: understatement is inevitable as medical assistance is frequently not sought for minor injuries and much of the data that is available covers only a relatively limited time span and may be subject to classification difficulties. Information from the Second National Survey of Morbidity in General Practice (1970–71), for example, relates to 'Accidents, Poisonings and Violence' and describes the nature of the injury rather than the external cause. Nevertheless, it indicates that 5·3 per cent[2] of all GP consultations are the consequence of such events. Furthermore, each year they cause 10 per cent of men and 7 per cent of women to seek medical help from a GP although, as Figure 5 makes clear, there are significant discrepancies according to age.

Figure 1 *Deaths from accidents, rates per million population, England and Wales, 1901–05 to 1976*



Source OPCS, DH4, 1975.

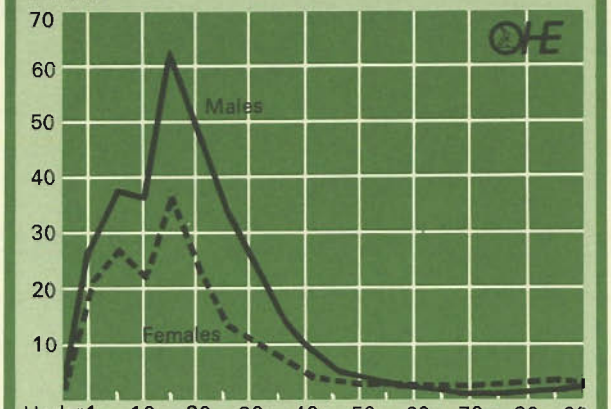
For the more clearly defined and serious injuries little difference exists between the findings of the 1970–71 survey and those of the first study undertaken in 1955–56. But there has been a reduction in the overall number of patients consulting (from 102 to 82·5 per 1,000 population) for accidents, poisonings and violence. This may, however, reflect an increasing tendency to by-pass the GP in favour of hospital casualty departments rather than a decline in accident rates.

Information about hospital inpatient stays employs a similar 'nature of injury' classification. In 1975 in

1 ICD nos E800 to E949. Those cases where it was undetermined whether the injury was accidentally or purposely inflicted are excluded.

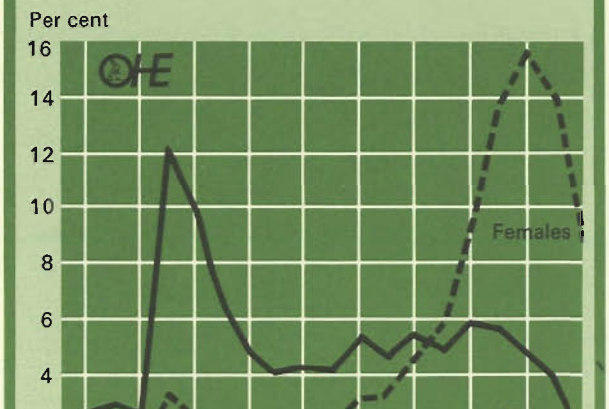
2 Taking the mortality data for England and Wales in 1976 accidents (E800–E949) account for 72 per cent of deaths in the 'accidents, poisonings and violence' (E800–E999) classification. Applying this proportion to the morbidity data implies that just under 4 per cent of GP consultations are for accidents alone.

Figure 2 *Accidental deaths (E800–E949) as a percentage of all deaths in each age-group, males and females, England and Wales, 1976*



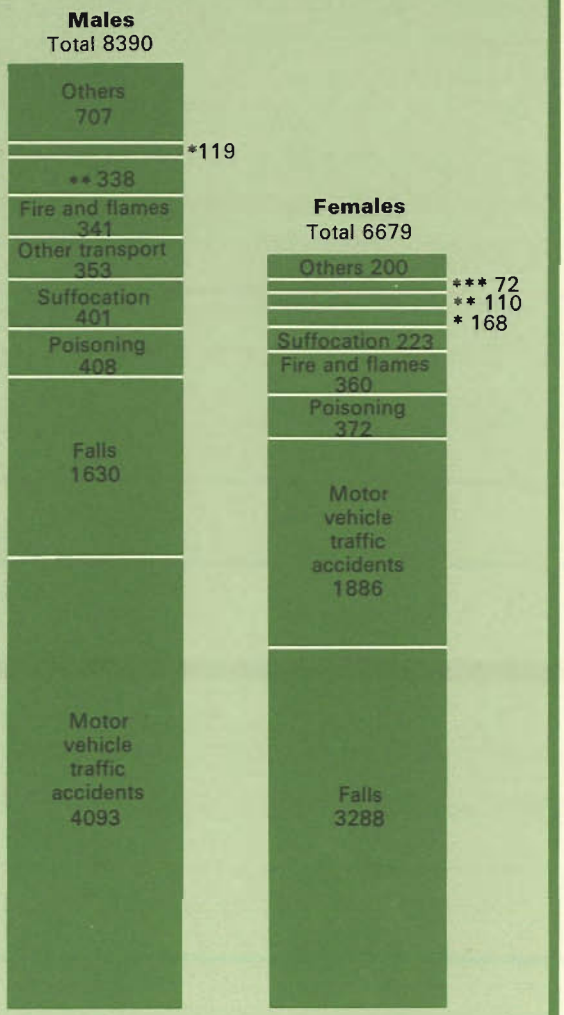
Source Registrar General's Mortality Statistics, 1976.

Figure 3 *Percentage of all accidental deaths in each age-group, males and females, England and Wales, 1976*



Source Registrar General's Mortality Statistics, 1976.

Figure 4 *Accidental fatalities (E800–E949), England and Wales, 1976*



*Natural and environmental causes of accidental death.
**Drowning and submersion.
***Other transport accidents.
Source Registrar General's Mortality Statistics, 1976.

