



The Health of Our **children**



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Office of Chief Medical Officer

Chief Medical Officer

Dr Jim Kiely

Deputy Chief Medical Officers

Dr Rosemary Boothman

Dr Eibhlín Connolly

Dr John Devlin

Dr Tony Holohan

Dr Bernadette O'Keefe

Specialist Registrars in Public Health Medicine

Dr Tony Holohan

Dr Joan O'Donnell

Dr Tom O'Connell

Dr Paul McKeown

Administration

Pauline Brady

Frances Norris



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Preface

It gives me great pleasure to introduce this, the second Annual Report of the Chief Medical Officer. This report describes progress made since the publication of the 1999 report on issues such as health inequalities and the major strategic areas of cardiovascular disease, cancer, communicable diseases and health promotion. It also identifies areas in which further progress needs to be made on these issues.

The major theme, however, is that of the health of our children. The report describes many important aspects of the health status of our children, the factors which determine it, and the services we have put in place to serve our children's health needs.

The picture painted is one in which our children's health has improved significantly over recent decades, though not as quickly as we might have hoped when compared to some other European Union countries. The services we have provided range across a wide spectrum of prevention, cure and rehabilitation and, in many areas, are excellent. However, a greater emphasis on prevention and promotion, coupled with a more integrated, child-centred and holistic approach is required to meet the increasing complex needs of our children and adolescents.

A number of priority areas for action within the health system are identified such as accidents, mental health and disability and a number of broader public policy issues are identified relating to the reduction in health inequalities in our children.

The publication of this report is very timely as it now can be considered in conjunction with the National Children's Strategy which was published by the government in November 2000 and which forms the policy and strategic framework within which the government will address children and their lives into the foreseeable future. I welcome this report as a major contribution to the debate on our children, their needs and their future.



Micheál Martin T.D.
Minister for Health and Children

Glossary of Terms and Abbreviations

Age specific rate:	The rate of occurrence of a particular event in a specified age group.
Age standardised rate:	Rate which has had the effect of differences in age between populations removed by application of a statistical process.
DT:	Diphtheria, tetanus.
DTP:	Diphtheria, tetanus, pertussis.
DTPa:	Diphtheria, tetanus, acellular pertussis.
Epidemiology:	The study of the distribution and determinants of health-related states or events in specified populations and the application of this study to control of health problems.
Health gain:	Concerned with health status, both in terms of increases in life expectancy and improvements in the quality of life through the cure or alleviation of an illness or disability or through any other general improvement in the health of the individual or the population at whom the service is directed.
Hib:	Haemophilus influenzae type B.
Incidence:	The number of new cases of a particular condition arising in a given population in a given time period (usually one year).
MMR:	Measles, mumps, rubella.
Morbidity:	Any departure, subjective or objective, from a state of physiological and psychological well-being.
Mortality rate:	The proportion of a population that dies during a specified period (usually one year).
NAPS:	National Anti-Poverty Strategy.
Prevalence:	The number of cases of a particular condition in a given population at a specified point in time.

Public health:	One of the efforts organised by society to protect, promote and restore people's health. It is the combination of sciences, skills and beliefs that is directed to the maintenance and improvement of the health of all the people through collective or social actions.
PHIS:	Public Health Information System.
SIDS:	Sudden Infant Death Syndrome.
Screening:	The presumptive identification of disease or defect by the application of tests, examinations or other procedures which can be applied rapidly. Screening tests sort out apparently well people who probably have a disease from those who probably do not. A screening test is not intended to be diagnostic. Persons with positive or suspicious findings must be referred to their physicians for diagnosis and necessary treatment.
Social gain:	Concerned with the broader aspects of the quality of life. It includes, for example, the quality added to the lives of dependent elderly people and their carers as a result of the provision of support services, or the benefit to a child of living in an environment free of physical and psychological abuse.
Surveillance:	The process of continuous collection and analysis of data and its subsequent dissemination to those who need to know.

Executive Summary

Introduction

This is the second in a series of annual reports from the Office of the Chief Medical Officer. It takes as its theme the issue of child health. The report seeks to identify and analyse child health status, child health services and the broader socio-economic determinants of child health.

This report begins by reviewing certain policy and service issues which were identified in the 1999 report as being important in terms of their public health impact and which have been the subject of developments in the intervening period (Chapter 2). These include health inequalities, the *National Health Promotion Strategy*, the cardiovascular disease strategy *Building Healthier Hearts*, the *National Cancer Strategy*, the *National Health Information Strategy* and communicable disease issues.

The report then focuses on specific issues such as the health status of children in Ireland, social determinants of child health, child health promotion, as well as childhood accidents, disability and mental health. A summary of key points in the report is presented below.

Children's Health: Social Determinants and Inequalities

- Whilst there have been overall improvements in the health of children in Ireland, inequalities in children's health persist.
- Inequalities in child health arise from socio-economic and environmental factors, as well as from ethnicity, disability and geography.
- Poverty is the most important social factor associated with ill-health in children.
- A broad range of interventions relating to income, family support, child care, education and health services are required to support children's health.
- Specific policy measures which redistribute resources, provide opportunities and services for families with children, especially poor children, will do most to create better child health. For this reason, basic universal health provision, such as free access to primary care for all children, should be considered.
- Education plays a key role in health. Particular attention needs to be paid to the education of disadvantaged children.

- There is a strong case for the development of all-Ireland research, policy development and interventions which aim to improve the health of children throughout Ireland.

Lifestyle-related Risk Factors

- The recent *Health behaviour in school-aged children* (HBSC) survey examined the health behaviour of schoolchildren in the 11 to 15-year-old age group. Younger Irish children compare favourably to the average for children in other countries for many risk indicators such as smoking and alcohol consumption, while for exercise they have one of the highest participation rates.
- The 1999 European School Survey Project on Alcohol and Other Drugs (ESPAD) examined alcohol, tobacco and drug use in 26 European countries including Ireland, in schoolchildren in the 15-16 year old age group. This followed up on the previous 1995 study. Comparing 1995 and 1999, the study found a marked deterioration in behaviour patterns among Irish participants compared to other countries particularly in the case of alcohol consumption. We rank among the highest of all participating countries in relation to alcohol and illicit drug use.
- Thus, the use of alcohol and illicit drugs increases at an older age in Irish school children compared to their European counterparts, their usage is higher, and the situation has deteriorated between 1995 and 1999.
- These two studies show the continued need for information on health behaviour in Irish teenagers.
- A broad intersectoral policy response is needed to deal with these issues. Sectors such as justice, education, social welfare and finance must work closely with health in addressing these problems.

Health Status of Children in Ireland

- The proportion of the population in Ireland between the ages of 0 and 14 has been declining steadily in recent years as the population in Ireland is ageing.
- Indicators of child health in Ireland have shown considerable and sustained improvement, mirroring improvements which have taken place in many other European and Western countries. However, according to many indicators, the health of Irish children lags behind that of children in other jurisdictions.

- Much morbidity and mortality in children is related to preventable causes such as injuries and poisonings, infectious diseases and certain congenital anomalies like neural tube defects.
- Admission and procedure rates have been steadily increasing in recent years. Variation in admission and procedure rates can be seen between health boards. The reasons for this are unclear.
- We have some way to go before we have the information available which enables us to produce a comprehensive picture of the health of our children, and their access to and utilisation of services.

Accidents in Childhood

- Accidents are a significant cause of morbidity and mortality in children, and are preventable.
- A significant proportion of health service resources is spent on treatment of accidents, and the wider socio-economic costs are even greater.
- Good quality information is required so that interventions to prevent accidents can be planned and successfully implemented.
- An intersectoral strategy for injury prevention, treatment and rehabilitation is necessary.

Disability in Childhood

- The Programme for Prosperity and Fairness has highlighted the development of services for persons with disability as a priority area.
- The *National Children's Strategy* has recognised the need for increased intersectoral collaboration in relation to children's health and welfare.
- There is a need for increased public awareness of childhood disability. Prevention is also of key importance.
- This involves promotion of healthy lifestyles, protective measures such as immunisation and prevention of accidents, appropriate management of disability including rehabilitation.
- The development of a national physical and sensory disability database, to complement the existing national intellectual disability database, will improve our ability to identify children with disabilities, and to plan services to meet their future needs.

Mental Health in Childhood

- Psychological and psychiatric conditions form a significant health problem in childhood and adolescence.
- The promotion and protection of children's mental health must be prioritised by the health system as well as by society at large.
- Prevention and intervention strategies must be based on information about mental illness in children and upon best available evidence.
- An integrated children's health strategy is required which prioritises children's mental health and identifies how the health system, in collaboration with appropriate sectors, can promote mental health and also prevent and treat mental illness.

Discussion

- The description and analysis of the health determinants, health status and service utilisation pattern among children given in the report are necessarily limited due to the lack of comprehensive data.
- It is a priority recommendation that the *National Health Information Strategy* pay particular attention to the requirement for comprehensive child health surveillance data.
- The health status of Irish children has improved significantly over recent decades. However, there is evidence to suggest that compared to the health experience of children in some other European countries, the improvement in health indicators has not been as large or as sustained as might have been hoped for.
- Child health should be reconsidered from a health promotion perspective because for too long it has been associated with a narrow focus on diagnosis and treatment of illness and disease.
- A system-wide review of primary care and acute hospital services is recommended, a review similar to what has already been conducted for pre-school and school health services through *Best Health for Children*.
- In the future, the changing pattern of disease such as the rise in adolescent suicide, sexually transmitted diseases, asthma and childhood obesity will present new challenges.
- The integration of children's health care into a holistic, child-centred system, necessitates fundamental organisational and behavioural changes within our health system. These can only be contemplated and resourced in the context of a national child health strategy.

chapter 1

Introduction



The Health of our Children

Introduction

This is the second in a series of reports from the Office of the Chief Medical Officer. The basic purpose of the report is to reflect on the health and well-being of the Irish population and to attempt to identify and analyse factors relevant to public health in Ireland. This is a rather broad canvas and, as mentioned in last year's initial report, it is not possible to deal in an annual report with all relevant issues of the day. It is, therefore, proposed to confine the discussion to a number of issues of both immediate or long-term significance to the state of public health.

With this in mind, the report for 2000 will:

- review certain policy and service issues which were identified in the 1999 report as being important in terms of their public health impact and which have been the subject of developments in the intervening period. These are:
 - Health inequalities, the narrowing of which was identified in last year's report as a matter of fundamental importance to the achievement of better health for the Irish population
 - The *National Health Promotion Strategy* published during 2000
 - *Building Healthier Hearts* (the cardiovascular strategy)
 - The *Cancer Strategy*
 - The *National Health Information Strategy* which was identified in last year's report as an indispensable element in the accurate monitoring of the health status of the population, in the measurement of biological, environmental and behavioural risk to health, and in health services utilisation, efficiency and effectiveness
 - Communicable disease
- identify and analyse certain aspects of child health status, child health services and the broader socio-economic determinants of child health. When examining these themes in general, it is proposed to deal in somewhat more detail with the issues of childhood accidents, disability and mental health. These are themes of particular contemporary relevance, are the subject of much public interest and concern, and have certain identifiable preventable factors in their causation which make them amenable to a range of successful interventions. The report does not propose to deal with such issues as social care, child protection issues as comprehended in the Childcare Act, or the issue of child homelessness and residential care which are subjects dealt with in other publications.

The theme 'The Health of Our Children' is significant in that the government published, in November 2000, the *National Children's Strategy* which seeks to enhance the status and further improve the quality of life of Ireland's children. This is a matter of fundamental importance, as child health and welfare, the factors affecting it, and the approach society takes to promoting and protecting children's health, have profound significance both in terms of the longer-term health and well-being of the Irish people and in defining the values and quality of life in Ireland. The issues this report raises could form the basis for consideration in a future children's health strategy.

chapter 2
Review



The Health of our Children

Review

Inequalities in health

Inequality was the underlying theme of last year's report. The report clearly identified that health, ill-health and premature mortality are unequally distributed in our society and that those whose socio-economic prosperity is less than others suffer disproportionately in this regard. It stressed the fact that the policy response to this issue has to comprehend the totality of factors which contribute to this phenomenon and that action to remedy the situation has to be based on intersectoral collaboration of a very fundamental and far-reaching nature.

Developments in the past year have confirmed that this understanding of health and its determinants has received far greater strategic focus than ever before. The National Anti-Poverty Strategy (NAPS) was drawn up by the government in 1997 and identified five areas for attention. These were:

- income adequacy
- unemployment
- educational disadvantage
- urban concentrations of poverty
- rural poverty.

While some health issues were raised in the NAPS, no specific health targets were set. A review of NAPS has now resulted in a decision to include health as a subject for target setting in the context of the National Development Plan and the Programme for Prosperity and Fairness (PPF).

Short, medium and long-term targets will be set and specific indicators developed so as to ensure that the targets can be measured and that progress towards achieving them can be monitored. The aim of the health targets is to generate activity and interventions across a wide spectrum of policy areas in order to reduce the impact of poverty on health and to ensure that good health can assist people in escaping poverty. A NAPS working group under the chairmanship of the CMO is developing targets which, it is hoped, will be ready by June 2001. As the Department of Health and Children is preparing to develop a new health strategy in 2001, it is an appropriate time to be involved in integrating the concept of health and health improvement into the broader government policy framework.

The National Health Promotion Strategy

The *National Health Promotion Strategy 2000-2005* was published in July 2000. The strategy builds on previous national strategy documents, *Shaping a Healthier Future* (1994) and *A Health Promotion Strategy ... Making the Healthier Choice the Easier Choice* (1995). Other relevant national policy documents were taken into account in the development of the health promotion strategy. There have been substantial developments in health promotion at health board level. A health promotion department led by a senior manager and with a dedicated budget has been established in each health board. The strategy builds on existing infrastructure and collaboration, and on programmes already being implemented.

Social, economic and environmental factors

In tackling issues of inequality it is important to adopt a holistic approach and ensure that all determinants of health are considered, particularly those beyond the remit of the health services. Towards this end, the health promotion strategy proposes that relevant policies, strategies and legislation undergo a process of 'health proofing' so that their potential impact on the physical, mental and social well-being of the population is assessed. There is a need for greater intersectoral action to address the impact which social, economic and environmental factors have on the health of individuals and communities.

Poverty is widely recognised as having a negative effect on health. In addition to lower levels of physical health, poor people suffer greater psychological distress and have lower self-esteem compared to those who are better off. Low literacy levels limit access to health information and health services. Young people from lower socio-economic backgrounds are almost five times more likely to leave school with low qualifications. This is associated with increased risk of becoming long-term unemployed and with less healthy behaviours and lifestyles.

Rural residence and physical isolation are recognised as barriers to accessing health services. Other aspects of the environment can also impact on health, for example the availability of transport and recreation facilities. The *Interdepartmental Proposal for a National Environmental Health Action Plan* (1999) which recognises the association between the physical environment and health is therefore welcomed. The proposal identified priority action areas, including some of particular relevance to health, such as the promotion of a tobacco-free society, the reduction of accidents, especially road traffic accidents, and the control of infectious diseases. Work is now underway to prepare a national environmental health plan which will contribute to an environmental health action plan for Europe.



Strategic directions: population groups, settings and health topics

Strategic aims and objectives for health promotion presented as three distinct approaches: (1) population groups, (2) settings and (3) topics. The three approaches are inter-linked and of equal importance. Emphasis is placed on working in partnership, in an intersectoral and multidisciplinary manner, and in consultation with consumers. Research and evaluation will be prioritised to maximise the effectiveness of health promotion initiatives.

- The population approach is used to plan health promotion initiatives to address health issues relevant to specific groups. People are supported to develop skills and to make behaviour changes to improve health and well-being.
- In the settings approach efforts are made to create an environment which supports healthier choices, with complementary education programmes.
- The health topics approach can provide a focus to address specific issues and facilitates working with statutory and non-statutory organisations.

In order to achieve the stated aims and objectives, attention will be paid to further development of the necessary infrastructure for health promotion.

Reducing the use of tobacco will be a priority for health promotion at national and regional level. The implementation of the cancer strategy and the cardiovascular strategy will result in increased health promotion action to reduce the percentage of young people who begin to smoke. Health services to support smokers to quit will be expanded in hospitals and in the community. The report of the Tobacco Free Policy Review Group also recognises that further regulation of the tobacco industry will be required. In addition, better law enforcement is necessary to protect non-smokers from the health effects of passive smoking.

Cardiovascular strategy

As described in last year's report, Ireland's high rates of premature mortality from cardiovascular disease are a major challenge, not only to the health services, but to all sectors which impact on health. Irish men and women have the highest rates of premature mortality from cardiovascular disease within the EU. Within Ireland, those in lower socio-economic groups have higher disease rates than those in higher socio-economic groups and there is significant regional variation in both mortality rates and health service provision.

The cardiovascular disease strategy, *Building Healthier Hearts*, was presented to the Minister in July 1999. Guided by the basic principles of delivering health and social gain; equity of access; safe and high quality service provision; effectiveness and efficiency; and accountability and audit, the strategy identified four key areas for action:

- Standardise acute care in the pre-hospital and hospital setting across health board regions
- Establish a protocol for appropriate primary care
- Ensure an effective surveillance system
- Expand or put in place settings-based health promotion activities.

The strategy included 211 recommendations across these action areas. Implementation of the strategy, which will be phased over five years, is now in its second year. This is one of the largest initiatives ever undertaken in the Irish health system. In recognition of the need for committed multisectoral action to combat cardiovascular disease, a Heart Health Task Force has been established to drive the process forward. An expert Advisory Forum advises the Department of Health and Children and the Task Force on practical issues arising from the implementation of the strategy. Regional implementation structures have been put in place in each health board and a national heart health advisor has been appointed to facilitate the work of the various national and regional implementation bodies.

Funding in 2000 was used to enhance services across a range of areas, with particular attention focused on building health promotion capacity, improving ambulance and pre-hospital services and increasing the provision of cardiac rehabilitation services.

There has been a substantial expansion in health promotion capacity across all health board regions over the past year and further developments are planned in 2001. Initiatives in 2000 were in the main targeted at raising public awareness of the strategy and at reducing smoking, particularly in young people. Physical activity will be targeted in 2001. Future challenges include the need to engage other sectors so that the environmental changes required to reduce social inequalities and to facilitate individuals in making lifestyle changes can be effected.

The strategy pinpointed general practice as a key setting for the delivery of preventive services. This will require significant investment in primary care infrastructure and staffing. A pilot study of primary care-based preventive services will commence in 2001, to be targeted at those with established coronary heart disease in the first instance.

Successful implementation of this recommendation will require significant resources and the pilot will be evaluated to ensure that developments in this area achieve the benefits anticipated.

There are substantial regional variations in the provision of, and access to, specialist cardiology services in acute hospitals. A priority for 2001 is the development of a national action plan for consultant cardiology services to address regional inequities and to ensure that hospital services are co-ordinated and integrated at regional and national levels.

Another priority is the development of health information and performance measurement systems. These are essential to support the strategy through developing clinical guidelines and protocols based on best evidence, setting standards, and monitoring and evaluating progress in meeting these standards.

Cancer strategy

The *National Cancer Strategy* was published in November 1996 and was followed in March 1997 by a three-year action plan giving details of how it would be implemented. The main elements involved the following:

- Reorganisation to ensure that cancer services, based on principles of best practice, are properly organised and fully co-ordinated throughout the country. This involved the appointment of regional directors to co-ordinate services and develop a cancer plan for their region, new consultant appointments and the establishment of expert committees to devise plans for the development of services including those in symptomatic breast disease, palliative care and radiotherapy services
- Devoting resources to screening and early detection programmes of proven value (such as cervical and breast cancer) and investigating evidence regarding screening for other cancers. This included the establishment of expert bodies to steer the implementation of national programmes of screening for breast cancer and cervical cancer and the introduction of legislation to ensure that the breast and cervical screening programmes comply with data protection requirements
- Using health promotion activities to emphasise further the importance of healthy lifestyles
- Facilitating greater co-ordination of cancer research through funding via the Health Research Board (HRB) and more recently, through the National Cancer Institute (NCI) Consortium.

The first National Forum on Cancer Services was established in 1997 to advise on the implementation of the *National Cancer Strategy*. It acted as a focal point of communication

and co-ordination of cancer services and as a unifying link across all levels of cancer services for planning and delivering services. It provided valuable advice on a range of issues during its three-year term.

The National Cancer Registry Board published its first national report, relating to 1994 data, in July 1997 and has since produced three further reports relating to 1995, 1996 and 1997. It has continued to develop its data analysis and research capability within the Registry and has worked closely with the Northern Ireland Cancer Registry. With the help of funding from the NCI Consortium, it produced an all-Ireland Cancer Report in May 2001.

The great majority of the commitments in the action plan of March 1997 have now been funded and have either been implemented or are in the course of implementation. These activities have resulted in tangible improvements in preventive, treatment and palliative cancer services throughout the country.

In order to build on the success of the three-year action plan, the Minister for Health and Children has established a National Cancer Forum and has appointed regional cancer directors throughout the country. A number of challenges face the Forum and the directors as a result of the following initiatives:

- The service developments undertaken during the three-year action plan have resulted in significant carry-over costs (e.g. drug costs and knock-on service requirements) which will require resources in the future.
- The regional directors, health boards and the National Cancer Forum have identified a range of service needs over and above those provided for in the original action plan.
- A number of other specific issues have been identified regarding the operation of cancer treatment services, e.g. surgical cancer services, the development of cancer nursing and education, counselling services and the development of protocols and guidelines.
- The report on the development of symptomatic breast services has been published and the health boards are currently implementing its findings.
- A report on the development of palliative care services is about to be published.
- A report on the development of radiotherapy services will be completed in 2001.

