The management response to childhood accidents

A guide to effective use of NHS information and resources to prevent accidental injuries in childhood

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Foreword

Every week in England and Wales seventeen children die as a result of accidents; a further 250 are admitted to hospital and ten times more are taken to accident and emergency departments for treatment. These figures represent an unnecessary toll on the life and health of children.

Britain's child accident mortality rate is not exceptionally high compared with other developed and industrialised countries. There is, however, no cause for complacency, because it has been estimated that a large proportion of these deaths are preventable.

Effective prevention requires concerted efforts by individuals, organisations and industries to increase the safety of homes, schools and streets. The health service alone can make only limited impact on reducing the numbers and severity of accidents. Health service staff, not least community physicians, could however do much to make life safer for children.

There have been some notable efforts to reduce child accidents in Britain, Sweden and the USA. These have demonstrated what can be achieved by a public health approach to accident prevention. Accident rates and severity can be reduced significantly by pooling the resources of a wide range of organisations with responsibilities for child safety; by working together to make products and the environment less hazardous; and by educating parents and children. Health service staff play a central part in designing and putting these initiatives into practice. The Department of Health and Social Security has, itself, helped to fund the Child Accident Prevention Trust and the first child accident prevention workshop, which was held at Harrogate in June 1987. The aim of this was to produce a model policy for child accident prevention to assist health and local authorities.

In this guidebook, Pamela Constantinides describes how managers in the National Health Service can develop their role in child accident prevention. She shows how their skills and influence could be used to initiate and co-ordinate prevention programmes involving a wide range of organisations.

To lay the foundations for this collaborative work, the guidebook outlines some relatively simple and inexpensive steps that can be taken immediately. The key is information, especially information held by the NHS about where, how, when and to whom child accidents happen. Managers can make sure that this information is used by their own staff and passed to the other organisations that can influence child safety. They can look to community physicians for help in a number of ways, including the application of epidemiological techniques. Local authorities, education authorities, police, fire and ambulance services, child care and playgroup campaigns all need information if they are to play a full part in identifying and eliminating hazards and directing their efforts at prevention towards groups in the population or localities with the highest accident rates.

The practical guidelines given in this book will assist doctors, nurses and managers who have already identified child accident prevention as a priority. For those who have not yet begun to develop prevention programmes, Pamela Constantinides makes a strong case for action. She makes sound suggestions for improving monitoring and follow-up of accidents and provides examples of effective approaches to prevention. The challenge to NHS staff is to apply these lessons more widely and lay a firm foundation for collaborative efforts to reduce accidents to children.

Sir Donald Acheson KBE

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PART ONE

Accident injuries in childhood

Mortality and morbidity

Accidents are currently the single most common cause of death among children in England and Wales, accounting for about one third of all child deaths. Accident injuries are also a major cause of morbidity in childhood. They are the reason for a substantial proportion of hospital admissions among children aged 1 to 14, as well as child attendances at hospital accident and emergency departments and general practitioners' surgeries.

Although the overall trend in child fatality following accident injury has moved slowly downward over the past few decades,[1,2] with the near elimination of previously significant infectious diseases from childhood mortality patterns, deaths from accidents have assumed greater prominence. Yet a large proportion of these deaths are preventable. In the developed and industrialised countries, accidents must now be seen as the next major hurdle to be overcome in reducing child mortality.

A global review by the World Health Organisation (WHO) of accident injuries ranks them fifth among the leading causes of death.[3] In England and Wales current annual deaths from this cause remain unacceptably high. In 1984 there were 890 such fatalities to children under 14 years of age, a figure very similar to that for the previous two years, and one which does not include a further hundred or so fatal injuries which were of undetermined cause or due to violence.[4] The Greater London area accounted for about 12% of all the child accident deaths.[5]

Which 'disease' tops the list of mortality causes among children, adolescents and young adults in all the developed countries and in an increasing number of developing countries? A 'disease' responsible for considerable morbidity and much long-term or permanent disability, which in addition to causing a great deal of human suffering costs the community vast sums of money, and yet is scarcely taught in medical and health professional schools, is little researched and the subject of only a limited number of preventive programmes, which if they do exist are often inappropriate and inadequate. There is only one answer: accident injuries.

Accidents in Children & Young People, WHO Statistics Quarterly, 1986.

A gradually declining mortality rate does not necessarily mean that the problem for health services is diminishing. Backett has pointed out that declining fatality rates may conceal the survival of an increasing number of disabled and handicapped people.[6] In contrast to the fatality trends, hospital admissions for childhood accident injuries rose until the mid-1970s, after which they too have declined steadily. Attendances at hospital accident and emergency departments (A&E) have however however continued to rise.[7]

Reliable morbidity figures are hard to obtain, though most authorities agree that fatalities represent only the tip of the iceberg of accidental injuries sustained each year by children.[8,9,10] In England and Wales in 1981

approximately 130,000 children under fourteen were admitted to hospital following accidental injury. The Child Accident Prevention Trust estimates that in the same period 1.3 million other children attended hospital accident and emergency departments for treatment of an injury, and that a similar number have done so in each subsequent year.[11] In other words, for each fatality there are about 70 admissions to hospital and about 1,400 outpatient A&E attendances.[12]

Outpatient attendances can only be estimated because there are no routinely collected data on the numbers of children with accident injuries attending either accident and emergency departments or general practitioners. However, several local and a few national studies have provided some idea of the scale of the problem. These indicate that up to one in five children may attend a hospital accident and emergency department with an injury in any one year and, according to area, between 5% and 10% of those attending are admitted into hospital. Moreover, accident rates are higher among younger children. Recently published results from a national cohort study of some 13,135 childen born during one week in 1970 showed that in the first five years of life 5,703 of the children suffered 7,887 accidents requiring medical attention, an overall accident rate of 60 accidents per 100 children. Over 43% of the children had had at least one such accident by age five; 12.1% had had two or more accidents; and 6.3% of the children in the cohort had been admitted to hospital due to an accident.[13]

A large proportion of the childhood injuries presenting at A&E departments, though distressing to the children concerned and their parents or carers, do not have a long-term serious outcome. When children are hospitalised as a result of accident injury, the appropriate medical response may vary from observation only to intensive care and corrective surgical procedures. Considerable long-term follow-up may be required especially for intracranial injury and burns and scalds.