England and Wales there were 559,050 discharges from or deaths in hospital (11·4 per cent of the total) which were originally admitted because of fractures, dislocations and sprains and other injuries and reactions. This represented a growth of 67 per cent over the figure recorded for 1960 (Figure 6). Expressed as a rate per 1,000 (home) population, discharges and deaths for accidents have increased from 7·3 to 11·4 per 1,000 over the same period of time.

More detailed analysis for 1974 shows that on average 14,854 hospital inpatient beds were in daily use for injuries (8·14 per cent of the total) in that year and that 20 per cent and 46 per cent were occupied by individuals aged between 0 and 19 years and 65 years or more respectively. The mean length of hospital stay ranged from 1·2 days for females aged 0–4 years admitted because of adverse effects of medicinal agents to 75·9 days for males aged 75 years or more suffering from 'fractures of other and unspecified parts of the femur'.

A final source of general information is provided by statistics of certifiable sickness absence from work. Accidents, poisoning and violence were responsible for 1,083 spells and 28·4 million days (9·2 per cent of the total) of absence through sickness or invalidity in Britain in 1974–75. This figure compares with 20·9 million in 1962–63. Between 1962–63 and 1973–74 the annual average number of days of absence per male at risk stemming from these causes has risen steadily from 1·12 to 1·73 days. Once again it is among young males that injuries are a particularly significant cause of sickness absence (Figure 7). Official statistics, however, understate the true level of absence generated by accidents because they do not include non-certifiable periods of less than three days which may be especially relevant in cases of minor injury.

Accidents in the home

This section examines home accident patterns as they relate to those groups at greatest risk: the elderly and young children. In 1975, the Registrar General for England and Wales recorded 15,284 accidental deaths[3]. Of these, approximately 30 per cent (4,545 deaths) occurred in the home (Figure 8). An analysis of the latter indicates that 63 per cent involved those aged 65 years or more (Figure 9).

Information about non-fatal accidents in the home has recently become available as a result of the establishment at the beginning of 1977 of the Home Accident Surveillance System by the Department of Prices and Consumer Protection.[4] Twenty hospitals are participating

3 E800–E949. Accidental/violent uncertainties are excluded.

4 The scheme was set up with the following objectives:
- i To provide reliable comprehensive and nationally representative information.
- ii To enable accidents which are amenable to action to be identified and allocate priorities.
- iii To monitor the accident problem so that new hazards may be identified and new trends in hazards investigated.
- iv To aid the evaluation of the effectiveness of preventative action.
- v To provide a basis for estimating the costs of different types of accidents.

Figure 5 *Morbidity caused by accidents, poisoning and violence seen in general practice,*

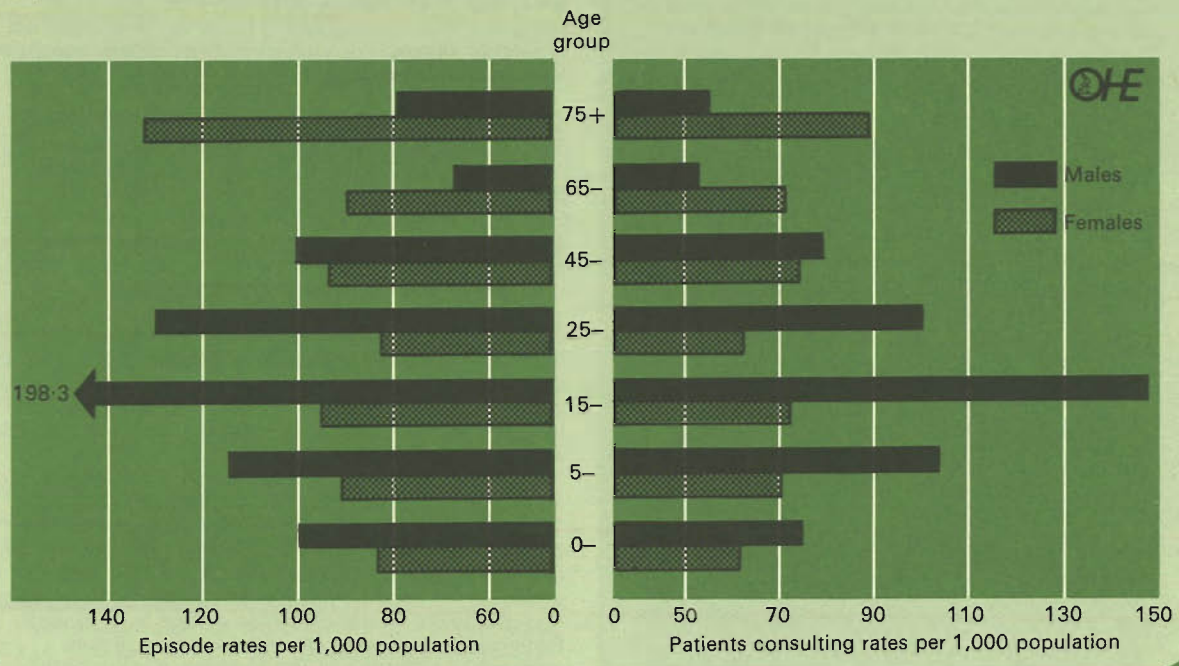
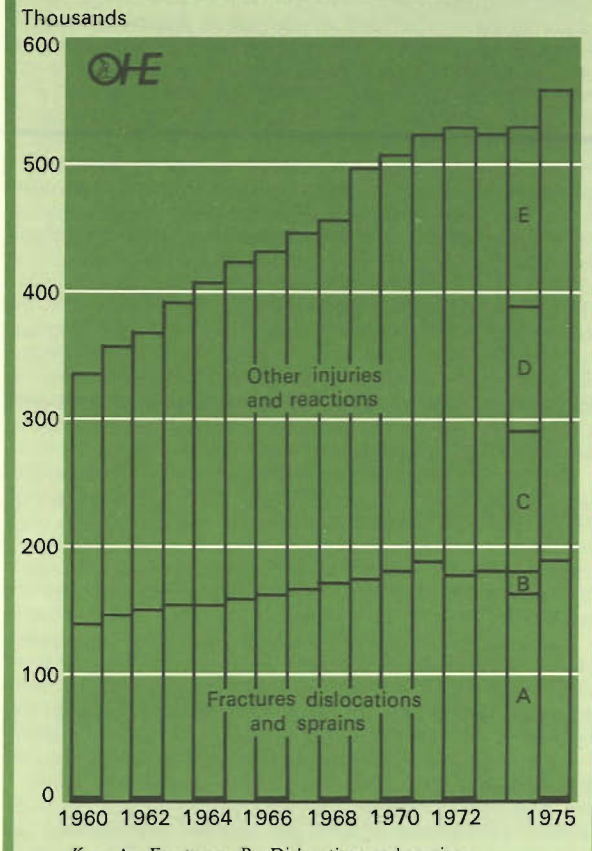