This is an exciting time for the development of cancer services in Ireland. The new Forum and the regional cancer directors are well placed to rise to the challenge.

The National Health Information Strategy

Our ability to adequately describe the health of the population, to identify population health needs or to evaluate the equity, effectiveness and overall quality of health services in addressing these needs is limited, because much of the health information required to answer these questions is lacking, or is not available in a suitable format. In the *Annual Report of the Chief Medical Officer (1999)*, health information was identified as a critical area for development if the key principles of equity, quality and accountability in the health system are to be achieved and measured.

It is important to recognise that the scope of health information, defined in the broadest sense, is extremely wide. The term 'health information' includes information about health, illness and health services required by the general public and many others, as well as the information required by health professionals, health service managers and policy-makers to ensure the quality, equity, efficiency and effectiveness of health service provision. Health information should be central to the decision-making process at every level in health care, but this cannot happen unless the collection and dissemination of information is driven by the uses that are to be made of it. Consideration must be given not only to the content and scope of information required, but also to its availability and accessibility, the routes through which it is provided and the quality assurance of information sources.

Improvements in health information can be greatly facilitated by recent developments in information technology. Information technology has the power to radically improve the provision of health information and ultimately to streamline and improve health service provision. This technology should be exploited to the fullest extent possible, as has happened in other sectors such as banking. However, it should be understood that improved production and use of health information depends on many other factors such as the culture within the health services, the medico-legal environment and the skill set of staff, as well as access to appropriate information technology.

Recognising the central importance of health information, the Minister for Health and Children established the National Health Information Strategy (NHIS) Committee in April 2000 to develop a strategic approach toward the achievement of a co-ordinated and integrated national health information system. This is a substantial task and there are many potential infra-structural, organisational, professional and legal obstacles to be considered.

Achieving a consensus on an appropriate approach to the development of a national health information strategy is an essential first step. This consultation process commenced with a National Health Information Conference in November 2000 to which many of the key stakeholders contributed, and is now continuing. The NHIS group is expected to complete its work in late 2001. The resultant strategy will link clearly with the new health strategy, due for publication in 2001, insofar as it will underpin many of the strategic goals which the strategy will outline by providing the information necessary for their attainment.

Communicable diseases

An overall aim of the Department of Health and Children is to reduce the incidence and severity of communicable diseases in the Irish population. This is achieved by the development of appropriate policies, together with the securing of adequate resources to achieve these objectives. Since the publication of the *Annual Report of the Chief Medical Officer (1999)*, significant progress has been made in a number of areas.

Immunisation

Vaccine-preventable diseases represent one area of communicable diseases for which highly effective and cost beneficial measures exist in relation to prevention and control. The success of the vaccination programmes depends upon achieving a high level of vaccine uptake among the target population. In Ireland, the primary immunisation uptake averages 86 per cent for DTPa/Hib/Polio and 75 per cent for MMR vaccine. This falls short of the target of 95 per cent uptake rate in the childhood population. In January 2000, a measles epidemic arose in North Dublin and spread to other areas. Additional measles control measures were put in place, including a lowering of the vaccination age to six months in the outbreak areas, an enhanced MMR programme aimed at improving uptake of the first dose of the vaccine, and a catch-up programme in the school population. This epidemic has resulted in more than 1,500 cases and two measles-related deaths. The control measures retarded the transmission of the measles virus and interrupted the epidemic curve of the outbreak. However, additional efforts will be necessary on an ongoing basis in order to achieve the elimination of measles in Ireland by 2007, in line with World Health Organisation targets.

The measles control measures were included in the new National Vaccination Programme, introduced after the publication of *the Royal College of Physicians of Ireland (RCPI) Immunisation Guidelines* in 1999. This programme also included the introduction of DT vaccine at primary school leaving age.

The influenza and pneumococcal immunisation programmes were significantly enhanced during 2000. This included a major media campaign, a significant increase in the quantity of available vaccine, and the agreement concerning vaccine delivery in primary health care. Significant improvements have also been made in relation to influenza surveillance and the development of strategies relating to pandemic influenza.

The most significant change to the immunisation schedule in 2000 was the introduction of the vaccine against group C meningococcal disease. This vaccine was licensed in Ireland in July 2000 and the immunisation programme commenced in October. The vaccine will be incorporated into the Primary Childhood Immunisation Programme on a phased basis. Children and young adults up to the age of 22 will be immunised.

Immunisation safety

Introduction

Vaccination is one of the safest and most effective of all health-care interventions. The intention of childhood vaccination is to protect vulnerable individuals as early in life as possible from the negative health impacts of the disease. The incidence of vaccine-preventable diseases, together with their associated complications, has greatly declined in Ireland. Nevertheless, immunisation programmes on a worldwide basis face many challenges. These include ensuring and monitoring the safety of all aspects of immunisation: vaccine quality, vaccine storage and the handling and delivery of the vaccine. Immunisation safety is a priority for the Department of Health and Children. The Department acknowledges the need for prevention, early detection and quick responses to adverse events related to immunisation programmes so as to lessen their negative impact on health and on the programmes themselves.

In recent years, the success of immunisation programmes in decreasing the incidence of many infectious diseases including poliomyelitis, diphtheria, measles and small-pox, has led to complacency about the seriousness of these conditions. It is important that public concern about vaccine safety is accurately reported in a balanced fashion. 'Vaccine scares' are widely reported in the media and sometimes claims are made with little concern for the harm resulting from loss of public confidence in the vaccine and the consequent decrease in the number of children vaccinated. Vaccination rates in the UK have fallen off, following publication of recent negative press coverage on the MMR vaccine. This may also be partially responsible for low MMR coverage in Ireland and which has resulted in the recent measles epidemic. Follow-up studies which do not corroborate these initial claims rarely achieve similar publicity. The international scientific consensus, including that of the World Health Organisation, is that these are safe and effective vaccines.

Adverse reactions

Effective vaccines induce protective immunity in individuals but may sometimes produce undesirable side effects. The vast majority of these are trivial and harmless. A very small number, however, are considered to be serious. It is often possible to prevent these reactions because there are clear contra-indications to some vaccines. These are taken into account prior to the administration of the vaccine.

It is considered that the benefits from protection as a result of receiving a vaccine vastly outweigh the slight risk of an adverse reaction following the vaccine. It is difficult to determine the exact frequency of adverse events that actually occur following vaccination. This is because many childhood illnesses are 'coincidental' with the administration of the vaccine. The World Health Organisation estimates that in the first 180 days of a child's life, there is a one in 20 chance that any event is within three days of a dose of DTP vaccine. Nonetheless, it is possible to provide an estimate of the frequency of severe adverse events to some of the commonly used childhood vaccines (Table 2.1).

Table 2.1: Frequency of severe adverse events to commonly used childhood vaccines

Vaccine	Rate for severe reactions
BCG	1 in 1,000 to 1 in 50,000 doses
OPV (Polio)	1 in 3 million doses for the first dose of OPV
Measles	1 in 1 million doses
DTP	1 in 750,000 doses

Adverse events following immunisation may occur coincidentally after immunisation or by faults either in the administration of the vaccine or associated with the properties of the vaccine. It is considered that errors in the storage, handling or administration of the vaccine are more common than adverse events due to the properties of vaccines. Careful surveillance and investigation of adverse events are necessary to identify the causes of those events that require correction. In Ireland, the Irish Medicines Board (IMB) is responsible for the monitoring and safety of pharmaceutical products sold in Ireland. The monitoring of vaccine safety is ensured through clinical trials prior to licence and post-licence surveillance by the IMB. In turn, the IMB liaises closely with international bodies including the European Union (the European Medicines Evaluation Agency has regulatory responsibility in this area) and the World Health Organisation.

Immunisation safety is considered to be a global priority and the EU, WHO, UNICEF, the World Bank and the Centers for Disease Control and Prevention (USA) all participate in this global effort which aims to:

- ensure vaccine safety, from clinical trials through vaccine distribution, to the point of use
- strengthen research and development of safer and simpler delivery systems
- establish efficient mechanisms that detect serious or potentially serious adverse effects following immunisation and enable prompt and effective responses
- broaden access to safer and more efficient systems for vaccine delivery and sharps waste management.

Immunisation offers the possibility of eliminating a number of serious infections in the Irish population. A high uptake of vaccination is necessary to achieve this. Immunisation safety is a priority for the Department of Health and Children. The challenge is to use vaccines effectively and, where appropriate, to incorporate new and safe vaccines into the National Immunisation Programme.

Antimicrobial resistance

The issue of antimicrobial resistance has been identified by many countries and the World Health Organisation as a major threat to public health. The prudent use of antibiotics in clinical practice and the adherence to the principles of infection control in the hospital and community settings are key issues. In Ireland, the recently published Methicillin Resistant *Staphylococcal Aureus* (MRSA) study indicated that a relatively high proportion of patients with positive blood cultures had MRSA. The EU-funded European Antimicrobial Resistance Surveillance System (EARSS) project which monitors the level of antibiotic resistance in staff – *staphylococcal aureus* and *streptococcus pneumoniae* – indicated that the levels of antimicrobial resistance vary greatly across Europe but are high in Ireland. The recent Vancomycin Resistant *Enterococcus* outbreak in one major teaching hospital underlines the importance of antimicrobial resistance in hospitals.

The multidisciplinary nature of the problem indicates that the solutions will be cross-cutting. The Department of Health and Children is working with the National Disease Surveillance Centre and developing appropriate strategies relating to the problem of antimicrobial resistance in the human population. A *Strategy for Control of Antimicrobial Resistance in Ireland (SARI)* has just been published. The strategy will require the development of an appropriate infrastructure which will enable more comprehensive microbiological, epidemiological and pharmacological surveillance relating to antimicrobial resistance. The strategy also includes recommendations relating to education and standards and proposes that antimicrobial resistance research become a priority for funding agencies.

chapter 3

Social Determinants and Inequalities



The Health of our Children

Children's Health: Social Determinants and Inequalities

Introduction

Within the European Union, Ireland has the highest level of children as a percentage of the total population. Although the birth rate has reached a plateau in recent years, Ireland still has a higher birth rate than other EU countries. It is imperative that there is long-term strategic planning to cater for the health needs of these children and of future generations of children. Recent research into children's health indicates that socio-economic conditions are among the key determinants influencing the health status and health behaviours of children. A holistic model of health that recognises the link between health and these social determinants is what is required to drive the health needs of children to the forefront of the political agenda.

A number of key policy documents are helping to inform this process:

- The *National Anti-Poverty Strategy* recommends that all government policies should be poverty proofed.
- The *National Children's Strategy* is helping to focus the combined efforts of all relevant government departments on the needs of children.
- The ESRI *Living in Ireland* surveys of 1994 and 1997 identify child poverty as an urgent priority for policy development.
- The *Open Your Mind to Child Poverty Initiative*, which represents seven national organisations who are working together to eliminate child poverty, has set the agenda clearly in relation to recommendations for how the government can address child poverty. The organisations involved in the initiative are: Combat Poverty Agency, Barnardos, Children's Rights Alliance, National Youth Council of Ireland, Focus Ireland, Pavee Point and the Society of St Vincent de Paul.
- The *Best Health for Children* document has outlined the practical ways in which the health boards need to respond to the development of a holistic child-centred health service for children.

At the start of the millennium there are unprecedented opportunities to create better health for children throughout the island of Ireland. Health in early life is the basis of health in adult life. While most of Ireland's children are healthy, international evidence would suggest that the burden of ill-health falls mainly on children in low-income families. The key determinants of health are social and economic with lifestyle, genetics and health services playing a relatively lesser part. The processes by which social determinants affect the health of both mothers and



children interact and affect lifetime opportunities. There are increasing concerns about inequalities in the health of children and the unacceptability and injustice of the wide and persisting gap in the health of rich and poor children. Good health in children is created not by access to high quality and effective services, important as these are, but by the cumulative experiences of social conditions throughout their lives.

The aim of this chapter is to develop the theme of the social determinants of health, draw attention to inequalities in health in children and identify how the Department of Health and Children, and other agencies, can contribute to improving children's health.

Evidence: the case for action

The weight of evidence supports the view that children's health can be traced to social, economic and environmental conditions. While these conditions affect health throughout life, childhood is a critical and vulnerable stage where poor economic conditions and the quality of the social environment have lasting effect.

Evidence for the long reach of childhood has been demonstrated for many years in several different fields of study such as psychology and mental health and studies of social circumstances. It is now also becoming evident in studies of biological processes.

Biological processes

Living in disadvantaged circumstances has a direct effect on the current and future health of children. Compared with children in better circumstances, disadvantaged children are exposed to a range of risk factors including poor maternal nutrition, parental smoking, stress and emotional disturbance, all of which lead to serious long-term health consequences. In addition, there are indirect effects because parental disadvantage starts a chain of social risk that puts children at further risk of ill-health in the future. Recent important research shows that low birth weight not only increases the risk of ill-health or death in the first year of life but is also associated with the development of heart disease, diabetes and high blood pressure in later life.

The biological processes which impact on children's health all take place in a social context. The health of mothers during pregnancy depends on their health throughout all their life before pregnancy. This varies according to social and family circumstances which in turn will affect not only their diet, smoking, exercise and alcohol consumption but also their mental well-being and coping skills. Similarly, the infant's health will depend on parents' social and economic circumstances as well as their health-related knowledge, attitudes and behaviour.



Inequalities

While there have been improvements in the health of children in Ireland, inequalities in children’s health persist. It is known for example that perinatal and infant mortality rates are higher in families where the father is an unskilled manual worker or is unemployed. The incidence of low birth weight is significantly higher in geographical areas which have high levels of socio-economic deprivation. Particular groups of children such as those with disabilities, and children who live in disadvantaged communities, have high rates of infant mortality and levels of sickness. Travellers represent a particularly disadvantaged and marginalised ethnic group within our society. A comprehensive national study of Travellers’ health in the late 1980s showed that Traveller children had more than twice the mortality rates of the general Irish population, and unhoused Travellers fared worse in this regard than those who lived in standard accommodation. The *Health behaviour in school-aged children* survey indicates a strong association between health status and socio-economic conditions. Inequalities in child health can, therefore, arise from wider socio-economic and environmental inequalities as well as from ethnicity, disability and geography.

Poverty

Poverty is the most powerful aspect of the social context associated with ill-health in children. There are many dimensions of poverty including: lack of educational attainment, inadequate housing, social exclusion, environmental risk and low income. Each diminishes opportunity and threatens children’s health.

One in four children under 14 in Ireland is poor, with 17 per cent experiencing chronic poverty. This figure is higher than in most European Union countries.

Nutrition of mothers and children

In early life the major risk factors for children are malnutrition and infection. Each is associated with poor social circumstances and can threaten survival as well as development. Even in reasonably well-nourished populations the interaction of diet with mothers’ pre-pregnancy state affects fetal development. Fetal development is also disrupted by maternal smoking, alcohol consumption and experience of infection. These risks interact and result in change which may not manifest itself until children meet a specific challenge later in life.

Mothers on low income may not be able to afford a healthy diet during pregnancy and may go short in order to feed their children. A study of mothers living in poor areas in Dublin suggested mothers went without food so that their children had adequate nutrition. Studies of at-risk children in school also show poor nutritional status.

Breast-feeding provides an important nutritional start, protecting infants from infection and allergy. When continued for three months or more, breast-feeding seems also to be associated with improved cognitive performance. Ireland has one of the lowest rates of breast-feeding in the EU and national data show that mothers in lower socio-economic groups in Ireland are less likely to breast-feed than those in higher socio-economic groups.

Family determinants

The social and family circumstances of mothers are of the utmost importance. These include the mother’s circumstances before pregnancy, diet, smoking, drinking and mental health, as well as her wider socio-economic circumstances.

Family circumstances in early life set a trajectory for children’s health into adulthood. Family socio-economic circumstances are associated with child growth, probably because of nutrition and exercise. Longitudinal studies show that the rising socio-economic status of the father is associated with increased height and growth in the child. Family socio-economic circumstances also relate strongly to the child’s educational opportunities which are in turn associated with occupation and income.

Influences on child development which have been shown to be particularly important include parenting skills, quality of parental care, security and child-rearing practice.

Education

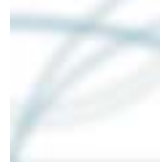
Education plays a key role in health: preparing children for life, ensuring practical, social and emotional knowledge and skills, and giving children the confidence and ability to participate fully in society.

Particular attention needs to be paid to the education of disadvantaged children, because in the long-term disadvantage, school exclusion and low educational attainment are associated with an increased risk of unemployment and homelessness in adulthood.

Pre-school education plays an important role – there is evidence that it is associated with improvement in a range of social and educational skills.

Environmental issues

There is considerable concern about issues such as air quality, environmental contaminants and child safety, yet little information is available in Ireland which describes how children’s health is affected by environmental issues. Priority should be given to reducing the extent to which children are exposed to environmental tobacco smoke.



Long-term effects

There is strong evidence from research studies that the important foundations for adult health are laid in prenatal life and early childhood. Slow growth and lack of emotional support during this period raise the lifetime risk of poor physical and mental health and reduced physical, mental and emotional functioning in adulthood with consequent repercussions for poor adult health.

Proposals for action

The promise of intervention to address the determinants of health and inequalities is considerable. Early intervention has the potential to improve children’s health and well-being as well as bringing parental benefit. Greater awareness of the importance of the social determinants of health and inequalities in children’s health will lead to a more constructive debate on the ways in which effective interventions could be designed to improve the wider social context for children. This wider societal dimension to children’s development is described in the *National Children’s Strategy* and the steps to support and nurture children’s development are explicitly spelled out.

Policy and service interventions

A broad range of interventions relating to income, family support, child care, education and health services is required to support children’s health. Specific policy measures which redistribute resources and provide opportunities and services for families with children, especially poor children, will do most to create better health.

A number of interventions to improve infant and child health have been tested world-wide.

Key policy issues include:

- the development of a package of child income support, support for child-care costs and increased child benefit
- adequate income to allow all families to meet their basic and nutritional needs
- wider family support through the development and extension of schemes such as the community mothers scheme
- wider public provision of high quality child care and pre-school education especially for low income families
- the promotion of safe environments for children, including housing with safe play-space and road safety

- the need to pay particular attention to the education of disadvantaged children
- wider access to a range of services for pre-school children, with emphasis on education, programmes to promote literacy and primary health-care services.

Models of provision which may leave low-income families with a financial burden may create problems of access to services including health services. For this reason basic universal provision, such as free access to primary care for all children, should be considered.

Priorities in addressing inequalities

Following the government decision of 1998, in line with a Partnership 2000 commitment to the strengthening of administrative procedures for equality proofing in the context of the NAPS, it is now policy that significant government proposals must indicate clearly the impact of the proposal on groups in poverty or at risk of falling into poverty. This is a requirement for all government departments and focuses attention on poverty and inequalities, with a view to poverty reduction.

Effective partnership and children’s participation

It is widely recognised that improving children’s health involves a broad range of sectors. There is a crucial need to strengthen effective partnerships between community, voluntary and statutory bodies, both in policy-making and service provision. The participation of local communities who know and understand the issues is likely to strengthen effective partnership. In particular the participation of children in decisions and activities which affect their health (a voice for children) is a crucial part of policy and service development.

Social and cultural diversity

As described in the *National Children’s Strategy*, diversity in family life and social and cultural diversity are becoming ever more significant features of Irish life. This poses major challenges in that the specific needs of minority ethnic groups, including Travellers, have to be identified and addressed, but in a way that respects their ethnic and cultural diversity. Several important initiatives are already underway to meet these challenges. There is a need for continuing attention to the implementation of the *Report of the Task Force on the Travelling Community*. The forthcoming *National Traveller Health Strategy* is to be welcomed. Ethnic, cultural and linguistic diversity considerations should be taken into account in all relevant national and local policy developments and service delivery.

Research and information

There are a number of ways in which research and information on children's health can underpin action. These include:

- monitoring trends in children's health and inequalities
- developing health indicators to provide measures of the multi-dimensional nature of children's health
- support for a longitudinal study of the health and well-being of children
- the development of routine and accurate collection of social class data for all births and deaths.

Initiatives are underway in support of this research.

Rights of children

A growing acknowledgement of the needs and rights of children is clearly expressed in the UN Convention on the Rights of the Child, ratified by Ireland in 1992. The Convention promotes a comprehensive approach which includes 'the right to the highest attainable standard of health and to have access to health and medical care, with particular emphasis on primary health care'.

The *National Children's Strategy* offers an important opportunity to develop long-term goals which reflect the aspirations of the UN Convention and develop practical action for children's health.

All-Ireland approaches

Concerns about persisting inequalities in child health have also been raised in Northern Ireland. There is a strong case for the development of all-Ireland research, policy development and interventions which aim to improve the health of children throughout Ireland.

Social progress

Children's health is inextricably linked to social and economic progress. The efforts to improve children's health should be placed at the centre of plans for national development. The most significant gains in children's health will come from tackling social and economic factors such as poverty, education, exclusion and the environment.

chapter 4

Lifestyle-related Risk Factors



The Health of our Children

Children's Health: Lifestyle-related Risk Factors

The lifestyle choices and health behaviours of children can have a direct impact on their health and social well-being, in childhood and in later life. Adolescence is the gateway from childhood to adulthood and many of the health behaviours exhibited by adolescents may be continued into adulthood or may have health consequences in later life. It is important to monitor health behaviours in children, particularly as they move towards adulthood, and respond appropriately. Recent national and international studies of health behaviours among children in Ireland have enabled us to make international comparisons of health behaviours among school-aged children and adolescents. As these studies will be repeated at intervals, our ability to monitor trends in such behaviours over time will improve. This chapter is based on information from The *Health behaviour in school-aged children* survey and The European School Survey Project on Alcohol and other Drugs (ESPAD) 1999 report which provide important insights into smoking, alcohol consumption and drug use among Irish children.