Death is obviously the most serious outcome of accidental injury. Permanent disability must rank next both in terms of human and economic cost. Nationally, only crude estimates are available for longstanding illnesses, disability or infirmity following childhood accidents. One recent detailed local study in the Midlands indicated a small but significant permanent disability rate varying between 18.6 and 20 per 100,000 children per annum following an accident.[14] Most of these permanent disabilities were the result of road accidents to pedestrians, recreational accidents, and burns and scalds. Extrapolating from these figures, the authors estimate that well over 2,000 children are permanently disabled in Britain each year following accidents. The disabilities include brain damage, deformity, loss of mobility, scarring and sensory loss (mainly due to eye injuries).[15]

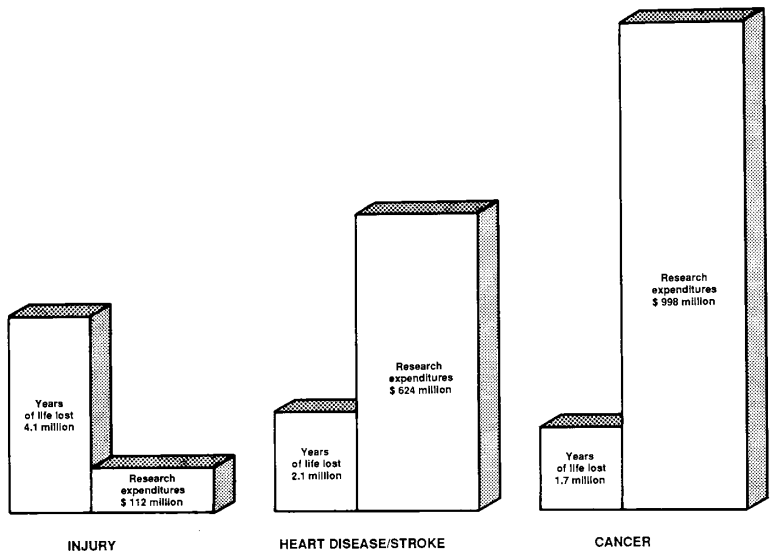
The cost of accidents

The costs of accidental injury in childhood are many, and not all are easily quantifiable.[16, 17] How, for example, does one evaluate the distress and disruption to family life, the costs of seeking medical care, the days taken from work to care for an injured child? The costs to individual families and the community of permanent disability and handicap following accidental injury remain unquantified.[19] Even all the medical costs involved in childhood injury are not easy to calculate, distributed as they are among hospital, ambulance, community and general practitioner services. Hospital costs – accident and emergency, outpatient and inpatient –provide the only readily available element since they can be obtained from the costing returns compiled by health districts and available from the DHSS.

The Office of Health Economics 1981 briefing on childhood accidents offered a crude estimate of some £70 million per annum for hospital and GP treatment of childhood accident injuries at 1980 costs.[18] A recent local study of accidents to children under five in one London health authority found that the combined costs of A&E attendance and in-patient treatment for this age group alone amounted to almost £90,000 in one year.[19] When divided by the total number of under-fives resident within the health authority, the hospital costs for accident injuries amounted to £8 per under-five per annum.

Of a quite different order of magnitude are calculations based on 'years of useful life' or 'years of productive life' lost. A developmentally normal child who dies as a result of an accident injury has *all* his or her years of productive life to come, making the loss to the community substantial indeed. WHO figures, based on the slightly different measure of 'potential years of life lost' (PYLL), show that for Europe and the developed and industrialised countries of the world, potential years of life lost due to accidents to young people aged 1 –24 in 1981 accounted, according to country, for between 38% and 59% of the total PYLL for that age group.[20]

PRODUCTIVE YEARS OF LIFE LOST ANNUALLY AND RESEARCH EXPENDITURE FOR MAJOR CAUSES OF DEATH IN AMERICA



Source: Injury in America, a continuing public health problem. Washington DC, Academy Press, 1985

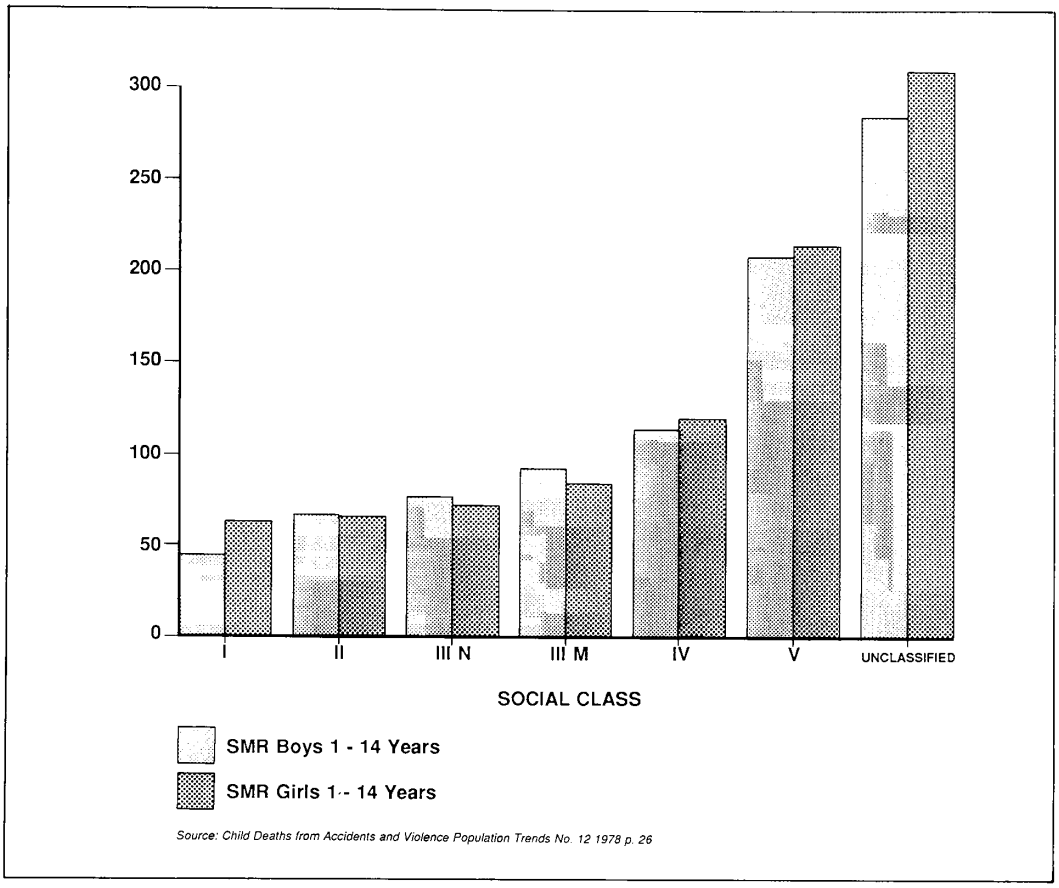
The gap between the cost of accident injury in general and the amount spent in identifying both causes and preventive techniques, is made stark by figures provided in an American study.[21] (Figure 1)

Notwithstanding the very different health service system and mode of budgeting, a profile of a similar order could be drawn up for Britain, and must point to the cost-benefit involved in the redirecting of some NHS resources towards prevention in the field of accident injury.

Accidents and inequality

It has been succinctly stated that 'it is a paradox that health professionals spend so much time and money treating the results of accidents, yet so little effort is put into their prevention'.[22] Several authors locate the problem in the very term 'accident', the ambivalent connotations of which allow a continuation of 'the traditional emphasis on accidents as a behavioural problem rather than on injuries as a health problem'.[23] Accident injuries are not random events, but show clear regional, age, sex and social class variation. At national level a great many of the facts are known and have been known for some considerable time: that certain types of accident are closely linked to specific age groups; that boys consistently suffer more accident injuries than girls across nearly all the injury categories; that there is a steep social class gradient in child accident fatalities. The study by Adelstein and White for the Office of Population Censuses and Surveys[24] showed that for the two broad categories examined, that is 'accidents, poisonings and violence' and 'accidents not traffic or poisoning' (mostly fire), the risk for children of all age groups was significantly higher in social class V. For children aged from one to four years the ratio was 4.7:1, class V to class I, for the first category of accidents, and 11.8:1 for the second category.