Figure 6 *Estimated discharges from and deaths in hospital resulting from accidents, poisonings and violence, England and Wales, 1960–75*



Key A Fractures B Dislocations and sprains
C Intracranial injury
D Adverse effects of medicinal agents E Others.
Source Hospital Inpatient Enquiry, various years.

in the scheme and they supply details of individuals attending Accident and Emergency Departments with injuries sustained accidentally in or around the home.[5] The report covering the system's first twelve months of operation recorded 60,534 accidents of which only just over 12 per cent were among those aged 65 years or more (Table 1). This, of course, constitutes a reversal of the home accident mortality profile outlined above.

Several possible explanations may be offered for this finding. It may be that advice concerning the avoidance of risks in the home, such as open plan stairs, poor lighting, loose rugs, unguarded fire-places and uneven outside paths is being heeded. Alternatively, it may be that elderly people are more likely to die at home from their accident than are younger people and are, therefore, under-represented in the HASS analysis. (Data about patients who were dead on arrival at hospital have been eliminated from the Accident Surveillance System.) A third possibility is that old people do not always seek treatment for home accidents. Indeed, a small study in the Birmingham area between April 1961 and June 1963 showed that old people left untreated a fifth of the accidents they sustained at home, although nearly half of these would have justified an approach to the general practitioner or hospital (Age Concern, *Profiles of the Elderly, Vol 3, Accidents,* 1977).

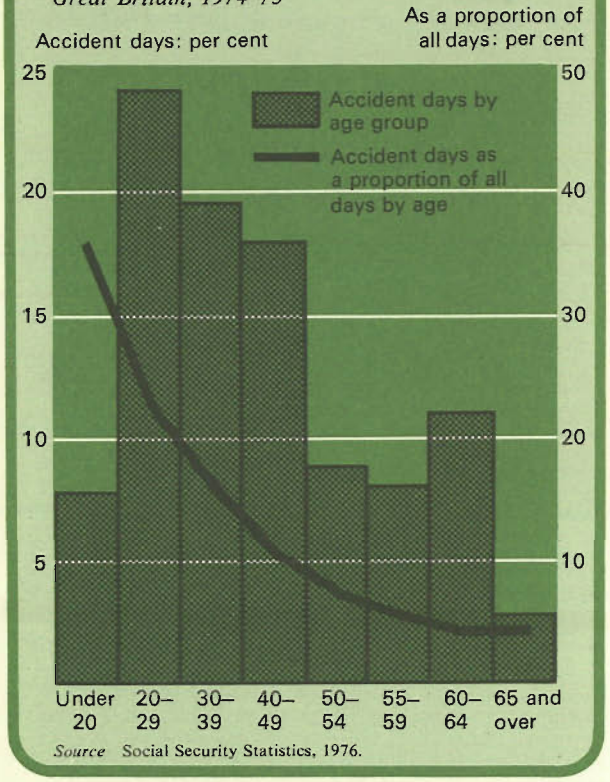
The Home Accident Surveillance System has established that 71 per cent of non-fatal home accidents among those aged 65 years or more involve a fall of some kind.[6] The significance of falls for the elderly is also reflected in mortality data: they accounted for 75 per cent of the 2,855 accidental home deaths in the same age group in England and Wales in 1975.[7] These findings concerning accidental falls may be explained by a number of factors: the overall deterioration in the psychological and or physiological state which may accompany ageing (although to varying degrees and at different speeds) transforms some activities previously regarded as a part of normal everyday life into hazardous operations; chronic disabilities can produce a similar effect and

5 The hospitals are chosen from the 250 hospitals in England and Wales offering a 24-hour accident and emergency department service and are carefully selected to be representative in terms of size and distribution. Each year 10 of the 20 hospitals will be replaced by others thereby minimising long term sample bias.

6 More detailed analysis indicates that dislocations and fractures account for 32 per cent and cuts for 24 per cent of home accidents among the elderly. Taking all age groups together cuts account for 34 per cent, dislocations and fractures for 12 per cent, sprains and strains for 9 per cent and bruises for 12 per cent of all non-fatal accidental injuries at home.