The Health behaviour in school-aged children survey

The *Health behaviour in school-aged children* (HBSC) survey involves the collaboration of researchers from several countries, under the auspices of the World Health Organisation Regional Office for Europe and a team of researchers from Canada and the United States. Comprehensive surveys of 11, 13, and 15-year-olds are carried out every four years in an increasing number of countries and are used to investigate health issues within and across participating countries.

Students from all participating countries in the HBSC survey, including Ireland, were asked the same questions about smoking, alcohol consumption and exercise. This allows extremely useful comparisons of important health behaviours to be made between Irish children and their international counterparts. Table 4.1 shows the proportion of boys and girls at different ages in selected participating countries who reported smoking on a daily basis. Daily smoking increases substantially across age groups. Large increases are noted in every country between ages 13 and 15. This is also the case in Ireland.

Table 4.1: Percentage of school children in selected participating countries who reported smoking daily. Source: *Health and health behaviour among young people, WHO, 2000*

	Female			Male		
	11 years	13 years	15 years	11 years	13 years	15 years
Ireland	0.4	6.0	16.0	1.0	8.0	19.0
Northern Ireland	1.0	10.0	24.0	1.0	7.0	16.0
England	1.0	8.0	24.0	1.0	7.0	21.0
USA	1.0	3.0	12.0	2.0	5.0	13.0
Canada	1.0	8.0	21.0	1.0	8.0	17.0
Norway	0.1	4.0	21.0	1.0	5.0	18.0
Sweden	0.3	2.0	16.0	0.0	2.0	10.0
France	0.5	6.0	25.0	1.0	5.0	20.0
Germany	0.1	9.0	25.0	1.0	9.0	22.0

Table 4.2 shows the proportion of school children in selected participating countries who reported weekly consumption of beer, wine or spirits. Weekly alcohol rates vary considerably between countries. Furthermore, countries are widely and evenly spread, with no obvious geographical or political pattern. Gender differences within countries are not as marked as for the smoking variables, particularly among younger students. The Irish data show that with increasing age, the proportion of Irish children who drink on a weekly basis increases relative to the same proportion in other countries.

Table 4.2: Percentage of school children in selected participating countries who reported weekly consumption of beer, wine or spirits. Source: *Health and health behaviour among young people, WHO, 2000*

	Female			Male		
	11 years	13 years	15 years	11 years	13 years	15 years
Ireland	1.0	6.0	12.0	7.0	8.0	27.0
Northern Ireland	1.0	6.0	20.0	5.0	14.0	33.0
England	9.0	16.0	36.0	14.0	22.0	47.0
USA	7.0	11.0	15.0	8.0	10.0	23.0
Canada	2.0	6.0	17.0	3.0	10.0	22.0
Norway	0.2	3.0	12.0	1.0	4.0	16.0
Sweden	1.0	4.0	11.0	3.0	6.0	17.0
France	3.0	5.0	15.0	6.0	12.0	31.0
Germany	0.3	5.0	22.0	2.0	10.0	29.0

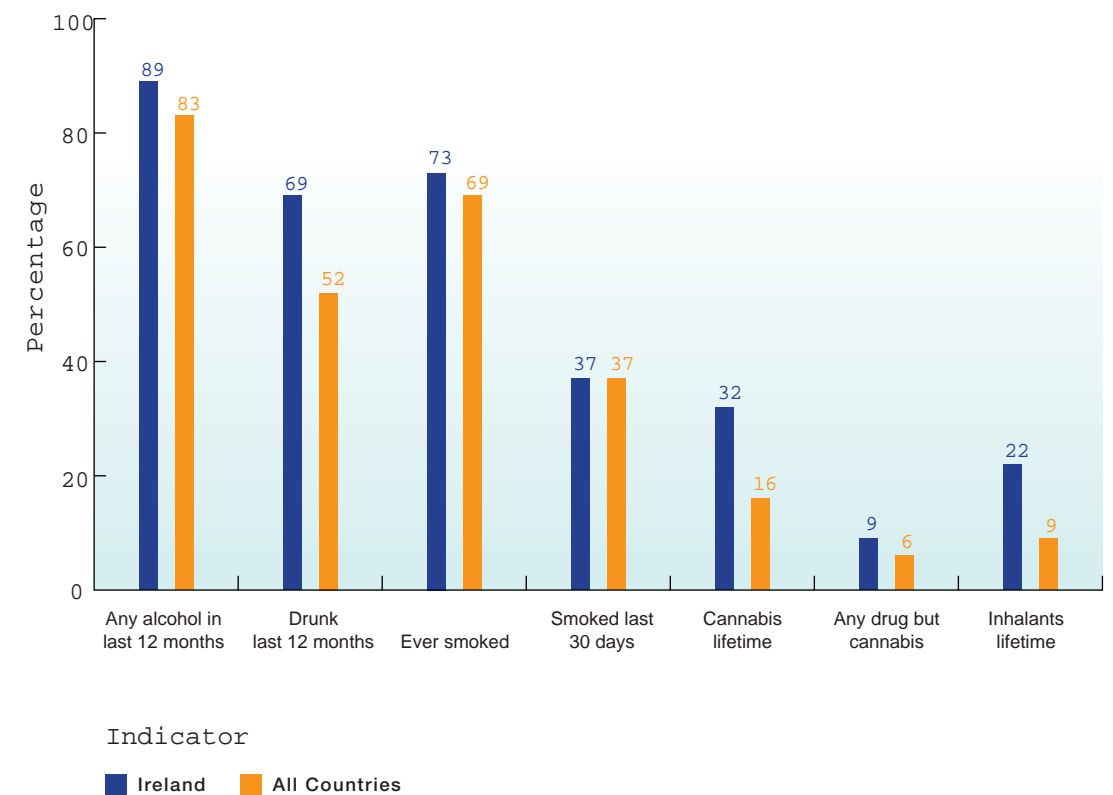
Table 4.3 shows the percentage of children at ages 11, 13 and 15 in selected European countries who reported exercising vigorously on at least two occasions per week. The percentages in Ireland compare favourably with those in other countries for both boys and girls at each of the ages in the survey. As with most other countries, regular exercise is more common among boys than girls and declines with age particularly in girls.

Table 4.3: Percentage of school children in selected participating countries who reported exercising twice a week or more. Source: *Health and health behaviour among young people, WHO, 2000*

	Female			Male		
	11 years	13 years	15 years	11 years	13 years	15 years
Ireland	82.0	78.0	59.0	87.0	87.0	81.0
Northern Ireland	89.0	83.0	63.0	93.0	90.0	63.0
England	73.0	63.0	50.0	78.0	82.0	79.0
USA	65.0	62.0	54.0	74.0	75.0	74.0
Canada	57.0	55.0	54.0	70.0	73.0	75.0
Norway	76.0	70.0	65.0	76.0	80.0	71.0
Sweden	59.0	62.0	55.0	77.0	77.0	71.0
France	54.0	53.0	46.0	80.0	80.0	72.0
Germany	74.0	74.0	66.0	83.0	86.0	83.0

The study produced country specific information for some of the principal health behaviours included in the survey in 1999. Figure 4.1 shows Ireland and the average of all participating countries for some of these indicators. This shows that, according to most indicators, the prevalence of risk behaviours among Irish 16-year-olds is somewhat greater than the average of all participating countries. The differences are greatest for lifetime cannabis (almost twice the average) and inhalant use (two and a half times the average), followed by drunkenness in the previous 12 months.

Figure 4.1: Key health behaviours in children aged 16 participating in ESPAD study in 1999, Ireland and all countries. Source: *The 1999 ESPAD report*



In 1995, 23 countries participated in the survey and, therefore, changes in health behaviours can be examined over the period 1995-1999.

The 1999 ESPAD report

While the foregoing suggests that children in Ireland up to the age of 15 are similar to their EU counterparts, it would appear that they might in some way disimprove after that age. Evidence for this comes from *The 1999 ESPAD report*, a recently published study of smoking, alcohol and other drug use among students in 30 European countries.

This study involved a random sample of 2,500 to 3,000 children in each participating country born in 1983, i.e. those who became 16 years of age in the year of the survey. This gives a picture of children who are slightly older than those in the HBSC survey discussed above. In total the study involved around 80,000 students who completed a questionnaire in late March or early April, 1999. The study included measures which allowed the validity and reliability of the answers to be monitored. The questionnaires were completed anonymously.

Cigarette smoking

Current cigarette smoking was ascertained by measuring the proportion of children in the study who reported smoking cigarettes in the previous 30 days. Table 4.4 shows the percentage of boys and girls who were current smokers in 1995 and in 1999 in each of the countries who participated in the two surveys. While Ireland has improved somewhat in terms of the prevalence of current smoking among 16-year-olds and in terms of its rank among participating countries, it still shows that more than one third of all participants are current smokers. The improvement that occurred was more pronounced among boys than girls, resulting in the difference between the sexes appearing to increase (42 per cent in females versus 32 per cent in males).

Table 4.4: Changes between 1995 and 1999 in prevalence of cigarette smoking in the previous 30 days by sex and rank among participating countries. Source: The 1999 ESPAD report

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
Faroe Islands	40	43	42	1	42	41	41	3
Ireland	37	45	41	2	32	42	37	=10*
Ukraine	51	28	38	3	50	29	40	=4
Finland	36	39	37	4	44	43	43	2
Italy	36	37	36	=5	37	43	40	=4
Norway	33	39	36	=5	36	44	40	=4
UK	32	40	36	=5	31	37	34	13
Czech Republic	37	31	34	=8	46	43	44	1
Hungary	36	32	34	=8	37	35	36	12
Croatia	34	28	32	=10	40	36	38	=8
Iceland	30	33	32	=10	26	30	28	20
Malta	33	30	31	12	29	34	32	=15
Sweden	28	33	30	13	29	32	30	18
Denmark	24	32	28	=14	34	41	38	=8
Poland	34	23	28	=14	39	28	33	14
Estonia	37	22	28	=14	41	24	32	=15
Slovakia	34	20	27	17	40	34	37	=10
Lithuania	34	18	25	18	49	30	40	=4
Portugal	22	25	24	19	31	30	31	17
Cyprus	32	15	23	20	25	9	16	21
Slovenia	19	20	19	21	28	30	29	19

* denotes shared ranking

Alcohol consumption

Alcohol consumption ten times or more in the previous 30 days was one indicator used to examine alcohol consumption patterns among participating students. This indicator includes people who drink relatively frequently and shows a high level of regular alcohol use among participants throughout the participating countries. The proportion of participants in Ireland who reported alcohol use ten or more times in the previous 30 days has increased in Ireland, particularly among girls where the rate has almost doubled since 1995 (Table 4.5). We now stand fourth highest among participating countries, according to this indicator.

Table 4.5: Changes between 1995 and 1999 in proportion of participating children reporting alcohol consumption ten times or more in the previous 30 days by sex and rank among participating countries. Source: The 1999 ESPAD report

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
Malta	20	12	16	1	25	16	20	1
Denmark	19	10	15	2	23	13	18	2
Italy	18	5	13	=3*	12	4	7	=10
UK	16	11	13	=3	17	13	16	3
Cyprus	19	6	12	=5	14	4	8	6
Ireland	14	9	12	=5	18	16	16	4
Czech Republic	12	5	9	7	21	8	14	5
Croatia	7	1	6	8	9	3	6	=12
Portugal	8	2	5	=9	9	4	6	=12
Slovenia	6	2	5	=9	10	5	8	=7
Faroe Islands	4	3	4	=11	3	2	4	=16
Hungary	6	1	4	=11	6	2	5	=14
Poland	6	2	4	=11	12	5	8	=7
Slovakia	6	1	4	=11	9	5	7	=10
Ukraine	4	3	3	15	5	4	5	=14
Estonia	3	1	2	=16	5	3	4	=16
Lithuania	3	1	2	=16	9	6	8	=9
Finland	1	1	1	=18	2	1	1	=20
Iceland	2	1	1	=18	1	1	1	=20
Norway	1	1	1	=18	3	1	3	18
Sweden	1	1	1	=18	2	1	2	19

* denotes shared ranking

Another indicator of alcohol abuse among participating students is the percentage who report having been drunk on three or more occasions in the previous 30 days. There has been a substantial increase in this indicator since the 1995 study, from 15 per cent to 24 per cent, with similar increases in both sexes. Accordingly, our rank among participating countries has also increased so that we are now joint second with the UK according to this indicator (Table 4.6).

Table 4.6: Changes between 1995 and 1999 in proportion of participating children reporting drunkenness three times or more in the previous 30 days by sex and rank among participating countries. Source: The 1999 ESPAD report

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
UK	24	20	22	1	23	25	24	=2
Denmark	24	18	21	2	36	26	30	1
Finland	19	18	18	3	19	17	18	4
Ireland	17	14	15	4	27	13	24	=2
Iceland	14	13	14	5	12	12	12	8
Sweden	13	12	13	6	15	11	14	5
Faroe Islands	11	10	11	7	13	6	9	=12
Czech Republic	14	5	10	8	18	9	13	7
Lithuania	11	6	9	9	12	6	9	=12
Italy	8	4	8	=10*	5	2	3	=20
Norway	9	8	8	=10	14	13	14	5
Poland	10	4	7	=12	14	6	10	11
Slovenia	8	5	7	=12	13	9	11	=9
Hungary	9	4	5	14	9	3	7	=16
Croatia	8	1	4	=15	9	3	7	=16
Estonia	7	3	4	=15	12	6	8	15
Malta	9	3	4	=15	6	4	5	18
Slovakia	9	2	4	=15	10	6	9	=12
Portugal	3	1	3	19	5	2	4	19
Cyprus	4	1	2	=20	5	1	3	=20
Ukraine	4	1	2	=20	14	10	11	=9

* denotes shared ranking

Illicit drug use

Lifetime illicit drug use was determined by measuring the proportion of those in the study who had ever used any illicit substance. In Ireland, the lifetime prevalence of illicit drug use decreased from 37 per cent to 32 per cent. However, we remain one of the countries with the highest figures in 1999, along with the United Kingdom and the Czech Republic (Table 4.7). The use of illicit drugs was more prevalent among boys (35 per cent) than girls (29 per cent). Male participants reported a greater decline in lifetime prevalence of illicit drug use between 1995 and 1999.

Table 4.7: Changes between 1995 and 1999 in lifetime experience of any illicit drugs by sex and rank among participating countries. Source: The 1999 ESPAD report

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
UK	44	40	42	1	39	33	36	1
Ireland	42	32	37	2	35	29	32	3
Czech Republic	26	19	23	3	40	30	35	2
Italy	24	17	21	4	29	24	26	4
Denmark	20	15	18	5	31	20	25	5
Ukraine	20	9	14	6	27	14	21	6
Slovenia	15	12	13	7	28	23	26	=4
Faroe Is	12	11	12	8	9	6	8	=17
Iceland	12	8	10	=9*	18	13	16	=10
Slovakia	13	6	10	=9	24	17	20	7
Poland	13	6	9	10	23	13	18	8
Croatia	10	5	8	=11	19	14	17	9
Estonia	11	5	8	=11	21	12	16	=10
Portugal	11	6	8	=11	15	8	11	14
Cyprus	11	3	6	=12	6	2	3	=18
Norway	8	5	6	=12	5	11	13	12
Sweden	7	5	6	=12	5	6	9	16
Finland	5	6	5	=13	11	10	10	15
Hungary	5	4	5	=13	17	8	12	13
Lithuania	4	3	3	14	21	10	15	11
Malta	3	2	2	15	9	8	8	=17

* denotes shared ranking

Cannabis use in the previous 30 days is another indicator of illicit drug use. There was a decrease in the indicator since the 1995 study from 19 per cent to 15 per cent with a greater decline among male participants, from 25 per cent to 18 per cent. Current cannabis use was more frequent among males (18 per cent to 11 per cent). Ireland ranks second highest with the UK and the Czech Republic in joint first position according to this indicator (Table 4.8).

Table 4.8: Changes between 1995 and 1999 in the proportion of all students who have used marijuana or hashish during the last 30 days by sex and rank among participating countries.
Source: *The 1999 ESPAD report*

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
UK	29	20	24	1	18	20	16	=1
Ireland	25	12	19	2	18	11	15	2
Italy	13	10	13	3	17	12	14	3
Czech Republic	8	6	7	4	20	13	16	=1
Denmark	8	4	6	5	11	6	8	5
Slovenia	7	5	5	=6*	14	11	13	4
Ukraine	6	2	5	=6	7	3	5	=8
Iceland	5	3	4	=7	5	3	4	=9
Portugal	4	2	4	=7	7	4	5	8
Croatia	4	1	3	=8	7	5	6	7
Norway	4	2	3	=8	5	3	4	=9
Poland	4	1	3	=8	10	4	7	6
Slovakia	5	1	3	=8	8	5	6	=7
Cyprus	2	1	2	=9	2	0	1	=12
Faroe Is	2	3	2	=9	3	0	1	=2
Malta	3	1	2	=9	3	2	3	10
Finland	1	1	1	=10	3	2	2	=11
Hungary	1	1	1	=10	5	2	4	=9
Sweden	2	1	1	=10	3	1	2	=11
Lithuania	1	0	0	11	6	2	4	=9

* denotes shared ranking

Perceived ease of availability of cannabis is another indicator for illicit drug use. Ireland ranked highest in relation to this indicator in 1995 and 1999. However, a decrease was noted in this indicator since the 1995 study, from 62 per cent to 59 per cent. The decreased proportion was only found in boys, with a reduction from 65 per cent to 57 per cent (Table 4.9).

Table 4.9: Changes between 1995 and 1999 in proportion of boys and girls who perceive marijuana or hashish 'very easy' or 'fairly easy' to obtain, by sex and rank among participating countries. Source: *The 1999 ESPAD report*

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
Ireland	65	60	62	1	57	60	59	1
UK	58	54	56	2	54	51	52	3
Denmark	48	44	46	3	60	53	57	2
Czech Rep	37	31	35	4	53	48	50	4
Italy	31	32	32	5	50	38	43	6
Iceland	30	25	27	=6*	38	37	38	=8
Slovenia	29	25	27	=6	49	45	47	5
Norway	25	26	25	=7	37	39	38	=8
Portugal	27	23	25	=7	33	24	27	11
Sweden	25	25	25	=7	25	27	26	12
Slovakia	27	21	24	8	46	35	40	7
Croatia	20	17	19	9	30	27	29	10
Faroe Islands	19	18	18	=10	16	18	17	15
Poland	22	15	18	=10	34	26	30	9
Finland	10	18	14	11	20	21	20	13
Malta	9	11	10	12	12	11	11	=17
Cyprus	10	8	9	=13	11	7	9	18
Hungary	11	8	9	=13	23	16	19	=14
Estonia	11	5	8	14	25	15	19	=14
Ukraine	7	3	5	15	14	8	11	=17
Lithuania	5	2	3	16	18	12	15	16

* denotes shared ranking

Ireland also ranked highest in relation to the proportion of participants who perceived that LSD or other hallucinogens were 'very easy' or 'fairly easy' to obtain. However, the proportion who reported this had decreased from 43 per cent in 1995 to 30 per cent in 1999. This decline was also greater among males (Table 4.10).

Table 4.10: Changes between 1995 and 1999 in proportion of boys and girls who perceive LSD or other hallucinogens 'very easy' or 'fairly easy' to obtain, by sex and rank among participating countries. Source: The 1999 ESPAD report

Country	1995				1999			
	Male	Female	All	Rank	Male	Female	All	Rank
Ireland	44	43	43	1	27	33	30	1
UK	42	42	42	2	24	23	23	3
Italy	16	17	17	3	21	8	13	8
Sweden	13	13	13	4	14	16	15	6
Czech Rep	12	12	12	=5*	21	20	20	=4
Denmark	12	12	12	=5	21	19	20	=4
Iceland	14	11	12	=5	15	18	16	=5
Portugal	11	12	12	=5	16	14	12	9
Slovenia	14	11	12	=5	25	24	24	2
Norway	12	10	11	=6	16	16	16	=5
Poland	13	9	11	=6	22	18	20	=4
Croatia	10	9	9	7	14	15	14	=7
Slovakia	7	6	7	8	15	12	13	=8
Cyprus	6	6	6	=9	7	4	5	13
Hungary	7	5	6	=9	17	15	16	=5
Malta	6	6	6	=9	6	5	6	=12
Finland	4	7	5	10	6	8	7	11
Faroe Is	4	6	4	11	4	8	6	=12
Estonia	3	2	3	=12	17	12	14	=7
Ukraine	4	2	3	=12	4	3	4	14
Lithuania	3	1	2	13	9	6	8	10

* denotes shared ranking

Conclusions

The pattern of health risk behaviour of Irish children, as reported in the HBSC survey, appears to deteriorate at a later age than that of other countries. Up to the age of 15, Irish children compare favourably to the average for children in other countries for many risk indicators such as smoking and alcohol consumption, while for exercise Ireland has one of the highest participation rates.

However, when we examine the results of the ESPAD study, there is a marked deterioration in behaviour patterns among Irish participants compared to other countries, particularly in the case of alcohol consumption. We rank among the highest of all participating countries in relation to alcohol and illicit drug use.