The report of the Working Group on Inequalities in Health,[25] chaired by Sir Douglas Black, indicated that accidents to children were a prime example of health inequality, the social class gradient for deaths due to accident



Source: Child Deaths from Accidents and Violence Population Trends No. 12 1978 p. 26

being far steeper than that for all deaths, which is about 2.2:1. In one of the commonest categories of accident, accidents in the home, the mortality figures for 1970 – 1972 show a clear social class gradient. (Figure 2)

The Working Group noted that information on childhood accidents was inadequate and indicated that research was required in defined populations where accidents were likely to be an appreciable problem. They considered 'such information is needed to assist health authorities; local authority planners, engineers and architects; health educators; and voluntary organisations in the formulation of effective preventive programmes'.

Mortality figures are crude, though clear, indicators. The morbidity figures that are available present a similar picture. Social class and related factors are implicated in several recent studies of non-fatal childhood accidents. Learmonth's excellent study on burns and scalds indicates a clear class gradient in morbidity for that particular type of accident.[26] A London study,[27] which looked at all types of accident to children under five, found the strongest statistical correlations were between more serious child accidents and unemployment, overcrowding and lack of parental education beyond secondary school level. There were significant negative correlations between accidents and social classes I and II, and significant positive correlations with classes III to V.

The role of NHS managers

Given the daunting social and environmental aspects implicated in childhood accidents, what is a district health authority management's contribution to tackling this problem? At the broadest level, Dr Susan Baker has cogently argued that the only approach is a public health approach[28,29] in which health professionals and managers use the information at their disposal to influence 'designers, manufacturers, planners, legislators, regulators, members of the judiciary and other people whose decisions determine the probability of injury for thousands of people'.

More specifically, and more immediately, there are several preliminary steps which

health authorities can take, and among these can be highlighted:

- **Improved collection of local information relating to accident injuries, so that a detailed epidemiological picture of the incidence of child accident injuries can be built up.**
- **Improvements in hospital and community service management and follow-up of childhood accident injuries.**
- **Improved education for health, education, housing and social service personnel and voluntary groups, as well as for parents, to increase awareness of accidental injury and the importance of environmental safety.**

The first step, improved collection of local information, is in many ways the key to the others. Such information can be used to target those accident types, age groups and areas which make the major demands on a district's health services. It can provide baseline data against which to evaluate child accident prevention programmes, and it can lead to appropriately directed, rather than diffuse health education.

Over the past few years considerable changes have taken place in National Health Service organisation. New management structures have been established along the lines proposed by the Griffiths Inquiry. The central proposals of the Körner report are being implemented. Health authority managers have become more aware of the need to develop improved methods of communication and cooperation with other statutory services, with family practitioner committees, and with health service 'consumers'.

In this context, reduction of the morbidity and mortality caused by child accident injury presents an exciting challenge. The field of child accident prevention with its many facets – health, environmental and planning – requires, par excellence, a truly multisectoral approach. It requires detailed co-operative effort and exchange of information, and is an ideal target for joint financing. Reduction of the social, economic and health service costs of children's accident injuries could provide a model of what might be achieved. The initiative lies not so much in the hands of those who treat the results of injuries, as in those of the community physicians who marshal the epidemiological evidence, and in those of health service managers.

PART TWO

Developing prevention strategies

Collecting and using information

In a useful summary of methodologies so far used in research into child accidents, Learmonth states: 'if one single factor could be blamed for the retarded progress of accident research, it would probably be lack of adequate records.'[30]

Following the Körner report,[31] and with the rapid development of computer-assisted health service information systems, the time is ripe to develop efficient systems for the collection and analysis of local data on child accident injury. Basic data on children who are hospitalised are already available from the regional Hospital Activity Analysis systems. Models exist for more comprehensive computer-based data collection on injuries which includes outpatient attendances – for example the Home Accident Surveillance System of the Department of Trade and Industry[32] and the CAER (Computer-based Accident and Emergency Records) Project.[33] These or similar models using the minimum datasets recommended in the Körner report have already been used successfully in several local epidemiological studies of child accident

injuries.[34,35] They are not the only computer-based systems in existence, nor do health authority managers need to await the advent of computer-recording in order to improve, and make better use of, existing record-keeping systems. In fact, a necessary prerequisite to the efficient use of computer technology is systematically to think through and revise the categories of information at present collected manually on casualty cards, hospital liaison health visitor forms, and child health records.

Precisely what information does one want from any system, computer or manual and what does one want it *for?*

It should be stated at the outset that most minor accident injuries to children do not present for medical attention. A recent study of urban families with young children showed that although 49% of the sample children had sustained a minor injury in the preceding 3 months, only 20% of those injuries had been taken to a GP or hospital doctor, the rest being treated at home by parents and relatives.[36] Another urban study has shown that, of those childhood accident injuries which do present for medical attention, most (some 64%) require only one episode of treatment, with the remainder needing further clinical follow-up (29%) or hospitalisation (7%).[37]

Health service managers can use a variety of items of information about accident injuries which do present for medical attention in the planning of services. To offer only a few examples:

- **Information about WHEN child accident injuries present, allows estimation of the timing and numbers of paediatrically-trained hospital staff who need to be available in A&E or on-call; it indicates when separate waiting rooms or areas for children are most likely to have their maximum use; and so on.**

- **Information about HOW MANY children need follow-up treatment allows informed discussion of whether, according to local circumstance, hospital or GP services are the most appropriate venue for this, or whether the addition of a community paediatric nursing team would improve services and be a cost-effective solution. The repeated presentation of individual children with even minor injuries may indicate family problems and the need for community staff to be alert to the possibility of non-accidental injury.[41] It would point to the value of a part or full-time hospital liaison health visitor working in the A&E.**

- **Information about WHERE in the district accidents are occurring, allows epidemiological mapping to take place with appropriate targeting of services. In the already mentioned London study, under-five accident rates (the numbers of injuries presenting for medical attention as a proportion of the total number of under-fives in each census ward) varied between 7.8% and 25%, with a third of census wards accounting for over half of all such injuries.**

- **Better information about the PLACE and MEANS of injury than currently occurs on most casualty cards, will help a health authority to delineate main problem areas – for example particular housing estates, particular playground or wasteland areas, particular roadways – to be raised in joint discussion with local authority planners.**

- **Local information about the SEVERITY of certain types of accident injury will help to focus preventive initiatives on those types of accident which have the worst outcome in each age group – for example, burns and scalds in younger children; road traffic accidents in older children.**

So far reference has been made principally to information based on hospital records, those of A&E departments, paediatric wards and special regional units. Experience has shown that although spaces are normally allocated on existing cards and forms for many of the types of information listed above, recording is often neither systematic nor complete, which places severe constraints on its effective use.