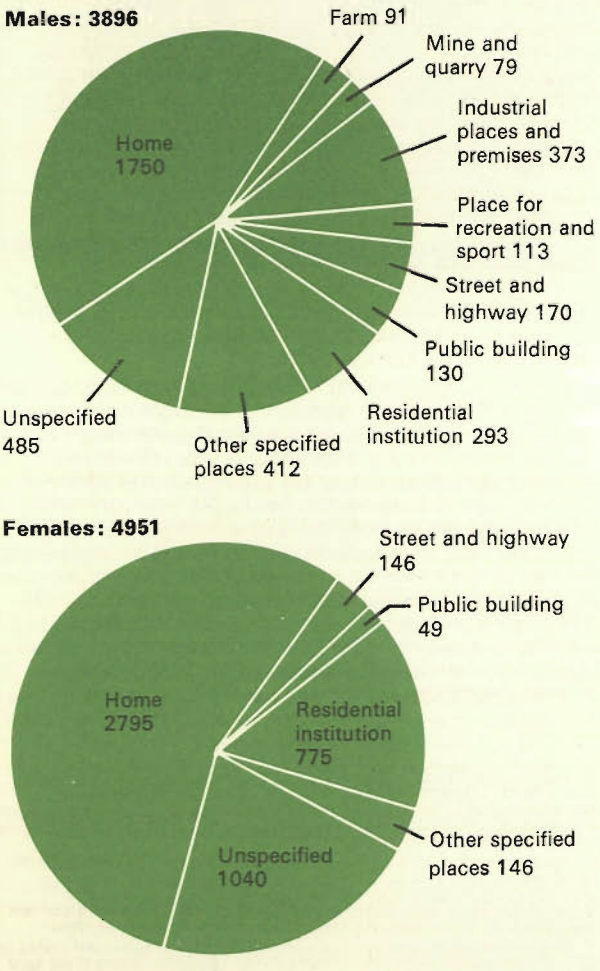
7 Broadening the perspective, falls accounted for 5,161 accidental deaths in 1975 (34 per cent of the total). Of these 70 per cent were among those aged 75 years or more and 84 per cent among those aged 65 years and over. Falls (in all locations) account for 47 per cent of male and 70 per cent of female accidental fatalities over the age of 65 years.

Figure 7 *Days of male sickness absence due to accidents, poisonings and violence: percentage of all accident days in each age-group and accident days as a percentage of all days by age-group, Great Britain, 1974–75*



Source Social Security Statistics, 1976.

Figure 8 *Non-transport accidental deaths by place of accident, England and Wales, 1975*



Source Registrar General's Mortality Statistics, Accidents and Violence, 1975.

sudden onset of acute illness (for example, 'drop attacks', myocardial infarction or stroke) may also involve a heavy fall. Such changes in health especially when combined with unsatisfactory living environments will inevitably increase the vulnerability of elderly people to falls and other accidents.

Young Children

The home environment abounds with hazards for adventurous and inquisitive young children. This is clearly reflected in data from the Home Accident Surveillance System which suggests that almost one-quarter of non-fatal accidents at home involve children aged 0–4 years. A fall is the primary element in more than half of the accidents in this age group.

The most frequently occurring injuries include cuts and bruises (together accounting for 48 per cent of the total), burns and scalds (9 per cent), poisoning (7 per cent) and dislocations/fractures (6 per cent). Approximately 46 per cent of children accidentally injured at home require further treatment following the initial visit to an accident and emergency department.

Mortality data, on the other hand, recorded 637 accidental deaths between these ages in England and Wales in 1975 and that 337 of them occurred in the home. Of the latter, which represents only 7·4 per cent of all home accidental fatalities, 24 per cent were due to inhalation of food or other objects causing obstruction or suffocation, 23 per cent were caused by fires and flames and 18 per cent stemmed from accidental mechanical suffocation. The Registrar General's decennial supplement on Occupational Mortality in England and Wales in 1970–72 found that social class differences in childhood were marked for all types of accident and particularly for falls, fire and drowning for which the social class 5 rates for males were more than ten times the corresponding rates for social class 1.

Road accidents

In his report on the State of the Public Health for 1976, the Chief Medical Officer suggested that because more is known about the events leading to accidental injuries than is the case for many other causes of incapacity or death, the possibilities for prevention are high. Certainly statistical information about road accidents is plentiful and effective preventative measures appear to have been identified. Yet there has been no sustained improvement in overall incidence figures in recent years. Thus the drop (by almost 10 per cent) in the total number of casualties between 1972 and 1975 was reversed in 1976 when 258,639 road accidents in Great Britain resulted in 339,673 people being killed or injured. The latter represented a 4·5 per cent increase on the 1975 figure and matched the growth in motor traffic. More optimistically, however, road casualties in 1976 were still 15 per cent below the number recorded in the peak year of 1965 in spite of a 50 per cent increase in motor traffic over the same period (Figure 10).

Drivers and passengers in cars and taxis accounted for 44 per cent of all road casualties in 1976, pedestrians for 20 per cent and users of two-wheeled motor vehicles also for 20 per cent (Figure 11). In absolute terms, casualties among the latter rose by 21 per cent between 1975 and 1976 which was 4·5 times the growth in all road user casualties.[8]

The severity of injury also varies by type of road user. Thus British statistics for 1976 indicate that 1·9 per cent of all road accident casualties die, 23·4 per cent are seriously injured and the remainder suffer only slight injuries. However, the range of fatalities extends from 3·4 per cent of all pedestrian casualties to just 0·5 per cent of public service vehicle (PSV) passenger casualties; the proportion of casualties experiencing serious injuries reaches a maximum of 27·9 per cent for two-wheeled motor vehicles but drops to 9·7 per cent in the case of public service vehicles.

Age analysis indicates that one-fifth (44,567) of all male road casualties are aged between 17 and 19 years (Table 2)[9]. Of these 1·7 per cent are fatalities and 27·4 per cent are seriously injured. But perhaps the most

8 Motor cycle casualties account for 75 per cent of two wheeled motor vehicle casualties, mopeds for 21 per cent and scooters for 4 per cent.

9 60 per cent of male casualties in this age group stemmed from two-wheeled motor vehicle accidents.

