

*Annual Report  
of the  
Chief Medical Officer  
1999*



**DEPARTMENT  
OF HEALTH and CHILDREN**  
AN ROINN  
SLÁINTE agus LEANAÍ

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# Introduction



The publication of reports on the health of populations is a long and highly valued tradition in the annals of public health. From the time of the recognition of the role of public health action in the elimination of certain infectious diseases, and the consequent improvement in health status of the population, periodic reports on the state of public health have been a feature of health service administration.

As part of its developing and changing role, the Department and its agencies are committed to the widest possible level of consultation and communication on health and health-related matters with its partners in the health system, including the general population. In this context, and as part of this exercise, it has been decided to produce a report periodically from the office of the Chief Medical Officer.

## 2 Introduction

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The general purpose of the Report is:

- To make a contribution to the debate on issues relevant to the development of public health policy
- To describe aspects of the health status of the Irish people by reference to certain indicators of mortality and lifestyle
- To identify particular factors which are relevant to the major disease entities affecting the Irish population
- To identify a specific theme of particular contemporary relevance to health in Ireland.

While the Report will attempt to be comprehensive in dealing with the issues identified above, such is the complexity of modern health systems that it would not be possible to address in a single Report, many of the issues and problems confronting the health service. In addition, in publishing this Report, cognisance is taken of the fact that many agencies and organisations in the health sector publish annual reports on their activities and the impact of these activities on the state of public health. Health boards produce public health reports which detail much of the health and disease experience of their populations; statutory officers such as the Inspector of Mental Hospitals and executive agencies such as the Food Safety Authority of Ireland, the Irish Medicines Board, the Blood Transfusion Service Board and the National Cancer Registry give details in their annual reports of their activities in support of public health. In addition, the Central Statistics Office provides information on deaths and causes of death.

It is not, therefore, proposed to replicate these Reports or their contents, or to concentrate on issues relating to the funding, activity or micro-management of health services, except in so far as they impinge upon the larger public health issues which will be the central focus of this and future reports.

Health inequalities is the theme of this first Report. It begins with a chapter on health information which makes a number of recommendations relating to the data required to evaluate developments within the health sector. In addition, the Report includes a review of the current situation

and developments regarding infectious diseases and the three major causes of premature mortality, namely cardiovascular disease, cancer, and accidents. This provides a basis for a further review of these important issues in subsequent reports.

## Overview

As we approach the end of the twentieth century, Ireland can look back on the last number of decades of solid achievement in improving the health status of its population and providing health and personal social services which, in terms of quality and comprehensiveness, compare very favourably with services provided in other countries. It is clear, however, that much still needs to be done in both these areas.

The early to middle decades of this century were characterised by the widespread incidence of damaging and potentially lethal infectious diseases such as polio, whooping cough, diphtheria and tuberculosis. These diseases were gradually brought under control with the improvement in environmental conditions through better housing and cleaner water supply, along with better nutrition and particularly the introduction of immunisation. Emphasis then passed on to other chronic diseases. It is interesting, however, to note that in more recent times, infectious diseases have become a major source of public concern and the advent of HIV, the recrudescence in the western world of tuberculosis, and the growing problems of antibiotic resistance in general have again brought infectious diseases to the fore.

With the establishment of a large measure of control over infectious diseases in the 1940s, 1950s and 1960s, priorities evolved and changed. Greater emphasis was placed on the access of individuals to doctors and this saw the change from the old dispensary system to the concept of choice of doctor as exemplified in the General Medical Service (GMS). The hospital system began to be modernised and developed; the provision of care for specific groups such as the elderly, children and the mentally ill, was promoted and strategies for the integration of services were brought forward and implemented. In recent years, more attention has been given to the delivery of efficient health care, value for money and equity in resource allocation. The 1994 Government Health Strategy, *Shaping a*

## 4 Introduction

*healthier future* (1994), sought to re-orientate the health services towards the achievement of health and social gain for individuals, families, groups, and the population as a whole, with particular emphasis on health promotion and disease prevention.

As we look forward from the vantage point of the last year of the millennium, those charged with responsibility for promoting and maintaining the health of the population face a very complex and challenging environment. The major challenges to be faced include the following:

- Responding in an appropriate fashion to the growing awareness and level of expectation among the public in general about issues relating to public health and the demand for high quality patient services
- Identifying and implementing the most appropriate strategies to help promote and protect the health of the population by way of an integrated approach across all sectors
- Developing indicators to evaluate and assess the effectiveness of health care in all its forms, with particular reference to the utilisation of emerging medical technology
- Developing structures and capacity to properly analyse and develop policies in relation to the major bio-ethical issues confronting us as a result of scientific progress
- Dealing with the problem of utilising the finite resources for health services in an equitable, cost effective and efficient manner
- Recognising what people can expect from the services in terms of outcome and quality of care, and supporting and nurturing a focus on quality
- Identifying, developing and training high quality managers and professionals to work in an increasingly complex and difficult environment.

In the context of challenges facing health and health services, this initial report of the Chief Medical Officer (CMO) would wish to draw attention to an issue which above all others is central to our understanding of the experience of our population's health and ill-health, namely the question of health inequality.



International research has demonstrated that those whose level of economic prosperity is less than that of the wider community in which they live, suffer a disproportionate burden of ill-health and premature death when compared to the community as a whole and, in particular, to those sections of the community who enjoy greater economic prosperity. The identification and understanding of the factors which determine this experience, and the development of strategies and plans to deal with these inequalities, are arguably the most pressing priorities facing us in the health field. The multi-dimensional nature of health and ill-health points inexorably to the fact that the solution to what presents as health problems lies in the wider community and that, while the health services have a part to play in our response to this issue, health service provision must be viewed as only one element within a broader context which recognises the role of multiple influences and participants.

It is hoped that by identifying this reality and presenting it for consideration, even in a general way in this, the first CMO's report, an informed, wide-ranging debate can be carried out on a most fundamental issue facing our community.

### **Investment for Health**

The various definitions of health which have been developed over the years have focused on the notion of health as a positive concept rather than merely the absence of disease. Health is now regarded as a resource to be protected and developed so as to enable people to attain their maximum physical and mental capacity.

This then raises the immediate question of how we can utilise the political, intellectual, personnel, and economic resources available to us as a community in order to make the greatest possible impact in the area of health. At the general level of discourse on health and health matters, particularly in the media, the debate tends to revolve around issues such as the length of waiting lists, or whether more or fewer patients are seen for the amount of money expended. It is essentially a debate about the efficient provision of acute medical services or the systematic control of the consumption of these services.

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However, many authorities would contend that the contribution of medical care to the health of a population is of less importance than the impact of such factors as socio-economic circumstances, living conditions, and access to and utilisation of educational services. A reasonable inference from such a claim is that, in focusing the debate on this topic in the way we do, we are in fact ignoring more fundamental and long-term issues of how to create the conditions for the promotion of long-term health and well being in our community. This is not to suggest that acute services are not important; they are, of course, and their availability, accessibility and quality are an indispensable element of civilised living as we approach the twenty-first century.

The argument to be made here revolves, not so much around the efficiency and effectiveness of the services provided in the curative sector, but on how we develop the concept of health as a fundamental human resource to be promoted and protected and, therefore, as something to be invested in. It requires us to consider health as being inextricably linked to social and economic progress. Health is at once a product of, and a necessary condition for, economic development and, therefore, should be a central consideration in any plan for social and economic development. If health is to be considered a critical social resource, then strategies which help to promote and protect health can be regarded as investment strategies. They can be seen to maintain and support health in an equitable fashion.

Accepting the concept of health as a social and economic resource poses a significant challenge to our community. The following are some steps that need to be taken if we are to meet such a challenge:

- Developing an understanding, at all levels in our society, of the real and demonstrable determinants of the health of our population
- Placing the promotion of health and, in particular, the narrowing of inequalities of health experience between differing segments of our population, at the centre of all our efforts at social and economic development
- Developing the technical capacity to identify and invest in the most productive strategies
- There are many factors which influence health such as biological, the

physical and social environment, personal lifestyle and health services. Consequently, improvements in health status and reduction in health inequalities can only be achieved by committed multi-sectoral collaboration.

Finally, although an argument for investment in health as an aid to continued economic development is a sound one, it is merely a secondary and supporting argument in that the accomplishment of longevity and significant health improvements, particularly for those most deprived, has an intrinsic human value which does not easily lend itself to further economic evaluation.



# Health

## General Facts and Figures

1

### The World Health Organisation

(WHO) defines health as 'a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity'. This is a very positive concept of health, but does not automatically produce measures by which health at a population level can be described.

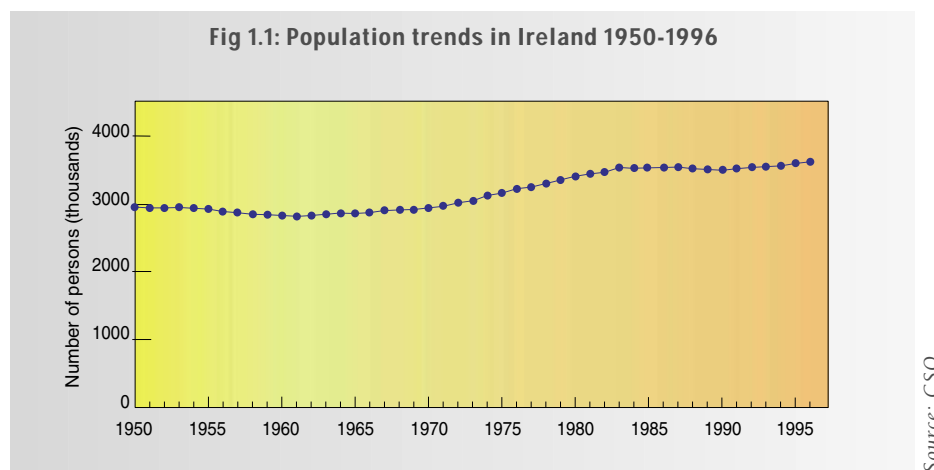
Inevitably the measurement of population health is largely reliant on the use of health indicators, most of which are derived from mortality statistics. This provides a somewhat limited picture of ill-health in a community as it only tells us about conditions that are fatal, whereas a great deal of ill-health is caused by non-fatal disease.

We lack a considerable amount of the information required to give a full picture of the health and illness of a population.

The development of a comprehensive population health surveillance system would not only permit a more complete evaluation of population health, but would also facilitate an assessment of population health needs and the adequacy with which these needs are met by the health services provided. The development of such a system is discussed at the end of this chapter.

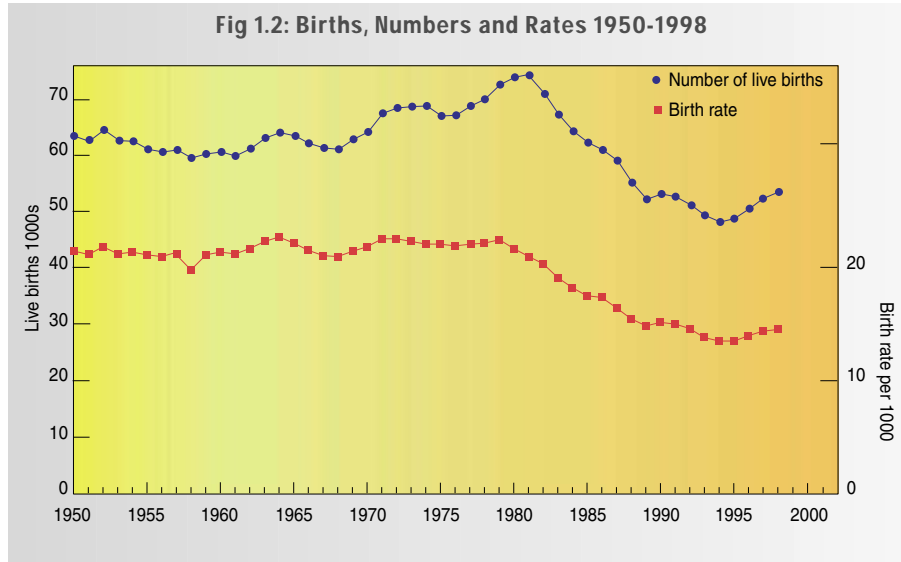
### The population of Ireland

It is important to look at background demographic changes when examining our current and future health situation. Different age groups have different health profiles and health care requirements.



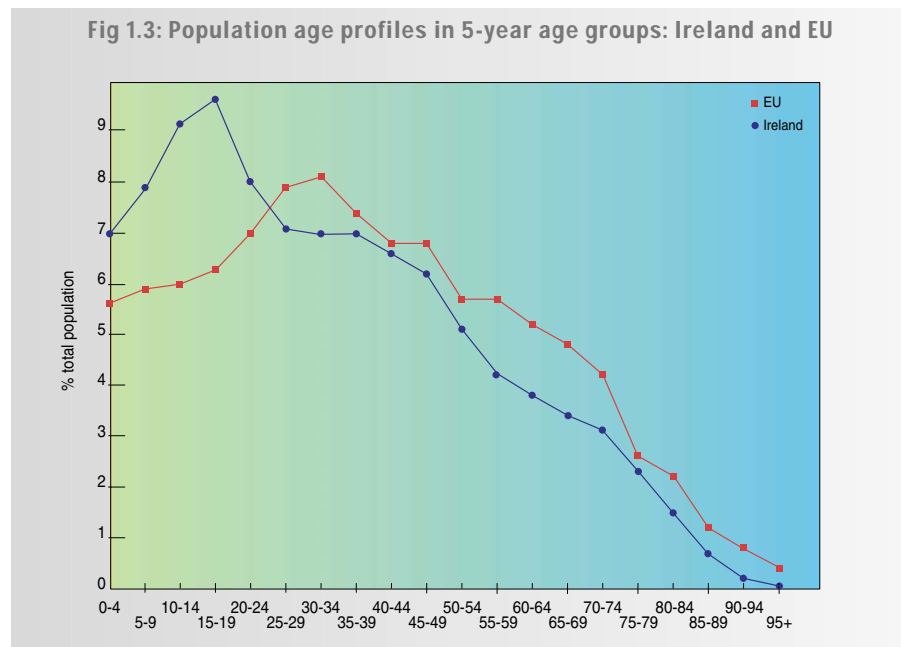
The population of Ireland has been increasing gradually over the past 50 years (Figure 1.1). Ireland had a very high birth rate from 1950 until the early 1980s. However, this was largely offset by net emigration from the country for several decades. The trend has been reversed in recent years which have seen large numbers of immigrants in the younger age groups coming into the country. At the last census, in 1996, the population stood at just over 3.6 million.

There was a marked decline in the number of births per annum during the 1980s and the early 1990s (Figure 1.2). This had obvious consequences for



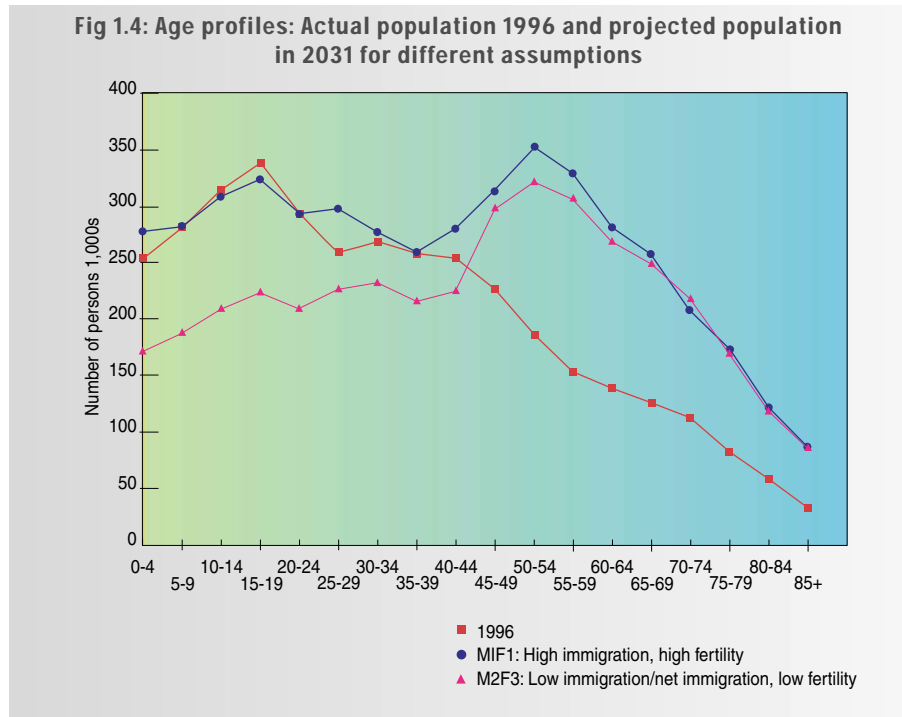
maternity and paediatric services. Since 1996 there has been a reversal of this trend, but the number of births is still far less than was seen in the 1970s.

Ireland has a relatively young population. In comparison with the EU average, Ireland has more children and adolescents and a lower proportion of older adults (Figure 1.3).



Ageing in Europe is recognised as having significant implications for health and health services. Older age groups have a higher prevalence of chronic disease and a higher requirement for health service provision.

Population projections have been made for Ireland up to the year 2031, based on assumptions regarding fertility, mortality and migration patterns (Figure 1.4). These projections have been revised recently in the light of significant changes in birth rate and immigration patterns. It is difficult to predict, with any certainty, changes in younger age groups. Overall, the population structure is predicted to become more mature, similar to the current EU pattern, with relatively fewer in the younger age groups and an



expansion in the middle and older age groups. A striking increase in the number of people over the age of 65 years is projected, particularly those in the very old population (over 80 years). This is expected to pose a significant challenge to our health and social services.

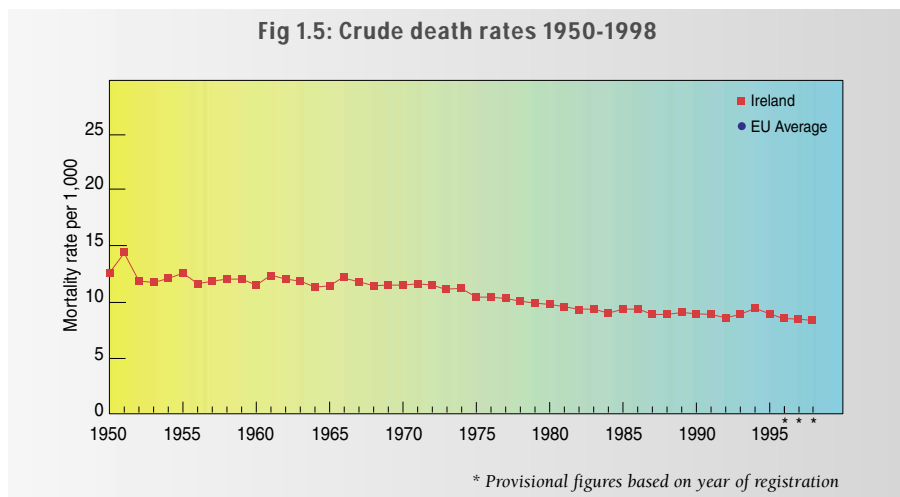


## Trends in mortality and life expectancy

Despite the fact that there have been considerable improvements in the health of the Irish population over the past 50 years, population health indicators in Ireland still compare very poorly with those of our European neighbours.