Most injured children who present for medical attention do so either at their nearest hospital A&E department or at their general practitioner's surgery. What proportion present at each service varies according to local circumstances, the GP's training and willingness to deal with minor trauma, and relative accessibility. General practitioners working in rural areas with hospitals at some distance away, may treat a substantial proportion of accident injuries, whereas in inner-city areas with poor GP facilities and

high A&E attendance rates, the vast majority of incidents are seen at hospital A&E departments. The Bristol 1970 cohort study found that of the 7,887 accidental injuries sustained by the cohort's 13,135 children in their first five years of life, 12.4% presented initially to their GPs for treatment.[39] In the London study, 8.5% of such incidents were seen first by a GP, with over 20% of these being subsequently referred on to a hospital A&E department.[40] Figures from the second national survey of morbidity in general practice, carried out in 1970/71, indicated that about 8% of 0 – 14s consulted their GPs in the course of a year following an accident, with about 18% being referred on to hospital.

Although at the moment data from general practices are notoriously difficult to obtain in any systematic way, information for management and planning may become more readily available as current moves to increase co-operation between family practitioner committees (FPCs) and district health authorities (DHAs) develop. As FPCs computerise their records and offer centralised data-base facilities to constituent GPs, one of the hoped-for outcomes will be better exchange of information between DHAs and FPCs, with consequent improved planning, management and service provision.[41] Again, this makes it an apt period to ensure that data on child accident injuries is included in this information exchange.

Systematically collected local data on child accident injuries can be used to:

- **develop policies;**
- **target resource and personnel allocation;**
- **evaluate programmes;**
- **provide a focal point for multi-sectoral co-operation.**

Improving the follow-up of child accidents

Some ten years after the Court Report argued for the integration of prevention and treatment services for children,[42] a spate of policy statements, articles and recommendations has appeared in the medical journals indicating that child health services are beginning to be reorganised.

The importance of child accident injuries, their treatment and prevention, must be taken into account when considering overall management and planning. If significant advances are to be made in the reduction of fatalities, plans for substantial improvement in the organisation, management and delivery of child health services cannot ignore this major cause of child mortality and morbidity.

A necessary corollary to the longer-term goal of primary prevention is improvement in the follow-up of accident injuries. Treatment for childhood injuries takes place in four principal locations: the accident and emergency department; the general practitioner's surgery; and the home or school; and the patient may be medically or self-referred from one to the other for follow-up. The community health services, particularly health visitors and others with paediatric nurse training, have a role or potential role in each of these settings, and their managers hold a key place in the co-ordination of follow-up and prevention.[43, 44]

The accident and emergency department

Particularly in urban areas, most of the injuries for which medical attention is sought are seen at hospital A&E departments.

A survey carried out by the British Paediatric Association of children's attendances at A&E departments found that what the Association had stated in a document some 20 years earlier[45] was still true, namely that 'it is very clear that there are many deficiencies in (A&E) arrangements for children'.[46] They found, for example, that in more than a third of 189 hospitals surveyed no systematic record was being kept of children's attendances, despite the very large numbers of children attending annually as new patients throughout the country as a whole. In a third of the districts the main paediatric in-patient facilities were in a different hospital from the A&E department. They found problems of staffing and co-ordination, in that paediatric staff were often not available for consultation in A&E on a regular basis, and only 15% of the hospitals had a registered sick children's nurse (RSCN) on the permanent A&E establishment. There was no liaison health visitor attached to the A&E in over half the hospitals.

After some discussion on the problems and deficiencies highlighted by their survey, the British Paediatric Association and the British Association of Paediatric Surgeons agreed with the Casualty Surgeons' Association the following set of proposals:

- Any A&E department with a large number of child patients should have a designated liaison paediatrician with responsibility for the general arrangements for children although the problems linked with the separation of paediatric departments from A&E departments are recognised.

- The designated paediatrician would be a hospital consultant or a consultant paediatrician with a special interest in community child health providing he or she had responsibility for the care of children in hospital. The consultant would take responsibility for the provision of a 24 hour advisory service to the A&E department.

- Up to six months experience in an A&E department should be recognised as part of paediatric experience during higher specialist training.

- A Senior Nurse 6 with an RSCN qualification should have oversight of the arrangements for children in A&E departments.

- In forward planning for new hospitals, A&E departments should only be sited in hospitals providing in-patient accommodation for children.

- The development of computerised A&E records would be of great value.

The importance of sytematic record-keeping on child accident injuries presenting for treatment at A&E departments has already been touched upon. Many of the information, staffing and inter-service co-operation issues surrounding child accidents have been brought into sharp focus recently by the requirement to tighten up procedures for detecting those cases of injury which are *not* accidental but a result of child abuse. Such cases form, however, only a tiny proportion of the case-load of child injuries seen each year in A&E departments. In the run-up to computerisation, care needs to be taken in thinking through the minimum information required on casualty records along the lines suggested by Körner. Increased effort needs to be made to ensure that A&E staff complete existing cards as consistently and accurately as possible.

All child accident injury cases need to be reviewed on a regular basis, preferably daily, and relevant information passed as quickly as possible to those in the field – health visitors, community paediatric nurses and social workers. A hospital liaison health visitor may do this, though there is no reason, especially where the daily numbers are considerable or health visitors over-stretched, why a trained A&E clerk cannot perform this task, with the health visitor and/or social worker collecting the forms/list each day and where necessary supplementing the information in discussion with clinical staff. In those current systems most widely used, some sort of duplicate or triplicate form exists, so that information can go straight to field staff with a copy being kept for the record. The main point is that when follow-up outside the A&E is required, it should be prompt. Whatever system is chosen should facilitate this, and not itself be the cause of delays or bottle-necks.

Such a free flow of information to fieldworkers outside the hospital does of course raise the issue of the confidentiality of medical records. Health authorities must, together with the communities they serve, decide what their priorities are in terms of prevention. They must then go on to decide the effective minimum amount of information which needs to be released, while still safeguarding confidentiality.

Case study 1: Whipps Cross Hospital, London

This hospital in north-east London provides a 24-hour A&E service to a wide area with several pockets of social and economic deprivation. Over 7,000 new attendances at A&E in 1986 were children under five years of age – constituting nearly 10% of all new attenders. Of these pre-school attenders, more than half are children under three years of age, and a separate register – a 'Baby Index' – is now kept of these attendances, with a note made of any previous attendances by the same child and the reason for attendance. If the child is from a family causing concern to social workers this is included in the index.

Each day an A&E clerk abstracts from the casualty register on to a special duplicate form, a limited amount of information on all young children aged 0 – 5 years who have attended during the previous 24 hours. A hospital-based social worker checks the list daily against an 'at risk' register and makes a note of any injuries to an 'at risk' child. This information is phoned out the same day to the key worker in the field.

Each week the the accumulated forms are taken by courier to the community health offices to be sent on to the child's health visitor. The health visitor makes a decision as to whether or not the information provided warrants a follow-up visit, but in any event a record

of the A&E attendance is kept with the child's folder.

This is a system designed to facilitate rapid social work follow-up of potential child abuse cases, but in the absence of a hospital liaison visitor, more general information on children's accidents is slower in reaching the health visitors.