Table 1 *Home accidents: Age by sex*

Age (years)	*Males*		*Females*		*Total*	
	No	%	*No*	%	*No*	%
0– 4	8,411	(13·9)	6,245	(10·3)	14,686	(24·3)
5–14	6,304	(10·4)	4,799	(7·9)	11,124	(18·4)
15–29	5,036	(8·3)	5,688	(9·4)	10,739	(17·7)
30–44	3,737	(6·2)	4,422	(7·3)	8,166	(13·5)
45–64	3,079	(5·1)	5,247	(8·7)	8,331	(13·8)
65–74	1,102	(1·8)	2,448	(4·0)	3,551	(5·9)
75 and over	686	(1·1)	3,149	(5·2)	3,839	(6·3)
Unknown	30	(0·1)	60	(0·1)	98	(0·2)
Total	28,385	(46·9)	32,058	(52·9)	60,534	(100·0)

Notes 1 Percentages shown are of the total.
2 91 cases where sex is unknown are included in the total age-groups.
Source Home Accident Surveillance System, DPCP.

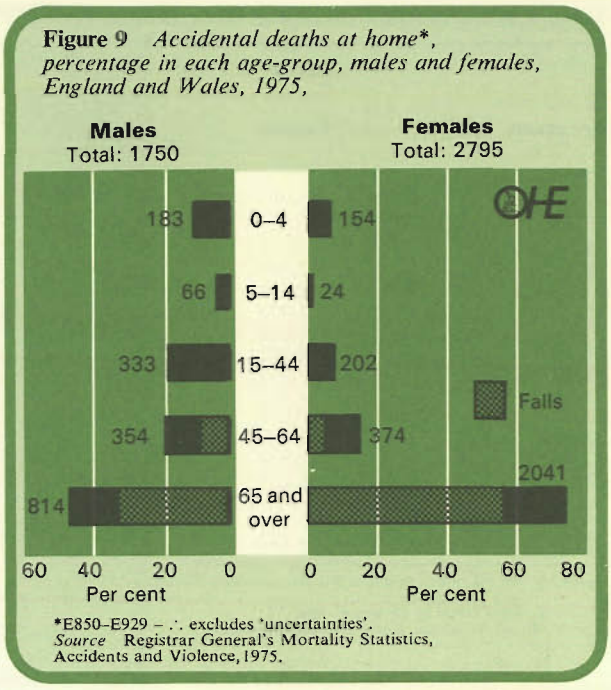


Figure 9 *Accidental deaths at home*, percentage in each age-group, males and females, England and Wales, 1975,*

*E850–E929 – ∴ excludes 'uncertainties'.
Source Registrar General's Mortality Statistics, Accidents and Violence, 1975.

alarming fact relating to road accidents is that they are responsible for almost one male death in two between the ages of 15 and 19 years (Figure 12).

Accidents at work

The Health and Safety at Work Act of 1974 was enacted with two principal objectives: to increase the efficiency of the State's contribution in this field and to provide a framework for self-regulation. It is perhaps too soon to assess the role of the legislation, which gave new powers of enforcement to inspectors and imposed comprehensive duties on employers and employees to ensure maximum safety at work, in reducing the hazards of the working environment. Nevertheless, improvements in industrial accident records have been achieved throughout the 1970s. Between 1971 and 1976 the total number of fatalities reported to the Health and Safety Commission enforcement authorities fell by 27 per cent[10]. Within this figure there were decreases of about 30 per cent in both coal mining and manufacturing industry as a whole (Table 3). There is scope, of course, for further reductions: an analysis of 189 of the 211 deaths in factory processes in 1976 suggested that management and workpeople could have taken appropriate precautions to prevent the occurrence of 62 per cent and 15 per cent respectively of the fatal accidents. Action by the two groups together might have avoided a further 5 per cent. It was therefore considered that 'reasonably practical precautions' were not available in only 18 per cent of cases.

Approximately 326,000 non-fatal accidents were notified to the authorities in 1976 and of these about three-quarters occurred in those industries covered by the Factories Act. More specifically it is estimated that there were about 172,000 notified accidents in manufacturing industry (excluding construction) and that 16 per cent of these were of a serious nature. In the same year the corresponding accident rate was 3,460 per 100,000 at risk. These figures and the slight improvements recorded since 1973 must, however, be seen in the light of two important qualifications. First, non-fatal accident performance is difficult to measure due to an unknown degree of under reporting of such events and because some accidents do not require official notification.[11] Second, in addition to the intensification of safety efforts, recent trends may also reflect diminished economic activity: the index of production in manufacturing industry fell by almost 7 per cent between 1973 and 1976 and UK unemployment more than doubled.

An alternative source of information is provided by injury and industrial disablement benefit statistics. Injury benefit is a weekly payment (for a maximum period of six months) to persons incapable of work as a result of an accidental industrial injury or the development of a prescribed disease. Industrial disablement benefit normally follows a period of injury benefit and may take the form of either a lump sum gratuity or pension in cases of more severe disablement. It is provisionally estimated that 158,000 pensions, or pensions in lieu of gratuities, for industrial accidents were current at the end of September in 1976.

Focussing on injury benefit, there were 509,000 male and 68,000 female spells of certified incapacity commencing in 1974–75 in Britain as a result of fresh industrial accidents. More detailed analysis of the data for males shows that there was a 27 per cent fall in the number of spells between 1963–64 and 1974–75 compared to a fall of only 6 per cent in the size of the average population at risk; that being struck by, striking against or being trapped between objects (35 per cent) and falls (23 per cent) are the major causes of incapacity; that 14 per cent of spells occur in mining and quarrying and 13 per cent in construction; and, finally, that all male spells generated a total of 12·9 million days of incapacity in 1974–75.