It is worrying to note that there has been a deterioration in many health behaviours between 1995 and 1999, according to the ESPAD survey. It is also of concern that females have higher smoking prevalences and have deteriorated to a greater degree than males in regular consumption of alcohol. Despite some modest improvements since 1995 in certain indicators relating to illicit drug use, we remain at the top of the league table. Irish participants in the ESPAD survey reported easier access to illicit drugs than participants in any other country. This poor pattern of health behaviour among older Irish teenagers predisposes them to many preventable health problems. These include suicide and accidents, particularly among younger males for whom these are the greatest cause of mortality, and in the long term, cancer and cardiovascular disease which are the leading causes of morbidity and mortality in the Irish population.

The findings from both these studies indicate the importance of good quality and timely information in monitoring trends in behavioural risk factors and in the development of prevention strategies to deal with such health threats. In order to further strengthen the information base for such policy development it will be necessary for this country to continue to participate in international surveys and to complement their results with more detailed research at a national level. Such research can help to identify the reasons behind these trends as well as the appropriate prevention strategies which should be put in place in order to reduce these risks and the threats to public health that they pose.

There is, clearly, a need to deal with these issues in both our health policy and our broader public policy. Sectors such as justice, education and social welfare must work closely with health in addressing these problems and the approaches taken need to be underpinned by consistent and supportive fiscal policies. Equal emphasis needs to be placed on all aspects of health promotion, e.g. enforcement of legislation and the creation of supportive environments.

This will ensure that the focus is not solely on changing the behaviour of individuals but also on enabling them to make healthy choices more easily.

Recent legislative changes in relation to cigarette smoking are to be welcomed. These increase the age at which cigarettes can be purchased and ban packs of ten cigarettes. It is important that such legislation be rigidly enforced. In the case of alcohol, access needs to be more strictly controlled and policed. Many aspects of wider public policy and practice such as the inclusion of cigarettes and alcohol in the consumer price index, advertising, de-regulation of licensed premises, availability of cut-price alcohol and the linking of alcohol with sport are, however, having the opposite effect. This needs to be recognised in order to make it difficult for young people to have access to alcohol and also to strengthen the penalty provisions for those who breach legislation on the sale of alcohol to minors. Similar strengthening of enforcement of legislation around access to, and use of substances such as inhalants and illicit substances, is also required.

chapter 5

Health Status of Children in Ireland



The Health of our Children

Children's Health: Health Status of Children in Ireland

Introduction

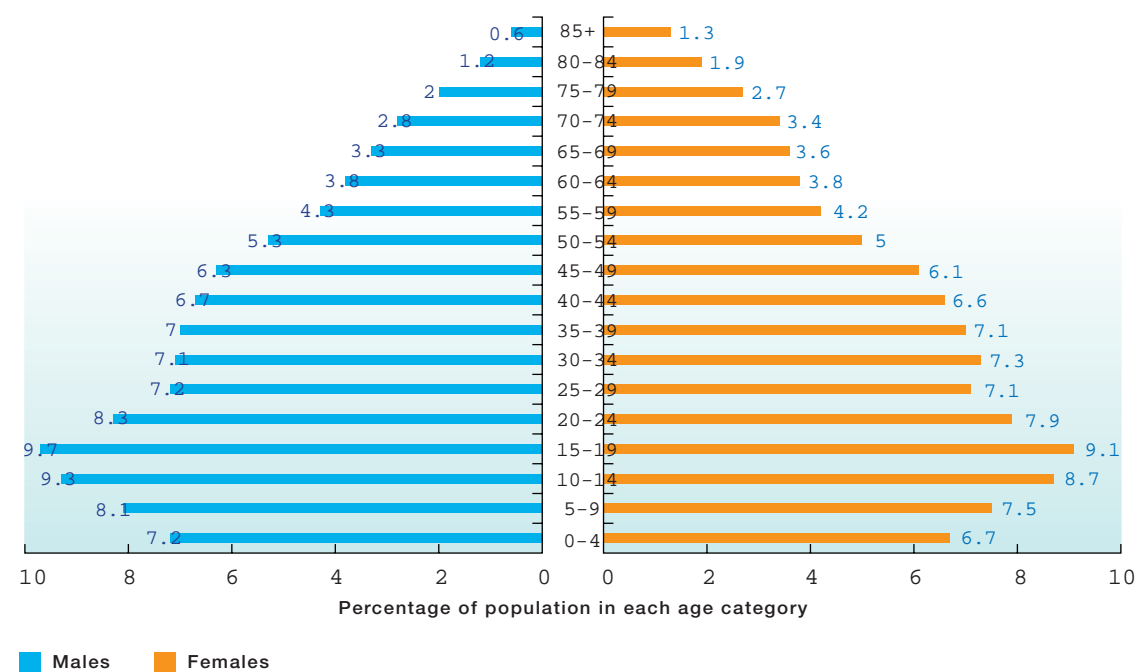
As was outlined in chapter 1, the health of children in Ireland has been highlighted as the key theme for this year's report. This chapter sets out some key demographic, mortality and morbidity indicators relating to children in Ireland. It provides an overview of trends in mortality in infancy and childhood, sets out the principal causes of mortality in childhood and selects some available sources of morbidity data. It also provides an overview of the demographic composition of our childhood population and likely trends in its composition into the future.

Demography

Ireland has the highest proportion (24 per cent) of children in the 0-14 years age group in the overall population of the European Union. The mean proportion for the remainder of the EU is 17.4 per cent, ranging from 14.9 per cent in Italy to 19.4 per cent in both France and the UK. The Irish percentage has fallen from 31.2 per cent in 1971 to its current level. The shape of the population pyramid for Ireland (Figure 5.1) reflects the young population, with a marked bulge between the ages of 10 and 25. What is also noteworthy in the population pyramid is the dramatic narrowing of the base of the pyramid, reflecting the fall in birth rates observed in recent years. The young dependency ratio (defined as the number of people in the 0-14 years age group as a percentage of the whole population in the 15-64 year age group) is currently 36.5 per cent having fallen from 54.2 per cent in 1971.

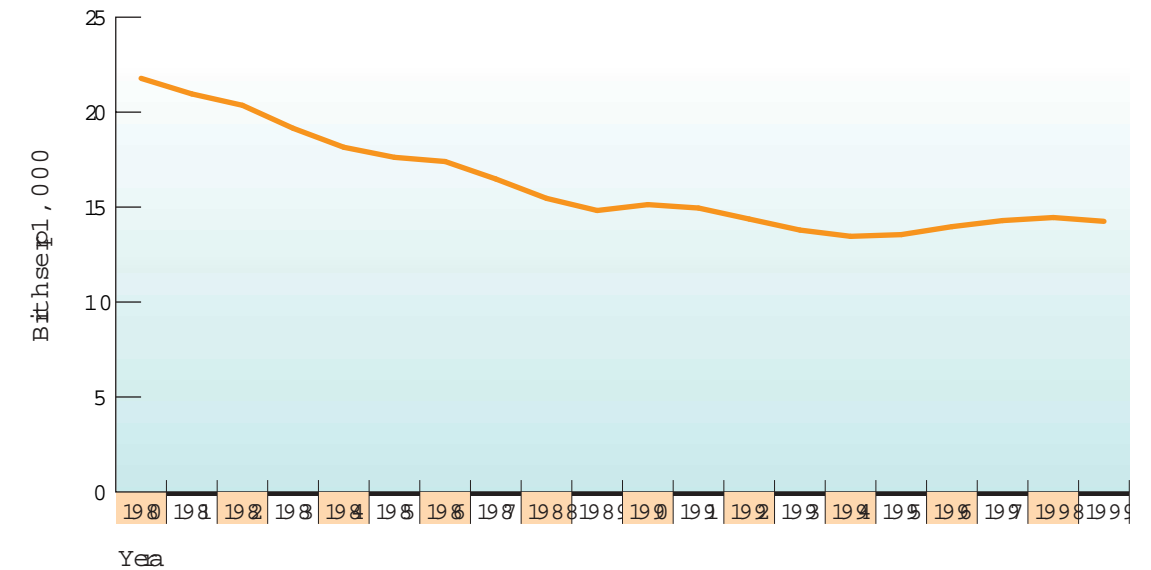


Figure 5.1: Population pyramid for Ireland, 1996. Source: Central Statistics Office



The high proportion of young people in this country can be related to historically high fertility rates. However, the crude birth rate in Ireland has fallen dramatically in recent years (Figure 5.2). The total population fertility rate is 1.93 (1998) which is slightly below population replacement level.

Figure 5.2: Crude birth rate in Ireland, 1980-1999. Source: PHIS version 4 and Central Statistics Office



Population projections

The projections based on the 1996 Census of Population suggest that the young dependency ratio will continue its current downward trend over the next 30 years to a level of approximately 25 per cent. These projections also indicate relative stability in the number of people in the 0-14 years age group for the next ten years with a fall-off of about 10-15 per cent over the ensuing 20 years.

Teenage pregnancy

Infants of young mothers are at higher risk of a variety of health and social problems in childhood and later life. Figure 5.3 shows the number of births to Irish women in the 15-19 year age group between 1980 and 1999. The absolute number of births in this age category had diminished between 1980 and the mid-1990s. Since then, however, this number has started to increase again. Furthermore, the percentage that this number represents of all live births in Ireland has increased slowly but steadily since 1980. This is seen in Figure 5.4 which shows the percentage of all live births to women under the age of 20 in Ireland and selected European countries. The percentage was highest in Greece in the early 1980s but has shown a steady decline since then.

In the corresponding time period, the UK has experienced a slight reduction but has overtaken Greece to have the highest percentage of teenage pregnancy in the EU. The percentage in Ireland has shown a slight increase over the past two decades and has also overtaken Greece. Other countries such as the Netherlands have persistently low levels of teenage pregnancy as a percentage of all births.

Figure 5.3: Number of births to women in Ireland in the 15-19 years age group, 1980-1999.

Source: PHIS version 4 and Central Statistics Office

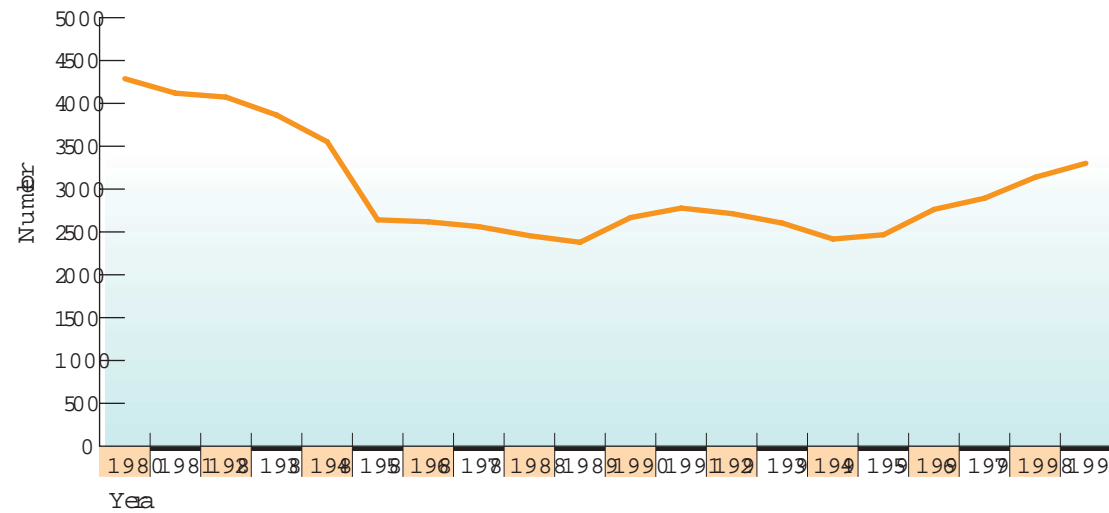
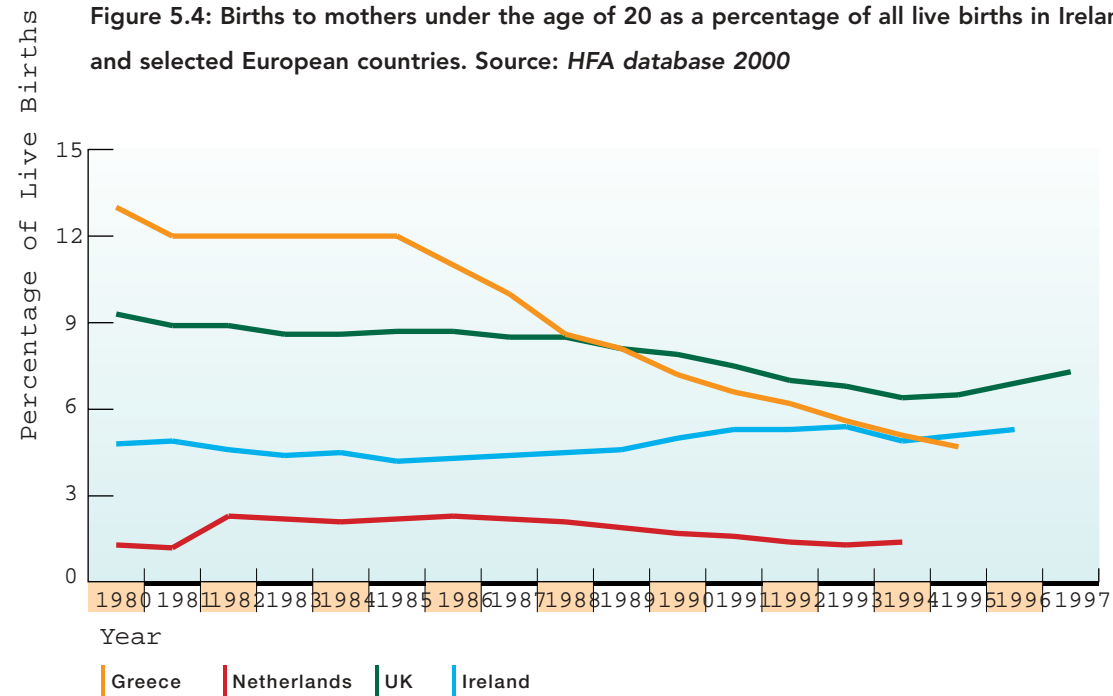


Figure 5.4: Births to mothers under the age of 20 as a percentage of all live births in Ireland and selected European countries. Source: HFA database 2000



Mortality

Childhood mortality

Table 5.1 shows the principal causes of death (as numbers and percentages of all deaths) occurring in children under the age of 14 in different age bands. It can be seen that causes vary significantly with age. Congenital anomalies and perinatal causes predominate in very young children, while accidents and malignancy become more significant as children get older.

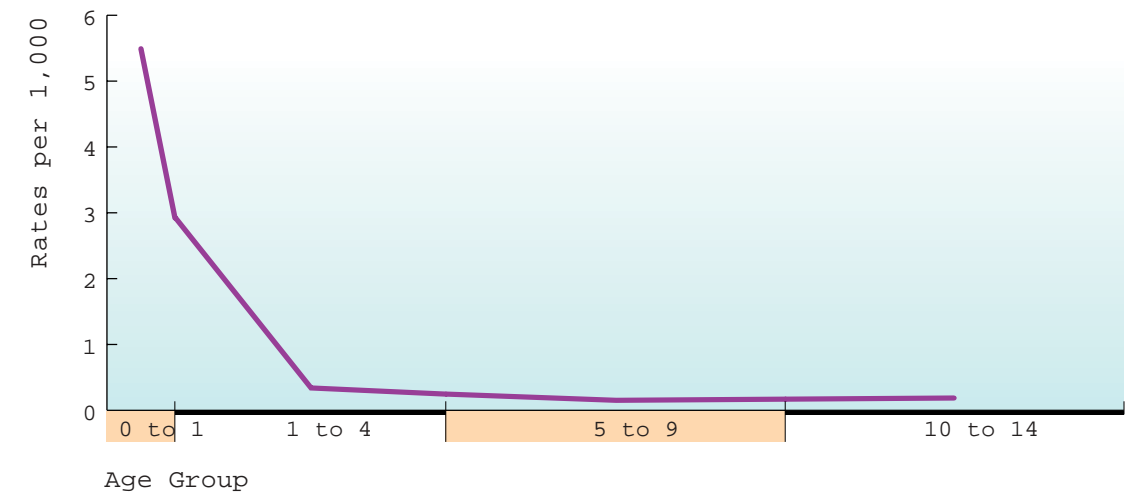
Table 5.1: Number of deaths and percentage of all deaths by principal cause and age group in the 0-14 age group, 1999. Source: Central Statistics Office

Cause	0-1		1 to 4		5 to 9		10 to 14	
	n	%	n	%	n	%	n	%
All causes	293		68		41		56	
Congenital abnormalities	121	41.3	0	0.0	0	0.0	1	1.8
Perinatal conditions	114	38.9	12	17.6	7	17.1	2	3.6
Injuries and poisonings	1	0.3	20	29.4	14	34.1	21	37.5
Infectious diseases (including meningitis)	7	2.4	7	10.3	3	7.3	1	1.8
Cancer	1	0.3	3	4.4	5	12.2	6	10.7
Respiratory	3	1.0	3	4.4	0	0.0	3	5.4
Circulatory	0	0.0	3	4.4	2	4.9	2	3.6
Others	46	15.7	20	29.4	10	24.4	20	35.7

Figure 5.5 shows the age specific mortality rates from all causes in children under the age of 14. The curve shows the relatively high early mortality from congenital anomalies and conditions arising in the perinatal period. The rise in later childhood mortality can be attributed to the increased mortality from injuries and poisonings and malignancy.

Figure 5.5: Age specific mortality rates in children aged 0-14 in Ireland, 1999.

Source: Central Statistics Office and PHIS version 4



Mortality in infancy

The infant mortality rate is defined as the number of deaths occurring in the first year of life per 1,000 live births occurring over the same time period in the same population. It is a key indicator of the health and social well-being of a society and, more specifically, reflects the standard of antenatal care afforded to women. The infant mortality rate in Ireland has been falling consistently in recent decades (Figure 5.6). The rate at the present time is less than one third the rate of 30 years ago, emphasising how much improvement has taken place in a relatively short time period.

Figure 5.6: Infant mortality rate in Ireland and EU, 1970-1996.

Source: Central Statistics Office and HFA database, 2000

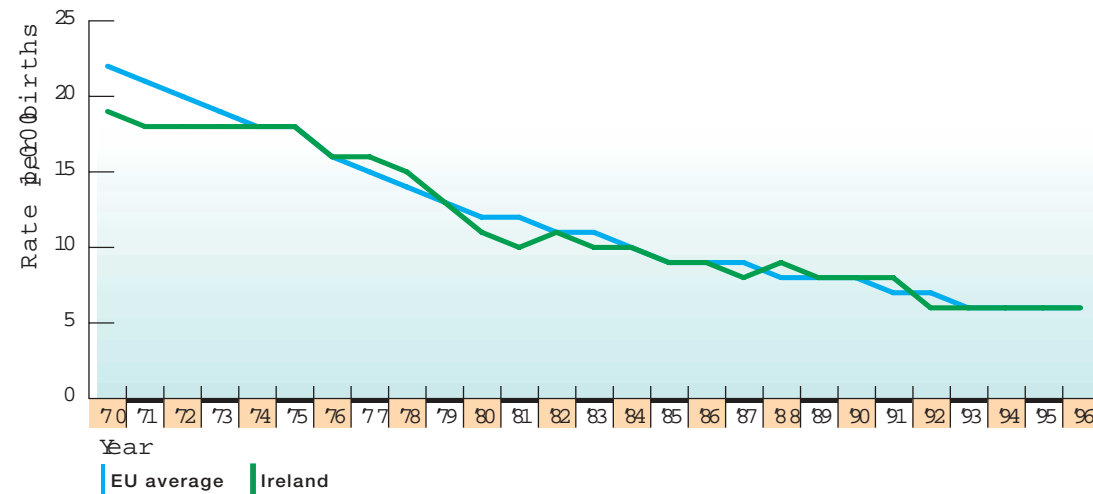
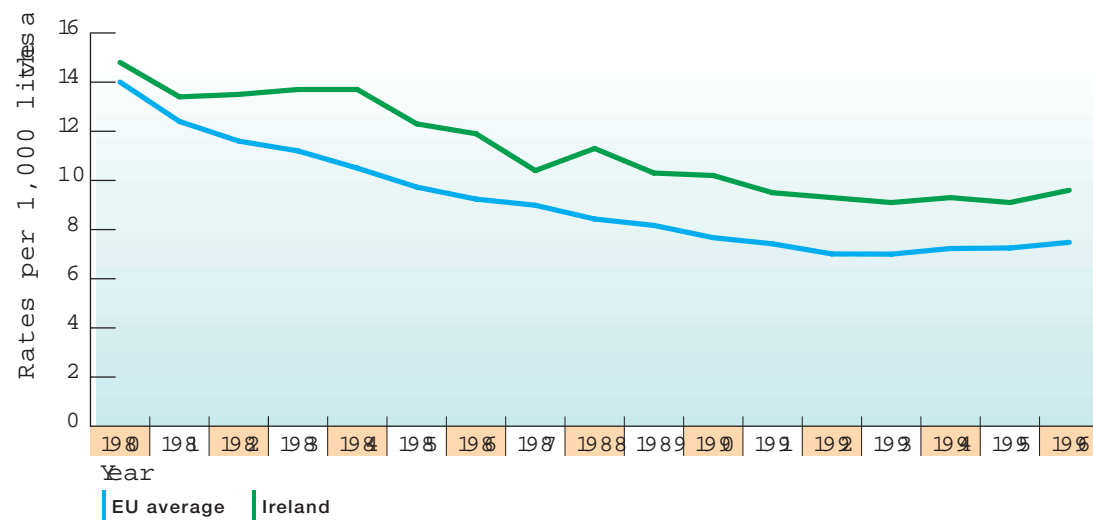


Figure 5.7 shows the perinatal mortality rate in Ireland and the EU between 1980 and 1996. The perinatal mortality rate is the number of stillbirths (defined as intrauterine deaths after 28 weeks of gestation)* and deaths in the first seven days of life per 1,000 live births and stillbirths occurring in the same population over the same time period. The perinatal mortality rate is a key indicator of the quality of obstetric care in a given population. As with the infant mortality rate, the perinatal mortality rate has been falling steadily in line with EU rates in recent decades.