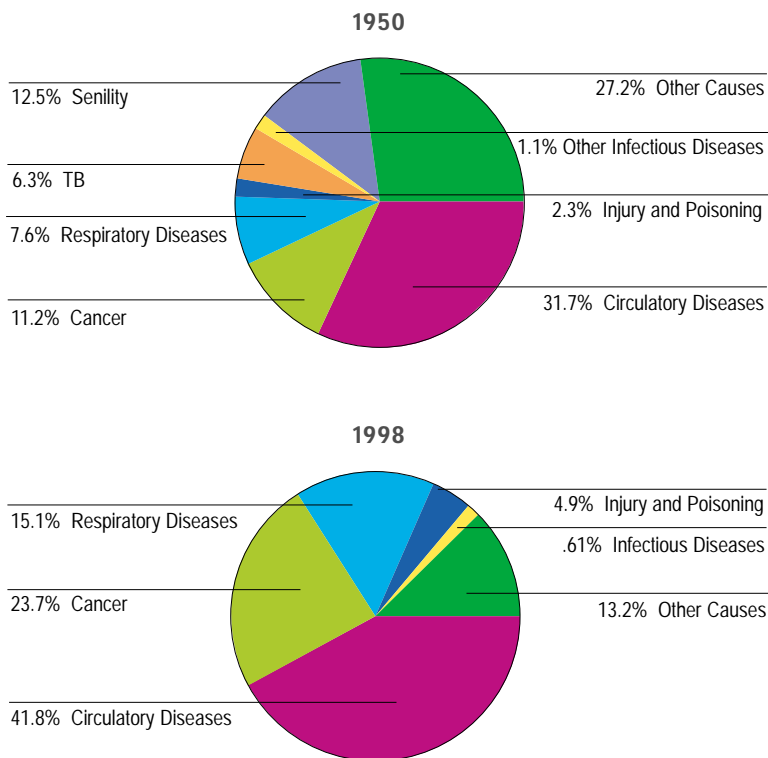
### Mortality

There has been a steady reduction in mortality rates in Ireland over the past 50 years (Figure 1.5). There has also been considerable change in the



main causes of mortality over that time. In 1950 heart disease, strokes and cancers were the main causes of death, as they are today. Other conditions such as 'senility' and tuberculosis were also recorded as major causes. There was considerable mortality from a number of infectious diseases including tuberculosis, influenza, whooping cough, measles, polio, typhoid fever, and scarlet fever. Over 90 maternal deaths were recorded. Infant and childhood mortality rates were much higher than in the present day. By contrast, in 1998 the main causes of death were chronic conditions such as heart disease, strokes and cancers (Figure 1.6).

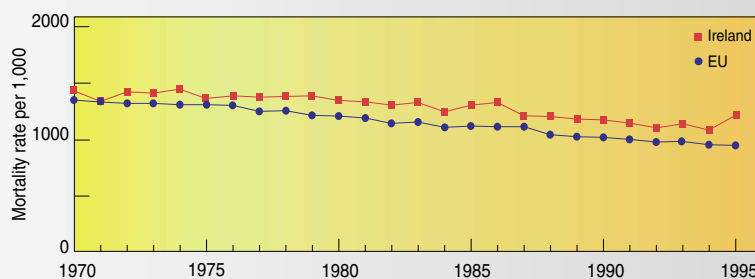
Fig 1.6: Deaths by principal causes, Percentage distribution



Source: CSO

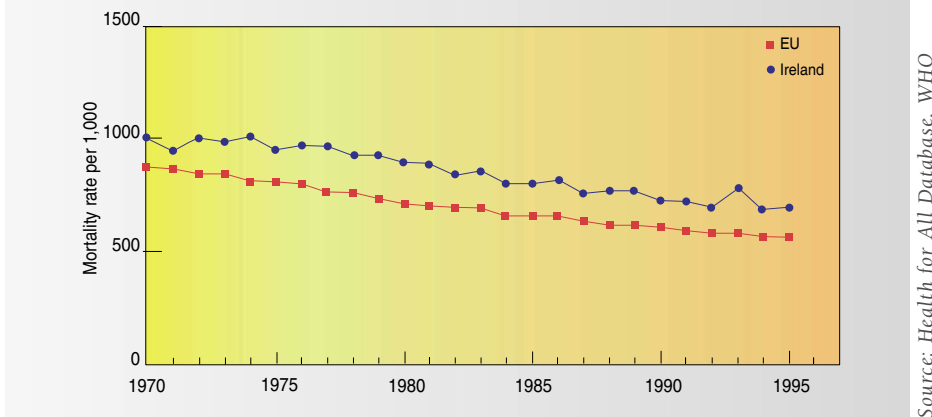
Although Irish mortality rates have been falling, they are still high in European terms. Mortality rates for females are lower than for males. The age-standardised death rates for both males and females in Ireland are higher than the European Union average (Figure 1.7 and Figure 1.8).

Fig 1.7: Trends in age-standardised death rates, Males, 1970-1995: Ireland & EU



Source: Health for All Database, WHO

**Fig 1.8: Trends in age-standardised death rates, Females, 1970-1995: Ireland & EU**



Within Ireland, mortality rates vary significantly between health boards. The development of the Public Health Information System (PHIS) by the Information Management Unit in the Department of Health and Children has facilitated further investigation of these differences at health board and county level in recent years.

### Life expectancy

As mortality rates have dropped, life expectancy in Ireland has increased substantially. Table 1.1 shows changes in life expectancy in Ireland over the latter half of the century. From 1950 to 1995, life expectancy at birth for men increased by 8.5 years and for women by 11.5 years. Much of the improvement in life expectancy at birth arises from better health and social provision for infants and young children. The increase in life expectancy achieved in older age groups is relatively small, particularly for males. Over the same period, there was an increase in life expectancy of just two years for males aged 60 whereas the equivalent figure for females was 4.7 years. However, Irish life expectancy is still below that for most other countries in the EU (Figure 1.9 and Figure 1.10). In 1995, Ireland had the lowest life expectancy of all 15 countries at age 65 for both women and men.

Table 1.1: Life expectancy in Ireland at selected ages for the period 1950-1995

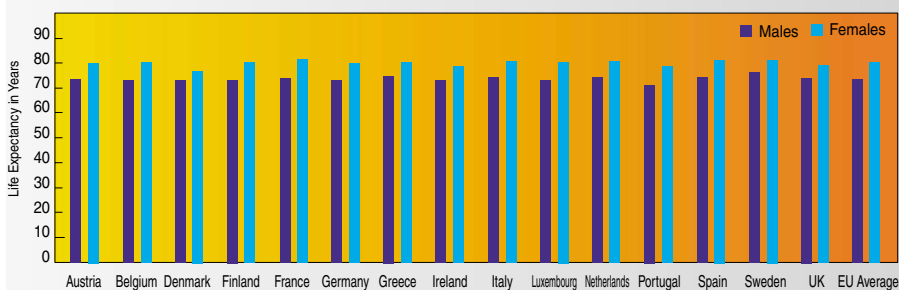
Male

	1950-52	1960-62	1970-72	1980-82	1990-92	1993*	1994*	1995*
Life Expectancy at age 0	64.5	68.1	68.8	70.1	72.3	72.6	73.2	73
Age 40	31.3	32.4	32.1	32.6	43.4	34.5	35.1	35
Age 65	12.1	12.6	12.4	12.6	13.4	13.4	13.9	13.7
Age 75	6.8	7.1	7.3	7.3	7.8	7.9	8.2	8.1

Female

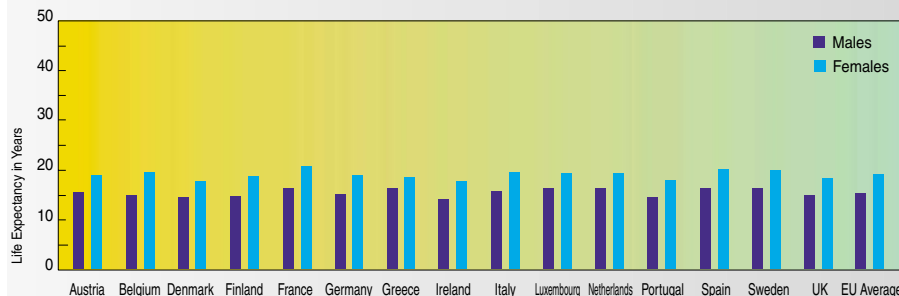
	1950-52	1960-62	1970-72	1980-82	1990-92	1993*	1994*	1995*
Life Expectancy at age 0	67.1	71.9	73.5	75.6	77.9	78.1	78.7	78.6
Age 40	33.3	35.3	36	37.3	39.2	39.3	39.7	39.8
Age 65	13.3	14.4	15	15.7	17.1	17	17.4	17.4
Age 75	7.6	8.1	8.5	9.1	10.2	10.1	10.4	10.4

Fig 1.9: Life expectancy at birth for males and females in EU Countries



Source: Demographic Statistics, Eurostat

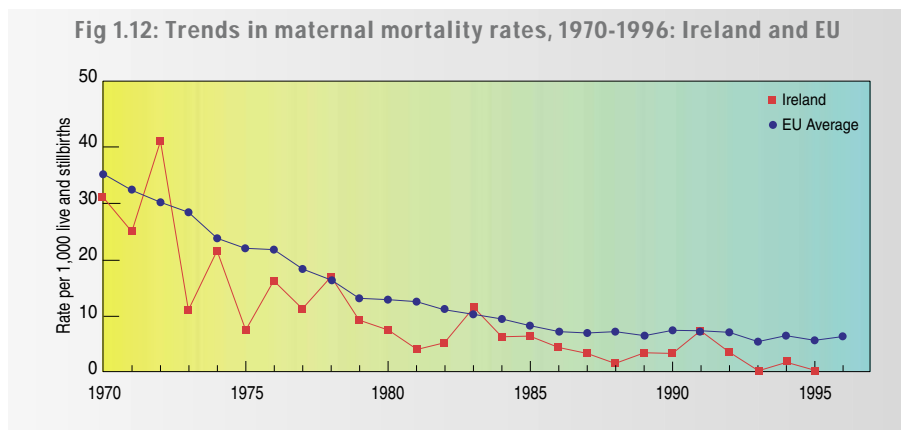
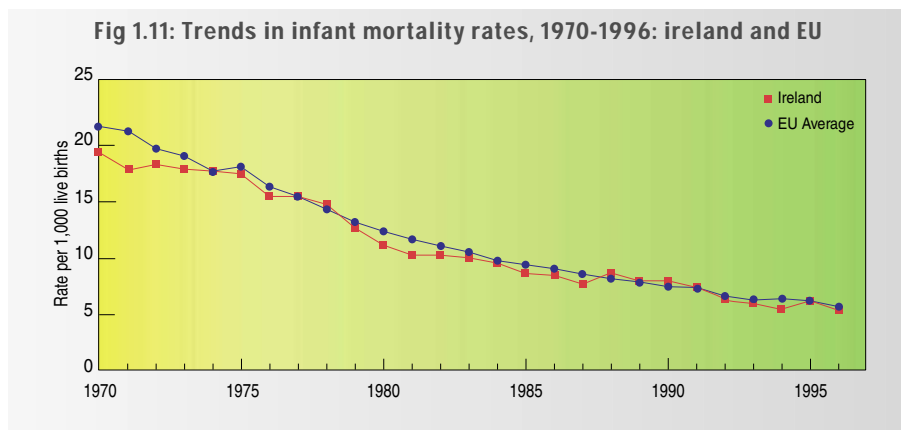
Fig 1.10: Life expectancy at age 65 for males and females in EU Countries



Source: Demographic Statistics, Eurostat

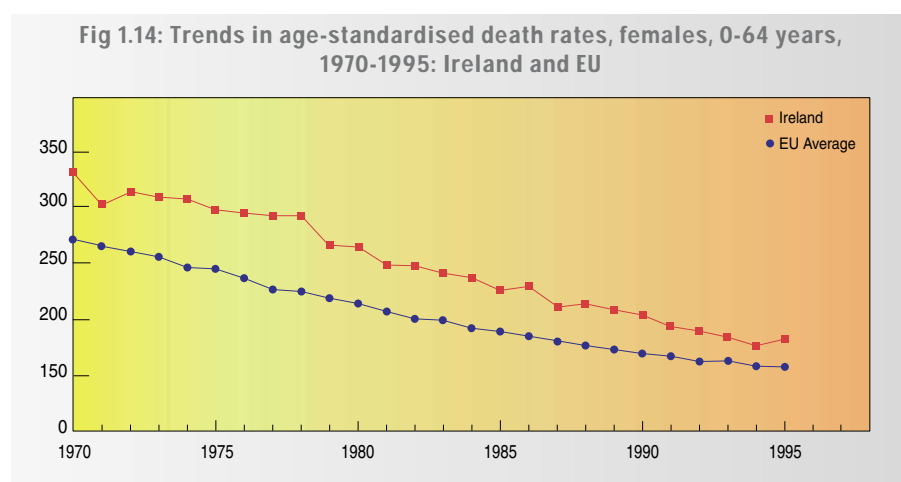
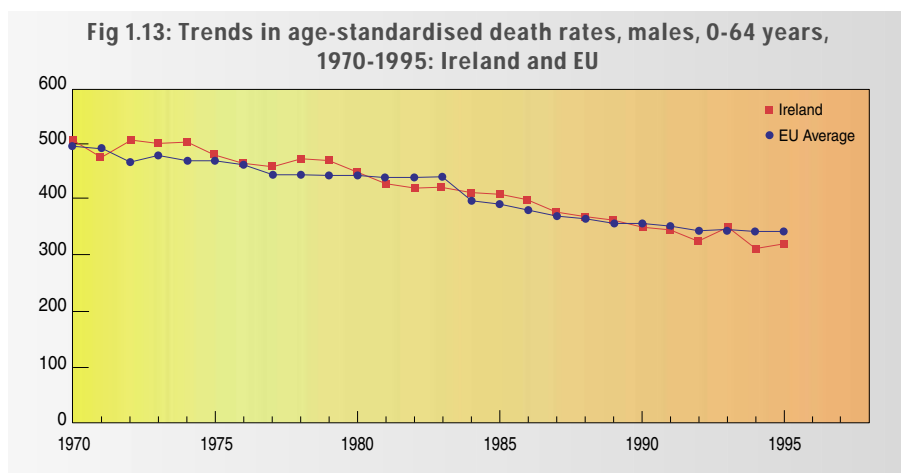
## Infant and maternal mortality

Infant mortality rates have fallen steadily over the past 30 years and are close to the EU average (Figure 1.11). Maternal mortality rates have also shown dramatic improvement and maternal mortality figures are now very low (Figure 1.12).



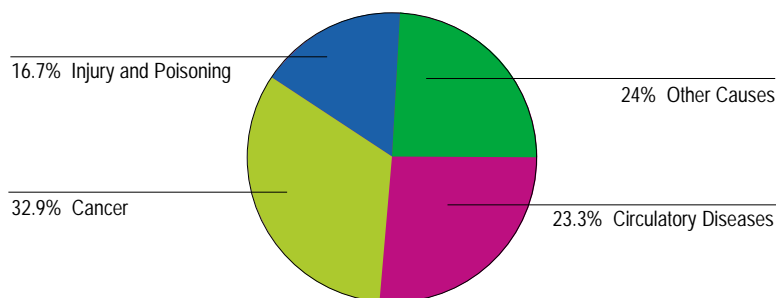
## Premature mortality

Ireland has a high rate of premature mortality, i.e. mortality aged under 65 years, when compared with our EU neighbours (Figure 1.13 and Figure 1.14).



Approximately one-fifth of all deaths in Ireland are in people aged under 65 years of age. Much of this mortality is preventable. Cancer, cardiovascular disease and accidents account for the majority of these deaths (Figure 1.15). *Shaping a healthier future* (1994) identified these three areas as requiring special attention if we are to achieve our national objective of moving over a period of time to the higher levels of life expectancy which are enjoyed by our European neighbours.

Fig 1.15: Premature deaths by principal causes, percentage distribution 1998



Source: CSO

### Determinants of health

A high proportion of the mortality and morbidity suffered by the population of Ireland is caused by chronic diseases such as cardiovascular disease, chronic respiratory disease and cancer. While genetic or familial factors play a significant role in the aetiology of these conditions, modifiable risk factors such as smoking, diet and exercise habits are also extremely important causes. We are largely reliant on surveys to obtain information about these determinants of health in the general population.

### National health and lifestyle surveys

Two national baseline surveys of health-related behaviours among adults and school-going young people were commissioned by the Department of Health and Children in 1998 and carried out by the Centre for Health Promotion Studies, National University of Ireland, Galway. These were the SLÁN (Survey of Lifestyle, Attitudes and Nutrition) survey of adults aged over 18 years and the HBSC (Health Behaviours in School-aged Children) survey of children aged 9-17 years.

The objective of the surveys was to provide a nationally representative profile of population health status and behaviour as part of a needs assessment process for the Department of Health and Children. It is intended to conduct SLÁN on a 4-yearly cycle to allow monitoring of trends in health and lifestyle behaviours. This first cycle was aimed at

providing baseline information on general health, exercise, tobacco, alcohol, other substances, accidents, and food and nutrition. Detailed mental health assessment and cardiovascular risk factors including blood pressure, cholesterol and body mass index were measured on a sub-sample of the target adult population.

Preliminary analyses of the SLÁN and HBSC datasets were made around the health targets as specified in *Shaping a healthier future* (1994). The main findings were as follows:

### General health

Overall, 48 per cent of SLÁN respondents reported excellent or very good general health, though smokers were significantly less likely to do so. Significantly more people in social classes 1-2 rated their health as excellent. Regardless of age, gender and social class, 'less stress' was perceived as the top priority for individuals bettering their health.

### Smoking

Cigarettes are the single most important cause of avoidable ill-health. It is estimated that smoking is responsible for about 30 per cent of all cancer deaths, 20 per cent of deaths from coronary heart disease and stroke and 80 per cent of cases of chronic obstructive respiratory disease. Fifty per cent of smokers will eventually die of tobacco-related disease and, of these, about half will die in middle age. About 7,000 deaths in Ireland each year can be attributed to smoking.

Table 1.2: Smoking prevalence (%) by gender, age and social class

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
18-34	33	42	41	18-34	36	42	45
35-54	22	33	36	35-54	22	34	38
55 plus	17	24	35	55 plus	17	19	19
Total	25	36	37	Total	28	36	38



The SLÁN findings regarding smoking are disturbing. Smoking rates among adults far exceed the target of 20 per cent anticipated for the year 2000. Overall 31 per cent of respondents reported being regular or occasional cigarette smokers. Rates among younger women are now comparable with men, at around 40 per cent. Most smokers reported that they wanted to quit, perceived lack of willpower as the problem, and tended to rate their health less well than non-smokers. There is a strong social class gradient evident in national smoking patterns, as shown in Table 1.2.

The high number of children and teenagers who reported regular tobacco use is of particular concern (Table 1.3). This pattern is being observed in several developed countries. It is evident that repeated anti-smoking campaigns over recent years have not had the desired impact on young people. More forceful anti-tobacco measures, such as have been proposed in the cardiovascular strategy, are urgently required.

**Table 1.3: Percentages of children reporting that they are current smokers**

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
9-11	7	13	6	9-11	3	5	1
12-14	20	18	20	12-14	16	20	20
15-17	31	33	28	15-17	35	33	40

## Alcohol

There has been a shift in patterns of drinking in Ireland. Most adults now drink alcohol. Twenty-seven per cent of males and 21 per cent of females consume more than the recommended weekly limits of sensible alcohol consumption (Table 1.4).