Hospital liaison health visitor schemes which include A&E departments have become more numerous in recent years, and when efficiently carried through and monitored, are seen as beneficial by hospital and community health services as well as by patients.[47] Most deal principally with visits to the A&E by children under five years, and tend to refer older children only in cases of possible or proven non-accidental injury, terminal illness, or fatal accident. A system for child accident follow-up by health visitors in Southampton works particularly well.

Case study 2: Southampton

In Southampton, health visitors, community nurses and some GPs work from health centres as primary health care teams. A senior nursing officer with an academic as well as practical interest in child injury has co-ordinated a child accident prevention strategy based on health visitor hospital liaison; quick follow-up of cases; three-monthly feed-back of aggregate data to health centre staff; substantial accident prevention in-put at each health visitor child development contact with parents and close co-operation with the community paediatric home care team, the social services and the local NSPCC.

Health visitor liaison coverage of the local A&E department is linked to same day health visitor follow-up in the case of possible non-accidental injury; follow-up within 48 hours if the child is new to the area (transfer-in visit); and follow-up within three days for all other incidents. 'Casualty Contact Notification' forms provide regular information for each health centre on the numbers of children under five in their catchment area who have attended an A&E department in the previous three months for accident, or illness. This allows a quarterly 'audit' of accidents, an assessment of what proportion of the primary health care team's caseload they represent, and identification of those areas which produce the highest incidences. Questionnaires about staff attitudes to accidents before and after the introduction of the scheme allowed for the monitoring of increased awareness of the importance of accident follow-up and prevention in their workload, and paved the way for receptivity to in-service training. Preliminary evaluations indicate an increased awareness of, and increased input into, accident injury prevention; an improved detection rate of potential non-accidental injury; and a marked reduction in repeat accidents.

Members of the primary health care teams work in close contact with Southampton's community paediatric nursing service, which also operates a daily liaison and follow-up system with the A&E department of the Southampton General Hospital.[48]

A community paediatric nursing service is another option in the linking of hospital and community services in child accident follow-up, and a good example of how this can operate is found at the Central Middlesex Hospital.

Case study 3: Central Middlesex Hospital, London

The Central Middlesex Hospital A&E department serves an area of considerable social deprivation in north-west London, yet its siting and public transport availability mean that the hospital is not easily accessible from all parts of the area. In 1981 the role of the existing paediatric home care team was extended to follow-up children from 0-12 years attending the accident and emergency department. Types of referral made from the A&E department included the removal of sutures or steristrips; minor burn and soft tissue injury as well as children with minor medical problems.

The community paediatric team is based at the hospital and is staffed by: 3 full-time Sisters SRN SCRN (one is also trained as a district nurse); 2 full-time liaison health visitors. The health visitors work a 9 to 5 five-day week, and the Sisters cover a seven-day 8 to 5 week. All staff share an office near the children's ward and regularly attend ward rounds as well as paediatric out-patient clinics. The health visitors liaise between the hospital and health visitors in the community, directing towards the latter information on hospital admissions, discharges and attendances, and referring to them those problems related to feeding and management in young children. The Sisters make daily visits in the community following in-patient discharge and A&E referral.

In the years since its inception, an increasing proportion of the team's workload has come from the A&E department,

and the current estimate is that some 60% of referrals now come from that department, with a further 30% from the wards, and the rest from GPs and social workers.

A review of the service published in 1986 indicates that it has been well received by children, their parents and carers and by A&E staff.[49] Of those parents and guardians offered the service, the overwhelming majority opted for it and, in a questionnaire follow-up, expressed satisfaction with it. The benefit to recipients of the service is that visits and treatments can be carried out at a place convenient to them – school, nursery, childminder or home. The benefit to health service providers is the low rate of return visits to hospital, with an accompanying overall reduction in A&E waiting time, and the cost-effectiveness of the system. As with health visitor follow-up, there are potential health education benefits to be gained when paediatrically-trained staff, dealing with the results of an accident often at that accident's location, are able to give informal and appropriate safety advice.

Paediatric home care teams have existence for a long time.[50] Where they have been recently introduced they seem to produce tangible benefits. Doncaster Health Authority, for example, reports that the introduction of such a service has cut down the stay in hospital by almost 50% and reduced out-patient visits by 25%.[51] Direct linkage of these systems to A&E departments is a promising option in the improvement of child accident injury follow-up.

The general practitioner

The history of the development of accident and emergency services as a hospital-based specialisation; the increasing rate of self-referral of patients with minor trauma to these departments, especially in cities and large towns; and the acquiescence in this of general practitioners for professional reasons of their own, have all been well documented from both the clinical management and sociological viewpoints.[52,53]

However, the facts of usage have not inhibited the continuing debate between A&E consultants, interested general practitioners and health service managers, about 'inappropriate' or 'trivial' attendance at hospital A&E departments.[54,55] Some A&E consultants and some GPs would like to see a re-direction of patients with some forms of minor trauma to the GP's surgery, while others would at least like to see better avenues of communication and co-operation opened up. A variety of schemes have been proposed, or put into practice, to assist in this patient re-direction, ranging from extending GP vocational training into A&E departments to equipping general practitioners to deal better with accidents and emergencies from their own surgeries or health centres.

There is certainly a prima facie case for attempting to divert more child accident injuries towards their own GPs. The London study showed, for example, that 65% of all children under five with accident injuries presented in the hours between 12 noon and 8 pm and 72% presented on weekdays rather than at weekends. Certainly the majority of cases were both minor in terms of severity and were seeking treatment within the extremes of GP surgery hours.[56] Set against this, however, is the fact that in the areas with the highest child accident rates, many of the GP practices were single-handed or two-partner practices, with rigid appointment systems, lock-up surgeries, unpopular deputising systems, and lack of facilities and willingness to carry out such procedures as the suturing of minor cuts. Several larger group practices were, however, both able and willing to provide treatment and follow-up for minor trauma, and this was especially true where there was a practice nurse available without appointment and trained to undertake the required procedures. There was evidence of increased willingness of parents to use these services, where they existed, in the treatment of minor injuries to their children.

Where GPs work out of their own premises rather than health authority provided health centres, there is still the problem of who should employ appropriately-trained nurses, and who should receive remuneration for services. The Cumberlege report has proposed that health authorities provide nurse attachments to those general practices which require them, and that the subsidies now paid to GPs who employ their own practice nurses be phased out.[57] Cliff has suggested that one solution might be for general practitioners to either contract in or out of providing a minor accident and emergency service.[58] FPCs may agree to draw up lists of local GPs willing and able to carry out minor trauma procedures. These lists could then be made available to A&E consultants in the area for their own and for public information. The lists could, for example, be prominently displayed in A&E

waiting areas, and patients or their parents gently advised during the course of treatment that next time such an event happened their GP could help. One of the problems of lists is, of course, that they have to be continually up-dated. Out-of-date and inaccurate information serves only to frustrate health professionals and the public and leads to less rather than more efficient service.

There has been much discussion of 'educating the public' to change their perceptions of the function of a hospital A&E department, but the 'public' is not necessarily as unsophisticated in maximizing its choices as some of the dialogues have suggested. To provide a viable alternative to the A&E department for the treatment of minor trauma, GPs need to be appropriately trained and well-equipped and their services made generally available and well-publicised. Certainly, in inner city areas especially, failure to register with a GP, inability to 'get on with' one's GP and the 'folk wisdom' born of collective experience of being referred on to the hospital casualty service by one's GP or practice receptionist, cannot be changed overnight.