Figure 5.7: Perinatal mortality rate in Ireland and EU, 1980-1996.

Source: Central Statistics Office and HFA database, 2000



* Stillbirths are defined differently in different countries. In Ireland, official statistics are now based on a definition of stillbirths from 24 weeks gestation. This graph is based on 28 weeks of gestation for comparison purposes.

Table 5.2 shows the perinatal mortality rate, together with the infant mortality rate, for Ireland and other EU countries in recent years. It can be seen that for each of these indicators, Ireland ranks below many other countries. Caution must be exercised in the interpretation of these differences, however. As discussed earlier, the infant mortality rate can vary because of variations in practices relating to the registration of deaths. Variations observed in the perinatal mortality rate are determined to a significant degree by practice in relation to termination of pregnancy. Many fetal abnormalities are detected in the antepartum period in countries that permit termination and resultant terminations are reflected in lower perinatal mortality rates.

Table 5.2: Infant and perinatal mortality rates for EU countries – latest year available.

Source: Demographic Statistics, Eurostat 1998 & 1999, *Source: Central Statistics Office

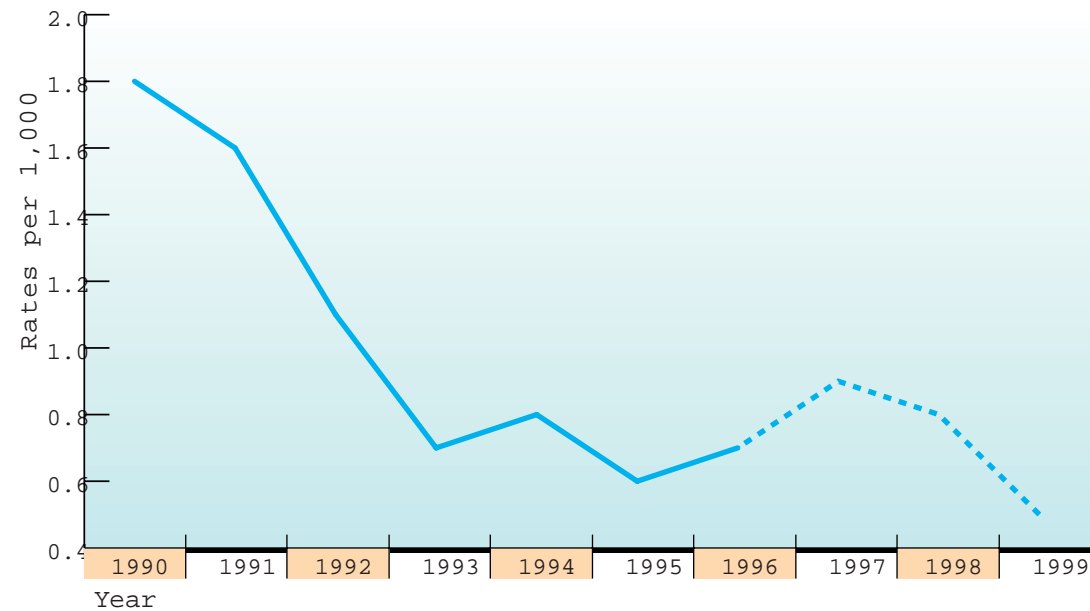
Country	Infant mortality rate		Perinatal mortality rate	
	Rate	Year	Rate	Year
Austria	4.9	1998	6.4	1997
Belgium	5.6P	1998	8.4	1992
Denmark	5.3	1997	8.0	1996
Finland	4.2	1998	5.9	1997
France	4.8P	1998	8.2	1966
Germany	4.7E	1998	6.5	1997
Greece	6.8E	1998	9.5	1997
Ireland*	6.2	1998	10.0	1996
Italy	5.3P	1998	7.1	1995
Luxembourg	5.0	1998	6.9	1997
Netherlands	5.0	1998	7.9	1997
Portugal	6.0	1998	7.2	1997
Spain	5.7P	1998	6.4	1996
Sweden	3.5	1998	5.4	1997
United Kingdom	5.6P	1998	8.7	1996
EU Average	5.2E	1998	7.7	1992

P=Provisional figure. E=Eurostat estimate.

Sudden infant death syndrome (SIDS)

The SIDS mortality rate in Ireland has fallen considerably in recent years and is currently about one third of the rate which was seen throughout the 1980s. However, SIDS still accounts for four in every ten deaths in the age group one month to one year. While SIDS continues to be a leading cause of deaths in infants during the post-neonatal period the declining SIDS infant mortality rate is positively changing this pattern (Figure 5.8).

Figure 5.8: Sudden infant deaths per 1,000 live births 1980-1999 (broken line indicates provisional data). Source: PHIS Version 4 and Central Statistics Office



Morbidity in childhood

Our ability to examine morbidity in childhood is significantly hampered by the lack of information relating to childhood illness. While some registers do exist which can provide very useful data on certain categories of morbidity, there are other causes of morbidity for which little or no data are available. Very often use has to be made of proxy information such as hospital activity data which, while useful, are no substitute for good quality epidemiological information in prioritising, planning or evaluating our health services. Notwithstanding these difficulties, this section will set out some morbidity data which are available at the present time.

Congenital anomalies

The EUROCAT register is a population-based register of congenital anomalies. It was set up in Dublin in 1979 by the Medico-Social Research Board. The register is one of a network of approximately 30 European registries which use a standard approach to data collection and analysis. In addition to the EUROCAT registries in Dublin, Galway and Belfast, a number of new EUROCAT registries are being or have been developed. These include the Southern, South Eastern and North Eastern health board areas. It is hoped in the future to collect this information on a national basis.

The subject population of the Dublin register consists of all infants born to mothers resident at the time of delivery in a defined geographic area – counties Dublin, Wicklow and Kildare (approximately one third of all births in Ireland). Not only are defects noted at birth collected, e.g. Downs syndrome and spina bifida, but also those appearing later, e.g. congenital heart disease. Defects recorded include structural and chromosomal anomalies and inborn errors of metabolism.

Data collected include: information on the baby (birthdate, sex, birthweight, gestation, live/stillbirth, birth order, anomalies present (up to 8), syndrome present, karyotyping, post-mortem; and information on the mother (birthdate, parity, hospital of delivery, area of residence). Annual birth prevalence rates for the major anomalies are calculated and anonymised data are transmitted to the EUROCAT central registry in Brussels for comparison with other registries. Table 5.3 shows the prevalence rates of selected congenital anomalies for 25 European centres between 1990 and 1996. It should be noted that termination of pregnancy is legal in all centres with the exceptions of Malta and Dublin and this explains much of the considerable variation between the 'live' and 'all' rates seen in most centres.

Table 5.3: Prevalence rate of selected anomalies (per 10,000 live births and per 10,000 live births combined with fetal deaths and terminations) in 25 EUROCAT registries, 1990-1996.

Source: *EUROCAT*

Centre	All congenital anomalies		Neural tube defects		Downs syndrome	
	Live	All*	Live	All*	Live	All*
Glasgow (Scotland)	241.3	281.6	4.0	18.0	9.3	16.8
Dublin	242.7	252.3	10.1	13.0	21.0	21.7
Odense (Denmark)	187.3	213.5	5.8	10.3	7.5	12.5
Northern Netherlands	232.1	251.2	6.6	10.7	9.3	13.1
South-western Netherlands	131.2	138.6	2.9	5.2	6.7	7.3
Antwerp (Belgium)	238.5	255.9	4.0	9.7	7.3	8.8
Hainaut-Namur (Belgium)	236.9	269.8	4.4	11.0	7.4	15.1
Paris (France)	264.9	352.7	1.3	12.6	9.1	28.7
Strasbourg (France)	293.3	342.9	1.6	10.6	9.4	18.3
Bouches-du-Rhone (France)	165.3	215.9	2.3	10.1	9.6	19.0
Switzerland	162.9	185.4	2.5	5.7	7.9	13.3
Tuscany (Italy)	195.9	222.7	1.9	6.1	9.4	14.7
Emilia Romagna (Italy)	171.1	172.8	3.4	3.7	9.5	9.9
North-East Italy (Italy)	93.3	119.2	2.0	6.4	11.7	17.1
Malta	220.3	223.8	8.7	9.8	18.8	19.0
Basque Country (Spain)	162.5	196.0	3.4	10.6	12.3	20.9
Asturias (Spain)	199.2	232.5	2.0	13.3	11.2	14.7
Barcelona (Spain)	109.5	146.4	1.9	7.1	7.5	16.2
El Valles (Spain)	153.5	207.7	2.1	8.4	9.9	23.5
Southern Portugal	134.8	150.8	5.6	9.0	9.5	9.7
Mainz (Germany)	367.8	397.5	10.1	15.8	9.7	18.4
Saxony-Anhalt (Germany)	225.5	245.1	3.5	8.5	7.6	9.9
Styrian (Austria)	304.6	329.7	4.1	8.3	8.8	12.5
Zagreb (Croatia)	175.5	175.7	4.6	4.8	9.9	9.8
Sofia (Bulgaria)	187.3	210.9	10.2	17.2	11.2	11.1
Total	189.8	220.0	3.4	8.7	9.9	16.0

*All refers to live births plus fetal deaths after 20 weeks gestation plus terminations

Cancer incidence

The National Cancer Registry provides data on cancer at a national level. It has produced data for each of the years 1994 to 1997 since its establishment. These include information on childhood cancer. Childhood cancers are relatively uncommon, accounting for only 0.5 per cent of all cancers. The incidence rate varies greatly from year to year, due to the small case numbers and therefore, variations between regions and over time need to be interpreted with caution. The incidence of childhood cancer in Ireland is typical of other European countries (Table 5.4).

Table 5.4: Age standardised cancer (all cancers excluding non-melanoma skin, non-invasive cases only) incidence rate in children under 15 years and rank of countries, Europe, 1995.

Source: *National Cancer Registry report, 1997*

Country	Males		Females	
	Rate	Rank	Rate	Rank
Spain	36	1	35	1
Malta	24	3	25	2
Switzerland	21	5	24	3
Denmark	25	2	13	11
Slovenia	18	6	16	4
Italy	24	4	6	23
Finland	15	11	14	7
England	16	10	13	8
Ireland	14	15	15	5
Sweden	16	8	13	12
Scotland	15	11	13	10
France	16	9	12	14
Netherlands	14	13	13	9
Estonia	14	16	14	6
Slovakia	16	7	10	19
Northern Ireland	14	14	11	16
Germany	13	18	10	17
Austria	13	17	9	20
Iceland	9	22	13	12
Bulgaria	10	20	10	18
Czech Republic	11	19	9	21
Poland	8	23	12	15
Norway	10	21	9	22

Disability

Information in relation to disability is limited. In 1998, the Department of Health and Children appointed a Physical and Sensory Disability Database Committee which is planning the implementation of a physical and sensory database. The National Intellectual Disability Database was established during 1995 to provide a comprehensive and accurate information base for decision-making in relation to the planning, funding and management of services for people with an intellectual disability. Prior to this the Medico-Social Research Board, the forerunner of the Health Research Board, undertook a census of all intellectually disabled persons in the state in 1974 and again in 1981. These censuses made Ireland one of the few countries in the world to have a national profile of its citizens with intellectual disability.

Table 5.5 shows the number of people with moderate, severe and profound intellectual disability in each health board by age group in 1996. It also shows the corresponding rate derived by using a denominator from the 1991 Census of Population. It can be seen that the prevalence is higher in older age groups, reflecting the fact that diagnosis and detection of intellectual disability is more difficult in younger age groups. It is hoped that in future years, prevalence among birth cohorts can be derived and this will provide more robust epidemiological data for monitoring and planning purposes.

Table 5.5: Numbers and prevalence rates of moderate, severe and profound intellectual disability combined per 1,000 population by health board of residence and age group, Ireland 1996. Source: National Intellectual Disability Database Report, 1998/1999

Health Board	0 to 4		5 to 9		10 to 14		15 to 19		All ages (0-19)	
	n	rate	n	rate	n	rate	n	rate	n	rate
EHB	79	0.83	356	3.37	410	3.56	513	4.26	1358	3.11
SEHB	50	1.63	102	2.85	134	3.36	180	5.00	466	3.28
SHB	44	1.11	166	3.51	227	4.33	235	4.71	672	3.55
MWHB	36	1.52	108	3.78	134	4.21	168	5.60	446	3.91
WHB	33	1.26	96	3.02	130	3.78	161	5.00	420	3.37
MHB	30	1.84	86	4.33	103	4.75	107	5.00	326	4.22
NWHB	25	1.51	70	3.56	93	4.39	76	3.98	264	3.45
NEHB	42	1.69	89	2.99	115	3.62	141	5.00	387	3.38

Mental health and illness

Data in relation to mental health and illness in children are very limited. Most childhood psychiatric illness is treated at a general practice or out-patient level. However, no available information source can provide epidemiological data on this. Admission to hospital for psychiatric illness in childhood is relatively unusual, yet this is the only source of information relating to such illness. In 1996, there were 105 admissions of children under the age of 15 years to psychiatric hospitals. The annual figure fluctuates somewhat from year to year. In 1995 there were 329 such admissions while in 1994 there were 208.

Hospital admissions and procedures

Figure 5.9 shows the three year moving averages of discharge for all causes of hospitalisation per 1,000 children aged 0-14 between 1994 and 1999 by health board of residence. In most health board areas the rate of hospitalisation has increased steadily over this time period as has the national rate.

Figure 5.9: Three year moving average of standardised discharge ratios for all causes of hospitalisation in children aged 0-14, 1994-1999 by health board of residence.

Source: PHIS version 4

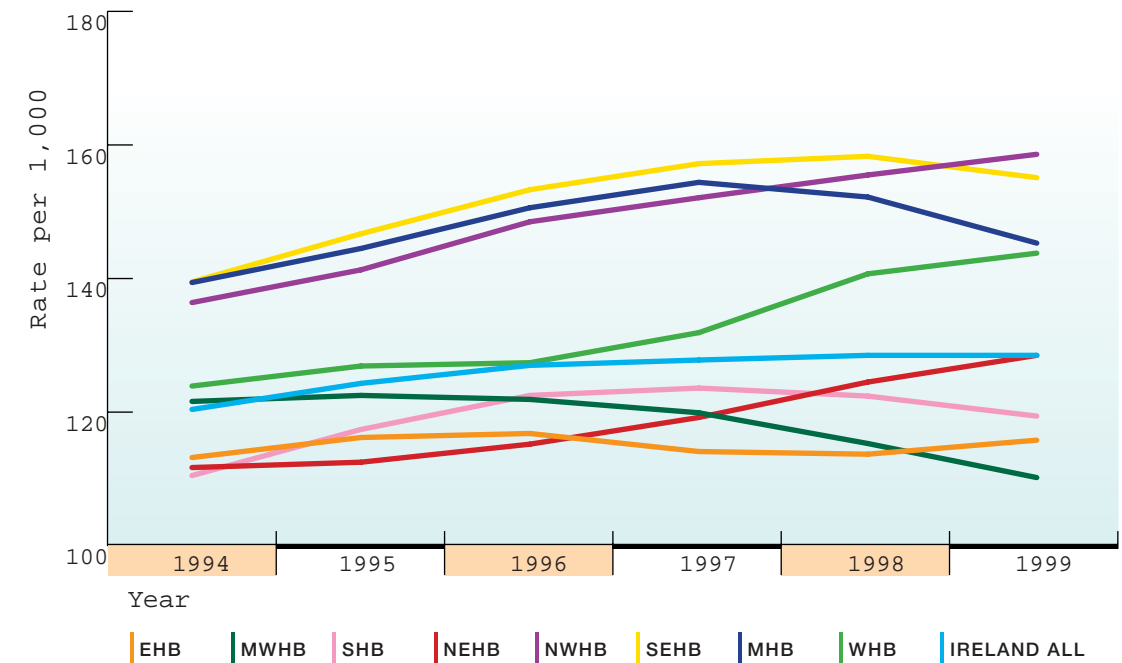


Figure 5.10 allows us to examine the rate of discharge from acute hospitals in 1998 in terms of day case and in-patient admissions for children in the 0-14 year age group. The figure shows the overall rate for all admissions as well as showing day case admissions and in-patient admissions separately. It is possible to see variation in the categories of admissions between regions. While the Eastern Regional Health Authority region had the lowest overall and in-patient admission rates, it had the second highest day case admission rate.

This may reflect the fact that day case admission may be more suitable for those living in proximity to hospitals while those travelling longer distances would in many cases have to be admitted overnight for the same procedures. This is further evidenced when we examine Figure 5.11 which shows day case admissions as a percentage of all admissions in children in recent years. It can be seen that this proportion has been highest in the Eastern Regional Health Authority, running at almost ten percentage points greater than the national average.

Figure 5.10: Admission rates in children aged 0-14 by health board and category of admission in Ireland in 1999. Source: PHIS version 4

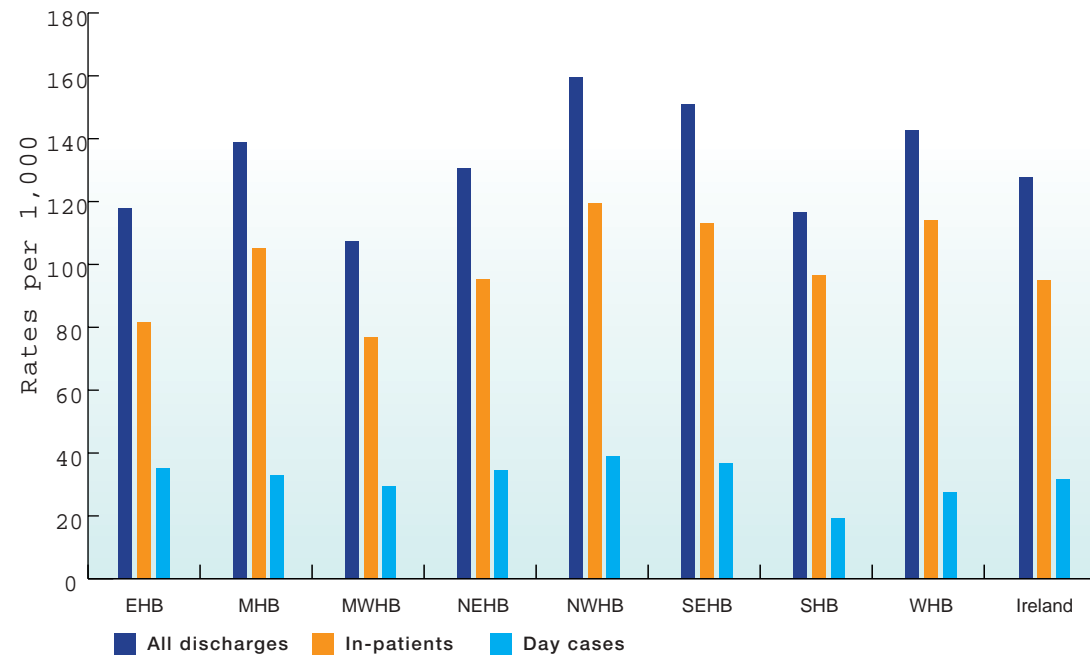


Figure 5.11: Day case admissions as a percentage of all admissions in children aged 0-14 by health board of residence, 1994-1999. Source: PHIS version 4

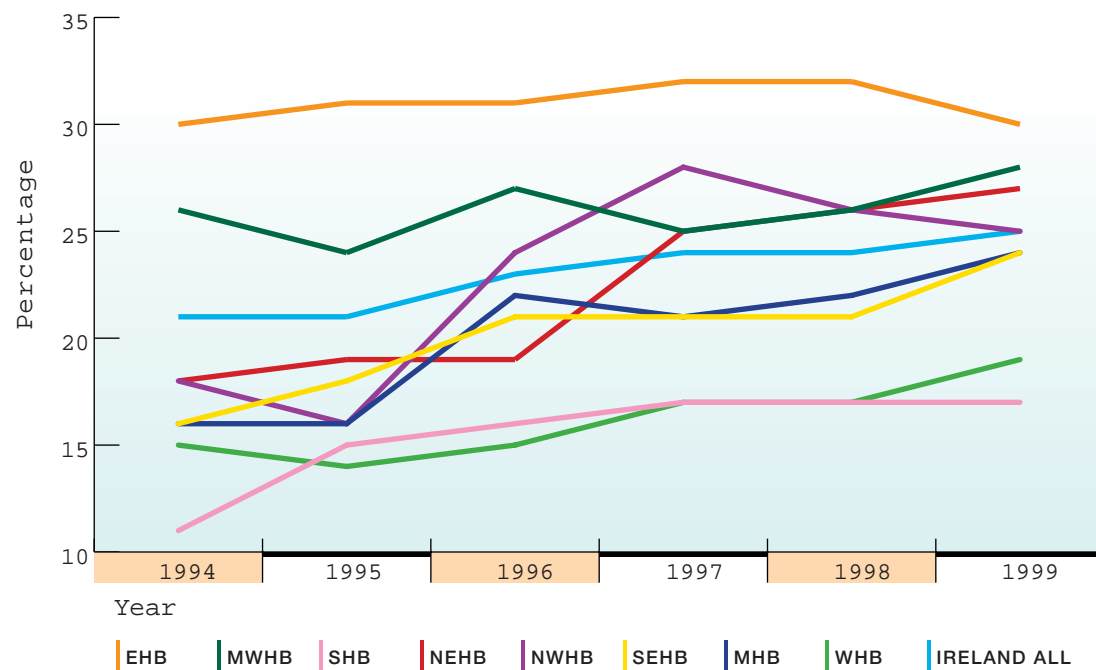


Table 5.6 shows the admission rate for the commonest admission categories in children in 1999 in Ireland. It can be seen that overall there were 129 admissions per 1,000 children aged 0 to 14. The four commonest admission categories account for almost half of these admissions. These include such reasons as respiratory disorders, injuries and poisonings, digestive system disorders and infectious diseases. A substantial number of admissions in the categories are preventable, underlining the morbidity burden in children resulting from preventable illness and disease.