**Table 1.4: Percentage consuming more than recommended alcohol limits by gender, age and social class**

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
18-34	34	32	40	18-34	27	34	22
35-54	23	30	21	35-54	11	16	8
55+	23	24	25	55+	8	15	21

Although substantially fewer children reported that they had had an alcoholic drink (32 per cent) than reported that they had smoked a cigarette (49 per cent), abstinence rates declined rapidly across adolescence for both boys and girls (Table 1.5). More than half of those in the 15-17 year age group reported having an alcoholic drink in the previous month, with higher levels seen in boys than in girls. A small but consistent effect on social class was evident in girls but not in boys.

**Table 1.5: Percentages of children who have had an alcoholic drink in the previous month by gender, age and social class**

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
9-11	15	18	19	9-11	7	2	4
12-14	29	26	24	12-14	13	16	19
15-17	54	61	59	15-17	49	50	52

## Food and nutrition

Thirty-two per cent of adult respondents reported a body mass index (BMI) classifiable as overweight and 10 per cent were classifiable as obese. More than half consumed less than the recommended 6+ servings per day of cereals, breads and potatoes. Thirty-six per cent consumed less than the recommended 4+ servings per day of fruit and vegetables. Twelve per cent ate fried foods 4 times or more a week and there was a strong relationship with social class and gender in this pattern (Table 1.6).

**Table 1.6: Percentages consuming fried foods more than 4 times per week by gender, age and social class**

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
18-34	22	25	32	18-34	6	6	16
35-54	11	12	15	35-54	5	5	9
55+	16	18	21	55+	6	7	8
Total	16	18	21	Total	6	7	12

More than half of the children surveyed reported frequent (more than 3 times daily) consumption of high fat and/or high sugar foods (Table 1.7).

**Table 1.7: Children consuming high fat and high sugar foods frequently by gender, age and social class**

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
9-11	44	60	61	9-11	41	54	60
12-14	59	60	69	12-14	46	56	62
15-17	56	62	65	15-17	44	52	52

### Exercise

Overall, 42 per cent of adult respondents engaged in some form of regular physical exercise. Rates declined markedly with age. Nearly one third of those over 55 years took no exercise at all in a typical week.

It was found that the majority of children reported exercising outside of school. However, boys exercised more than girls and there was a noticeable drop in exercise participation in older children, again more marked in girls (Table 1.8).

**Table 1.8: Percentages of children participating in vigorous exercise four or more times per week by gender, age and social class**

Males				Females			
Age group (yrs)	SC1-2	SC3-4	SC5-6	Age group (yrs)	SC1-2	SC3-4	SC5-6
9-11	66	74	64	9-11	59	61	56
12-14	69	68	65	12-14	53	49	47
15-17	54	55	54	15-17	29	26	24

### Accidents

Eighteen per cent of respondents reported an injury which had interfered with their daily activity. The site of injury varied according to gender and age. A higher percentage of females (74 per cent) always use the seatbelt in the front seat of a car, compared to males (61 per cent). Of those respondents who normally drank and who normally drove a car, 22 per cent indicated that they had driven soon after consuming two or more alcoholic drinks. A significantly higher percentage of males than females reported doing this. Thirty-nine per cent of males in the 35-54 years age group exhibited this behaviour.

Less than half of the children overall reported that they always wear a seatbelt when travelling by car, 35 per cent of boys and 46 per cent of girls. Of the children who rode bicycles, only 8 per cent said that they always wore a cycle helmet. The rate dropped progressively from 16 per cent at ages 9-11, through 7 per cent at ages 12-14 to a very low 3 per cent at ages 15-17.

## Summary

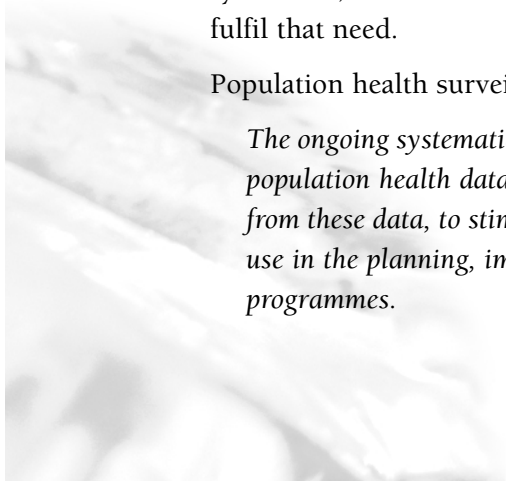
The information from the SLÁN and HBSC surveys provides an extremely valuable overview of lifestyle risk factors at a national level and will provide a benchmark by which progress in achieving targets can be assessed in the future. There are several areas of concern in the findings of the SLÁN survey. If the results are compared with those of several other smaller surveys which have been conducted in recent years, the evidence suggests that lifestyle risk factors have improved overall. However, it is clear that strong socio-economic differentials are persisting. The reported levels of smoking, alcohol intake, fat consumption and sedentary lifestyles in many young people are disquieting and suggest that much more effort is required to ensure that health improvements achieved over recent decades are not undermined.

## Population health surveillance

Information on the health status of the population and on potential risks to health is essential if we are to describe and monitor changes in population health, identify health needs and use and manage health services appropriately. This information should be available in a systematic, structured way. A population health surveillance system would fulfil that need.

Population health surveillance is defined as follows:

*The ongoing systematic collection, assembly, analysis, and interpretation of population health data, and the communication of the information derived from these data, to stimulate response to emerging health problems, and for use in the planning, implementation, and evaluation of health services and programmes.*

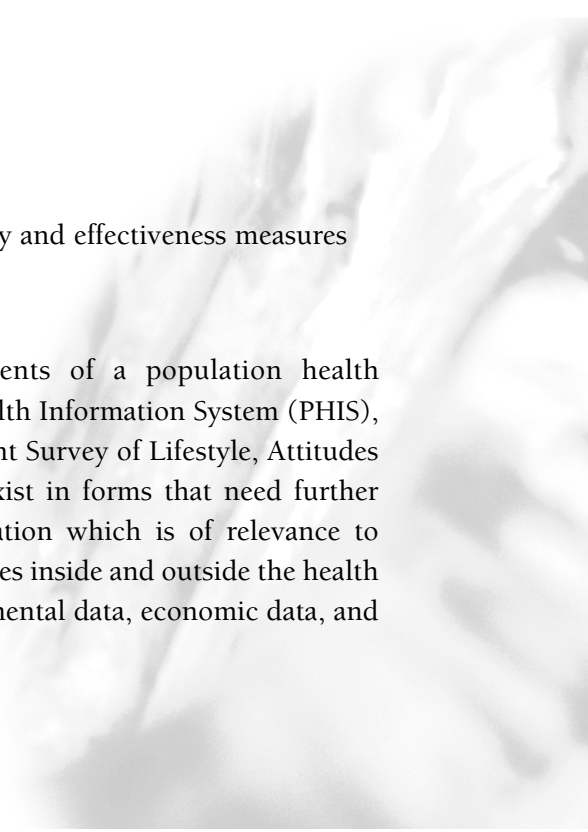


Information derived from a population health surveillance system has a wide variety of uses. It allows real-time surveillance of disease and actions to be taken if unusual events, e.g. outbreaks of disease, occur. It supports and guides the management of health-care services. It aids the setting of priorities for the development of health services. It allows for the evaluation of services and the establishment of systems for quality assurance and audit at all levels within the services. PHS is the knowledge that should drive the whole course of health services for a community. In the Irish context it should be the methodology by which the three key principles of *Shaping a healthier future* (accountability, equity and quality) are measured and evaluated.

There are many components to a comprehensive population health surveillance system. They include the following:

- Demographic data
- Health status measurement
  - Positive health measures
  - Ill-health measures
  - Mortality data
  - Equity of health status
- Health risk measurement
  - Biological
  - Environmental
  - Behavioural
- Health systems
  - Health services utilisation, efficiency and effectiveness measures
  - Health care resources.

Ireland already has some of the elements of a population health surveillance system such as the Public Health Information System (PHIS), the National Cancer Registry, and the recent Survey of Lifestyle, Attitudes and Nutrition (SLÁN). Other elements exist in forms that need further development. A huge amount of information which is of relevance to health is collected by many different agencies inside and outside the health services, e.g. census information, environmental data, economic data, and



health service activity data in the hospital sector, general practice and community care. The difficulty is that many data systems are not compatible with each other and the data collected is not in a format which permits analysis of health status and outcomes measures. Then there are gaps where new systems need to be prioritised, e.g. the development of quality measures in health-care, the measurement of disability in the population and the identification of future health care needs. A co-ordinated approach involving national and local agencies is essential if our existing and future information resources are to be fully utilised.

It is important to note that population health surveillance, like all information, is not cost free. A well-organised system of data collection and analysis is required. This would entail, in the Irish context, both regional and national components operating within an agreed structure. It would require an individual information system for the separate components and an overarching management information system for the spectrum of information referred to above.

It is essential that this type of information becomes central to health service planning. To achieve this, it has to be accessible to managers at local level. Population health surveillance information should be available in a variety of media from paper to website, in order to facilitate as wide a dissemination and use as possible. The information should be analysed and presented in formats useable by non-statisticians.

# *Inequalities in Health*



2

It is widely accepted that there are natural differences in health in any population. Human beings vary in health as they do in every other aspect of life. In 1980 a research working group on Inequalities in Health in the UK published a report which had some disturbing findings. This report, which has become known as the Black Report, found that there were large differentials in mortality and morbidity between the higher and lower social classes in Britain.

The research group came to the conclusion that health inequalities were primarily a consequence of material differences in living standards. They argued that much of the problem lay outside the scope of the health services.

Social and economic factors like income, unemployment, environment, education, housing, transport, and 'lifestyle factors' all affect health, and all favour the better off.

The recommendations of this report pointed to a wide range of social policy measures to combat inequalities in health. In Ireland, Nolan's report, 'Socio-economic Mortality Differentials in Ireland', documented similar findings to those in the Black Report. Based on 1981 mortality and census data, this report showed significant differences in standardised mortality rates between professional/managerial occupational groups and semi-skilled or unskilled workers.

Over the past 10 years, there has been considerable international research into measuring and monitoring social inequalities in health. It has been demonstrated in many developed economies including the Netherlands, Finland, Sweden, Spain, West Germany, Switzerland, Australia and the USA that those whose socio-economic status is less than that of the wider community in which they live suffer a significantly disproportionate burden of ill-health and premature death.

Target 2 of the World Health Organisation's European Region's Health 21 Strategy (to which Ireland is a signatory) states that by the year 2020, the health gap between socio-economic groups within countries should be reduced by at least one quarter in all member states, by substantially improving the level of health of disadvantaged groups.

*Shaping a healthier future* (1994) made a commitment to the principle of equity of access to health care, recognising the importance of paying special attention to geographical areas or population groups where the indicators of health status are below average.

### **Causes of inequalities in health**

The factors producing the observed relationship between socio-economic status and physical ill-health are complex. Social inequalities in health are believed to result from a variety of cultural and behavioural factors including the following:

- Health-related behaviour and biological risk factors
- Material conditions: unemployment, lack of access to adequate housing, poor transport, etc
- Low educational attainment



- Factors operating early in life: genetic, biological, results of early life experiences
- Psycho-social factors: lack of control over working lives, poor support networks, stressful life events including violence and abuse
- Inadequate medical care.

The existence of inequalities in health are not likely to be explained by any one of the above factors. It is likely that such inequalities result from an interplay of genetic, biological, social, environmental, cultural and behavioural factors.

### **The Irish situation**

Up until the early 1990s, little work had been done on socio-economic differences in health in Ireland. However, since then, a series of reports have examined aspects of this problem and identified a number of concerns:

- Based on data from the 1980s and 1990s, for men aged 50 to 64 years, significant differentials in standard mortality rates exist between professional/managerial occupational groups and semi-skilled or unskilled manual categories.
- Perinatal and infant mortality rates are higher in families where the father is an unskilled manual worker or is unemployed.
- There is a higher incidence of reported chronic illness for unskilled manual classes as compared to the professional and managerial classes.
- Sections of the Irish population who are marginalised, e.g. Travellers, have a particularly heavy burden of illness and premature death.
- It is possible to identify specific geographical areas where increased mortality rates and the incidence of low birth-weight babies are significantly higher than other areas. These areas (black spots) can be identified by reference to indicators of serious socio-economic deprivation.
- Two national surveys of health-related behaviours among adults (SLÁN) and school-going children (HBSC) in 1998 found that those

in lower socio-economic groups had significantly less healthy lifestyles than those in higher socio-economic groups. This suggests that socio-economic differences in health in this country are likely to continue.

- There is evidence that the less well-off in society have poorer access to health services. Recent documentation suggests that there are substantial variations in the provision of diagnostic, therapeutic and rehabilitation services for coronary heart disease. Such inequities in service provision must be addressed.

Already a number of initiatives have been introduced in this country aimed at reducing inequalities in health, for example the Community Mothers' Programme. It is encouraging to see the development of initiatives such as this to help reduce inequalities in health within communities and these should be supported. However, it is important that these projects become part of a large broad-based national strategy, so that their overall effectiveness and impact can be evaluated.

### **Conclusions**

- There is strong and consistent evidence for a relationship between health and socio-economic status. Deprivation is associated with poor health.
- Inequalities in health status between socio-economic groups have been demonstrated in this country and are persisting.
- Health is determined by a wide range of factors of which availability and quality of health services is only one.
- To improve the nation's health, a holistic rather than a service-oriented approach is needed across all sectors of government.
- Government must take responsibility for the wider influences of its policies on health in order to facilitate the development of a social and economic environment in which health inequalities can be reduced.

### **Issues for consideration**

It is important that the needs of people who are suffering the effects of health inequalities are placed at the centre of plans for health and social

improvement, as has been done in the current National Anti-Poverty Strategy document. However, any strategy relating to health inequalities must be broad-based and must be committed to tackling the underlying problems of social and economic inequality.

### **Inter-sectoral collaboration**

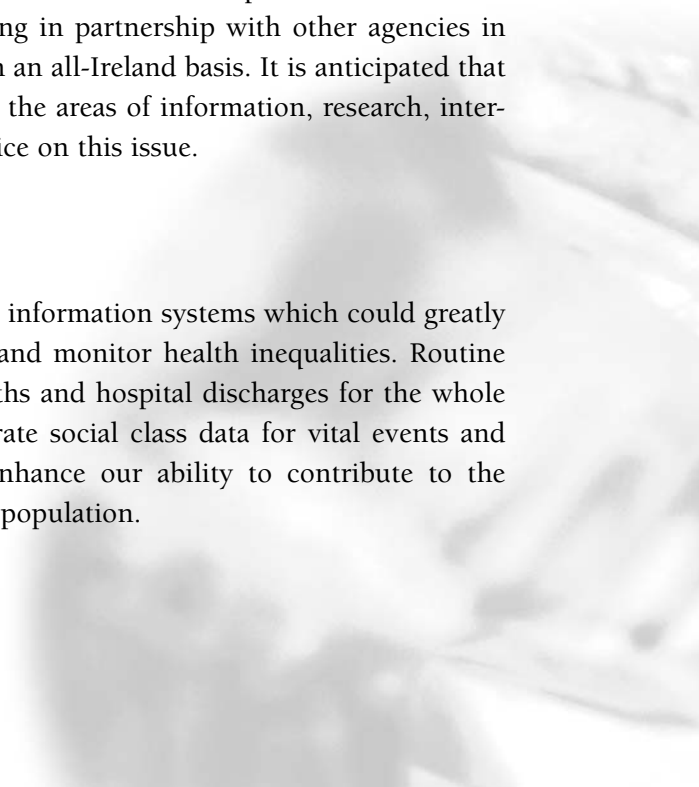
Many of the causal factors of health inequalities, such as poverty and unemployment, are outside the direct control of the health services. Inter-sectoral collaboration is required to tackle these problems, and partnership between government and the statutory and voluntary sectors is vital if the cycle of inequality is to be broken. Close co-operation between the Departments of Health and Children, Education and Science, Environment and Local Government, Community and Family Affairs, Agriculture and Food, and Finance will be required to address this important issue.

### **The Institute of Public Health**

The Institute of Public Health was set up in 1998 under an agreement between the Department of Health and Social Services in Northern Ireland and the Department of Health and Children in the Republic of Ireland. The Institute is committed to working in partnership with other agencies in addressing health inequalities on an all-Ireland basis. It is anticipated that it will play an important role in the areas of information, research, inter-sectoral working and policy advice on this issue.

### **Information needs**

Changes are required to existing information systems which could greatly improve our ability to identify and monitor health inequalities. Routine small area coding of births, deaths and hospital discharges for the whole country, and collection of accurate social class data for vital events and hospitalisation would greatly enhance our ability to contribute to the surveillance of the health of the population.



### **Research**

Research is urgently required to establish the extent of health inequalities in Ireland and the complex causes of these inequalities, including inequalities in access to health care such as has been highlighted in the recent Cardiovascular Strategy document, *Building healthier hearts* (1999). This also includes undertaking research to help decide what works best.

### **Health equity impact assessment**

All policies likely to have a direct or indirect effect on health should be evaluated in terms of their impact on health inequalities, and should be formulated in such a way that by favouring the less well-off they will, wherever possible, reduce such inequalities.

# Cardiovascular Disease



3

Cardiovascular disease (which includes heart disease, strokes and circulatory disorders) is the single highest cause of mortality in this country and a major cause of premature mortality. Over 1,800 people died prematurely from cardiovascular disease in 1997. In addition to those who die prematurely, many others suffer chronic ill-health and reduced quality of life.

Cardiovascular disease was identified as a priority in the Health Strategy *Shaping a healthier future* (1994). The Health Strategy set a medium-term target to reduce the death rate from cardiovascular disease in the under-65 year age group by 30 per cent over a ten year period and it would seem that we are in line to achieve this. However, this is no cause for complacency.

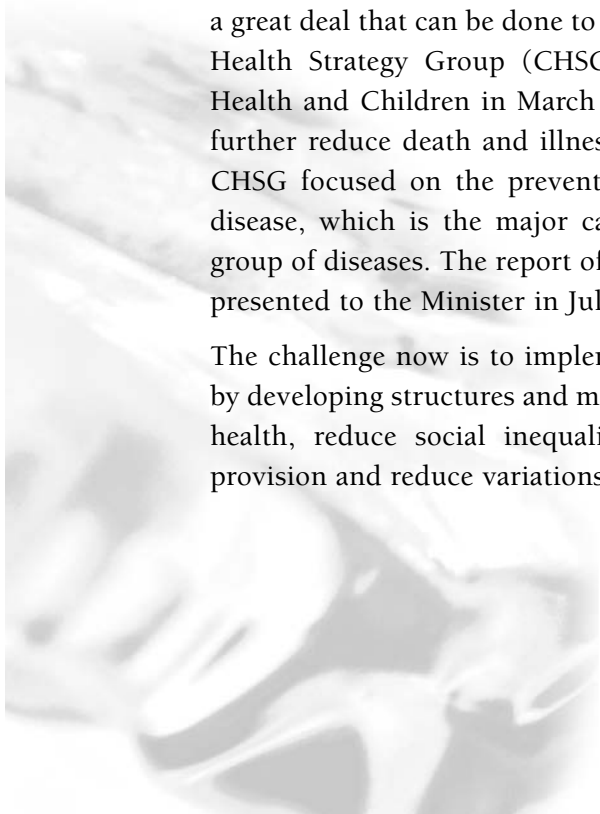
## 34 Cardiovascular Disease

Although there have been significant reductions in mortality from cardiovascular mortality in recent decades, Ireland's position in the league table of European countries is very poor. Also, there is evidence that the burden of cardiovascular disease on the health services may actually be increasing despite the fall in mortality, due to an increase in the number of chronically ill, older patients.