An injury following an accident is one of the few circumstances where lay diagnosis and assessment can gain an individual direct access to hospital facilities.[59] For the parent or carer of a young child the dilemmas following an accident are urgent and real – does their child's head injury mean that there may be some unseen internal damage?; does the pain after his fall mean a broken bone?; is this amount of blood loss too much?; doesn't their child really need X-rays/blood transfusion/ in-patient care?; isn't it just delaying appropriate treatment and access to advanced medical technology by going first to the GP?

The difficulties that still exist in the re-direction towards GPs of primary *treatment* for minor trauma are not of course the same for post-treatment *follow-up*, nor for *prevention*, and here the role of the GP could more easily be expanded. Some hospital A&E departments still regularly recall minor trauma patients for such things as suture removal, dressing change, and advice. This is an expensive use of hospital time and resources for services which could be more easily and cheaply provided in the community by GPs, community paediatric teams, district nurses or health visitors. Again, there need to be improved avenues for discussion between the relevant providers in a district – hospital, general practice and community health services – about who is best placed to provide what follow-up service.

In the field of prevention, GPs, like health visitors, have access to and knowledge of a patient's housing, domestic and economic circumstances, which puts them in an ideal position to give informal and realistic advice about environmental and developmental hazards to children – in other words to take an active educational role in child accident prevention.

Home and school

Accident injuries, even quite minor ones, are distressing events for children, their parents and carers. Parents often feel guilty, anxious and defensive, and skill and tact has to be used in treatment and follow-up of the child's injury and in capitalising on any 'immunisation effect' which this experience may have in preventing similar occurrences to the same child or to a sibling.

Often the best and most cost-effective place for injury follow-up is the child's own home or school. These familiar surroundings diminish stress and provide an appropriate location for preventive education. Indeed, the home is the most common accident location for children, and the younger they are the more likely it is that the accident took place in the home. Home accidents account for nearly half of all injuries to children of all ages, and for over 70% of injuries to the pre-school child. For the young child especially, therefore, health visitor or community paediatric nurse follow-up of the type already described is an obvious solution. Again, in considering the allocation or re-direction of staff time towards these tasks, managers need to know *where* the highest incidences of various accident types are in their district. Field staff need in-service training to boost their perception of the relative importance of child accident injuries and to help them to define what part they can play in prevention.

Schools are relatively safe places for children. A local study carried out over two years in four West Lothian schools indicated an overall accident injury rate of 26 per 1,000 pupils per year, the highest incidence being of unwitnessed playground injuries among primary school children. Just over a third of the injuries were treated at hospital A&E departments. With some variation according to age, about a quarter to a third of the children were treated by local GPs, but a further third or more were treated solely by staff at the school.[60]

A study in two outer London boroughs demonstrated an interesting and unusual use of the school health service medical examination on school entrance.[61] Data was

collected on several thousand school children who were routinely medically examined during their second term at school. Information on socio-economic circumstances and on whether or not the child had sustained an injury requiring medical treatment before the school examination, was compared with physical and developmental data collected during the medical examination. A 'composite risk index' was drawn up which proved to have high predictive value, allowing the author to conclude 'it is possible to identify a large proportion of children at greatest risk of sustaining serious or repeated accident injury using a simple scoring method based on findings at routine school medical examinations.'

Taken together, these studies suggest a positive role to be explored for the school health services in the treatment, follow-up and prevention of childhood accident injuries.

Preventing childhood accidents

So far the discussion has dealt mainly with tertiary accident prevention – what can be done following an accident injury to reduce or minimize its effects, including the family disruption which may follow.

Longer-term and more challenging problems are presented by secondary and primary prevention. As Professor Bernfenstam has said in reviewing the work of Sweden's Joint Committee for the Prevention of Accidents, 'the world of today is to a great extent created by adults for adults and does not take sufficient account of the child's limited capacity to cope with risks'.[62] How can the health services assist children and parents to cope better with existing inadequate environments while working towards the long-term goal of improving those environments?

It would be unrealistic to assume that a district health authority could, or even should, attempt to eliminate all childhood accidents. What it *can* do however is:

- **initiate policies aimed at identifying and reducing the levels of mortality and serious morbidity from childhood accidents in its area;**

- **manage the treatment and follow-up of injuries in a more efficient and cost-effective manner;**

- **by means of appropriate health education and by placing the problem firmly on local authority agendas, help gradually towards improving the bad, and often appalling environments with which children have to cope.**

How is this to be achieved? In calling for a community health approach to child accident prevention, Dr Susan Baker states: 'until recently, attempts to prevent childhood injuries have emphasized the need for parents to be vigilant and to keep their children away from hazards. Admirable as these aims may be, we cannot expect them to substantially reduce injuries, even at home.' Educational efforts, she believes, would be better aimed at the decision-makers – the designers, manufactuers and planners who control the way products and environments are built; the legislators, regulators and local officials; the media representatives whose policies determine what information reaches the public.[63]

'There are effective ways to keep our children healthy and whole . . . exhorting parents to be careful is not one of them'
Susan Baker

In America, following a proposal that 'the reduction of childhood injuries be a major goal in preventive health care', the Massachusetts Department of Public Health developed its 1979-1982 Statewide Childhood Injury Prevention Program. Its premise was a community-based intervention approach and its starting-point a population-based epidemiological study of morbidity and mortality related to childhood injury.[64] Having looked carefully at the epidemiological evidence, the programme specifically targeted burns, poisonings, other household injuries such as falls, and injuries to children as car passengers. It used routine child development checks to counsel parents on accident prevention; inspected a sample of the homes of young children for hazards, and used the data gained on domestic and environmental dangers to propose revisions in existing state statutes or to introduce new legislation.

In Britain, although such an ambitious programme has yet to be launched at either regional or district level, many health authorities have incorporated some notion of child accident prevention into their strategic plans. What is required in the initial stages is a commitment to the principle of child accident prevention, followed by some minimal organisational effort. Health authorities already have on their staff personnel whose job involves, or potentially involves, child accident

prevention. These are the health visitors, clinical medical officers, school health staff, health education officers, community physicians, paediatric specialists and casualty consultants. Local authorities also employ personnel whose key role is safety, such as environmental health officers, trading standards officers and road safety or accident prevention officers. Other local statutory and voluntary services – including the housing, social and educational services, leisure services, child care and playgroup campaigns, and community health councils – have an interest in, or educational role to play in, child safety.

What is required is to bring these resources together, provide them with relevant and up-to-date information, and empower them to hammer out a district policy. Each district could work out its own time scale for getting together a group or working party, marshalling local data on accidents, and developing and evaluating action plans. Some actions can be carried out in the short term, for example establishing a hospital liaison health visitor in an A&E department which has not previously had one. Some will be medium term, for example providing a separate children's waiting area with toys and fresh drinking water in A&E; establishing an A&E linked community paediatric team; providing in-service staff training on the importance of child accident prevention; incorporating a formal programme of safety education into routine child developmental checks; and so on. Yet other activities will be earmarked as part of long-term strategies – identifying and altering environmental, traffic, housing and product hazards.