Table 5.6: Reason for hospitalisation among children aged 0-14 admitted to hospital in 1999 Source: PHIS version 4

Reason for hospitalisation	Rate per 1,000	Percentage of all admissions
Respiratory disease	23.4	18.1
Injuries and poisonings	16.0	12.4
Digestive system disease	14.6	11.3
Infectious diseases	10.1	7.8
Perinatal conditions	6.5	5.0
Congenital abnormalities	7.1	5.5
Genito-urinary system disease	8.0	6.2
Cancer	3.5	2.7
Circulatory disease	0.6	0.5
Others	39.2	30.4
All causes	129.0	100.0

Figure 5.12 shows the rates of procedures in children by health board between 1994 and 1999. It can be seen that these rates have increased sharply over this time period in all regions. This may be due to better recording of procedures in the hospital in-patient enquiry (HIPE) system. Figure 5.13 shows procedure rates separately for in-patients and day cases in children in 1999 while Figure 5.14 shows the percentage of all procedures which are carried out as day cases by health board of residence in recent years. It can be seen that in each of these rates there is variation between health boards. When grommet insertion procedures (Figure 5.15) are examined, for example, similar variation can be observed.

Figure 5.12: Three year moving averages of procedure rates for in-patients and day cases combined per 1,000 children in the 0-14 year age group by health board of residence in Ireland, 1994-1999. Source: PHIS version 4

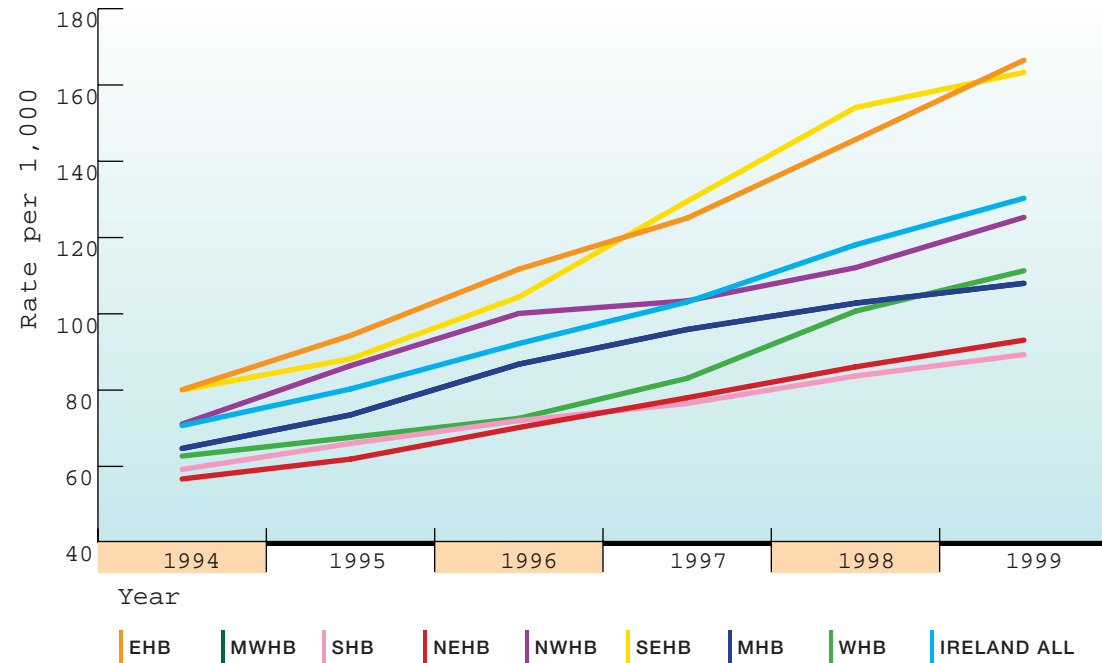


Figure 5.13: Procedure rates in children aged 0-14 by health board in Ireland in 1999. Source: PHIS version 4

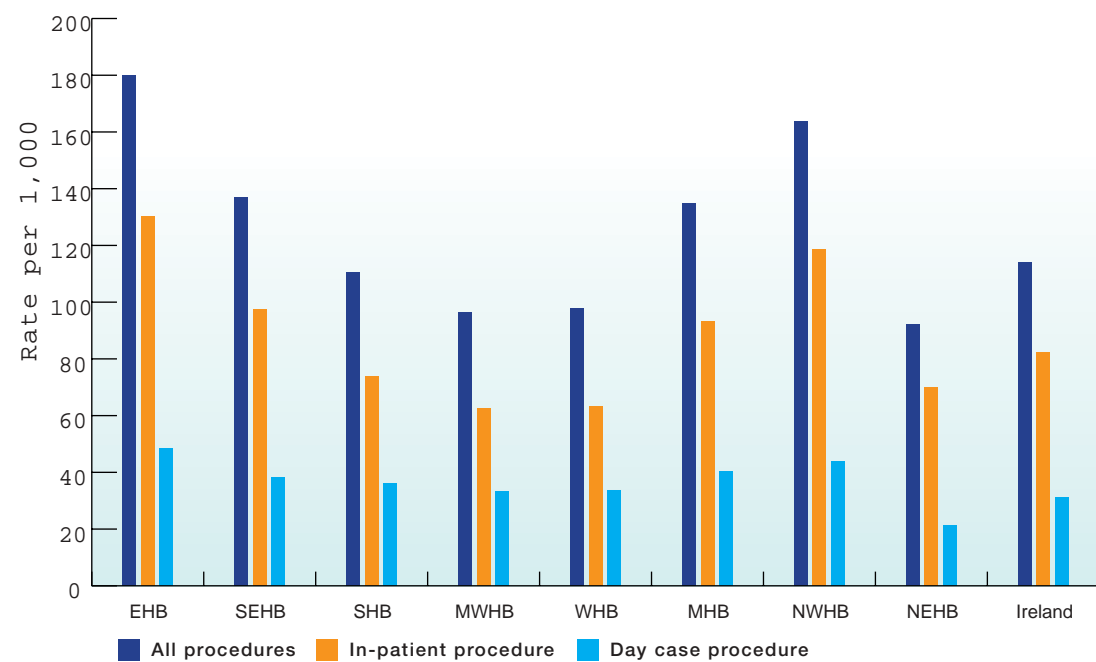


Figure 5.14: Day case procedures as a percentage of all procedures in children aged 0-14 by health board of residence, 1994-1999. Source: PHIS version 4

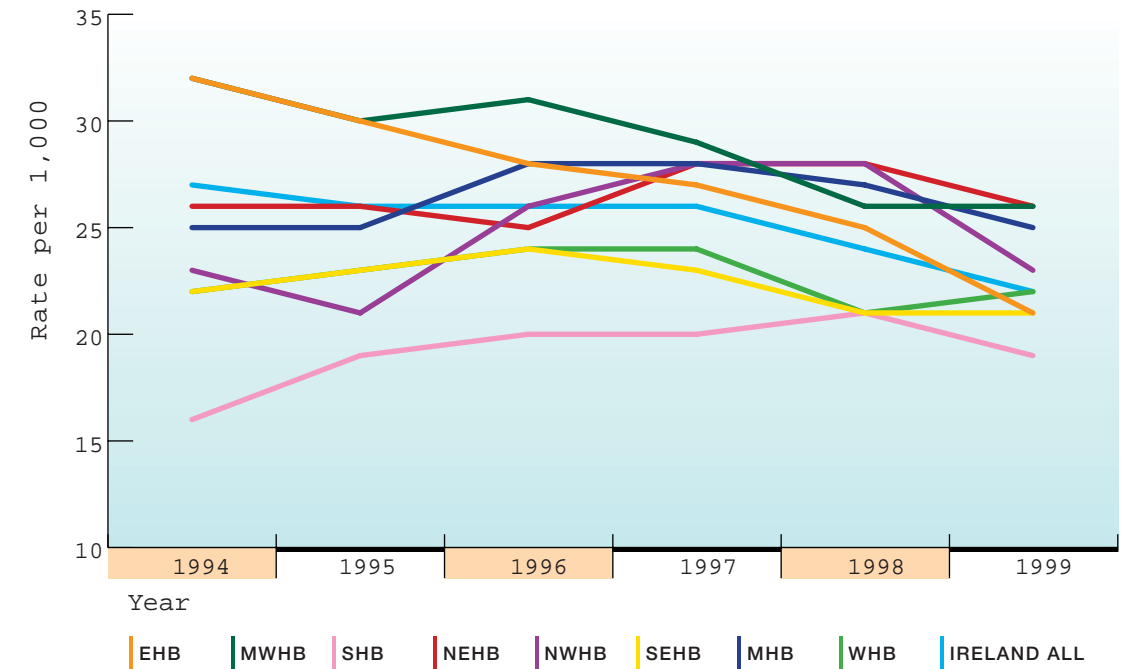
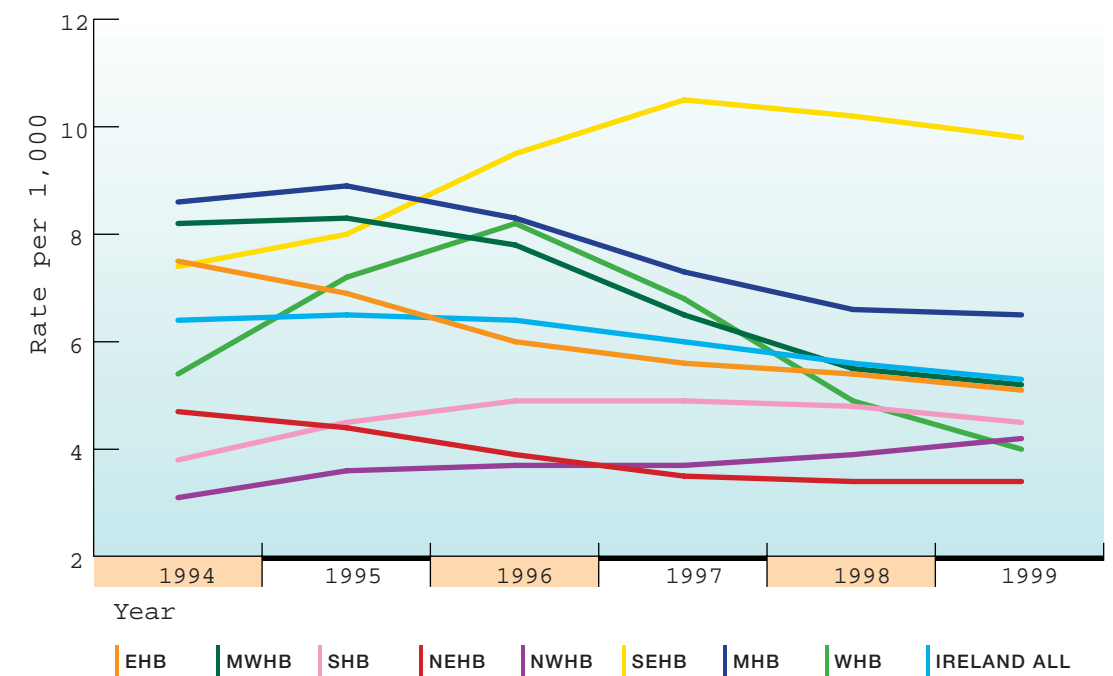


Figure 5.15: Grommet insertion rates per 1,000 children aged 0-14 by health board of residence, 1994-1999. Source: PHIS version 4



Acute hospital out-patients

While there are considerable data available from acute hospitals relating to in-patient and day case admissions, very little morbidity data are available concerning acute hospital out-patient departments which could be used in the planning, monitoring and evaluation of services both at a primary and secondary care level. Available data at out-patient department level relate to activity and attendance. Table 5.7 shows some key activity data relating to hospital out-patient paediatric clinics in recent years.

Table 5.7: Activity data from consultant controlled out-patient paediatric clinics, 1994-1999

Source: *Health Statistics 1999 and Information Management Unit*

	1994	1995	1996	1997	1998	1999
Number of sessions	5,060	5,849	6,589	7,670	7,854	9,761
Number of attendances	83,421	82,733	86,897	105,693	107,269	124,512
Average number of attendances per session	16.49	14.14	13.19	13.78	13.66	12.76
New attendances as a percentage of total	23.80	25.38	25.73	28.17	27.21	34.97
Percentage of all paediatric OPD attendances	4.49	4.38	4.51	5.48	5.46	6.36

Conclusions

Demography

The proportion of the population in Ireland between the ages of 0 and 14 has been declining steadily in recent years as the population in Ireland is ageing. It currently stands at 24 per cent which, in spite of the recent decrease, is considerably greater than the European average of 18 per cent. This is likely to have significant policy implications for the health system.

Health status

Indicators of child health in Ireland have shown considerable and sustained improvement, mirroring improvements which have taken place in other European and Western countries. However, according to many indicators, the health of Irish children lags behind that of children in other jurisdictions.

Many of the causes of morbidity and mortality in children are related to preventable causes such as injuries and poisonings, infectious diseases and certain congenital anomalies like neural tube defects. Indeed, there has been considerable success with specific causes of morbidity and mortality (e.g. infectious diseases and SIDS), underlining the important role of prevention in the strategic development of services at all levels.

The importance of prevention and health promotion for our children is further underlined by the data in relation to smoking and alcohol consumption. While we compare reasonably well to other countries according to these indicators, we nevertheless need to address these specific risk behaviours in order to prevent a significant impact on the health of our children as they get older.

Service utilisation

As discussed earlier, admissions and procedures have been steadily increasing in recent years. Variation in these rates can be seen at a health board level for reasons that are unclear. It will be important in another forum to attempt to provide answers to the many questions that such observed variation poses, e.g. whether such variation can be linked to availability and access to services, to variation in medical practice, or to variation in need. The lack of information required to answer such questions means that no immediate conclusion can be drawn. Nevertheless, it highlights the importance of ensuring that health services provision is related to need. This in turn will help to ensure that, insofar as the health services play a role in determining health, health inequalities can be tackled.

Information

The strategic direction of child health services must be informed by data on child health issues and priorities. Information about the health of children in Ireland has been somewhat limited in the past but has been improving in recent years. Availability of information sources such as the Central Statistics Office, the National Cancer Registry, the Intellectual Disability Database, the EUROCAT register and the SIDS register have contributed valuable information for planning. However, we have some way to go before we have the information available which enables us to produce a comprehensive picture of the health of our children.

The Public Health Information System, which has been developed by the Information Management Unit of the Department of Health and Children, currently holds information up to and including 1999. It brings together information on an increasingly large common dataset of public health from a variety of disparate sources at national and health board level which can be used for planning, evaluation, performance measurement, research and other purposes. It provides most of the information included in this report. It demonstrates the value of good quality information and underlines the need for its continued prioritisation in the health services.

However, there are considerable gaps such as information from out-patient and primary care, mental health information and chronic disease information. The number of admissions of children to hospital and the number of procedures carried out on children have been steadily increasing in recent years. Variation in these rates can be seen at a health board level for reasons that are unclear.

Our information systems do not allow us to examine these reasons in anything more than a rudimentary way. It is not possible, for example, to determine from existing information the degree to which any increase in activity could be attributable to underlying changes in the occurrence of illness. The importance of this is that potential increases in occurrence may be preventable.

The Department of Health and Children is currently producing a health information strategy (due for publication in late 2001) which will help to improve the information on which planning and prioritisation decisions about health and health services are based. This is a welcome and significant development, given its value in the area of child health.

chapter 6

Accidents in Childhood (Unintentional Injury)



The Health of our Children

Children's Health: Accidents in Childhood (Unintentional Injury)

Injuries are the single greatest health threat to children in Ireland today. They are the leading cause of death, ill-health and disability in children. The national health strategy *Shaping a Healthier Future* (1994) considers injury prevention a priority for improving children's health. In spite of this, injury is a health problem that does not receive as much attention from the medical profession and from policy-makers as other health issues. One possible reason for this neglect is the widely held view that injuries are caused by accidents, which are random occurrences that cannot be prevented.

Part of the problem is the prevailing use of the term 'accident'. This implies that injuries sustained are beyond our control. In fact, injuries are preventable. Usually a combination of a sequence of events leads to an episode that results in an injury. Opportunities for prevention occur at each stage. When policy-makers hold the view that injuries are inevitable, a major barrier to progress in injury prevention is created. Successful intervention requires that professional groups, policy-makers, the media and the public recognise that unintentional injuries (accidents) can be and deserve to be prevented.

Another difficulty in tackling injuries is the fact that there is no one government department or agency with responsibility for their prevention. Injuries can be viewed as non-medical because prevention involves law enforcement and physical and social engineering measures rather than medical treatment. This may lead to a perception that they do not come under the remit of the healthcare system. However, because the treatment and rehabilitation of injuries entails a large expenditure in the health service, it is a subject of great importance to the health system.

This chapter deals with mortality and morbidity resulting from unintentional injuries. In most cases the age group considered is the 0-19 year age group. While 18 and 19-year-olds fall outside of any definition of children, they will be considered together with under 18-year-olds as the causes of injury throughout the 15-19 year age band are similar and require similar approaches in terms of prevention strategies.



The extent of unintentional injury

Unintentional injury is the third commonest cause of death in Europe and in Ireland it accounts for approximately 1,400 deaths annually. It is the most common cause of death in children and in people under the age of 45.

Risk factors for childhood injury include: developmental stage of the child, male sex, family stress, social disadvantage, poor supervision, history of previous injury, overcrowded housing conditions and rented tenure. Young children are most at risk of unintentional injury at home especially from falling, burns and poisoning. Older children are at greater risk on the road and during sports activities.

Injury mortality

Injuries are the main cause of death in children over the age of one year but relatively unusual in infants. In the 0-19 age group in 1999 there were 336 deaths from all causes and 170 (50.6 per cent) were due to injuries. The highest proportion of injury deaths was in the 15-19 year age group (67.3 per cent). Of the 171 recorded injury deaths in 1999, 137 (80.1 per cent) were documented as being unintentional (accidental).

Table 6.1: External cause of injury deaths by age group (1999). Source: PHIS version 4 and Central Statistics Office

Age group	RTA	Poisoning	Fall	Fire/flame	Drowning/suffocation	Other	Total
0-4	11	0	2	2	5	4	24
5-9	5	0	0	1	4	5	15
10-14	9	2	2	0	3	3	19
15-19	54	8	3	1	5	8	79
Total	79 (57.7)	10 (7.3)	7 (5.1)	4 (2.9)	17 (12.4)	20 (14.6)	137

In 1999, most unintentional injury deaths, 79 (57.7 per cent) were in the 15-19 year age group. The majority, 79 (57.7 per cent), were due to road traffic accidents of which 48 (35.0 per cent) were car occupants, 18 (13.1 per cent) were pedestrians, 5 (4.4 per cent) were motorbike casualties and 6 (3.5 per cent) were pedal cyclists. Falls, drowning, poisoning and house fires/burns accounted for most other injury deaths. Injuries from falls and poisoning are also a major cause of non-fatal injury.

Trends in mortality

As discussed in the previous chapter, there has been a steady downward trend in overall childhood mortality. Injury mortality shows a similar pattern (Figure 6.1). The highest injury mortality rate is in the 15-19 age group and the lowest rate is among infants. Deaths from injuries now account for 25 per cent of deaths in the 0-19 year age group but for over 50 per cent of deaths in the 1-19 year age group.