Within Ireland, the burden of coronary heart disease (CHD) is not distributed equally in society. On the basis of both international and national evidence, we know that cardiovascular diseases are more common among the socio-economically disadvantaged. The recent national SLÁN survey found that those in lower socio-economic groups are more likely to smoke, less likely to be physically active and less likely to eat a healthy diet than those in higher socio-economic groups. Socio-economic differentials in cardiovascular health are likely to continue unless strong multi-sectoral health promotion and preventive activities are specifically targeted at addressing these inequalities. There are also important regional inequities. Cardiovascular mortality rates are significantly higher in some areas of the country. Hospital utilisation figures suggest that there is regional inequity in access to services.

Ireland's high rates of cardiovascular disease are not inevitable. There is a great deal that can be done to address the problem. The Cardiovascular Health Strategy Group (CHSG) was established by the Minister for Health and Children in March 1998 to develop a strategic approach to further reduce death and illness caused by cardiovascular disease. The CHSG focused on the prevention and management of coronary heart disease, which is the major cause of death and disability within this group of diseases. The report of the CHSG, *Building healthier hearts*, was presented to the Minister in July 1999.

The challenge now is to implement the recommendations of the CHSG by developing structures and mechanisms which promote cardiovascular health, reduce social inequalities, ensure a high quality of service provision and reduce variations in access to and quality of services.

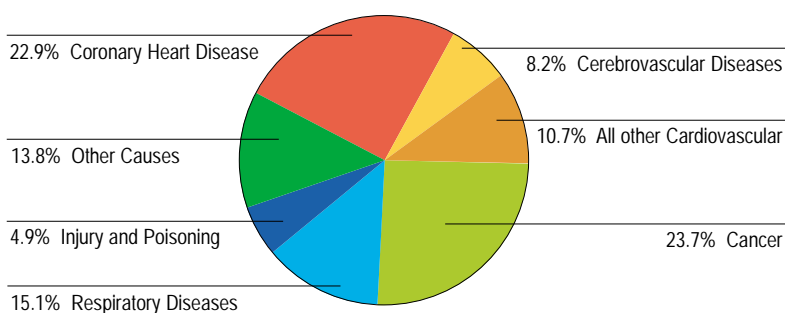


## Epidemiology

### Mortality

Cardiovascular diseases are a major health burden and cause over 40 per cent of all mortality in Ireland. Within this group of diseases, ischaemic heart disease or coronary heart disease (CHD) accounts for most of this mortality and is the cause of almost one quarter of deaths at all ages.

**Fig 3.1: Deaths by Principal Causes, Percentage Distribution, 1998**

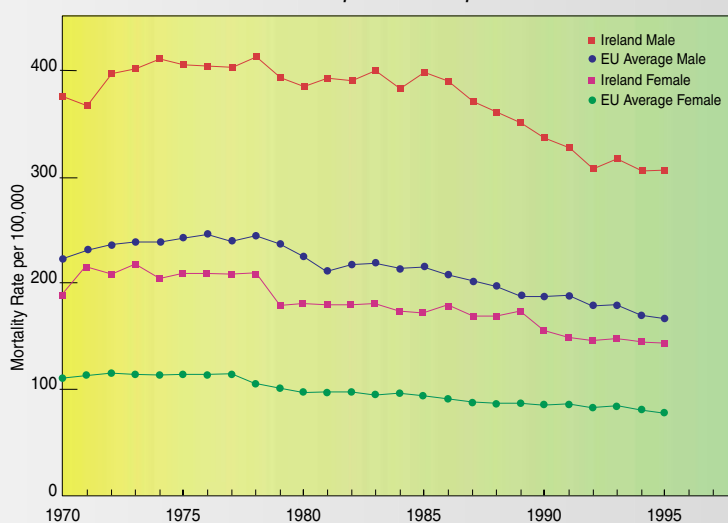


Source: CSO

Cerebrovascular diseases or stroke are also a major cause of death and account for approximately 10 per cent of all deaths (Figure 3.1).

The epidemiology of cardiovascular disease is undergoing significant change. Cardiovascular disease has been declining as a cause of death in

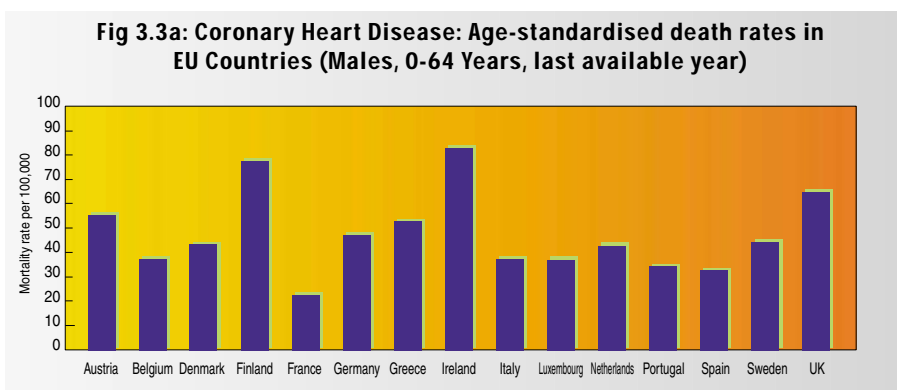
**Fig 3.2: Coronary Heart Disease: Trends in age-standardised death rates, Males and Females, 1970-1995, Ireland and EU**



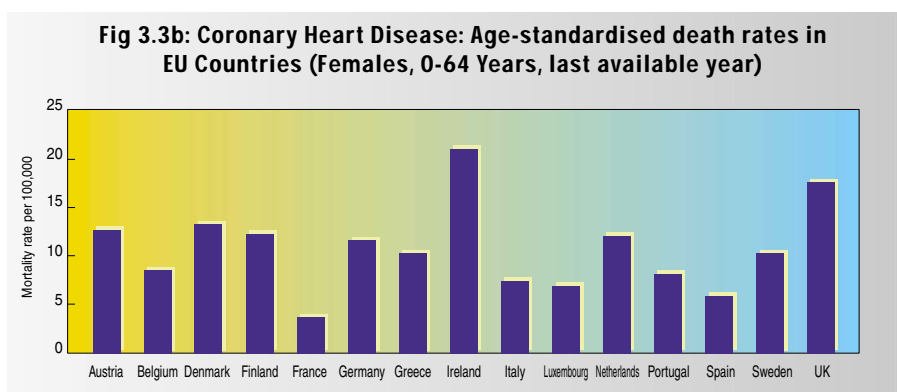
Source: Health for All Database, WHO

## 36 Cardiovascular Disease

Ireland and throughout the western world in recent decades. Irish CHD death rates have fallen by about 30 per cent in the past 20 years but remain very high when compared with other EU countries (Figure 3.2). Ireland has the highest rates for premature mortality from CHD in the EU for both males and females (Figure 3.3).



Source: Health for All Database, WHO



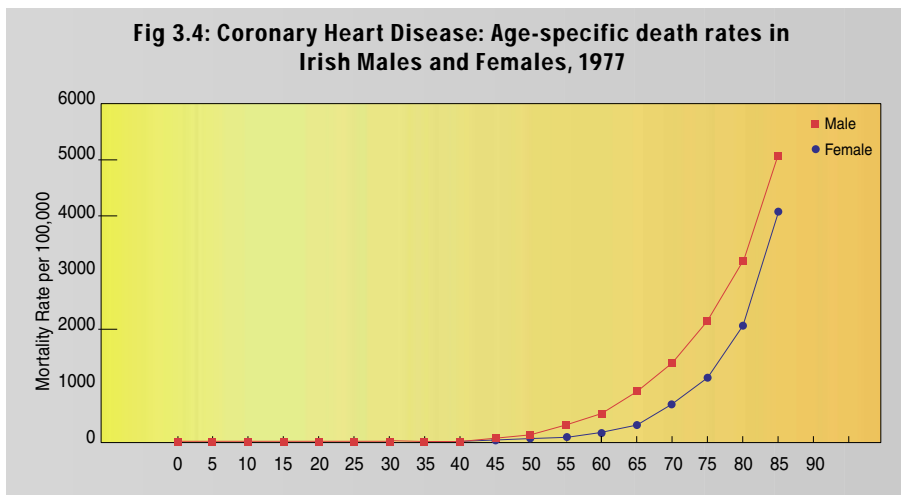
Source: Health for All Database, WHO

CHD affects men at a younger age than women. Age-specific mortality rates start to rise at a younger age in men than in women, and men have higher death rates from CHD at all ages (Figure 3.4).

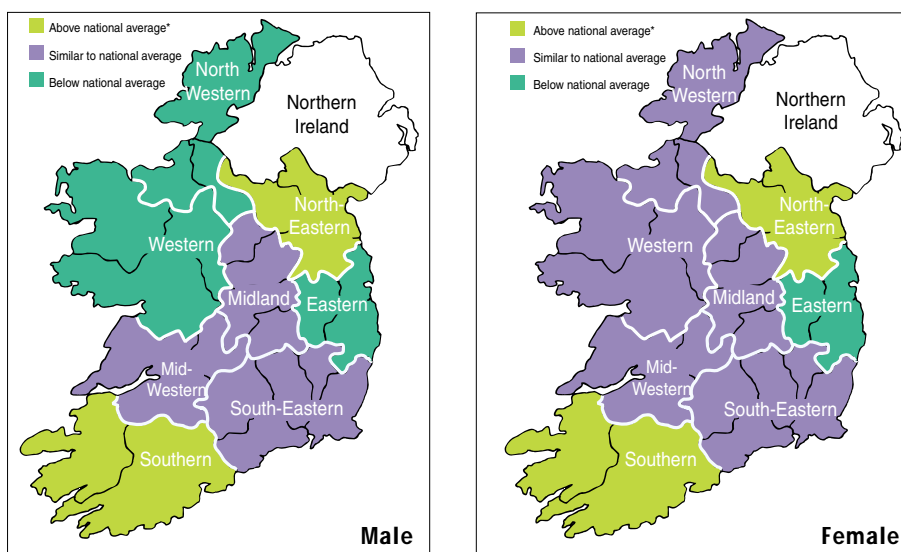
There is some geographic variation in the mortality from CHD nationally. Age-standardised death rates from this cause are highest in the North Eastern and Southern Health Board areas and lowest in the North Western Health Board area (Figure 3.5).

Cerebrovascular mortality rates have fallen considerably in recent decades and Irish mortality figures from this cause now compare favourably with the EU average (Figure 3.6). However, stroke continues to be a major





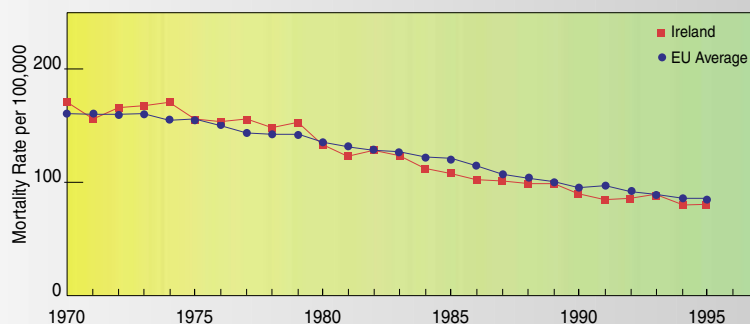
**Fig 3.5: Coronary Heart Disease: Age-standardised death rates by health board, Males and Females, average rate 1991-1995**



\* Based on 95% confidence intervals

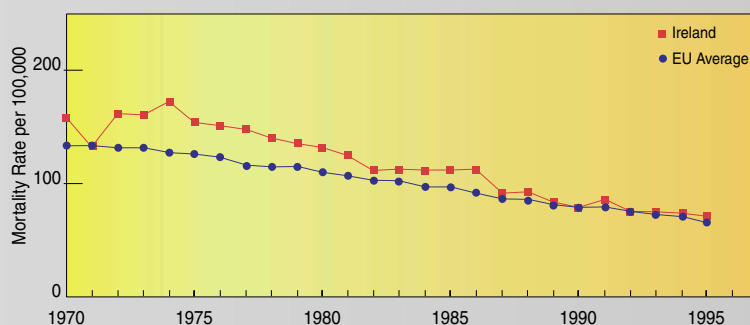
cause of hospital admission. This disease has a major impact on an individual's quality of life and poses a heavy social and economic burden on the patient, the family and the community.

**Fig 3.6a: Cerebrovascular Disease: Trends in age-standardised death rates, Males, 1970-1995: Ireland and EU**



Source: Health for All Database, WHO

**Fig 3.6b: Cerebrovascular Disease: Trends in age-standardised death rates, Females, 1970-1995: Ireland and EU**



Source: Health for All Database, WHO

## Morbidity

Information on deaths from cardiovascular disease gives a very incomplete picture of the pattern of these diseases and the burden they place on the community. Despite the fact that mortality from cardiovascular diseases has declined, the overall incidence is likely to increase as the population ages and survival after acute cardiac events such as heart attack improves. This has implications for the health services as, paradoxically, the burden of cardiovascular disease in the population may be increasing as mortality is falling.

Unfortunately the cardiovascular morbidity data available to us is limited. We do not have information systems to make an accurate judgement of changes in disease incidence or prevalence in the community. There are no routinely available primary care level data sources. Hospital utilisation

data pertaining to discharge diagnosis and uptake of cardiac procedures may reflect regional referral and availability patterns rather than true differences in disease prevalence.

Figures from the recent SLÁN survey suggest that about 10 per cent of men in the 55-64 year age group have some form of heart disease, while in the over-65 year age group, at least one in five people of both sexes are affected.

### **Prevention**

A large proportion of cardiovascular mortality and morbidity is preventable. The risk factors associated with CHD and other cardiovascular diseases are well known. Modifiable risk factors include smoking, high blood pressure, high cholesterol levels, physical inactivity and obesity. It is difficult to quantify the potential extent of lifestyle change on mortality but we know that modification of classic risk factors reduces disease incidence.

Although Irish death rates have declined, it is clear that more can be done. Other countries, such as the US, Australia and Finland, which had higher death rates than Ireland in the 1960s, now have lower levels. It has been estimated that 25 per cent of the reduction in mortality observed in the US can be attributed to primary prevention, 50 per cent to cardiological and surgical interventions to treat acute events, and 25 per cent to secondary prevention in those with the disease.

The most up-to-date information available about cardiovascular risk factors at population level is that collected in the recent SLÁN survey. The findings of this survey give cause for concern. Smoking rates are rising, particularly in young women and teenagers. Continuation of this trend could see a reversal of the reduction which has been observed in mortality rates in the past few decades.

The risk factors associated with heart disease are also associated with a wide range of other conditions including strokes and other circulatory disorders, diabetes, and cancers. Strategies aimed at reducing CHD should also bring about substantial reductions in these conditions.

### Treatment

There have been major advances in CHD treatment in recent years which have contributed to the observed reduction in mortality. These treatments, which include thrombolysis and other drug therapies, coronary angioplasty and cardiac surgery, are of proven efficacy and can reduce complications, increase survival and reduce risk of a further event.

### The cardiovascular disease strategy

The changing epidemiology of cardiovascular disease, its largely preventable nature, and the significant developments in management and treatment options available, all have significant implications. An ageing population, and improved survival after acute cardiovascular events, has increased the burden of care on the health system. It is essential to optimise services for patients presenting with cardiovascular problems in order to ensure a high quality, equitable service and to enhance the continuing downward trend in death rates. Also, it is clear that further reductions in mortality are achievable. A strategic commitment to primary prevention is required to ensure the cardiovascular health of the next generation and to address the serious health inequalities in our community.

The Cardiovascular Health Strategy Group (CHSG), established by the Minister for Health and Children in March 1998, focused on the prevention and management of coronary heart disease, which is the major cause of death and disability within this group of diseases. The report of the group, *Building healthier hearts* (1999), included 211 recommendations.

Four key areas for action were identified:

- 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.

### **Need for multi-sectoral involvement**

Implementation of the recommendations in *Building healthier hearts* will pose a major challenge, not only to the health services, but to the wider community both public and private. It is clear that committed multi-sectoral action is required if primary prevention at a population level is to be effected. Major population lifestyle changes in smoking, alcohol consumption, diet and physical activity cannot be achieved by the health services on their own. Special attention will be required to promote health in disadvantaged groups with low income or low levels of education. This strategy should produce not only substantial cardiovascular health gains, but also significant benefits in other areas of morbidity and mortality such as strokes, cancers, diabetes and general mental well-being. The establishment of the National Heart Health Task Force is an important first step in driving this process forward.

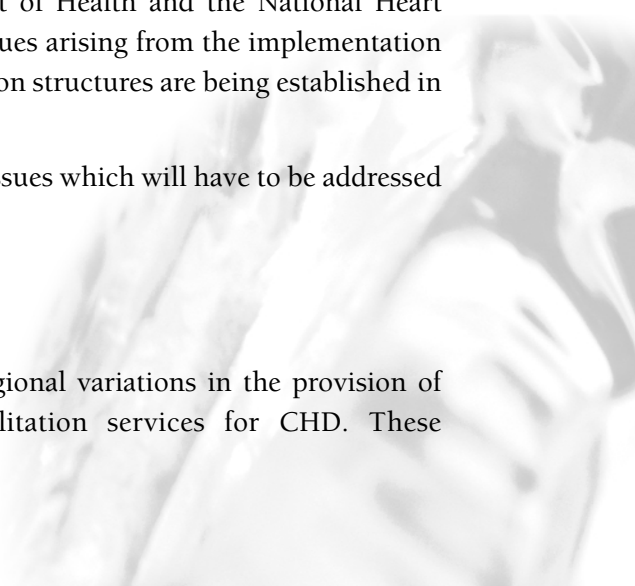
### **Health service challenges**

The importance of multi-sectoral collaboration to achieve reductions in CHD incidence through primary prevention cannot be over-emphasised. Additionally, the CHSG identified several significant deficiencies in current health service provision to patients presenting with either established cardiovascular disease or with risk factors for the disease. Addressing these deficiencies will require a co-ordinated approach across all levels of the health services and the involvement of management, clinicians and professional bodies. An expert Advisory Forum has been established to advise the Department of Health and the National Heart Health Task Force on the practical issues arising from the implementation of the strategy. Regional implementation structures are being established in each health board.

The following are some of the major issues which will have to be addressed by the new implementation bodies.

### **Regional inequities**

The CHSG discovered substantial regional variations in the provision of diagnostic, therapeutic and rehabilitation services for CHD. These



variations cannot be explained solely by regional variations in disease prevalence, but must reflect variations in professional referral patterns and/or regional inequities in access to these procedures. Such variations are clearly unacceptable.

### **Evidence-based practice**

Ensuring that internationally accepted best practice as determined by research evidence becomes part of routine clinical practice is a challenge facing all health administrations. There have been major advances in CHD diagnosis and treatment in recent decades including thrombolysis and other drug therapies, coronary angioplasty and cardiac surgery. A substantial body of research evidence underpins these developments, establishing what works best, in whom, and when it should be given. However, the CHSG found in a number of instances some evidence of inconsistent implementation of internationally recognised best practice and evidence-based treatment. More commonly, it was impossible to determine from available information if such practices were being followed.