The costs of accidents

The purpose of this section is to identify some of the major economic burdens which are generated by accidental deaths and injuries. Most of the estimates, however, represent only approximate orders of magnitude. Furthermore, they cannot realistically be summed to obtain a grand total because of the danger of a certain degree of double counting and, more significantly, because many of the costs associated with accidents are either incalculable or do not lend themselves to expression in financial terms.

The latter point is especially relevant in assessing the number of potential years of life foregone as a result of accidental fatalities. Using age-specific accident mortality data for England and Wales and appropriate life-expectancy estimates it maybe calculated that some 263,000 male and 125,000 female years of potential life were lost in 1976 alone. Thirty-seven per cent of the total male loss and 18 per cent of that for females is accounted for by those aged between 15 and 24 years. The scope for expressing these losses in economic terms is strictly limited and indeed any such attempt is probably unnecessary as by themselves these figures clearly represent an alarming wastage of human life.

One of the techniques most frequently employed to measure the economic loss resulting from premature death involves the quantification of production values foregone. These analyses suffer inevitably from a number of drawbacks: they have to be seen in the light of the assumptions upon which they are based and the difficulties inherent in accurately forecasting future earnings levels. Furthermore, account has to be taken of the fact that many people dying accidentally in a given year are 'non-productive' members of the population (in

10 The Registrar General's Mortality Analysis for England and Wales indicated that 573 men and 18 women died accidentally at or on their way to or from work in 1975. (These figures are based on ICD nos E850–E929.) Accidental deaths at work account for approximately 4 per cent of all accidental fatalities.

11 An accident is notifiable if it causes loss of life to a person employed in premises subject to the Factories Act or if it disables any such person for more than three days from earning full wages at the work at which he was employed.

Table 2 *Road accident casualties, Great Britain, 1976*

	Males			Females		
Age group	*Number*	*% of total male casualties*	*Casualty rate per 100,000 population*	*Number*	*% of total female casualties*	*Casualty rate per 100,000 population*
0– 4	4,723	2·1	255	3,468	3·0	198
5– 9	12,997	5·9	589	7,502	6·6	359
10–14	14,435	6·6	626	8,395	7·4	383
15	2,937	1·3	664	1,857	1·6	444
16	11,094	5·0	2,609	3,083	2·7	764
17–19	44,567	20·2	3,630	11,883	10·4	1,008
20–29	55,557	25·2	1,396	23,519	20·7	608
30–39	24,522	11·1	732	13,188	11·6	404
40–49	17,107	7·8	549	11,220	9·9	361
50–59	14,700	6·7	471	11,099	9·7	337
60–69	11,221	5·1	422	9,987	8·8	317
70 and over	6,413	2·9	363	8,663	7·6	270
	220,273	100	833	113,864	100	408

Notes 1 Of the male casualties 2·1 per cent were fatalities and 25·0 per cent were serious injuries. For females the corresponding figures were 1·7 per cent and 21·0 per cent.
2 Data refers to all known ages.
Source Road Accidents, Great Britain, 1976, HMSO.

England and Wales in 1976 children aged less than 16 years and individuals of retirement age or above accounted for 10 and 47 per cent respectively of accidental deaths). The theoretical value of lost production, whether for a given year or over time, would therefore have to be set against the theoretical value of those resources released, for example through reduced educational and health requirements and pension payments. To achieve a greater degree of accuracy more sophisticated economic analysis would then of course have to examine the extent to which such areas of social expenditure are in reality responsive to sudden modifications to 'normal' demand patterns. It is, nevertheless, possible to derive a crude value for the financial burden of accidental fatalities. The Department of Transport has estimated the average cost of a fatal road casualty-consisting principally of lost potential and subjective considerations – at £56,700 in June 1977 prices. Applying this to the (provisional) 14,452 accidental deaths in England and Wales in 1977 generates a cost of £820 million.

An alternative to those methods which focus on the human contribution to economic production is provided by the value of life implicit in a number of public policy decisions. However, there is no established consensus view. For example, the fitting of cabs to farm tractors, which was made compulsory in 1969, implied a value of life of around £100,000. Alternatively, changes in building standards following the loss of life when Ronan Point high rise flats partially collapsed suggested a value of £20 million.[12] A problem additional to such inconsistencies is that discrete statistics supposedly representing the value of a human life will obviously fail to discriminate between such variables as the age and health (and hence the crude economic value to the community) of an individual.

Although no attempt is officially made to calculate the overall economic consequence of all accidental injuries certain areas do receive special attention. Government estimates are for example made each year of the cost of road accidents, partly to assess the economic loss to the nation that results but primarily to assist the allocation of resources to safety measures. In 1971 it was estimated that all road traffic accidents cost about £500 million rising to £816 million in 1975 and £972 million in 1976. In real terms, however, there was little difference between the costs in 1971 and 1976 reflecting the fact that in these two years the number of accidents was the same (159,000) with a slight (3·5 per cent) fall in the total number of casualties to approximately 340,000 in the latter year.

Recent estimates suggest that road accidents cost £1,290[13] million in 1977 (£1,125 million at 1976 prices)

Table 3 *The number and incidence per 100,000 employees at risk of fatalities resulting from accidental injury at work reported to the Health and Safety Commission Enforcement Authorities, 1971 and 1976*

	1971	*1976*	*1971*	*1976*
	Fatalities		*Fatalities per 100,000 employees at risk*	
Factories Act	525	382		
Manufacturing Industry	(251)	(175)	4·3	3·4
Construction	(201)	(156)	19·6	15·7
Offices, Shops and Railway Premises Act	35	20		
Explosives Act	6	6		
Regulation of Railways and Railway Employment (Prevention of Accident) Acts	60	46	24·1	18·8
Mines and Quarries Act	97	74		
Coal Mines	(72)	(50)	24·2	19·6
Quarries	(18)	(16)	47·4	*32·8
Agriculture (Safety, Health and Welfare Provisions) Act	53	41	NA	14·1
Total of Sectors covered by HSC	776	569		

*Provisional.
Source *Hansard*, 21 April 1978.