Figure 6.1: Age specific injury mortality 1980-1999 in 0-19 age group. Source: PHIS version 4 and Central Statistics Office

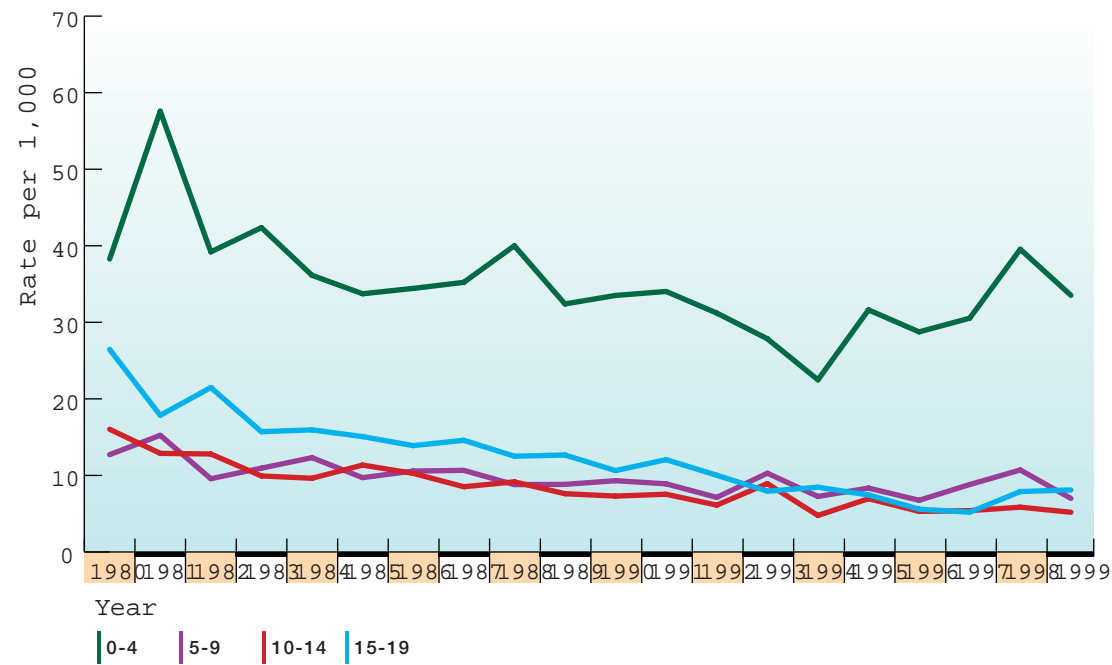
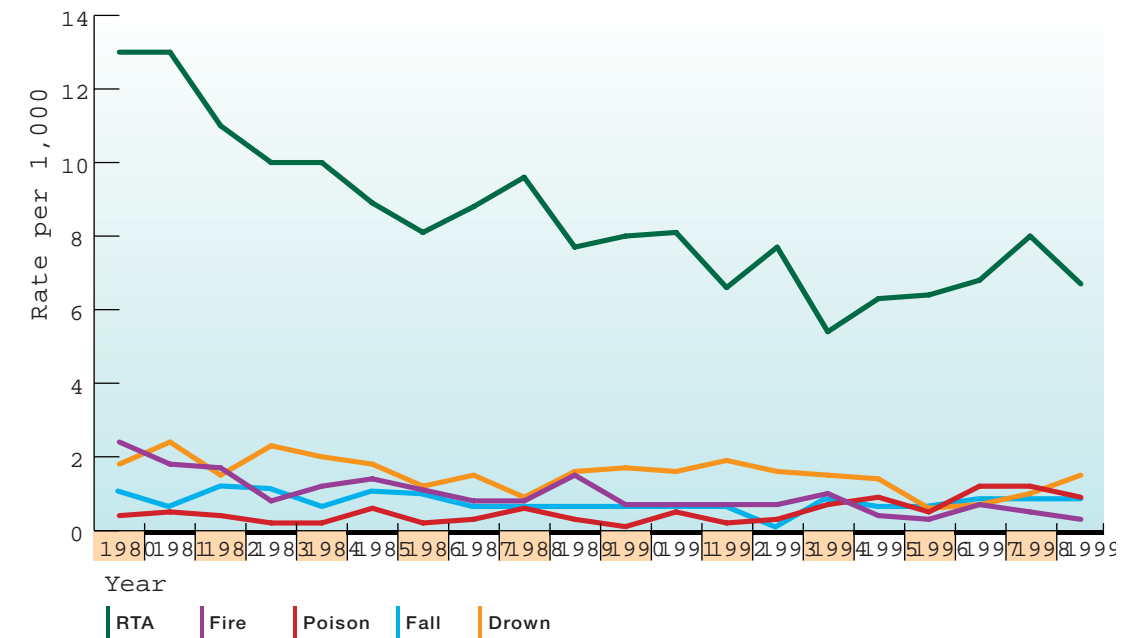


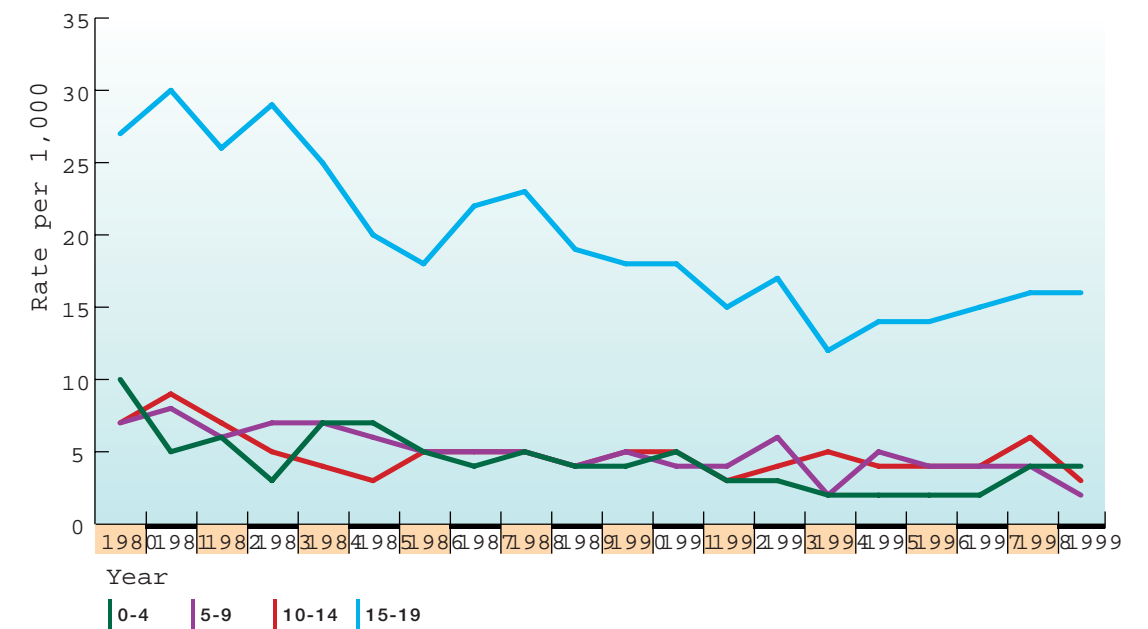
Figure 6.2 shows trends in deaths for specific injuries in the 0-19 age group since 1980. There is a general downward trend for injuries as a whole. The highest cause specific mortality rate in 1999 was for road traffic accidents (57.7 per cent of all unintentional injury deaths).

Figure 6.2: Cause specific mortality 0-19 years for unintentional injury, 1999. Source: PHIS version 4 and Central Statistics Office



Although there was a steady drop in the number and rate of deaths from road traffic accidents (RTAs) since 1980, since 1994 the trend is upwards. This increase has primarily occurred in the 15-19 age group. In 1980, 170 young people died in RTAs compared with 67 in 1994 and 79 in 1999. Trends in other types of injury mortality in childhood such as falls and drowning are based on very small numbers and show significant year on year variation.

Figure 6.3: Road traffic accident age specific mortality 1980-1999 in 0-19 age group. Source: PHIS version 4 and Central Statistics Office



Trends in morbidity

Each year there are between 14,000 and 15,000 admissions of children to hospital with injuries. Figure 6.4 shows the number of admissions in recent years for males and females. The number of male admissions in the 0-14 year age group is almost double the number of females. The number of children attending GPs and Hospital A&E departments is not quantified but it is estimated that approximately 20 per cent of children each year may attend hospital with an injury and 10 per cent of all children attending with injuries require admission to hospital.

Figure 6.4: Number of injury admissions in the 0-14 age group by age and sex, 1994-1999.
Source: PHIS version 4

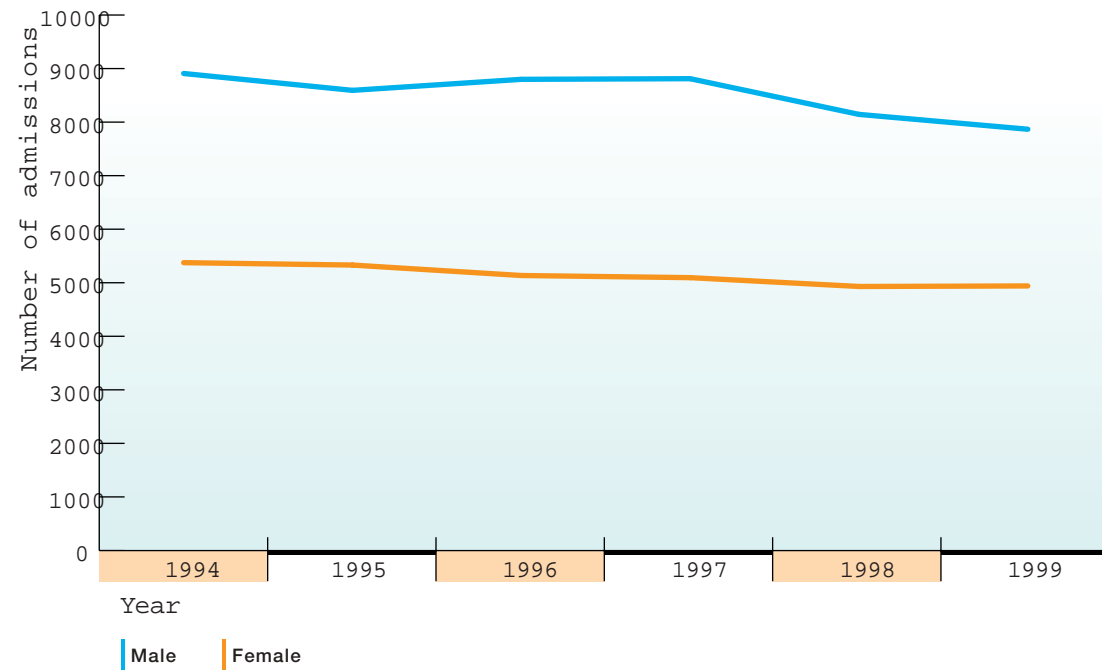


Figure 6.5 shows the percentage of all admissions in the 0-14 year age group accounted for by injuries. It can be seen that injury admissions account for almost one in every five or six admissions overall. Injuries, therefore, represent a significant component of health service workload and are, in addition to the burden of morbidity on those injured, a significant consumer of healthcare resources in terms of time, staff and finance.

Figure 6.5: Injury admissions as a percentage of all admissions in children aged 0-14 by sex, 1994-1999. Source: PHIS version 4

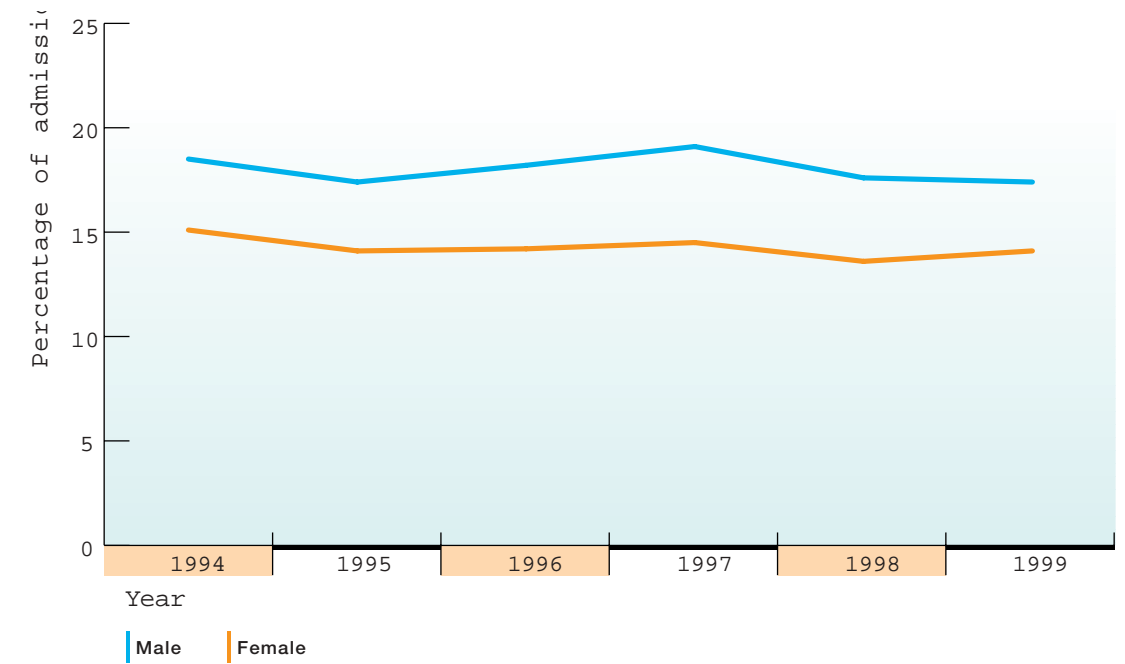


Table 6.2 shows the main causes of admission according to the type of injury. Falls are the main cause of injury requiring admission. Poisonings and burns, while less common, are important in terms of seriousness and can lead to high medical costs, suffering and disability. Young children receive more injuries in the home than anywhere else. Home accidents produce 65 per cent of injury admissions in children under five years and 10 per cent of injury admissions in children 5-14 years old. There is a social class gradient for injuries at home, with children from disadvantaged homes being at greatest risk. Houses are built for adults rather than for children. The average home contains many structures and products which are accessible to children and present a risk of injury. The provision, installation and maintenance of home safety devices offer potential for injury reduction.

Table 6.2: Number of injury in-patient admissions in 0-14 year age group by cause, 1994-1999.
Source: PHIS version 4

	1994	1995	1996	1997	1998	1999
All unintentional causes of injury and poisoning	12,153	12,698	12,977	13,332	12,715	12,611
Drowning and submersion	8	15	13	18	8	20
Falls	5,099	5,379	5,589	5,895	5,782	5,785
Fire and flames	86	128	105	115	100	109
Motor vehicle accidents	807	837	864	819	753	746
Poisoning	1,367	1,245	1,179	1,236	1,135	1,164
All other unintentional injuries	4,786	5,094	5,227	5,249	4,937	4,787

Prevention

There are three main approaches to injury prevention: education, enforcement and environmental change. The most effective measures involve product design and environmental modifications but a combination of all three strategies are usually required. Changes cannot be achieved by education alone. What is important is to prevent the accident from occurring and if this is not possible, then the consequences of the event must be minimised.

Preventive measures include establishing a safe working and living environment; creating protective devices for individuals such as helmets and seat belts and early warning systems such as smoke alarms; ensuring that the emergency services and treatment and rehabilitation services are of the highest quality (see below for some evidence-based injury prevention programmes).

Advances in trauma care have contributed to the reduction in injury deaths over the years. It is essential that the injured are transported to the most appropriate hospital as quickly as possible. Immediate and effective care of the injured before they reach hospital is also important in improving the chance of survival and reducing complications and the risk of disability. Life-threatening complications such as airway obstruction can often be prevented by early basic life support. Consideration should be given to more widespread training in first aid for parents, schools and road users in general.

Examples of evidence-based injury prevention programmes

Evidence-based interventions that have been demonstrated to reduce injury mortality and morbidity in children include:

- Urban traffic measures to reduce pedestrian cycle injury
- Traffic speed reduction
- Seat belt legislation and enforcement
- Legislation and enforcement on child restraints in cars
- Motor cycle helmet legislation
- Child resistant closures to prevent poisoning
- Provision of smoke alarms
- Window guards to prevent falls
- Safe domestic product design.

Interventions that have been shown to change behaviour and reduce injury risk include:

- Educational campaigns to increase the use of safety devices, e.g. bicycle helmets, child restraints in cars, smoke alarms and seat belts
- Pedestrian education aimed at the child and the parents
- Parent education on home hazard reduction.

Some preventive measures require that individuals be persuaded to take action to protect children, either voluntarily or through legislation. Other measures are directed at designing products and environments (sometimes required under legislation) which reduce the risk of injury without the need for action on the part of individuals. Legislative and enforcement methods are usually more effective when the public accepts that they are necessary. Educational measures may be used to prime the population in advance.

Some excellent work is taking place to prevent accidents. It needs to be co-ordinated and strengthened. It is sometimes difficult to determine where the responsibility for injury prevention should lie. The health services have responsibility for the care of the injured and bear the brunt of the costs incurred. Many other agencies are involved in prevention of injuries on the road and in the workplace. When there are so many involved there is a likelihood that there will be duplication of efforts and that some areas may be overlooked. There is no single agency with the mandate to co-ordinate the work of all the others involved and to ensure a thoroughly focused approach to prevention. Since treating those with injuries is the responsibility of the healthcare system, perhaps that sector should take a more active role in co-ordinating efforts at injury control.

Surveillance

In order to develop a comprehensive and effective policy for injury prevention the means for determining the epidemiology of injuries must be established. This will enable those responsible to set priorities, plan prevention and generally raise public awareness. It will also facilitate the evaluation of any preventive measures that are introduced.

Some information is available from sources such as National Roads Authority (NRA), European Home and Leisure Accident Surveillance System (EHLASS), Hospital In-Patient Enquiry System (HIPE), local systems and studies undertaken from time to time. However, there is little knowledge about the true incidence of non-fatal trauma. Even where data are recorded, there are concerns regarding the completeness and accuracy of the data. Circumstances of the accident are often unknown and data generally relate to the injury received and not to its cause.

There is no single source to provide data on non-fatal injuries and data tend not to be specific to particular groups or to geographical areas. There is no infrastructure whereby agencies with information can share it and develop common parameters which would allow for comparisons and permit identification of trends.

Our biggest problem: road traffic accidents

Nearly half of child injury deaths are caused by motor vehicle crashes. All children are at risk as car passengers; as toddlers the risk of a pedestrian accident increases; and as they get older they become more vulnerable as cyclists and later as motorcyclists.

In Ireland among all age groups road traffic incidents (RTAs) cause over 400 deaths and 13,000 reported injuries each year. As motor travel has increased substantially over the past 20 years there has been a decrease in death rates per mile travelled. However, the actual number of persons killed remains at an unacceptably high level. This is a real cause of concern, particularly as other countries have shown that a reduction in the number of road fatalities is possible. The cost of each fatal road traffic death in Ireland is estimated at £850,000 while the total cost of road traffic crashes is estimated at £443 million.

The government strategy for road safety has been designed for implementation over the 5-year period from 1998-2002. The main target is to reduce road fatalities by 20 per cent of their 1997 level. Additional targets are to reduce speeding by 50 per cent from 1997 levels; to increase front and rear seat belt wearing to 85 per cent and to reduce by 25 per cent the number of fatal road traffic accidents (commonly alcohol related) between the hours of 9 pm and 3 am. Successful implementation of this strategy requires strict enforcement of existing legislation.

International comparisons

A major expansion of injury prevention programmes is needed in Ireland to achieve results like those in the UK, Sweden and Australia. It is important that the interventions which have been proven to work are implemented particularly in socially deprived communities and in groups that are most at risk of unintentional injury. Such approaches cross all boundaries between government departments and should become a central duty for collaborative action between central government departments, local authorities and the health service.

Although Irish mortality rates have improved, this is little reason for comfort as the magnitude of the Irish injury problem continues to escalate with over 60,000 hospital admissions per year. Our knowledge of the underlying frequency of non-fatal injuries is crude. We cannot say whether the incidence of specific injuries is increasing or decreasing over time. There is also a possibility that survival from potentially fatal injury may be bought at the price of a presently invisible increase in long-term injury and disability. One element of our future strategy must therefore be a commitment towards the development of accurate and comprehensive surveillance of injuries and their sequelae.

Conclusions

Injury is preventable. Only a small proportion of injuries result in death. The great majority of injuries do not require hospital admission. Most injuries are treated at A&E, by a GP or by people themselves. Our understanding of the nature of these injuries is severely limited by the lack of information either from A&E level or from a general practice level to inform the development of policy and the implementation of successful prevention strategies. What is clear from the data that do exist is that a considerable proportion of health service resources is spent on injury treatment. The wider socio-economic cost of injuries is even greater.

We cannot begin to understand potential outcomes from injury prevention programmes without including actions taken after injury as well as before. Good quality information is required so that such interventions can be planned and successfully implemented. This will require a co-ordinated national injury surveillance system in order to capture information from all types of injuries. Good quality injury research is also required to determine injury prevention priorities and to identify successful prevention strategies. Structures such as national committees for prevention and control and the commitment of a dedicated agency to implement national programmes of injury prevention and control should also be considered.

An intersectoral strategy for injury prevention, treatment and rehabilitation is necessary given the importance of injuries as outlined in this chapter and the requirements for policy development. This could draw together the many sectors with a stake in this area, with the common goal of reducing the burden of injury in our society. The preventability of injuries together with their consequences and costs make the case for such a strategic approach unanswerable.

chapter 7

Disability in Childhood



The Health of our Children

Children's Health: Disability in Childhood

The occurrence of a disability in a child is a source of great anxiety and distress in families. Issues of particular significance include: uncertainty about the prognosis, the long-term implications of the disability for the quality of life of the child, the availability of appropriate diagnostic and treatment facilities, psychological and practical support for the families in caring for the child, and a myriad of other doubts and uncertainties. Chapter 5 sets out some information on the occurrence of disability in Ireland, derived from EUROCAT and the national intellectual disability database.



Over recent years, it has become clear that the actions of the health system, as they relate to people with disabilities, need to be powered up. A more proactive approach is needed in order to encompass a greater appreciation of the needs of this group, as part of a broader public policy response. Specifically, there is an urgent requirement to develop a range of initiatives relating to prevention, diagnosis, treatment and rehabilitation, and thus assign to this group of citizens the dignity that is their inherent right. The public policy priority attaching to this issue has been reflected in the Programme for Prosperity and Fairness where under the general objective of 'to improve access to quality health-care services in order to strengthen social inclusion and cohesion and also to monitor socio-economic health inequalities', the development of services for people with disabilities has been targeted.