Action is required on a number of fronts to tackle these difficulties. Commissioning the development of protocols and guidelines of best practice at national level will be a major function of the new Advisory Forum. This process will require input from professional bodies and academic departments of medicine. Experience elsewhere has shown that dissemination and adoption of guidelines at local level requires ongoing commitment of resources. Specific structures and dedicated personnel will have to be put in place regionally to facilitate this.

### **Performance measurement and development of health information systems**

The lack of health information data relating to morbidity patterns and service provision was a major difficulty experienced by the CHSG in compiling its report. Improvement in health information availability is essential for future planning of services and for monitoring the equity and quality of service provision. The introduction of performance

measurement systems to monitor implementation of the group's recommendations and to identify resultant health and social gains cannot proceed without significant health information developments.

There is an almost complete lack of organised health information collection at the primary care level, and many GP practices are not yet computerised. Unless this deficit is addressed, it will be impossible to evaluate the benefits attached to any primary or secondary preventive measures which may be introduced at general practice level in the future.

### **Reorientation of services to prevention and health promotion**

One of the principal recommendations of the CHSG report was that there should be an increased focus on the provision of appropriate preventive services in both primary care and secondary care. The report pinpointed general practice as a key setting for the identification of individuals at high risk of developing CHD, and for the delivery of appropriate supportive services to enable patients to make the necessary changes in their lifestyles. Apart from the obvious monetary and manpower resource implications of the re-orientation of general practice to cover preventive services, there are other important areas to be considered.

Preventive services, like any other service, have to be founded on evidence of benefit. There are many reports in the international literature of prevention initiatives which have produced little or no benefit. Developments in this field will have to be carefully planned and subsequently monitored to ensure that resources are deployed to maximum effect.

Widespread population screening for cardiovascular risk factors would not be cost-effective. The evidence is clear that the greatest benefit will derive if preventive measures are focused in the first instance on those with established CHD and those at highest risk. At the moment, there is no system whereby these target groups can be readily identified. All practices involved in providing this type of service should be computerised. This would allow the development of practice lists of at-risk groups and facilitate the evaluation of the service.

### Cerebrovascular diseases

This chapter has dealt principally with coronary heart disease, because that is the main cause of death and morbidity within this group of diseases, and it was the subject of the CHSG report *Building healthier hearts* (1999). The two other major types of cardiovascular diseases are cerebrovascular disease or strokes and peripheral vascular disease, a major cause of morbidity. Cerebrovascular mortality rates have fallen considerably in recent decades. However, stroke continues to be a major cause of hospital admission. This disease has a significant impact on an individual's quality of life and poses a heavy social and economic burden on the patient, the family and the community.

The risk factors associated with these diseases are largely the same as those for CHD, and at a population level the health promotion and preventive measures proposed by *Building healthier hearts* should also result in significant reductions in the incidence and severity of these diseases. However, the specifics of diagnosis and management of these diseases are quite different from those of CHD. With an ageing population and increased survival of younger adults as a result of falling incidence and better management of CHD, a heavy ongoing burden of cerebrovascular disease can be expected. The management of cerebrovascular disease has seen significant developments in recent times, with increasing indications for the use of pharmacologic and other interventions. The provision of rehabilitation services to stroke patients is crucial in enabling them to achieve optimal recovery. The provision of stroke services is an important area of health service delivery which should be reviewed as a matter of priority.

### Conclusion

There are several significant benefits which can be expected to accrue from the implementation of the strategy outlined in *Building healthier hearts*. Apart from the health and social gains in cardiovascular diseases and other areas as outlined above, implementation should result in improved co-ordination and efficiency of health service provision. Implementation of the strategy should serve as a model for improvements, particularly in respect of such areas as the standardisation and co-ordination of services, the development of national guidelines and protocols, and the introduction of systems for surveillance and performance measurement.



# Cancer



4

Cancer is a common global problem that is costly to the health services, the individual, the family and society.

It is the second most frequent cause of death and was identified in *Shaping a healthier future* as an area that needed to be urgently tackled. Cancer tends to create a sense of fear and helplessness partly because of its insidious onset and lack of symptoms in the early stages, the side effects associated with some treatments, and the perception that it involves long-term pain and suffering.

A diagnosis of cancer may lead to psychological problems for many patients and their families and creates a degree of panic that is not experienced to the same extent in other diseases. It is estimated that one third of cancers are preventable, and one third are potentially curable. Good palliative care can provide significant improvements in quality of life.

Careful planning is essential if the resources available to us are to be utilised to achieve the maximum benefit for our whole population.

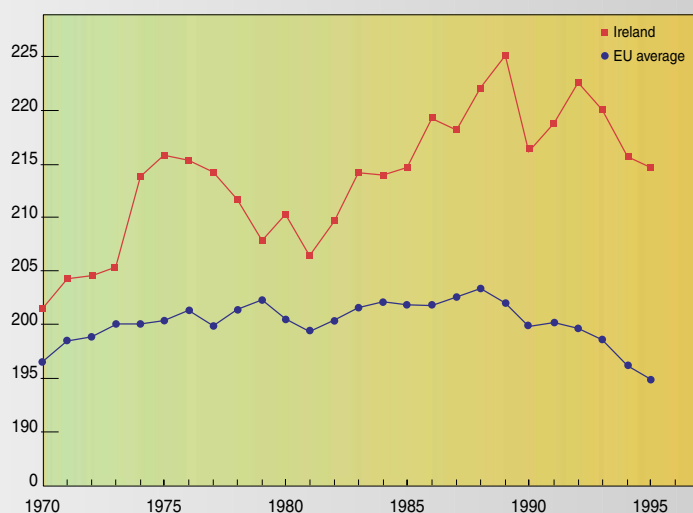
## Epidemiology

The risk of contracting and surviving cancer varies throughout the world and among different socio-economic and demographic groups. Various developments in urbanisation and technology have affected the occurrence of cancer through their impact on lifestyles and environmental exposure. The establishment of national cancer registries to collect cancer data in a number of countries has improved our knowledge about cancer and our ability to examine the variation in occurrence among different populations. There is a wealth of information available in the National Cancer Registry Ireland for those who wish to examine the profile of cancers occurring in Ireland. Many of the most common cancers can be prevented by lifestyle changes. Smoking is the single biggest preventable cause of cancer.

## Incidence and mortality

Cancer is becoming increasingly significant as a cause of mortality in our population. The overall death rate from cancer in Ireland has increased since the 1970s (Figure 4.1), and because of a reduction in other causes of

**Fig 4.1: Cancer: Trends in Age-Standardised Death Rates, 1970-1995: Ireland and EU**

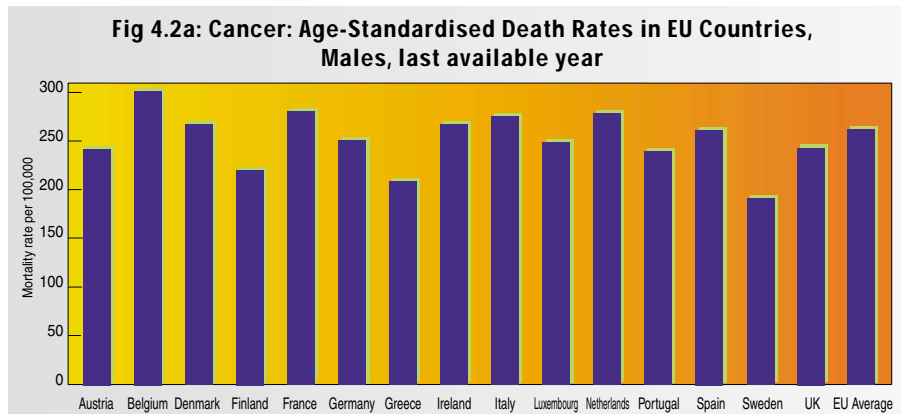


Source: Health for All Database, WHO

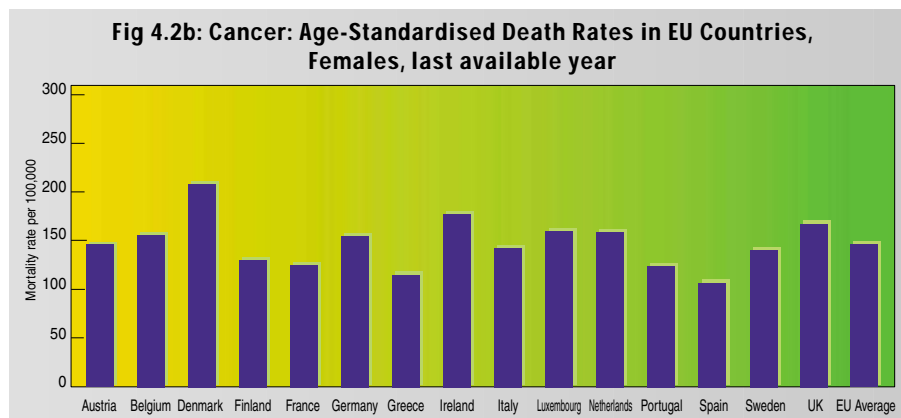
death, the proportion of deaths due to cancer has increased. In 1996, 20,818 new cases of cancer were recorded in Ireland and 7,436 people died from cancer. Approximately one in four deaths are due to cancer. Apart from non-melanoma skin cancer (35 per cent), the most commonly occurring cancers in the general population are cancers of the lower bowel (9 per cent), breast (8 per cent) and lung (7 per cent). Commonly occurring cancers in women are: cancers of the breast (16 per cent), cervix (9 per cent), and lower bowel (7 per cent), and in men: cancers of the prostate (11 per cent), lower bowel (10 per cent) and lung (9 per cent). The most common cause of cancer death in men is lung cancer (23.9 per cent) and in women it is breast cancer (18.5 per cent).

### Cancer in Europe

Cancer is the second leading cause of death in Europe. When account is taken of differences in age structure between EU member states, the risk of



Source: Health for All Database, WHO



Source: Health for All Database, WHO

dying from cancer among men is highest in Belgium and lowest in Sweden (Figure 4.2a). Ireland ranks sixth. The risk of dying from cancer among women is highest in Denmark and lowest in Greece (Figure 4.2b). Ireland ranks second. The lower mortality rate for cancer in the Mediterranean countries is partly due to lower rates of breast and bowel cancer.

## **Individual cancers**

### **Cancer of the colon and rectum**

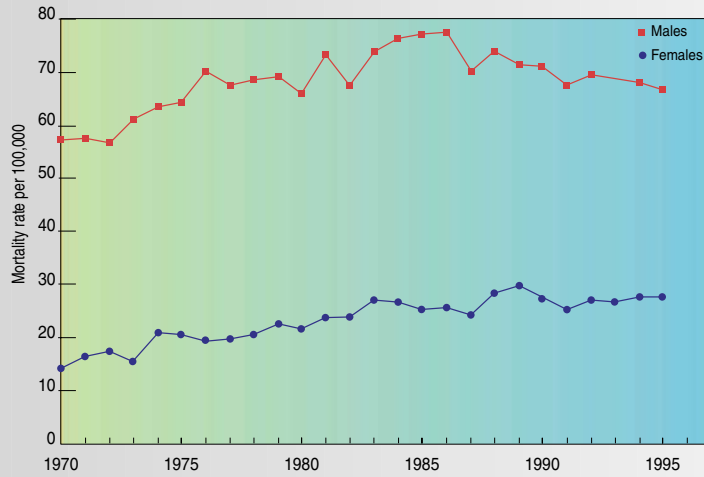
Ireland has a high rate of colorectal cancer where it is the second most common cancer after skin cancer. There were 1,792 new cases and 896 deaths in 1996. Cancer of the colon is a disease of economically developed countries and it affects both sexes almost equally. Rectal cancer is usually more common among men. Environmental factors play a major role in the aetiology of the disease, the most important being diet. Most distal colorectal carcinomas arise in benign adenomas, with a slow transition time to malignancy of 10 to 15 years. Many patients seek treatment at a late stage and the prognosis is poor when the tumour has spread beyond the bowel wall.

Theoretically, screening procedures that detect and lead to the removal of adenomas or early cancers should result in a decrease in mortality. Faecal occult blood testing in men and women age 50 to 69 years has been found to reduce colorectal cancer mortality. This test is being considered as a preventive measure in a number of European countries. The feasibility of flexible sigmoidoscopy and colonoscopy in screening is also being evaluated. Studies of screening by dedicated researchers among motivated populations have shown reduction in the mortality from colorectal cancer. This does not mean that the introduction of mass screening would lead to similar benefits. Until screening has been shown to be a feasible and effective method of reducing mortality from colorectal cancer in the Irish context and the benefits and risks have been carefully evaluated, screening cannot be recommended on a population basis in Ireland.

### **Lung cancer**

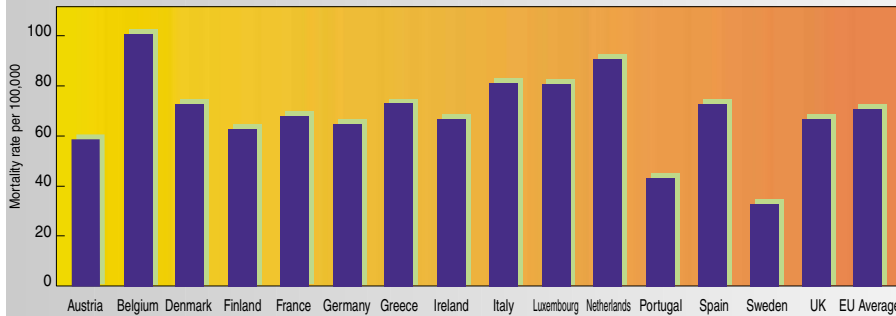
Lung cancer is the most common cause of cancer deaths in Ireland. There were 1,456 new cases and 1,464 deaths in 1996. The rate is higher in men

**Fig 4.3: Lung Cancer: Trends in Age-Standardised Death Rates, Males/Females, all ages, 1970-1995**



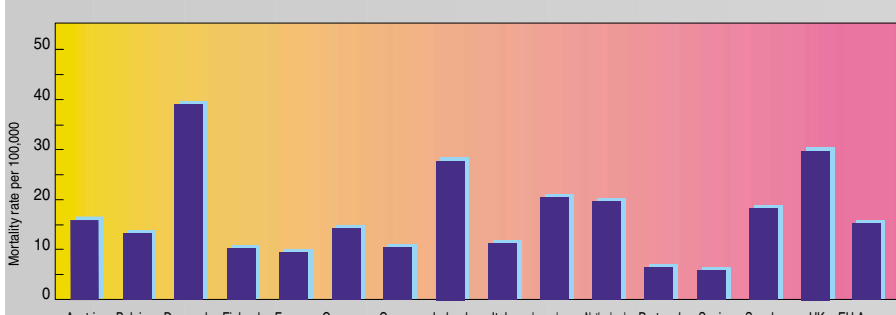
Source: Health for All Database, WHO

**Fig 4.4a: Lung Cancer: Age-standardised death rates in EU Countries, Males, last available year**



Source: Health for All Database, WHO

**Fig 4.4b: Lung Cancer: Age-standardised death rates in EU Countries, Females, last available year**



Source: Health for All Database, WHO

than women (Figure 4.3). The low survival rate occurs partly because of the advanced stage at diagnosis. Geographical variations in lung cancer have been noted and are attributable to different smoking patterns in different populations (Figure 4.4a and Figure 4.4b). Irish women have the third highest rate of lung cancer in the EU (Figure 4.4b). The level of lung cancer has increased due to an increase in smoking. The increase in lung cancer among women is a particular cause for concern and reflects the differential rates of smoking between the sexes. Among younger women the smoking rates are now 40 per cent while the level of smoking for the population overall is 31 per cent. This is an area that requires urgent action.

### **Prostate cancer**

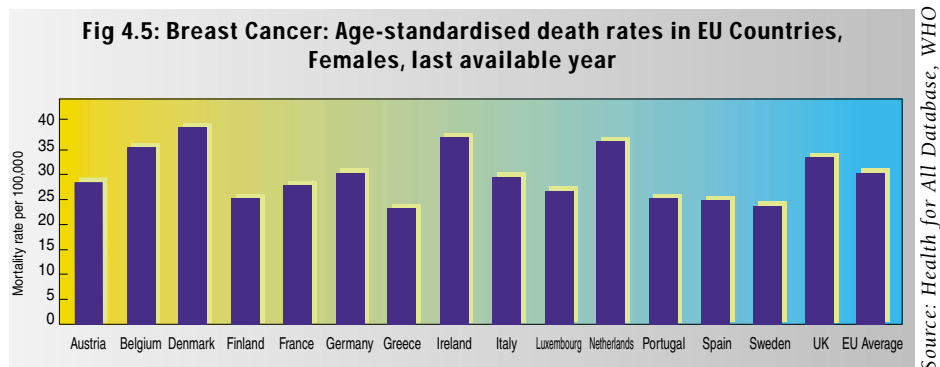
In Ireland, prostate cancer is the most common form of cancer occurring in men excluding non-melanoma skin cancer and the second most common cause of cancer death among men after lung cancer. It accounts for 13 per cent of all cancer deaths among men. There were 1,138 new cases and 523 deaths in 1996. It is a disease that mainly affects older men and this will become a more significant problem as the male population is ageing. Both genetic and environmental factors play a part in the development of prostate cancer. An apparent increase in the incidence of prostate cancer has been noted internationally. It may be partly explained by an ageing population, by an increase in the number of asymptomatic subjects requesting screening, the availability of screening in some countries, improved diagnostic accuracy and improved registration of the disease.

Curative treatments for prostate cancer are limited to early stages of the disease. An effective method of early detection of prostate cancer that would lead to a reduction in mortality would be useful. However, experts in the area are divided regarding the existence of a reliable screening tool that could be used in mass screening to reduce mortality from prostate cancer. Screening for prostate cancer has the potential to reduce mortality only if it can distinguish clinically significant cancers from those of little clinical significance. Currently-available tests cannot distinguish between tumours that are life threatening and tumours that might remain clinically dormant. There is no clear evidence yet available to indicate that clinical outcome is improved by early detection. Unnecessary interventions should be avoided. Randomised controlled trials are being undertaken in a

number of countries to evaluate the benefit of screening for prostate cancer using a number of tests. Until the evidence of benefit is available it would not be appropriate to introduce mass screening for prostate cancer in Ireland.

### Breast cancer

Breast cancer is the most frequent cause of cancer death among women. In Ireland there were 1,601 new cases and 641 deaths in 1996. Breast cancer is responsible for almost one in five cancer deaths in women. It occurs infrequently before the age of 40 but then becomes increasingly more common with age. International comparisons of death from breast cancer reveal wide variation in the death rates. Ireland ranks high alongside other northern European countries such as Denmark, UK and the Netherlands (Figure 4.5). The great variation in breast cancer among different countries



and the change in risk of breast cancer in migrants from low incidence to high incidence areas and in their descendants has been interpreted as a strong indication that environment and lifestyle influence the risk of breast cancer. There is a positive association between late childbearing and nulliparity and breast cancer. In younger women genetic predisposition may be a more significant factor than reproductive status.

The most important prognostic indicator is stage at diagnosis. In many countries early diagnosis through screening has enabled many women to be treated successfully. In these countries an increase in incidence is not matched by an increase in mortality. In Ireland, the National Breast Screening Programme has been launched and the first women are due to be screened shortly. It will be a state of the art programme that will target

women in the 50-64 year age group. Women outside this age group will attend the existing symptomatic clinics. This service will be augmented to ensure that women who have symptoms receive an equally excellent service to those who are discovered through screening to have breast cancer.