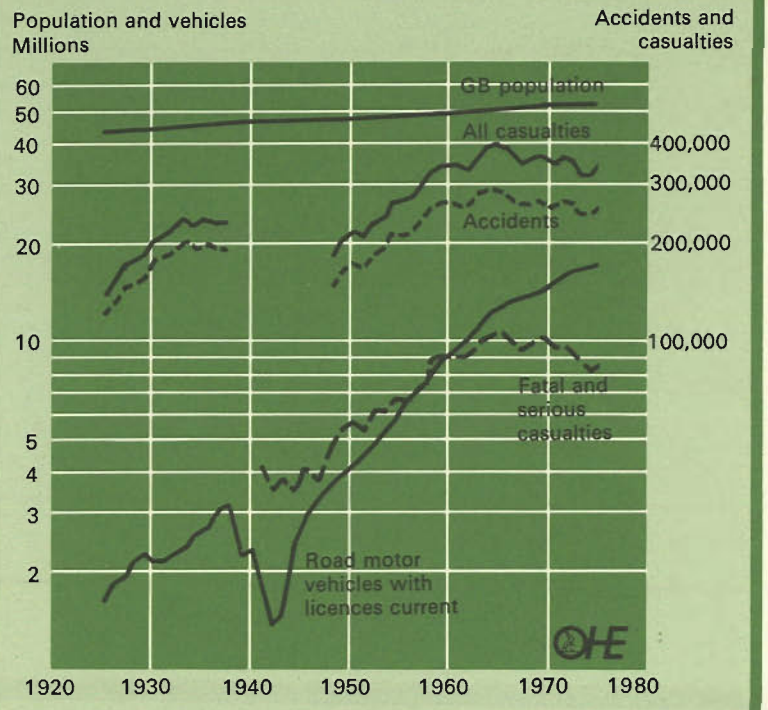
and this is expected to increase to £1,350 million in 1978. In real terms the 1977 estimate represents a 16 per cent increase over the previous year's figure reflecting changes in the assumptions underpinning the calculations. Thus in 1977 the value of the subjective costs of grief and suffering – calculated at £25,880 for a road death – was 50 per cent higher than in previous years following the recommendations of the Leitch Committee earlier this year. The total cost of a fatal accident which was put at £64,600[14] also included £37,450 for the loss of the victim's own potential, £300 for the cost of medical and ambulance services, £150 for police and administration costs and £820 for damage to property. The financial implications of serious and slight accidents were estimated at £4,740 and £670 respectively in 1977.

12 Card W I and Mooney G, 1977. *British Medical Journal*, 2, 1627.

13 This consists of: lost output £287 million, police and administration costs £75 million, medical and ambulance costs £42 million, damage to property £542 million and notional allowance for pain, grief and suffering £347 million.

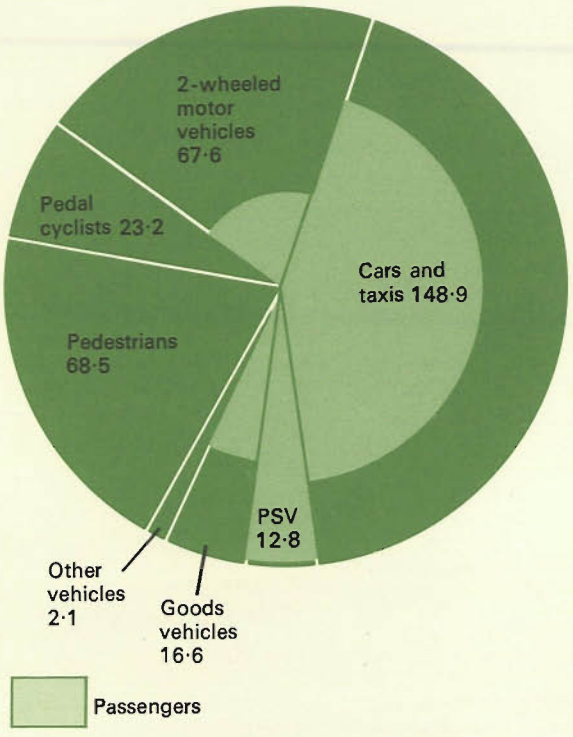
14 The cost of a fatal accident is higher than the cost attributed to a fatal casualty because there is on average more than one casualty per accident and because some accident costs such as damage to vehicles cannot be associated with particular casualties.

Figure 10 *Road accidents and casualties, Great Britain, 1926–76*



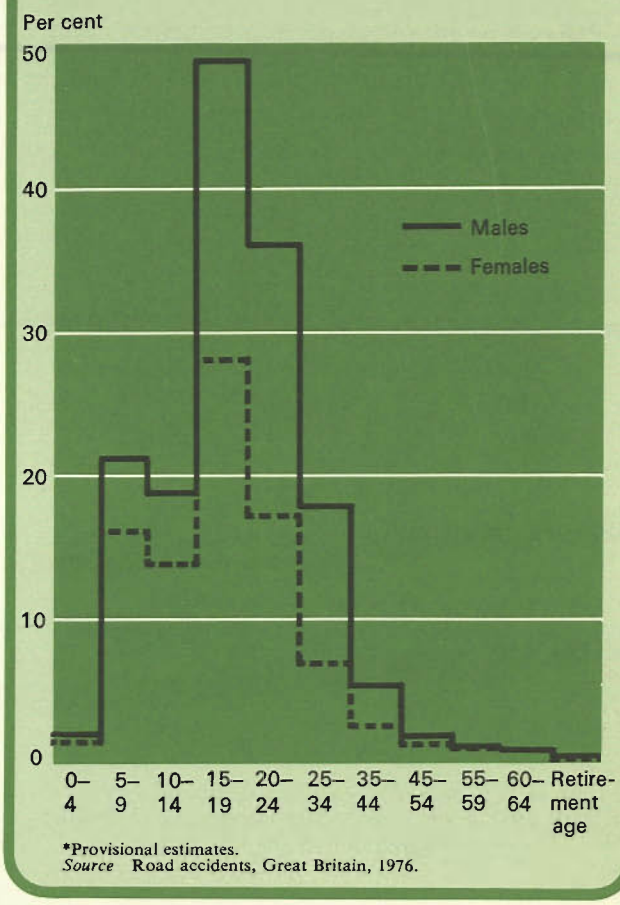
Source Road accidents, Great Britain 1976.