Health authority managers, through their community physicians and information officers, have access to local epidemiological evidence on child accident injury morbidity and mortality and therefore have a vital role to play in:

- **initiating multidisciplinary child accident prevention groups within their areas;**
- **making sure that their own staff who are concerned with child health give accident prevention high priority;**
- **providing training, time and resource allocation adequate to the task.**

A number of child accident prevention groups are now in existence throughout Britain. Some arose independently in recognition of the problem in their areas. Others started as part of the activities surrounding the BBC television series 'Play It Safe'[65] and have gone on to develop a broader role. Some are co-ordinated by local authority personnel – road safety or environmental health officers – and others by health authority personnel, most often health education officers. The profile of the groups varies, but in general they are involved in every level of activity from general 'consciousness-raising' to policy formulation. The Leicester City group has, for example, published its own information pack for professional and voluntary workers.[66] The Hillingdon group has developed a child safety equipment loan and advice scheme.

Hillingdon and Coventry provide examples of two groups, initiated by health education units but with a broad multi-disciplinary membership, which are taking an active role in promoting child accident prevention both within their own districts and more widely, initially through workshops aimed at developing a model prevention policy along similar lines to the one produced by ASH to combat smoking.[67]

The main criteria for the successful impact of such groups on policy making seem to be:

- **that they should incorporate key personnel from the relevant health, local authority and voluntary agencies without reaching unwieldy numbers;**
- **that individual members are active participants with sufficient status within their own organisations to influence management decisions and direct resources;**
- **that the group as a whole is accorded a high profile by its initiating body;**
- **that the group has the means of keeping itself well-informed and therefore capable of passing on precise information to planners.**

Resources

Financial resources for child accident prevention programmes are poorly and patchily provided. It is to be hoped that there will be greater financial commitment at regional and district level, and that more widespread establishment of joint health and local authority accident prevention groups will lead to an increased use of joint finance to tackle this important environmental and health problem.

However, health authority managers wishing to give serious consideration to the problem of child accident injuries are not without information resources. Government, professional, voluntary and academic groups provide data on many aspects of childhood accidents, and several key organisations are synthesizing this information for the purpose of identifying accident prevention strategies.

Foremost to be mentioned here are:

The Child Accident Prevention Trust (CAPT)
75 Portland Place, London WIN 3AL

Originally set up under the auspices of the Medical Commission on Accident Prevention, the Trust was given independent charitable status in 1981. The CAPT publishes an annual report, acts as a resource centre for data on all aspects of child accidents, carries out independent research, organises seminars and working parties, and keeps a running register of research into child accidents. Among its publications are:

Fact Sheet Series – dealing with most aspects of child accidents.

Keep them Safe – a guide to child safety equipment.

Burn and Scald Accidents to Children –summary of a multi-disciplinary working party on the topic

Child Safety and Housing – practical design guidelines for commissioning agencies, architects, designers and builders.

The Health Visitor, the Pre-School Child and Accident Prevention – (forthcoming).

The Royal Society for the Prevention of Accidents (ROSPA)
Cannon House, The Priory Queensway, Birmingham B4 6BS.

This long-established Royal Society undertakes a wide variety of activities in the dissemination of information about accidents and accident prevention. It organises well-attended national seminars and has a series of regular publications on all aspects of safety, as well as a variety of leaflets and information packs.

See for example data from its 1985 National Seminar on child safety in the home and near the water, and
The Facts About Accidents (1981)
The Cost of Home Accidents (1986/87)

The Home Accident Surveillance System (HASS)
Consumer Safety Unit, Department of Trade and Industry, Millbank Tower, Millbank, London SWIP 4QU.

In existence since 1976, HASS offers a wealth of detailed data on home accidents and the products and locations involved, using data gathered from a rolling sample of 20 hospitals in England and Wales which offer 24 hour A&E service. HASS produces a comprehensive report on each 12-month set of data, and the Safety Research Section produces a series of studies and analyses of specific topics. See for example:

Analysis of Domestic Accidents to Children (1979)

Child Poisoning from Household Products (1977)

and a variety of short analyses of the part played by nursery furniture and child transport in child accident injuries.

The Office of Population Censuses and Surveys (OPCS)
Information Branch, Office of Population Censuses and Surveys, St Catherine's House, 10 Kingsway, London WC2B 6JP.

OPCS provides national and regional statistics on deaths to children by accidents and violence. Some of these data have been analysed in depth in the articles by Adelstein and White, Macfarlane, and Macfarlane and Fox, referred to in the bibliography.