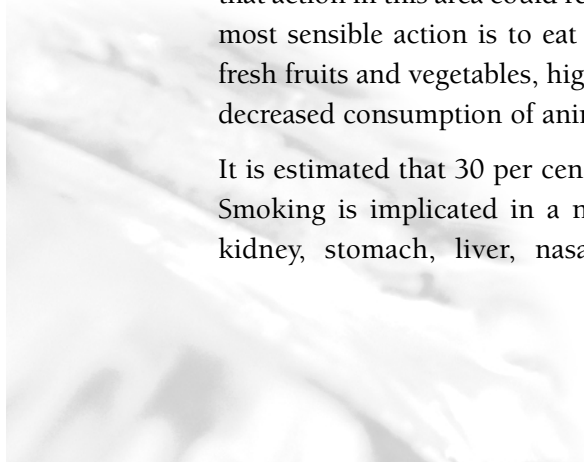
### **Cervical cancer**

Cancer of the cervix is the second most common cause of cancer among women worldwide but 80 per cent of these cancers occur in developing countries. In Ireland, there were 999 new cases and 82 deaths in 1996. A decline in the incidence and mortality rates for cervical cancer has been observed globally. Where effective national screening programmes have been introduced, mortality has fallen substantially. In Ireland, preparations for Phase One of the National Cervical Screening Programme are nearing completion. The intended start-up date is March 2000. Work is also underway to ensure that the infrastructure for the programme is in place nationally. This will facilitate the smooth transition from Phase One to the full national programme without undue delay.

### **Cancer prevention**

Cancers occur as a result of the interplay between genetic and environmental factors. Risk of cancer depends on age, sex, genetic make-up, where we live and how we live. To some extent certain aspects of cancer risk are within our own control. We now have sufficient information to contribute to the prevention of a majority of the most common cancers – those associated with lifestyle. The effect of diet modification to reduce cancer risk is an area of increasing significance and it is amenable to individual control. Diet is the subject of much research but it is thought that action in this area could result in a 30 per cent reduction in cancer. The most sensible action is to eat a balanced diet with an increased intake of fresh fruits and vegetables, high fibre whole grain breads and cereals, and a decreased consumption of animal fat and red meat.

It is estimated that 30 per cent of all cancers owe their origin to smoking. Smoking is implicated in a number of cancers including lung, bladder, kidney, stomach, liver, nasal sinuses, larynx, pharynx, oesophagus,





pancreas and cervix. Prevention of smoking would lead to a substantial reduction in death and morbidity associated with cancers and other illnesses such as cardiovascular disease and chronic lung disease. Tackling the problem of tobacco control is not easy. There are many factors that influence the decision of individuals to smoke. Choices are affected by social influences and by the powerful vested interests of tobacco companies. Advertising and the sponsorship of sporting activities reinforce the social acceptability of the product and undermine the effectiveness of health promotion activities that aim to reduce the prevalence of smoking. Smoking is also an economic issue because the tobacco industry provides employment and income to many sectors and is a source of tax revenue to the government. However, if all costs to society were calculated (health care costs, working days lost, pain and suffering to individuals and their families, etc.) it would be clear that there is a net loss to society.

There is a need for alternative economic strategies to be devised which would reduce the production and consumption of tobacco, with minimum immediate harm to the economy. This requires action across a number of government departments and at EU level. A comprehensive tobacco policy is required to reduce the health consequences of tobacco. This should include preventing young people from starting to smoke, helping smokers to quit, increased taxes on tobacco, total bans on advertising (direct and indirect), provision of smoke-free enclosed public areas, effective health warnings on tobacco products, and health education. Smoking is a public health problem that requires urgent attention.

Interventions to ensure earlier detection of cancer range from educational initiatives to formal population-based screening strategies. In screening, the health services seek out apparently healthy individuals and ask them to undergo a procedure that will lead to a benefit. When deciding on the implementation of a screening programme it is essential that one can ensure that the collective benefit will outweigh any harm from the programme. It is sometimes believed that the ability of a test to detect a disease is in itself sufficient reason to screen, even if there is no evidence of improved outcome. Some believe that the epidemiological importance of a disease is sufficient justification for screening, pending definitive evidence of effectiveness. It is important to ensure that the policy on what is and is not screened is carefully thought out and that programmes which

are put in place are of the highest quality. Population screening programmes should only be undertaken when their value has been proven and resources and facilities exist to conduct a quality programme.

### **Cancer services**

The main purpose of cancer treatment services is cure, prolongation of life and improvement of quality of life. Over the years, although a magic cure has not been discovered, there has been a steady improvement in the quality of care. Surgery has become more conservative due to technological improvements, radiotherapy has become more precise, and the role of chemotherapy has become more defined and its administration less unpleasant. There has been a significant improvement in our understanding of cancer at a molecular level. Continuing research will lead to less toxic and more effective treatments. All patients throughout the country should have access to a high quality of care that includes good diagnostic practice, effective primary care, and well-developed treatment services. Depending on the type of cancer, the treatment may involve surgery, radiation therapy, chemotherapy, hormonal therapy or a combination of these. Some treatments require sophisticated technology only available in specialised locations. Others are available at regional or local level. Primary care is an important element in cancer care, co-ordinating management of medical treatment and psycho-social aspects throughout the illness. Patients with cancer place a high value on quality of life. Palliative care is an integral part of any cancer service and should be easily accessible to everyone locally, both in the hospitals and in their homes.

To a certain extent in the past cancer services developed in an ad hoc fashion. Ideally, the services should be based on agreed current best practice, using the treatments and organisational arrangements that are likely to achieve the best results. Resources must be mobilised to maximise the benefit that can be gained from them. Agreed referral and clinical care guidelines that can be audited are an important part of any comprehensive cancer care service. The cancer service must be based on an integrated multi-institutional approach determined by the needs of patients rather than by accidents of residence, location of services, or traditional patterns of referral. In an effort to deal with some of the weaknesses in the system

and to build on the strengths, the National Cancer Strategy has established an infrastructure to support development of the services. The National Cancer Forum was formed in 1997 to advise on the implementation of the National Cancer Strategy and Regional Directors of Cancer Services were appointed to oversee the development of cancer services in each health board area. Expert advisory groups have been set up to advise on specific issues such as breast screening and cervical screening. The latest advisory group to be established is the Palliative Care Advisory Committee. The organisation of cancer services will now operate through supra regional services in Cork, Dublin and Galway (responsible for treating the full range of cancers within their catchment areas, with some exceptions, e.g. for rarer cancers) and regional services (provided by designated groups of hospitals treating specific cancers according to the agreed best practice).

The 'National Cancer Institute All Ireland Partnership' is an exciting initiative that will lead to a further improvement in the quality and range of cancer services available for patients in Ireland. It will provide opportunities for joint programmes for cancer treatment, education and research between the North and South of Ireland and the National Cancer Institute in the USA. The main components will include consolidation of cancer registries, education and exchange programmes for professionals, enhancement of clinical trials, teleconferencing to facilitate education, and improvement in cancer clinical services.


## Conclusions

Cancer is becoming more significant as a health problem in our society. The National Cancer Strategy has achieved much in terms of developing infrastructure, tackling regional variations in service, etc. This work is continuing and we will continue to see improvements in the provision of services. It is now time to consider what people can expect from the services in terms of outcomes and quality of care. The impetus has come from the Royal Colleges and international literature with the development of clinical guidelines, clinical indicators and recommendations for best practice. It is important that this focus on quality is supported and nurtured.

Prevention is another important area that requires action. We have the knowledge to help prevent many of the common cancers. We need to

translate that knowledge into interventions. This may sometimes entail making unpopular decisions. In addition to lifestyle modifications at the community and individual level, any sound preventive effort has to tackle socio-economic issues and ensure the development and implementation of healthy public policies. We have achieved much but a lot of work remains to be done.

# Injury



5

Injuries are a major cause of death in Ireland but there is wide scope for reducing them. They are the leading cause of death, ill-health and disability in children and young adults. They are also a significant problem in the elderly. They represent a larger burden on the health system than many other health problems and the financial and social costs of injuries are high. The cost in terms of years of potential life lost under 65 is higher than for cancer or cardiovascular disease.

*Shaping a healthier future* identified injuries as an important area to target. However, this 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 the 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 totally beyond our control. In fact, such 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.

Another difficulty in tackling injuries is the fact that there is no one 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 health-care system. However, because treatment and rehabilitation of injuries entails a large expenditure in the health service, it is a subject of great importance to the health system.

### **Epidemiology**

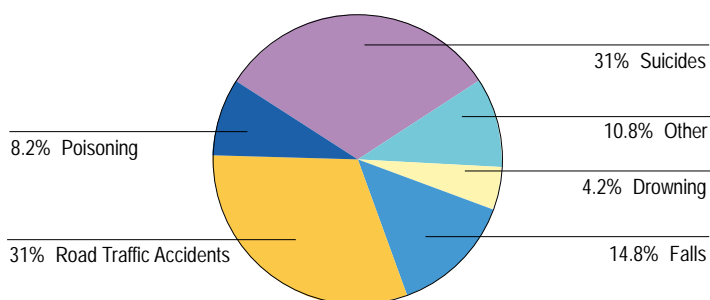
The epidemiology of injuries can be influenced by economic, social and population developments. Technical progress can aid injury prevention but equally it can change the environment in which we live and work, making it either more or less hazardous. Economic progress can alter our lifestyle. It may change the amount of time spent at work and leisure and also change the type of leisure activities we engage in. Males are at greatest risk for accidental injury. Most injuries occur in the younger age groups, with another peak in the elderly. There is also a significant problem in relation to road traffic accidents among young people and work-related injuries among the working population.

### **Morbidity and mortality**

In 1998, about 46,000 people received inpatient care for injuries in Ireland. Women accounted for 36 per cent of the injury admissions. They took up approximately 209,000 bed days. A major cost was incurred while they were in hospital. High costs also occurred after discharge, and by those who did not require admission, in terms of accident and emergency, outpatient, paramedical, and general practitioner care and rehabilitation.

Injuries account for 10.4 per cent of admissions overall but a higher proportion of admissions in young people are injury related, with 17.8 per cent of 1-14 year old admissions and 20.2 per cent of 15-24 year old admissions being due to injury. As only 10 per cent of people attending hospital with an injury are admitted to hospital, it is estimated that in 1998 over 400,000 people may have attended hospital with injuries. Many more attended their general practitioner. Information on injuries that do not result in death or hospital admission is not routinely collected. It is difficult to obtain a full picture of the epidemiology of non-fatal injuries.

**Fig 5.1: Injury Deaths by Principal Causes, Percentage Distribution, 1998**

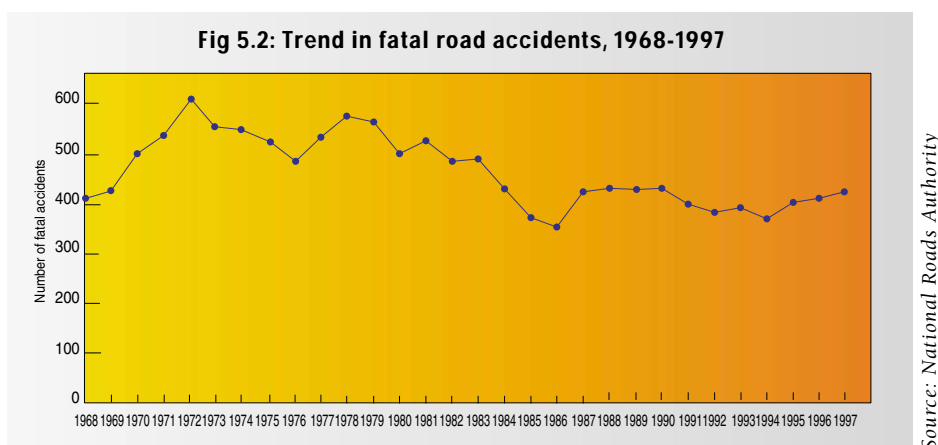


Source: CSO

Each year 1,400 people in Ireland die from injuries. The most common causes of injury deaths (Figure 5.1) are road traffic accidents (31 per cent) and suicides (31 per cent), followed by falls (14.8 per cent), poisoning (8.2 per cent), and drowning (4.2 per cent). Suicide is an extremely important area. It has different causal factors and intervention requirements to other injuries. Suicide will not be discussed further here but will be dealt with in more detail in a future report. Accidents account for about 4.5 per cent of deaths overall but they account for 37.7 per cent of deaths in people under 45 years. Males, particularly in their early twenties, are at greater risk of death from injury than are women. The high death rate from injuries among males is mainly due to their high rate of death from road traffic accidents. The latter are the most significant category of fatal accidents among people under 65 years of age.

## Road traffic accidents (RTAs)

In 1997, 472 people were killed in 424 fatal accidents on Irish roads. This is a lower number compared to the 1970s when there were between 500 and 600 road deaths per year (Figure 5.2). There has been a steady increase in the amount of travel on Irish roads over the years and although



the number of accidents has increased the number of deaths has decreased. This may be the result of protective measures such as better vehicle design, airbags, and child restraints, or of better medical care and improved survival following accidents. There is room for improvement in terms of the trauma response, to ensure that seriously injured patients receive basic first aid immediately and arrive quickly at the hospital which can most appropriately cater for their injuries.

The death rates have levelled off in the past few years but the level of minor injuries continued to rise until the implementation of the Road Safety Strategy. In 1997, 13,115 persons were injured in 8,072 injury accidents on Irish roads. Car users make up 63 per cent of casualties, pedestrians 13 per cent, motor cyclists 9.5 per cent and pedal cyclist road users 5 per cent. Road traffic accidents are the most significant cause of admission to hospital in terms of severity of injury. The method by which an individual is most likely to be injured changes in each age group. Under one year the child is at risk as a car passenger; in toddlers the risk of a pedestrian accident increases; and as they get older they become more vulnerable as cyclists. Motorcycle accidents mainly affect the 15-34 year age group, and vehicle injuries are most common in the 25-44 year age group.



Factors influencing the severity of injury sustained include poor interior crash protection for the occupants and failure to use appropriate restraints. Wearing restraints reduces the risk of serious injury and death. However, only about 64 per cent of people wear seatbelts. Usage is higher among those travelling in the front seat compared to rear seat passengers. In the SLÁN survey, 74 per cent of females stated that they always wore a seatbelt in the front seat of a car, compared to 61 per cent of males. The use of safety restraints by children is even lower. Road traffic accidents have major cost implications. The National Roads Authority has estimated the cost of road traffic accidents in 1997 to be £886,000 for fatal injury, £110,000 serious injury, £10,500 minor injury, and £1,148 for material damage accidents. This is an underestimate of the true cost as it does not include injuries that occurred in accidents that were not reported to the Gardaí. In order to reduce road deaths further it is necessary to succeed in reducing the number of road accidents occurring.

### **The elderly**

The ageing of the population poses a special challenge in relation to injury prevention. The elderly have the highest admission rate following injury, the longest length of hospital stay and the highest need for long stay accommodation following discharge. In the elderly, falls are the main source of injury causing death. In 1997, 208 people died as a result of a fall. Of these, 70 per cent were older than 65 and 58 per cent older than 75 years. Hip fractures following falls are what most frequently lead to injury admissions and deaths among old people. The risk of falling and the likelihood of severe injury increases with age. Older people are at increased risk for a number of reasons including failing vision, reduction in short-term memory and slower reflexes. Osteoporosis can predispose older women to hip fractures. Outcomes of hip fracture are poor and increased dependency following a fall means that they are more likely to require admission to a nursing home.

In 1997, 16.5 per cent of all those killed in road accidents in Ireland were aged over 65, although they form only 11.4 per cent of the population. Older people are also at particular risk from injury or death from domestic fires. In 1997, 38 per cent of all people killed in fires were aged over 65. In house fires, deaths occur typically as a result of smoke inhalation and

burns. The high fatality rate among older people may result from their reduced likelihood of escaping from house fires and their reduced likelihood of survival following fire-related injury.

The number of people aged 65 and over in Ireland is increasing. The largest increase will be seen in people aged 80 and over. There will be a parallel increase in the number of people in this age group suffering death and disability from injury, with a consequent cost burden to the health and social services. Prevention entails ensuring that they have a safe physical environment to live in and that personal risk factors are minimised. This includes preventing osteoporosis through lifelong good diet and exercise, and early adequate management of conditions such as cataract and hearing loss that may predispose to accidents.

## **Children**

Injuries are the most common cause of death in children. In 1997, 56 children under 14 years died from injuries. Road traffic accidents were the main cause of injuries leading to death (52 per cent of deaths); 55 per cent were pedestrians, 34.5 per cent were motor vehicle occupants and 7 per cent were pedal cyclists.

In 1998, 10,515 children between 1 and 14 years were admitted to hospital with injuries. 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. Falls are the main cause of injury requiring admission. Burns and poisonings, 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. 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.

## **Work-related injuries**

In 1998, 70 fatal work-related accidents occurred in Ireland and 6,512 work-related injuries were reported to the Health and Safety Authority. The majority of deaths occurred in agriculture and forestry (26) and construction (22) and were caused by falling or by being struck or crushed. Those working in agriculture are also exposed to environmental hazards, toxic chemicals and infectious diseases. The hazards extend to the workers' families and visitors to the farm. It is worrying to note that seven of the agricultural deaths occurring in 1998 were children, six of which involved tractors. Deaths in agriculture and forestry had fallen in recent years until the dramatic increase in 1998. Deaths in the construction industry are gradually rising. There are concerns at the level of safety provided in the construction industry. The current level of fines does not act as a sufficient incentive to provide safe systems of work. There is a need for more active interventions to encourage safe working environments for our workforce.

## **Surveillance**

In order to develop a comprehensive and effective strategy for injury prevention there must be the means for determining the epidemiology of the injuries and for monitoring trends. 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 the data generally relate to the injury, not to the 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 that would allow for comparisons and permit identification of trends.

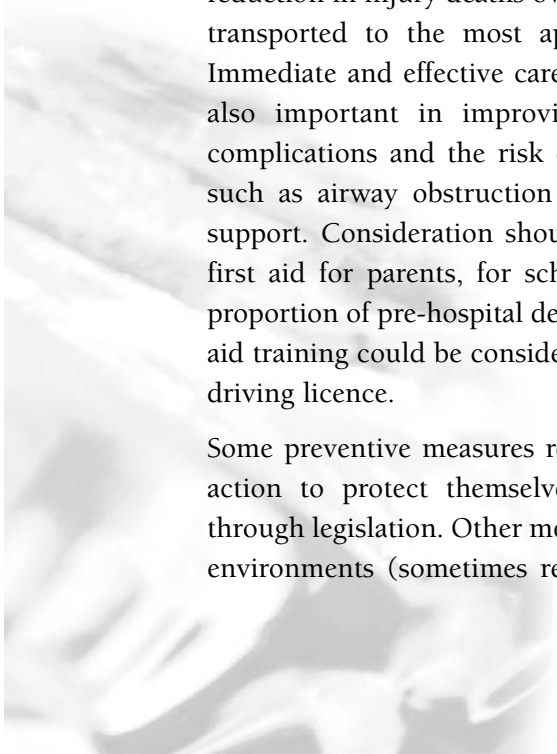
It would be useful to develop injury surveillance in selected representative areas, which would enable a view of the national situation to be estimated, and improve links between the data that are already available. The Office for Health Gain is currently undertaking work in this area. Its aim is to facilitate the provision and use of data in order to enable interested parties access and utilise information to promote injury prevention measures.