Classification of disabilities

The medical model is unsuitable for the categorisation of disabilities as it fails to examine the impact upon the daily lives of those who suffer from a disability. The World Health Organisation (WHO) classification of impairments, disabilities and handicaps is an attempt to overcome these difficulties. While there is some work being carried out at the present time to look at alternative classification models, it nevertheless provides a useful framework for examining issues of disability in childhood. It is based on a sequential model, as follows:



Disability is defined as any restriction or lack (resulting from impairment) of an ability to perform an activity in the manner or within the range considered normal for a human being. Disability therefore relates to any activity which a person can or cannot do, such as an ability to walk or to see.

Disabilities include:

- Intellectual disability
- Physical and sensory disability.

Intellectual disability

Intellectual disability is a condition of delayed or incomplete development of the mind, which is present at birth or acquired before the age of 18. It results in a greater than average difficulty in learning and can occur with or without any other mental or physical disorder. The WHO provides diagnostic guidelines to categorise degrees of intellectual disability. These are based on IQ scores and skills assessment and range from mild (IQ: 50-69), to moderate (IQ: 35-49), severe (IQ: 20-34) and profound (IQ<20).

Causes of intellectual disability can arise during pregnancy or labour or after birth. They include chromosomal abnormalities, e.g. Down's syndrome; metabolic defects, e.g. phenylketonuria; abnormalities at birth, e.g. trauma and hypoxia; infections, e.g. meningitis, rubella; trauma and many others.

Physical and Sensory disability

Sensory and physical disabilities are defined as a persisting sensory deficit (e.g. blindness) or physical deficit (e.g. paraplegia) resulting from disease, disorder or trauma. They are classified using the World Health Organisation Disability Assessment Schedule, Version 2 (WHODAS2) classification system as follows:

- Understanding and communication, e.g. concentration, remembering, starting and maintaining a conversation
- Mobility
- Self care, e.g. washing, dressing and eating
- Getting along with people
- Life activities, e.g. household tasks, work and school
- Participation in society, e.g. joining in community activities.

Physical and sensory disabilities can be caused by:

- Neurological disorders, e.g. spina bifida, cerebral palsy
- Musculoskeletal disorders, e.g. muscular dystrophies, scoliosis
- Sensory disorders, e.g. deafness, visual impairment, speech and language disorders.

Policy considerations

The *National Children's Strategy* sets out the need for intersectoral collaboration in relation to children's health and welfare. Key elements of a policy approach which responds to the needs of children with disabilities in childhood include: increasing awareness, prevention of disability, early diagnosis and intervention, and the provision of appropriate rehabilitation.

Among the difficulties which disabled people encounter are negative attitudes from the public or from public services, which in turn can lead to social exclusion and marginalisation.

Disability is often portrayed as a problem and those with disabilities are viewed as helpless, dependent, ill, or victims. Culture plays an important role in the way we relate to people with disabilities. This contributes to our perception of people with disabilities as being different. Public education and awareness are central to the changing of attitudes and policy in relation to disability. A strong focus needs to be placed on raising awareness, eliminating discrimination, and putting value on diversity.

Prevention

Prevention is one of the cornerstones of disability policy. The majority of disabilities are preventable. Failure to prevent disabilities can result from lack of co-ordination between sectors and services, absence of specific prevention policies, or lack of identification and intervention around specific disabilities or risk factors. Existing prevention policies are not effectively linked to identification and early intervention policies.

The concept of prevention has three general strands, namely: (i) direct prevention of the disease or impairment, (ii) modification of the natural history of the condition, which is the objective of screening and prompt treatment, and (iii) rehabilitation, which aims to reduce the personal and social effects of the disability. The overall aim is to offer children with disabilities substantially improved opportunities for health, educational and social gain.

Preventive approaches offer children a healthy start in life and can apply at different stages. Comprehensive antenatal care delivered by competent, appropriately trained doctors and nurses provides the basis for the prevention of many congenital anomalies. Successful preventive strategies include the cessation of smoking, drinking of alcohol, inappropriate consumption of therapeutic and other drugs as well as the timely administration of folic acid to women of child-bearing age.

The early detection of many congenital anomalies is facilitated by a national neonatal screening programme for inborn errors of metabolism.

Properly structured and resourced genetic counselling services are important in the prevention of disability due to genetic causes. Opportunities for prevention also exist in infancy and early childhood. The primary childhood immunisation programme offers protection against a range of communicable diseases which may lead to severe disability in childhood. There is also scope for prevention in the physical environment – injuries and road traffic accidents are a significant cause of disability in older children.

The nature of disability in childhood requires intersectoral action. The development of new screening and therapeutic approaches, in particular for genetic conditions, offers the potential to prevent many causes of childhood disability. It is important, therefore, that disability services and prevention programmes are integrated to take advantage of emerging opportunities to promote better health for children with disabilities.

Treatment and rehabilitation services

Disabled children and their families require appropriate, accessible and affordable health services at primary, secondary and tertiary level. Where the disability and other circumstances permit, special forms of assistance, offered either on an out-patient basis or at home, are preferred to hospital care.

Rehabilitation should enable children with disabilities to become fully participating members of society, with access to all the benefits and opportunities of that society. Access to interventions and services such as early childhood development opportunities, education and training opportunities, community development programmes and ultimately job opportunities are important. Rehabilitation services have traditionally been poorly developed and limited in their accessibility. In addition they have tended to be poorly co-ordinated and integrated with diagnostic and therapeutic services. A child-centred approach to disability would require a more central role for disabled people in the planning, development, implementation and monitoring of rehabilitation services.

Rehabilitation policy objectives should enable children with disabilities to reach and maintain the highest possible quality and quantity of life; should provide them with tools to give them greater independence; and should prevent secondary disabilities. Realisation of these objectives will require strategies which focus on education and training of staff, appropriate inter-sectoral collaboration, involvement of those with disabilities in the planning and delivery of services, and the development of comprehensive rehabilitation programmes which include and integrate medical, psychological, social, educational and vocational components with one another and with other aspects of services for those with disabilities.

Information

While information relating to disability is limited, important developments in recent years have improved the capacity of the health system in terms of the planning, funding and management of services for people with a disability. The national intellectual disability database was established during 1995 to provide a comprehensive and accurate information base for such decision-making. In 1998, The Department of Health and Children appointed a physical and sensory disability database committee which is planning the implementation of a physical and sensory database. This information base will improve our ability to identify the needs of those with disabilities. However, further information development will be required in order to allow for a more detailed epidemiological analysis of incidence and prevalence of disability. This is necessary for the development of a comprehensive strategic approach to the prevention of disability, the evaluation of prevention and other programmes, and the monitoring of trends.

Conclusions

In recent years, the increasing challenge posed by disability in childhood has been recognised. The Programme for Prosperity and Fairness has highlighted the development of services for people with disability as a priority area. The *National Children's Strategy* has recognised the need for increased intersectoral collaboration in relation to children's health and welfare. There is a need for increased public awareness of childhood disability. Prevention is also of key importance. This involves promotion of healthy lifestyles, protective measures such as immunisation and prevention of accidents, early intervention, appropriate management of disability, and effective rehabilitation. The development of a national physical and sensory disability database will improve our ability to identify children with disabilities and to plan services to meet their needs.

chapter 8

Mental Health in Childhood



The Health of our Children

Children's Health: Mental Health in Childhood

Introduction

Knowledge of child development, both physical and psychological, has expanded dramatically over the past few decades. In so far as there has been a prioritisation of child health at a health policy level in Ireland and in other countries, health systems have tended to concentrate to a greater degree on the promotion of physical health and the provision of diagnostic and treatment services dealing with physical illness. Approaches to the promotion and development of sound mental health for children, and the identification and treatment of psychological and psychiatric disorders, have been patchy, uncoordinated and under-resourced.

It is now necessary to reconsider this approach in the light of emerging evidence. Over the past 30 years, Ireland has undergone rapid economic, social and behavioural change, the rate of change in the past decade being of an unprecedented nature. The identified link between increased economic prosperity and better health, as measured by indicators of physical morbidity and mortality, does not appear to be as strong in relation to mental health. In fact, international research has pointed to increased rates of psychiatric and behavioural disturbances among young people in many countries which have undergone similar changes to Ireland. This is particularly the case for crime, alcohol and substance abuse, suicide and depression.

The recent ESPAD study, referred to in Chapter 4, gives some indication of the problems being experienced in this regard by Irish adolescents. In relation to most behavioural indicators, the prevalence of risk behaviours for Irish 16-year-olds is greater than the average of 30 other European countries. This is particularly true for cannabis taking, use of inhalants, and alcohol consumption, all of which have detrimental consequences in terms of mental health.

As regards psychological/psychiatric conditions, while data are not comprehensive, some epidemiological studies show that as many as 18 per cent of the child population under the age of 16 years will experience significant mental health problems at some period of their development; but a much smaller proportion, of the order of 3-4 per cent, will actually suffer from a psychiatric disorder such as anorexia nervosa or a crippling, obsessive, compulsive state. Recent data compiled in the USA suggest that one in ten children and adolescents have a mental illness serious enough to cause some level of impairment in any given year.



Poor mental health in childhood can cause suffering to the child, the family and the wider community, may compromise the child's optimal development, and is an indicator of increased risk of poor mental health in adulthood.

In the light of the high prevalence of emotional and psychiatric disorders, the higher than average prevalence of risky behaviours in Irish adolescents, and the deficits in the health system response to these matters, it is clear that the issue of child mental health and illness constitutes a major area of concern from a public health point of view. In Ireland, policy-makers, service providers, professionals and the public at large would do well to heed the warning of the US Surgeon General in relation to this matter as it affects the USA when he recently stated that 'the burden of suffering by children with mental health needs and their families has created a health crisis in this country'. In that context, the policy priority which needs to be given to mental health in children is self-evident, if we are to pre-empt the occurrence of such a crisis in this country.

Classification

Mental health in childhood is determined by the interplay of a variety of inherited and environmental influences. Children exposed to stresses such as poor physical health, disability, injury, inadequate parenting and poor living conditions are at increased risk of developing mental health problems. Individual experience is of course tempered by factors such as the child's state of emotional and intellectual development, the nature of the stress, and the family's coping skills. The multi-axial classification system commonly used in child psychiatry to categorise mental health problems in childhood is complex, encompassing the full spectrum of influences on a child's emotional well-being. This system categorises the mental health difficulties of childhood as arising from one or more of five dimensions: (a) defined clinical psychiatric syndromes, (b) specific developmental disorders, (c) problems of intellectual development, (d) mental health problems associated with medical problems or conditions, and (e) problems arising from disturbed psychosocial conditions.

Within this classification system, the commonest presenting category is disturbance of the child's psychosocial conditions, e.g. poor living conditions, inadequate parenting, child abuse, or school bullying. The commonest presenting disorders are conduct disorders, e.g. truancy and delinquency, emotional disorders, attention deficit disorders and hyperactivity syndromes, major psychiatric disorders, developmental delay, pervasive developmental disorders such as autism, and other specific eating and elimination disorders. Some disorders may be clearly identifiable as abnormal behaviour, but in many instances there may be a spectrum of behaviour ranging from normal to pathological.

Policy considerations

Mental health in children is an essential component of health policy as well as of wider public policy. Both the promotion of mental health in children and the prevention and treatment of mental illness should be major public health goals. Promoting and protecting mental health and well-being is essential to meeting the holistic needs of children as identified in the 'whole child' perspective. Prevention must not only focus on evidence-based intervention relating to health services but must be firmly rooted in education and social services policy. The children's strategy sets out the need for intersectoral collaboration in relation to children's health and welfare. Key elements of an approach to deal with mental health in childhood include: mental health promotion; prevention of mental illness; prevention of emotional and behavioural disorders; and early intervention.

Mental health promotion and prevention of mental illness

Children who are at high risk of developing mental health problems include those living in poverty, showing behavioural disorders, experiencing parental separation and divorce, or living within families who are experiencing bereavement.

Socially disadvantaged children are at higher risk of mental health problems in childhood and later life. However, several social interventions, for example high quality pre-school and nursery education, have been shown to provide lasting cognitive, social and emotional benefits. Early childhood programmes for children lead to improved cognitive development (thinking and reasoning), improved social development (relationship to others), improved emotional development (self-image, security) and improved language skills. Learning and performance at school is also enhanced. Children showing behavioural problems in school or at home can benefit from school-based interventions and parent training programmes. Emotional support and cognitive skills training can be used effectively with children after the death of a parent or for children of separating parents.

The provision of programmes to develop mental and emotional health, self-esteem, personal relationships and coping skills is also important. In the long-term, this will strengthen children's basic capacity to make healthy choices and to cope with stressful situations without recourse to behaviours that can damage health. The following will be required in order to attain this: continuing support and improvement of existing services, training of service providers, and additional provision of childhood education through local communities and direct state provision.

This will be most effectively executed through collaboration with both statutory and voluntary agencies, e.g. education, social services, child care, Barnardos and local authorities. In light of this, it is essential that mental health professionals work more closely with non-health workers in the promotion of positive mental health.

Early intervention

As in other areas of child health, early intervention is an important component of the overall approach to protecting the mental health and normal development of children. In order to facilitate early intervention, we must maximise the ability of parents, teachers, carers, health professionals and other key persons to identify potential mental health problems at an early stage. This requires that awareness is raised among the public and, in particular, among parents. Further consideration is also required to determine how best to reduce the stigma associated with mental illness, in order to remove barriers to early identification and help-seeking.

In addition to raising awareness, it is necessary to provide training for primary health care and educational professionals to recognise early signs and symptoms of mental health problems in children. Guideline development for the appropriate treatment of mental health problems, once identified, is also required. It will be necessary to ensure that these guidelines are multi-disciplinary in nature and that they reflect available evidence and best practice.

It is also necessary to ensure that children have access to mental health services according to their needs and that such services are integrated with existing child health services.

Services

Mental health services for children have traditionally been delivered in a fragmented manner. Integration of services across generalist and specialist care and between disciplines must be strengthened in order to provide more efficient and effective care. The delivery of mental health services for children must be integrated with other sectors such as education, environment and social care. A working group to advise the Minister for Health and Children on the development of child and adolescent psychiatric services was established in June 2000 and will make an interim report to the Minister in the near future.

Information and quality issues

The absence of epidemiological information relating to children's mental health on a national basis is a significant limitation in our current system. No routine information system captures information on children's mental health problems, with the exception of the national psychiatric in-patient reporting system, which provides information on children admitted to psychiatric hospitals. However, since mental health problems in children rarely require admission, this source of information is of limited value. A highly developed information system is required, in order to underpin approaches to quality assurance and evaluation of mental health prevention and treatment services, to monitor trends in incidence, and to identify risk factors and risk groups.

Conclusions

The promotion and protection of the mental health of children must be prioritised by the health system and by society at large to a greater degree than heretofore. The development of our capacity to generate information upon which to base policy is an essential step in prioritising children's mental health. However, prevention and intervention strategies must be based on information about mental illness in children and upon best available evidence. The importance of intersectoral approaches to the promotion of mental health and the prevention and treatment of mental illness cannot be overstated.

The identification of children at risk of developing mental health problems is important so as to facilitate management of the condition at the earliest opportunity. The nature of the association between social disadvantage and the risk of mental health problems will require integrated approaches including social support and educational and clinical care interventions.

The health system itself can respond to these challenges by integrating its activity in the area of mental health with other aspects of health and personal social service provision. To help achieve this, an integrated children's health strategy is required which prioritises children's mental health and identifies how the health system, in collaboration with appropriate sectors, can promote mental health and also prevent and treat mental illness.

chapter 9

Discussion



The Health of our Children

Children's Health: Discussion

In putting forward 'The Health of Our Children' as the theme of this report, we are conscious of and to a large degree, influenced by, the recent publication of the *National Children's Strategy*. The publication of this strategy provides an important opportunity for society to promote and protect the welfare of children and, in this context, the health of our children is of fundamental and far-reaching importance.

The various aspects of child health described and analysed in this report lead us to a number of conclusions and a number of observations which we hope will provoke further discussion and will make an informed contribution to the development of a national children's health strategy. These conclusions and observations are set out below.

Health information



The description and analysis of the health determinants, health status, morbidity and mortality, and service utilisation pattern among children given in the report are necessarily limited. The reason for this is that the quality and quantity of information available is not sufficient to enable many important health and disease indicators to be measured and properly informed planning of services and interventions to be undertaken. It is a priority recommendation that the national health information strategy pay particular attention to the requirement for comprehensive child health surveillance of many issues including demography, health status, health risk and health systems.

Prioritising children's health

The health status of Irish children has improved significantly over recent decades. However, there is evidence to suggest that compared to the health experience of children in some other European countries, the improvement in health indicators has not been as large or as sustained as we might have hoped for. To make the sort of progress in relation to our children's health which is commensurate with our status as an economically successful, modern society committed to social inclusion, significant policy decisions have to be made at a number of levels. A matter of most fundamental importance, as outlined in the 1999 report from the CMO's Office is that: 'health should be considered as a fundamental human resource to be promoted and protected and ... health should be a central consideration in any plans for social and economic progress'.

In this context, as the *National Children's Strategy* states: 'Children matter.' Their status and well-being speak volumes about the values and quality of life within any society. Investment in the future means investing in children and in particular in their health.

Child health policy

General issues

Reference was made in Chapter 3 to the myriad of wider societal and socio-economic determinants of children's health. Addressing these determinants by specific policy measures which help distribute wealth on a wider scale and provide opportunities and services for families with children, especially poor families, will do much to create better health. A number of interventions to improve infant and child health have been tested worldwide. They revolve around:

- Income support especially for poor families
- Social, psychological and wider community support for families
- Building and maintaining safer environments
- Wider pre-school and educational opportunities especially for disadvantaged families.

These issues are dealt with in the *National Children's Strategy* and the implementation of the recommendations and achievement of the objectives set out in the strategy will go a long way towards the creation of conditions conducive to the health of children.

Health issues

Child health needs to be reconsidered from a broader health promotion perspective because for too long it has been associated with a narrow focus on diagnosis and treatment of illness and disease.

The national health strategy, *Shaping a Healthier Future* (1994), presented the case for reorienting the health service towards prevention and primary health care. It proposed the planning of services on the basis of care groups, including children as a key group. Prior to that, children's health needs were often 'hidden' under topic headings such as immunisation, substance abuse, or accidents and injuries. The *National Health Promotion Strategy 1995* further developed the theme of the reorientation of services away from an illness and disease focus towards a holistic and health promoting perspective. Since 1995, the development of health promotion structures at regional health board level has made possible the implementation of many of the recommendations from the strategy. The *National Health Promotion Strategy 2000 – 2005* has continued this focus.

Children and young people are a key priority group for health promotion as it is well recognised that health in childhood is a principal determinant of health in later life.

Child health can also be considered from a health protection perspective. Children have little control over their lives and it is important that policies and services allow them to reach their full potential. The influence of social determinants on health should continue to be reflected in health policy. It is essential that supportive environments are created for children and their families. Health alliances and partnerships between communities and service providers are also important if the services are to be responsive and appropriate. The development of personal skills in children and their families increases their control over healthier choices. Policies which support parents or carers to this end will facilitate child health protection.

Development of the child health services

In 1996, the chief executive officers of the health boards commissioned a review of the pre-school and school health services – *Best Health for Children*. This review identified a number of issues relating to these services as being in need of attention:

- Services usually disease-focused
- Content of programmes often based on orthodoxy rather than evidence
- Extremely low yields from screening programmes
- Widespread variation in service delivery between and within regions
- Inequity in the service
- Poor feedback of information at many levels
- Data of dubious validity and not used for performance management
- Poor quality control of programmes
- No measurement of health or social gain
- Poor training and development of staff involved
- Failure to utilise health promotion opportunities.

Arising from this report, a series of fundamental, wide-ranging reforms are being implemented in these services with the objective of developing health promotion and child-centred services.

No systematic review of primary care and acute hospital services for children has been undertaken in recent years and there is an urgent need to do so. However, there is enough research-based and anecdotal evidence from service providers and patients/families to strongly suggest that some or all of the same problems also need to be addressed in these services.

The provision of accessible and appropriate primary care services for children, with emphasis on the role of the general practitioner in health promotion and disease prevention, is a matter which should be central to the review of primary care currently being undertaken. The development of acute hospital services for children needs to be accelerated with the promotion of optimal care for sick children as the primary focus, untrammelled by geographic, disciplinary or institutional considerations.

The future

The recently published *National Children's Strategy* set out the challenges meriting attention by the children's health and personal social services in the coming decade:

- The changing pattern of disease, rising rates of adolescent suicide, sexually transmitted diseases, asthma and the increase in childhood obesity and other eating disorders
- The need to tackle the social causes of disease, including poverty, homelessness and rural isolation
- The impact of advances in medicine and surgery which mean that children who would have died, particularly children with multiple disabilities, are now surviving
- The participation of children in damaging behaviours including smoking, alcohol consumption and drug abuse.

The examination of the health of our children and the specific identification of a number of issues such as disabilities, accidents and lifestyle factors, while limited for the reasons outlined previously, suggests that significant health gain could be achieved for our children by further analysis and research of these issues and the identification of effective preventive and therapeutic measures. Further, the more detailed analysis of health service utilisation phenomena such as the regional variation in some identified procedures could help to bring a greater degree of equity to the planning and delivery of acute services as well as assisting clinicians in practice audit.

Finally, the integration of these strands of children's health care into a holistic, child-centred system, necessitates fundamental organisational and behavioural changes within our health system. These can only be contemplated and resourced in the context of a national child health strategy.