Figure 11 *Road accident casualties by type of road user, thousands, Great Britain, 1976*



Source Road accidents, Great Britain, 1976.

Figure 12 *Road deaths as a percentage of deaths from all causes, by age-group, Great Britain, 1976**



*Provisional estimates.
Source Road accidents, Great Britain, 1976.

An accumulating body of evidence suggests that more extensive use of seat belts by drivers and front seat passengers of motor vehicles would have a significant impact on the numbers of people killed or injured in road accidents and hence on the costs associated with these events. Research carried out by the Transport and Road Research Laboratory[15] indicates that some 1,000 fatalities and 11,000 serious casualties might be avoided each year by universal wearing of seat bealts. On the basis of official calculations of accident economics such reductions would have generated a saving of about £100 million in the cost in 1977. Yet in Britain, which is now one of the few countries in Europe where seat belt wearing is not enforced by law, an average of only 30 per cent of front seat occupants of cars in motion (44 per cent on motorways and 25 per cent in urban areas) make use of safety belts even though survey findings indicate that more than 90 per cent of drivers consider that they give effective protection in accidents.

The costs of road accidents could be further reduced by an effective strengthening of the laws relating to drinking and driving. Sample data for England and Wales indicated that in 1975, 35 per cent of drivers killed in accidents (70 per cent between 10 pm and 4 am) exceeded the legal alcohol limit. It has been estimated that road accidents caused by alcohol cost the NHS alone about £6 million per annum. The total cost is probably in the region of £80 million.

The cost of providing medical services for accident victims is also substantial. The 1975 Hospital Inpatient Enquiry[16] for England and Wales indicates that all injuries (excluding complications of surgical and medical care) account for 8·1 per cent of all hospital inpatient days. Applying this to the 1975–76 cost of the hospital services in Great Britain (less psychiatric and convalescent hospitals) implies a cost of £200 million. Accidents in the home and on the road account for at least[17] 24 per cent and 17 per cent respectively of this figure. The £200 million figure is of course only a crude estimate and indeed it would have been smaller if the cost of 'excluded' departments had been withdrawn from the total cost of the hospital services but greater had account been taken of hospital outpatient treatment for accidental injuries[18]. In terms of the cost to the general medical services in Britain, the 5·3 per cent of GP consultations accounted for by accidents, poisonings and violence generated an economic burden of £18 million in 1975–76.

These same causes also gave rise to estimated benefit payments for sickness and invalidity absence from work of £61 million in 1974–75. Using data from the new earnings survey, a similar period of absence would have entailed lost production of about £310 million in 1976. However, the extent to which short term spells of absence seriously disrupt normal production patterns is unclear and may vary significantly by industry.

Finally, the following payments were made from the Industrial Injuries Fund in 1975: Injury benefit £35 million, industrial disablement benefit £110·1 million, industrial death benefit £17·2 million and allowances and benefits relating to the Industrial Injuries and Diseases Act 1967 or earlier schemes £3·5 million. Focussing on the first two of these benefits it may be estimated that £34·1 million and £86 million of the respective figures resulted from accidental injuries at work rather than from industrial diseases.[19]

Other expenditures relating to the medical and social care of accident victims are not so readily identifiable. It is unknown, for example, how many individuals suffer long-term disabilities as a result of accidental injury[20] and the nature and extent of the demands they make on the social and other supportive services. Even more intangible from an economic point of view are the lost opportunities for self-achievement and the social handicaps affecting these individuals and the relatives caring for them. In the absence of better information it is clearly disturbing to note in this context the increasingly important role of accidental injury in the morbidity patterns of children and young adults and the fact that almost one-quarter of road casualties are seriously injured and that nearly 6 per cent of non-fatal home accidents require admission to hospital.

15 Hobbs C A. 'The effectiveness of seat belts in reducing injuries to car occupants'. TRRL Report, 811.

16 This excludes psychiatric hospitals and departments and convalescent hospitals or units.

17 These percentages are probably higher than this because in a large proportion of accident cases location is not specified.

18 In England and Wales in 1976 there were 13·9 million (9·3 million of which are new) attendances at accident and emergency departments. However, it is not clear what proportion of these is for accidents alone. On the basis of the 1975–76 average cost per new attendance at accident and emergency departments of acute hospitals in England of £7·28, new attendances in England and Wales in 1976 cost £68 million. Other attendances (average cost: £4·39) and new ones together cost £88 million. The Home Accident Surveillance System estimates that 813,000 people in England and Wales received treatment at accident and emergency departments due to home accidents in 1977. Assuming all of these to be new attendances implies a cost of £6 million or about 7 per cent of the total above.

19 The resource costs (lost output, treatment, damages, etc) of industrial accidents and prescribed industrial diseases have been estimated at between 1 and 2 per cent of Gross National Product, or about £1,800 million in 1977.

20 Tentative estimates suggest that perhaps 1 per cent of the population aged over 16 years is impaired as a result of accidents, poisonings and violence and that 10 per cent of these may experience severe disabilities.

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