### **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. Advances in trauma care have contributed to the reduction in injury deaths over the years. It is essential that the injured be 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, for schools and for the workplace. Since a large proportion of pre-hospital deaths occur in road traffic accidents, basic first aid training could be considered as a requirement for those applying for a driving licence.

Some preventive measures require that individuals be persuaded to take action to protect themselves or their 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. An example of this may be seen in the road safety initiatives undertaken in Ireland. It has now become socially unacceptable to drink and drive in Ireland. Gradually the same will happen with speeding. In a climate of limited resources, it is often necessary to make choices about the most cost-effective way to achieve the best results from an intervention.

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, in the workplace, at school, etc. 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 make sure that nothing is omitted.

Since treating those with injuries is the responsibility of the health-care system, perhaps the health sector should take a more active role in co-ordinating efforts at injury control. However, other government departments have a part to play. The Department of the Environment and Local Government has the power to produce safe road design and housing. The Department of Justice, Equality and Law Reform has the power to enforce legislation for drunk driving and speeding. The Department of Enterprise, Trade and Employment has the power to regulate unsafe products. The Department of the Marine and Natural Resources is responsible for safety at sea. The multifaceted aspect of injury prevention results in responsibilities being widely diffused. We need to identify a government body that will give visibility to this problem and develop a co-ordinated approach to address it. The health sector, as an advocate for health, must become more actively involved in working with the relevant departments and agencies, to quantify the extent of the problem, determine the research needed and develop policy and preventive measures.

### **Current progress**

The Office for Health Gain was established in Ireland to facilitate the joint working by health boards to achieve measurable health gain. Injuries were chosen by the Office for Health Gain as a key area which requires investigation. It also established the National Accident Forum in 1996 to facilitate a co-ordinated approach to injury prevention at national and regional level. A wide variety of agencies are represented in the Forum.

The government's National Road Safety Strategy, 1998, intends to reduce the level of serious and fatal road traffic injuries by at least 20 per cent by the year 2002. In 1998, the number of serious injuries fell by 12 per cent and the number of deaths fell by 3 per cent. While a reduction in deaths is welcome, it is disappointing that the decline was not greater considering the enormous effort made by the Gardaí. It is essential that the Gardaí be given the resources and public support necessary to carry out this work. Experience in Australia shows that investment in enforcement and advertising can result in major savings in rehabilitation costs and insurance claims. A recent report commissioned by the National Safety Council estimates that the economic benefit of achieving the targets set by the government's National Road Safety Strategy will be at least £536m in the period 1998 to 2002. In addition to the requirement for sufficient resources, the success of the strategy will depend on public ownership of road safety and acceptance by individuals of their own responsibility to contribute to the safety initiative.

### **Conclusions**

Injuries continue to occur at an unacceptable level in Ireland. In addition to the human costs there are heavy financial costs to the health services, which if they could be reduced would make more resources available to meet other priority needs. While many groups are undertaking excellent work in an effort to reduce the burden of injury, they face numerous difficulties. There is a need to establish mechanisms for effective co-ordination of activities, improve the information base, and invest in action that will provide an environment in which people can live and work in safety.

# Communicable Diseases



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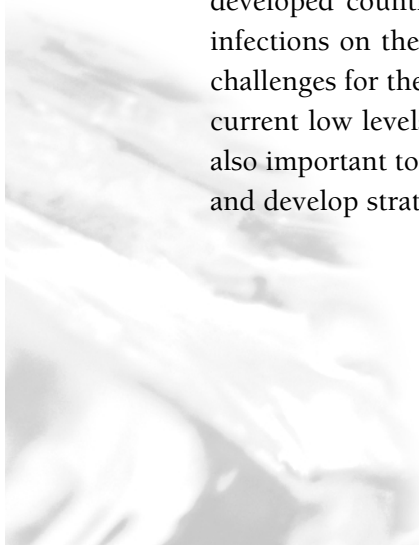
Communicable diseases have always been recognised as a major threat to public health. In the nineteenth and early twentieth centuries, major health problems were associated with poor nutrition, over-crowding and inadequate water supplies. These conditions led to a high incidence of tuberculosis, gastro-enteritis, respiratory diseases and infant mortality. At the turn of this century, the Spanish flu ravaged continents and killed more than 20 million people in a few months.

In recent years, improved economic and social conditions, together with public health action, have virtually eliminated the pandemics of communicable diseases. Medical advances, including the development of vaccines and new drugs, the provision of safe drinking water, better nutrition and improved personal hygiene, have reduced the threat of infectious diseases to the population.

The worldwide eradication of small pox represents one of the most significant medical achievements of all time. Poliomyelitis is now targeted by the World Health Organisation for global eradication.

More recently, however, infectious diseases which were well controlled have begun to reappear and are reaching epidemic proportions in some countries. A combination of factors, including the slackening of vaccination programmes, poor living conditions, anti-microbial resistance and scarce health-care resources, have contributed to the resurgence of these infections. Within countries, there is evidence that communicable diseases are associated with socio-economic deprivation. Worldwide, infectious diseases remain a major cause of mortality, accounting for approximately 17 million deaths annually in developing countries and 500,000 in the industrialised world. In developing countries, they represent more than 70 per cent of the global burden of disease and in industrialised countries are a major cause of school and work absenteeisms. When infectious diseases are not adequately controlled, they can place a tremendous burden on economies. The World Health Organisation considers that the benefits of controlling or eliminating infectious diseases far outweigh the costs incurred.

In Ireland, we have come a long way since the poliomyelitis and tuberculosis epidemics which affected thousands of people and resulted in significant morbidity and mortality in the 1950s. In the 1990s, public expectations are high and communicable diseases are often perceived to be a problem of the past. New threats have emerged, however, in the form of AIDS, BSE and CJD, hepatitis and E.Coli. This underscores the likelihood that infectious diseases will remain a significant problem, even in developed countries, for many years to come. The full impact of these infections on the human population has yet to be determined. The main challenges for the future will be to contain communicable diseases at their current low levels and also to limit the emergence of new infections. It is also important to gain a greater understanding of anti-microbial resistance and develop strategies to contain the spread of this problem.





### **Trends in communicable disease**

Over the past 50 years, there has been a marked change in the pattern of communicable diseases in Ireland. In 1947, when the Department of Health was established, there was considerable mortality from infectious diseases which included not only tuberculosis but also conditions such as typhoid fever, scarlet fever, whooping cough, diphtheria, influenza, polio and measles. In children aged between 1 and 5 years, the vast majority of deaths were caused by infectious diseases including pneumonia, tuberculosis, whooping cough, measles, gastro-enteritis and diphtheria. In older children aged between 5 and 15 years, the most common cause of death was tuberculosis. Tuberculosis was also the major cause of death among adolescents and young adults under 45 years of age. In recent years, tuberculosis has diminished in frequency. However, it remains a problem because of the issue of antibiotic resistance and its association with the HIV/AIDS epidemic.

### **Immunisation**

In Ireland, the benefits of childhood vaccinations are clear. Immunisation has had a dramatic impact on the incidence of many communicable diseases, with a corresponding reduction in mortality. The overall aim of the National Childhood Immunisation Programme is to eliminate vaccine-preventable diseases including diphtheria, pertussis, tetanus, polio, haemophilus influenzae type B, measles, mumps and rubella, by achieving at least a 95 per cent vaccine uptake in the childhood population. The Department of Health and Children monitors the incidence of infectious disease through the notifiable disease reporting system and this information is supplemented by surveys in the community and laboratory settings. The changing patterns of communicable disease, together with the availability of new vaccines, indicate the necessity of continuing to review our immunisation programmes. The Department acknowledges the important role played by the Immunisation Advisory Committee of the Royal College of Physicians of Ireland in the formulation of policy advice in this area. The publication of new guidelines in relation to primary childhood vaccination is welcome.

### **Vaccine safety**

Vaccines are amongst the most effective public health measures that are available. The incidence of vaccine-preventable diseases, together with their associated complications, has greatly declined in Ireland. Many of these infections are now at a level where we tend to forget the seriousness of these conditions. Instead the focus has shifted onto vaccine safety. Recent 'vaccine scares', including Hepatitis B vaccine and MMR, have been widely reported in the media. Claims are sometimes made with little concern for the potential harm resulting from loss of public confidence in the vaccine and the consequent decrease in the number of children vaccinated. Follow-up studies which do not corroborate these claims rarely achieve similar publicity. The international consensus, including that of the World Health Organisation, is that these are safe and effective vaccines.

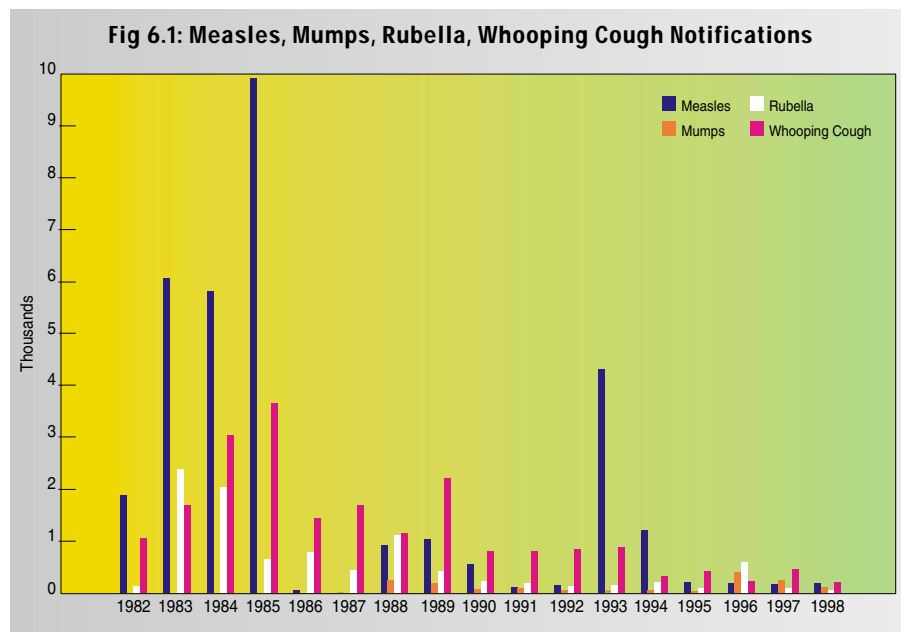
The Irish Medicines Board (IMB) is responsible for the monitoring and safety of all pharmaceutical products sold in Ireland. The monitoring of vaccine safety is ensured through clinical trials prior to licence and post-licence surveillance by the IMB. The overall aim of the National Childhood Immunisation Programme is to eliminate vaccine-preventable diseases by achieving at least a 95 per cent vaccine uptake rate. If uptake declines, there will be a resurgence of these infections as was demonstrated by the recent diphtheria and polio outbreaks in Europe. The policy of the Department of Health and Children is to promote vaccination based on Irish and international scientific advice which concludes that the benefits far outstrip possible risks. Adverse reactions do sometimes occur but most of these are minor and transient. Immunisation offers the possibility of eliminating a number of serious infections in the Irish population. However, this is contingent on a high uptake of vaccination. The challenge for the twenty-first century is to use these vaccines effectively and, where appropriate, to incorporate new and safe vaccines into the national programme.

### **Measles, mumps and rubella**

The impact of measles vaccine is apparent from Figure 6.1. Prior to the introduction of the measles vaccine in 1983, there were almost 10,000 cases per year in Ireland. This resulted in significant morbidity for Irish

children. The incidence has dropped in recent years, apart from an epidemic in 1993.

The World Health Organisation has targeted that indigenous measles be eliminated from the European region by the year 2007. In contrast with many other European countries, Ireland has been unable to clear this residual measles infection, primarily because of inadequate immunisation coverage. National MMR vaccine coverage is approximately 80 per cent. This falls short of the target of 95 per cent uptake rate in the childhood population. Measles elimination will result in substantial health-care cost savings. The goal of elimination will require strengthening of our surveillance system, together with improved immunisation coverage in the childhood population.



The incidence of mumps and rubella remains unchanged in recent years. Mumps is less infectious than measles. However, some children require a second dose for protection against this infection. Rubella is a mild infectious disease, but its occurrence in pregnancy can result in major damage to the child, including mental handicap, visual and hearing problems and congenital heart disease. The primary aim of the health sector is to eliminate the congenital rubella syndrome by protecting

women of childbearing age and secondly to interrupt the transmission of rubella infection in young children. These issues spell out the importance of providing adequate protection against measles, mumps and rubella in early childhood. This may require a catch-up programme in some school children who have not received the second dose of the MMR vaccine.

### **Diphtheria, pertussis, tetanus and polio**

There have been no recorded cases of diphtheria in Ireland for many years and the WHO target has been achieved. However, the diphtheria epidemic that occurred in the former Soviet Union countries in the beginning of the 1990s demonstrates the need for ongoing primary and booster immunisations by use of the currently available combination vaccines.

Pertussis (whooping cough) is a highly infectious bacterial disease which may cause periodic outbreaks. It can result in significant morbidity and may be complicated by pneumonia, seizures and brain damage. The recent introduction of the acellular pertussis vaccine reduces the possibility of adverse reactions and has improved vaccine uptake to almost 85 per cent of the childhood population. The full course of vaccine confers protection in over 80 per cent of children. It is very important, therefore, that vaccine uptake targets are achieved so as to reduce the incidence of this infection. The ongoing monitoring of pertussis infection will determine whether changes are necessary in the vaccine schedule.

In Ireland, tetanus is a rare disease. Nevertheless, the organism exists widely in the environment. Immunisation is provided as part of the primary childhood immunisation programme. Booster doses are necessary to provide protection in later life. The introduction of a combined tetanus toxoid/low-dose diphtheria toxoid at school-leaving age should confer additional immunity against these infections.

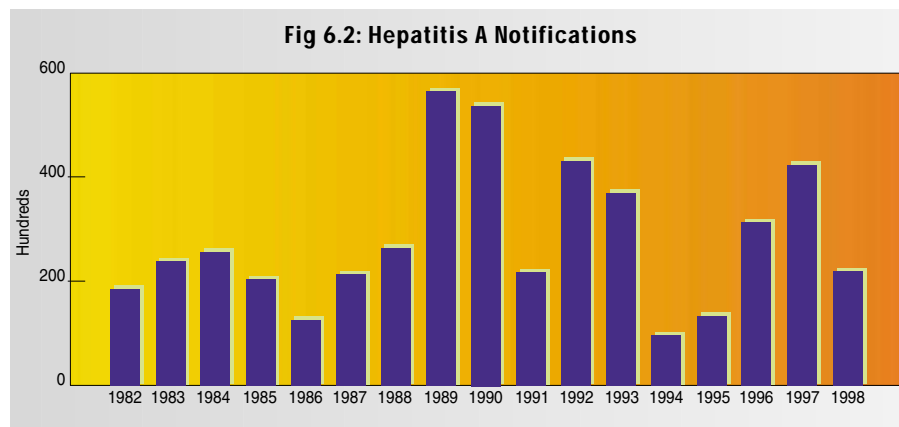
Poliomyelitis infection is endemic in some developing countries and in Europe has been targeted for elimination by the World Health Organisation. The process of certifying poliomyelitis has commenced in Ireland. This strategy entails high routine immunisation coverage, together with enhanced surveillance. Live oral polio vaccine is used for routine immunisation and inactivated polio vaccine is also recommended

for certain clinical conditions. The ongoing surveillance of both polio disease and potential adverse reactions to the vaccine will influence future immunisation policy.

## Viral hepatitis

### *Hepatitis A*

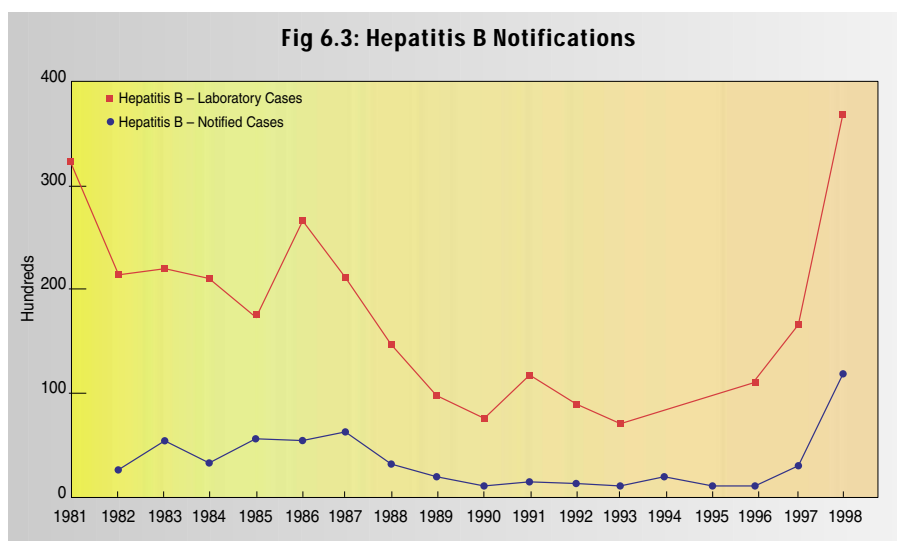
Hepatitis A virus is usually benign. However, in some cases it may cause serious liver disease. The incidence of hepatitis A follows a cyclical pattern (Figure 6.2). In Ireland, most cases are caused by person-to-person transmission and are sporadic. Outbreaks do occur and illustrate the need for good standards of hygiene and immunisation where appropriate.



### *Hepatitis B*

Worldwide, hepatitis B is a highly endemic viral infection which may cause hepatitis, cirrhosis of the liver and liver cancer. The incidence of hepatitis B infection varies throughout Europe and is highest in the Mediterranean and Eastern European countries. Ireland has one of the lowest prevalence rates of hepatitis B infection in Europe. Approximately one in 4,000 (0.026 per cent) of new blood donors tested positive for HBsAg in recent years. While the incidence of hepatitis B infection has reduced since the mid-1980s, it has, however, increased slightly in recent years (Figure 6.3). It is also apparent that there is under-reporting of hepatitis B when laboratory confirmed cases are compared with statutory notifications.

In Ireland, immunisation is recommended for individuals who are at increased risk of hepatitis B infection because of their occupation, lifestyle or close contact with a carrier of hepatitis B. A high compliance amongst the targeted populations is crucial if this approach is to be successful. The early detection and management of hepatitis B in pregnancy and the newborn is also important and should be included in the ante-natal programme. There are a number of ongoing epidemiological studies on hepatitis B which will provide additional information regarding the distribution of this infection. This information, together with the evaluation of the targeted immunisation programme, will influence the nature of future strategies for the long-term control of hepatitis B in Ireland.