References

1. Macfarlane, A. and Fox, J. Child deaths from accidents and violence. *Population Trends*, No. 12, 1978.
2. Accidents in Childhood. *Office of Health Economics Briefing*, No. 17, 1981.
3. Accidents in Children and Young People. *World Health Organisation Statistics Quarterly*, Vol. 39, No. 3, 1986.
4. Annual Report. *Child Accident Prevention Trust*. 1984-1985.
5. *Annual Abstract of Greater London Statistics*, Vol. 17, GLC Intelligence Unit. 1986.
6. Backett, E. Introduction to *Accidents in the Home*, Burman, S.B. and Genn, H.G. (eds) Croom Helm, London, 1977.
7. Accidents in Childhood. *Office of Health Economics Briefing*. 1981, ibid.
8. Accidents in Childhood. *Child Accident Prevention Trust, Fact Sheets*, 1985.
9. Wilson, D. The epidemiology of childhood accidents, in *Proceedings of the Symposium on Accidents in Childhood*. Child Accident Prevention Trust, Occasional Paper No. 7, 1985.
10. *The Facts about Accidents*. RoSPA Safety Education Publication, 1981.
11. Child Accident Prevention Trust Fact Sheets, ibid.
12. Child Accident Prevention Trust Annual Report, ibid.
13. Stewart-Brown, S., Peters, T., Golding, J. and Bijur, P. Case definition in childhood accident studies: a vital factor in determining results. *International Journal of Epidemiology*, Vol. 15, 3, 1986.
14. Avery, J.G. and Gibbs, B. Long term disability following accidents in childhood, in *Proceedings of the Symposium on Accidents in Childhood*. Child Accident Prevention Trust, 1985, ibid.
15. Child Accident Prevention Trust Fact Sheets. 1985, ibid.
16. Office of Health Economics Briefing. 1981, ibid.
17. Cliff, K.S. *Accidents: Causes, Prevention and Services*. Croom Helm, London,1984.
18. Office of Health Economics Briefing. 1981, ibid.
19. Constantinides, P. and Walker, G. *Child Accidents and Inequality in a London Borough*. Unpublished Report to North East Thames Regional Health Authority. 1986.
20. Taket, A. Accident mortality in children, adolescents and young adults, in WHO Statistics Quarterly. 1986. ibid.
21. *Injury in America: a continuing public health problem*. Academy Press, Washington. 1985.
22. Jackson, H. Falling through the gaps. Health Summary. *Times Health Supplement*, Vol. 11, XI, November 1985.
23. Baker, S.P. Medical data and injuries. *American Journal of Public Health*, 73, 7, 1983.
24. Adelstein, A. and White, G. Causes of children's deaths analysed by social class, in Child Health: a collection of studies. *Studies on Medical and Population Subjects* No. 31. HMSO, London. 1976.
25. *Working Group on Inequalities in Health*. (The Black Report). DHSS, London. 1980.
26. Learmonth, A. Factors in child burn and scald accidents in Bradford 1969-1973. *Journal of Epidemiology and Community Health*. Vol. 33: 270-273, 1979.
27. Constantinides, P. and Walker, G. 1986, ibid.
28. Baker, S.P. Childhood injuries: the community approach to prevention. *Journal of Public Health Policy*, Vol. 2, 3, 1981.
29. Baker, S.P. 1983, ibid.
30. Learmonth, A. *Factors in Child Burn and Scald Accidents: a review of the literature*. School of Science and Society, Bradford University, 1980.
31. *Steering group on health services information* (Korner Report). First Report to Secretary of State. HMSO, London. 1982.
32. The Home Accident Surveillance System. Consumer Safety Unit. Department of Trade and Industry, London. *Report of 1984 Data*, 1985.
33. *Computer-based Accident and Emergency Records Project (CAER)*. Accident & Emergency Department, General Infirmary at Leeds, Leeds.
34. Wilson, D.H. 1985, ibid.
35. Constantinides, P. and Walker, G. 1986, ibid.
36. Mayall, B. and Grossmith, C. Caring for the health of young children, in *Health Visitor*, Vol. 59, 1 and 2, 1986.
37. Constantinides, P. and Walker, G. 1986, ibid.
38. Eminson, C., Jones, H. and Goldacre, M. Repetition of accidents in young children, *Journal of Epidemiology and Community Health*, Vol. 40, 2, 1986.
39. Stewart-Brown, S. personal communication.
40. Constantinides, P. and Walker, G. 1986, ibid.
41. Winn, E. and King, C. (eds) *Making Use of Community Health Services Information*. Report of a workshop. King's Fund Centre, London, 1986.
42. *Fit for the future: report of the Committee on Child Health Services*. (The Court Report). HMSO, London, 1976.
43. Laidman, P. The health visitor, the pre-school child, and accident prevention. Research report in, *The Child Accident Prevention Trust Annual Report*, 1985-1986.
44. Melia, J. Study of the Prevention of home accidents in pre-school children. *Annual Report of the Social Medicine and Health Services Research Unit and Division of Community Health*, United Medical Schools of Guy's and St. Thomas' Hospitals. 1986- 1987.
45. Standing Committee on Accidents in Childhood of the British Paediatric Association. Memorandum on the management of accidents in childhood. *British Medical Journal*, Vol. 3: 103, 1967.
46. Jackson, R.H. Children in accident and emergency departments. *British Medical Journal*, Vol. 291:991-992, 1985.
47. Tuplin, J.A. *A study of the system of referrals and the role of the liaison health visitor in hospital/community communications*. Unpublished Report to the Bloomsbury Health Authority. 1984.
48. Atwell, J.D. and Gow, M.A. Paediatric trained district nurse in the community: expensive luxury or economic necessity? *British Medical Journal*, Vol. 291: 227-229, 1985.
49. Glucksman, E., Tachakra, S.S., Piggott, S. and Lea, H. Home care team in accident and and emergency. *Archives of Disease in Childhood*, Vol. 61, 3, 1986.
50. Bergman, A.B., Shrand, H. and Oppe, T.E. A paediatric home-care programme in London - ten years experience. *Paediatrics*, Vol. 36, 3, 1965.
51. Doncaster Health Authority. Evidence submitted to the Community Nursing Review.1985.
52. Cliff, K.S. 1984, ibid.
53. Calnan, M. The hospital accident and emergency department: what is its role? *Journal of Social Policy*. Vol. 2, 4, 1982.
54. *Accident and emergency services: use, abuse and misuse*. Report of a conference held at the King's Fund Centre. KFC 79/122. 1979.
55. Davies, T. Accident department or general practice? Practice Observed. *British Medical Journal*, Vol. 292: 241-244, 1986.
56. Constantinides, P. and Walker, G. 1986, ibid.
57. *Neighbourhood Nursing - A Focus for Care*. Report of the Community Nursing Review (The Cumberlege Report). HMSO, London, 1986.
58. Cliff, K.S. 1984, ibid.
59. Calnan, M., Abson E.P. and Butler, J.R. In case of emergency. *Health and Social Service Journal*.May 20: 615-617, 1982.
60. Bell, K. School accidents. *Health Bulletin*, Vol. 44, 2, 1986.
61. Stirland, H. Risk factors in childhood accidents, *Proceedings of the Symposium on Accidents in Childhood*, 1985, ibid.
62. Bernfenstam, R. Survival in childhood - experiences in Sweden in childhood accident prevention during the last twenty-five years, *Social Security*, Special Issue, 1979.
63. Baker, S.P. Injuries: the number one threat to our children, *Dimensions in Health Service*, Vol. 62, 4, 1985.
64. Gallagher, S.S. et al. A strategy for the reduction of childhood injuries in Massachusetts:SSCIPP, *The New England Journal of Medicine*, Vol. 307, 16, 1982.
65. *Play it Safe: a guide to preventing children's accidents*. Health Education Council and the Scottish Health Education Group in association with BBC Television.
66. Child Safety Information Pack for Professional and Voluntary Workers, Environmental Health Department, Leicester City Council.
67. Child Accident Prevention Policy Workshop. Child Accident Prevention Trust in conjunction with the Hillingdon and Coventry Health Education Units. Harrogate, June 1987.

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The **Primary Health Care Group** is a multidisciplinary team based at the King's Fund Centre for Health Services Development. Its aims are to improve primary and community health services, particularly in inner London; to encourage experiments with new ways of working; to disseminate 'good practice'; and to contribute to debates about primary health care policy. The group provides information and advice about primary care developments; works with NHS managers to establish and evaluate demonstration projects; organises workshops and conferences; and publishes papers and reports.

The group's current interests include strengthening the management of primary care services; collaboration between district health authorities and family practitioner committees; decentralising community health services; and services for disadvantaged groups. The work is financed by the King's Fund and the Department of Health and Social Security.

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Accident injuries are the single most common cause of death among children. They account for about one third of all child deaths and are a major cause of morbidity in childhood. The annual cost to the health services of treating children's accident injuries is estimated in tens of millions. The cost to individual children and their families in terms of pain, distress, long-term disability and suffering is incalculable. Yet the majority of these accidents are preventable.

The National Health Service bears a large part of the financial burden of accident injuries, but it also holds one of the keys to successful prevention in the form of information — data on what injuries are happening where and to which age groups. Health service managers have, therefore, a vital role to play both in improving the follow-up of children's accident injuries, thereby minimising long-term disability, and in initiating preventive policies and programmes, thereby reducing morbidity and mortality.

This booklet draws together the now substantial evidence that a multi-sectoral, public health approach is needed in childhood accident prevention. It highlights the role which might be played by various branches of the health service, preventive and curative, and offers some examples of 'good practice'. Finally, it indicates potential avenues for co-operation between health and other statutory and voluntary services which have an interest in child safety.

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