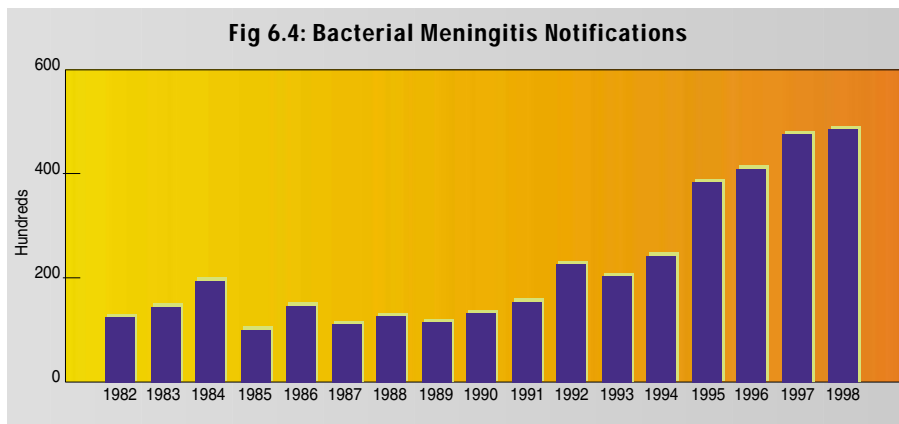
## Influenza

Influenza is a highly infectious viral infection which results in significant morbidity amongst the population. Influenza activity peaks in the winter months and localised outbreaks occur at variable intervals. The immunisation programme is primarily directed at individuals who are at increased risk of influenza-related complications. In 1998, the target group included adults older than 65 years. This produced a welcome reduction in the morbidity from influenza. It is important to improve our public health and laboratory surveillance of influenza which, together with the WHO and the EU Communicable Disease Network, will provide early warning in

relation to major outbreaks of influenza in the coming years. Finally, it has been approximately 20 years since the last pandemic and it is therefore important to refine the national contingency plans for this situation.

### Meningococcal disease

Meningococcal disease is a serious condition with high morbidity and significant mortality. The frequency of this infection has increased in recent years (Figure 6.4). The prevention of meningococcal infection has been greatly facilitated by the development of the Meningococcal Reference Laboratory at the Children's Hospital, Temple Street, which provides comprehensive epidemiological laboratory information on a national basis. The Department of Health and Children's Working Group on Bacterial Meningitis and Related Conditions monitors the epidemiology of meningococcal disease and makes recommendations in relation to its prevention. The Group's second report, published in 1999, included guidelines for the hospital management of suspected meningococcal sepsis/meningitis. A new conjugate vaccine against Group C meningococcal infection will soon be available and it is recommended for everyone under 22 years of age. The National Working Group will also monitor the development of vaccines against Group B meningococcal infection.



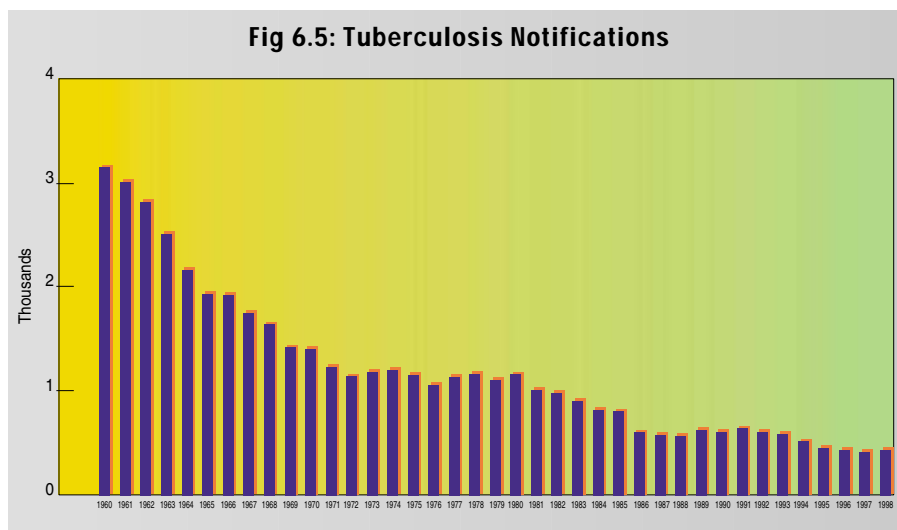
### Pneumococcus

Pneumococcal infection is a significant cause of mortality in vulnerable groups. In recent years, antibiotic resistance has emerged and is a cause of

concern. Vaccination is now available for at risk groups and adults older than 65 years of age. The impact of the pneumococcal vaccine will require evaluation as will new developments, including the emergence of a conjugate vaccine.

## Tuberculosis

The incidence of tuberculosis has declined since the 1950s. However, it remains a public health threat in view of the nature of the infection (Figure 6.5). In 1996, the Department of Health and Children published the report of the Working Group on Tuberculosis which outlined a model for the prevention, diagnosis and management of tuberculosis in Ireland. Core concepts included the early identification and appropriate treatment of tuberculosis cases and the screening and follow-up of close contacts. The key to eradication of tuberculosis in this country is an active surveillance system, with prompt notification, early treatment and thorough contact tracing of all cases of tuberculosis.



The range of information available from the surveillance system has now been expanded and new case definitions which align with WHO policy have been developed. The operation of the surveillance system will be devolved to the newly-established National Disease Surveillance Centre (NDSC).



The development of a National TB Reference Laboratory facility is considered to be an important element of the surveillance strategy. Although multi-drug resistant TB is uncommon in Ireland, it is increasingly recognised in Europe. This underlines the importance of good public health and laboratory surveillance of TB.

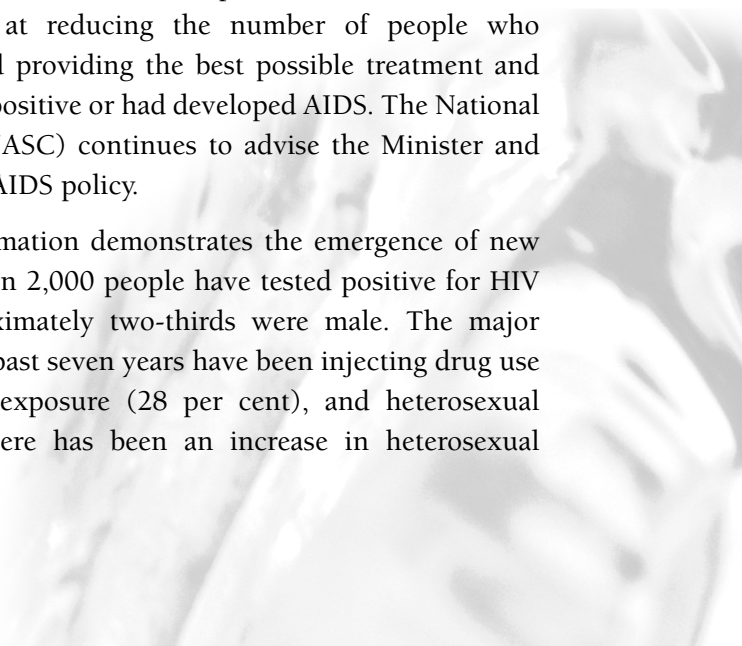
BCG vaccine is available for the prevention of TB and is most effective against TB meningitis and miliary tuberculosis. It has been generally recommended that BCG vaccine be administered to infants in the neonatal period. It is also recognised, however, that BCG policy was not standardised across all health board areas. The most recent TB surveillance data indicate that the incidence of TB has reduced in most areas including those where BCG is not administered in the neonatal period. Ireland is approaching the level of TB infection where the discontinuation of BCG vaccination may be considered. The provision of additional surveillance data, including clinical outcomes, will influence future policy.

The National Tuberculosis Advisory Committee is liaising with the Regional TB Committees with respect to all aspects of tuberculosis control throughout the country. Considerable progress has been made. However, it is very important to monitor trends in incidence and to be alert for the emergence of multi-drug resistant TB.

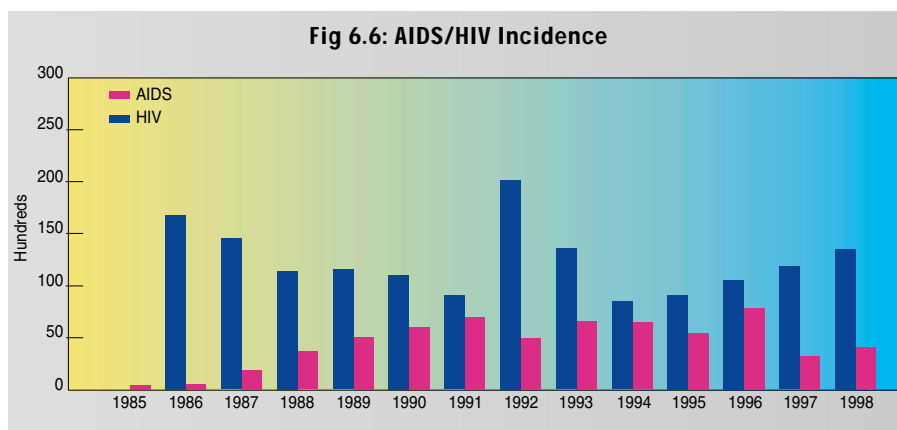
## **HIV/AIDS**

In 1992 the Department of Health and Children published a National AIDS Strategy which was aimed at reducing the number of people who contracted HIV infection and providing the best possible treatment and care for those who were HIV positive or had developed AIDS. The National AIDS Strategy Committee (NASC) continues to advise the Minister and the Department on HIV and AIDS policy.

Additional surveillance information demonstrates the emergence of new trends (Figure 6.6). More than 2,000 people have tested positive for HIV in Ireland. Of these, approximately two-thirds were male. The major exposure categories over the past seven years have been injecting drug use (32 per cent), homosexual exposure (28 per cent), and heterosexual exposure (21 per cent). There has been an increase in heterosexual



transmission over the past three years and in 1998 this was the most common means of transmission of the HIV virus in Ireland.



The incidence of AIDS in Ireland has declined, similar to the pattern in other developed countries. At the end of the second quarter of 1999, 682 cases of AIDS and 344 deaths were recorded. The major categories were intravenous drug use followed by homosexual/bisexual transmission. The use of highly active anti-retroviral treatments has retarded the development of AIDS and reduced mortality from this infection.

The new HIV/AIDS strategy will focus on surveillance, prevention and education, care of persons infected with HIV/AIDS and anti-discrimination. The paradigm of 'integrating prevention with cure' will be central to future planning. The provision of more clinics and new programmes for drug misusers, together with additional services for the gay community and ongoing support for the voluntary agencies, will form the basis of the prevention programme.

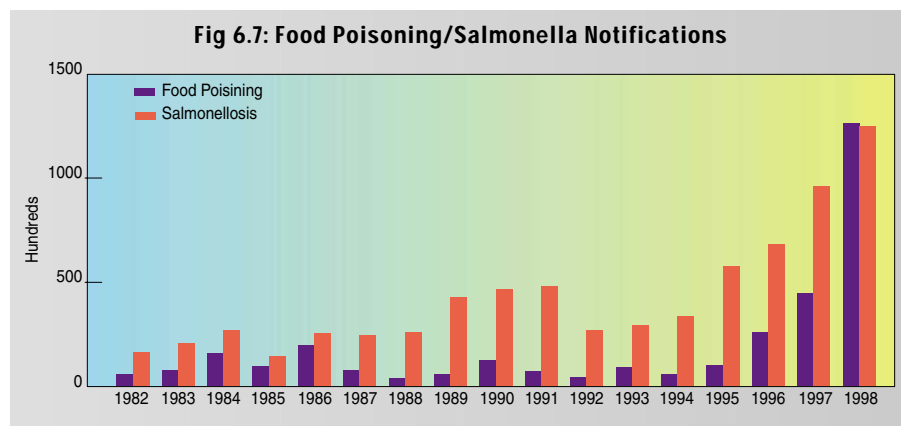
Education and information on HIV/AIDS will continue through the use of media campaigns and the publication of resource material for effective HIV/AIDS education. The care and management of persons infected with HIV/AIDS has been improved through additional consultant appointments including those with expertise in palliative care. Anti-retroviral therapy has significantly improved the management of this infection. However, there will be additional diagnostic requirements such as viral load measurement and the monitoring of anti-viral drug resistance.

In the area of HIV/AIDS surveillance, the anonymous unlinked HIV screening of antenatal bloods highlighted perinatal transmission of HIV as an important issue. The first five years of this programme resulted in 64 cases being confirmed HIV positive. Routine linked antenatal HIV testing has been introduced during 1999. Antenatal screening and treatment of HIV positive women, together with careful management of the delivery, can reduce the chance of infection in the baby by approximately two thirds. This programme will be evaluated on an ongoing basis and, for the time being, anonymous testing will continue.

The surveillance of HIV/AIDS is undergoing change. It is increasingly recognised that a system of case-based HIV surveillance, similar to the AIDS surveillance system, would provide better information on the transmission of HIV infection and on the factors that are associated with clinical outcome. The development of such a system should adhere to the appropriate safeguards for privacy and patient confidentiality.

### Gastroenteric pathogens

Food-borne and water-borne diseases are increasingly recognised as a significant public health problem. Increased awareness, more intensive investigation and better reporting have contributed to the increased incidence of these infections (Figure 6.7). Water-borne diseases, including giardia and cryptosporidium, have also been recorded. The Food Safety Authority of Ireland is developing strategies to control food-borne infections. The recent report on the prevention of E.Coli 0157:H7



infection contains a number of practical recommendations to prevent human cases of this disease.

It is recognised that more sophisticated typing in reference laboratories is required to enable earlier identification of outbreaks. It is also important to electronically transfer this information from laboratories to the public health department of health boards and the National Disease Surveillance Centre. It will be necessary to review the infectious disease regulations (1981) to take account of the emergence of these infections as a public health problem.

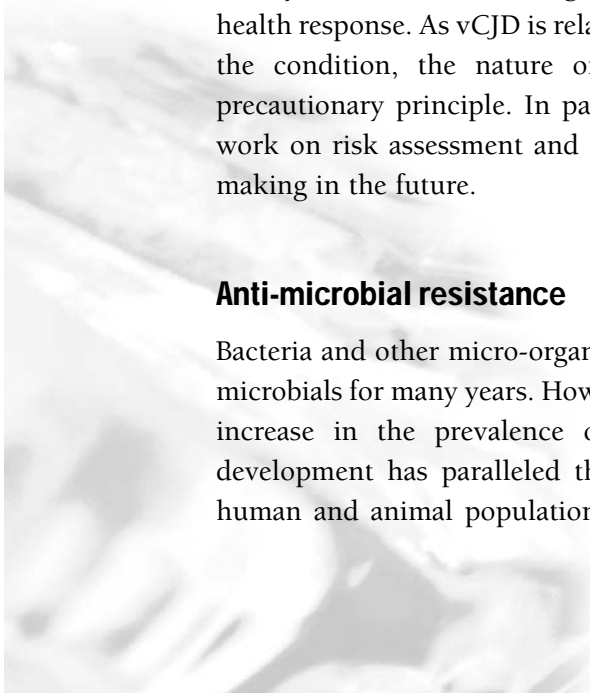
### **Transmissible spongiform encephalopathies**

Creutzfeldt-Jakob disease is a rare, fatal human neurological condition that occurs worldwide. Sporadic CJD is by far the most common subtype and its cause remains unknown. vCJD was first described in March 1996 and is linked with exposure to the Bovine Spongiform Encephalopathy (BSE) agent that affects cattle.

In Ireland, the Department of Health and Children has established an advisory committee which makes recommendations in relation to the prevention of transmission of CJD. This Committee works closely with the Department of Agriculture and Food which has responsibility for the control of TSE in the animal population. Over the past three years, a variety of issues have emerged which have necessitated a rapid public health response. As vCJD is relatively new and there is much to learn about the condition, the nature of this response has been based on the precautionary principle. In particular, there is a requirement for further work on risk assessment and management which would guide decision-making in the future.

### **Anti-microbial resistance**

Bacteria and other micro-organisms have demonstrated resistance to anti-microbials for many years. However, recent evidence indicates a significant increase in the prevalence of drug resistance among bacteria. This development has paralleled the expansion of anti-microbial use in the human and animal populations. Some bacterial species are now able to



develop resistance to the majority of therapeutic agents. The issue is now a major European and global health problem because of serious implications for the treatment and prevention of infectious diseases in the human and animal populations. Anti-microbial resistance and its various causes will require a multi-disciplinary and cross-sectoral approach.

In Ireland, there is little systematic information regarding the prudent use of anti-microbials. The EU has initiated a limited anti-microbial resistance surveillance project in which Ireland participates. There is a need to extend such surveillance in humans, animals and food stuffs. It is also important to monitor and control the usage of antibiotics in clinical practice and to adhere to the principles of infection control both in hospital and community settings. The Department will work towards establishing multi-disciplinary and cross-sectoral policies to reduce the level of antibiotic resistance in Ireland.

## **Emerging issues**

### **Isolation facilities**

The suspected outbreak of viral haemorrhagic fever in Germany during August of 1999 has highlighted the need to provide appropriate isolation facilities for acute infectious diseases. Such facilities should provide for intensive care support for childhood and adult populations. It is also considered important to provide laboratory support which has the appropriate containment level facilities.

### **New vaccines**

A range of vaccines is becoming available including the pneumococcal conjugate vaccine, new combination vaccines and vaccines against rotavirus and varicella. In the longer term, future candidate vaccines that protect against hepatitis C, herpes simplex, respiratory syncytial virus and HIV may become available. Vaccine developments in this area will be monitored and introduced as appropriate so as to reduce the public health threat from these infections.

### **Enhanced surveillance**

The recently established National Disease Surveillance Centre (NDSC) is expected to play an increasingly important role in the surveillance and outbreak management of communicable diseases. The NDSC will act as a resource for the health boards and, in addition, will take on the national operational aspects of surveillance which were previously performed by the Department of Health and Children. Together with the Department of Health and Children, it will provide the Irish input into the EU Network of Communicable Disease Surveillance and Early Warning Response System. These new operational changes will require legislation to establish the NDSC on a statutory basis. Legislative change will also be necessary to amend the list of notifiable diseases and the reporting system requirements.

### **Conclusions**

Although communicable diseases are no longer responsible for the high levels of morbidity and mortality of previous years, they remain a cause of concern. The re-emergence of TB and diphtheria in Eastern Europe indicates the consequences of a slackening in effort in this area. The emergence of diseases including vCJD, HIV and E.Coli 0157 highlight the need for continued vigilance and the development of appropriate strategies to minimise such threats to public health.

The prerequisites for success in the control of communicable disease include well-defined strategies based on public health and laboratory-based surveillance and the provision of adequate resources to strengthen the infrastructure that underpins the control of communicable diseases. New opportunities are becoming available including novel vaccines and enhanced information technology. The challenges for the future are to exploit these opportunities and to develop them into appropriate strategies that reduce the burden of communicable diseases in Ireland.

# Conclusions



The health of the Irish population has improved significantly over the past 50 years when measured by indicators such as life expectancy, and infant, perinatal and maternal mortality.

This has been mainly due to the control and, in some cases, the elimination of potentially lethal infectious diseases such as TB, polio and diphtheria. Despite these successes, vigilance must be maintained. Strategies must be in place to prepare an effective response against the threat of new infectious diseases, the re-emergence of diseases, and the problem of anti-microbial resistance.

Premature death from chronic diseases such as cancer and cardiovascular disease is higher in this country than in other European countries. Interventions against these diseases represent a significant challenge for the years ahead.

## **84 Conclusions**

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This will require moving these issues into a broader, multi-sectoral policy context as regards their prevention and, within the health sector, concentrating on the achievement of measurable health and social gain by ensuring the greater utilisation of effective evidence-based interventions.

Finally, there is a need to reduce the burden of excess mortality and morbidity suffered by the poor. Commitment to the identification and alleviation of health inequalities must be at the centre of our strategic plans in the coming years. This approach, together with the general investment in health and preventive services, will enhance the health and social gain of the population, and this in turn will help maintain our economic prosperity.