



Seirbhíse Sláinte na hÉireann
Health Service Executive

Health Status

of the Population of Ireland



2008



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of the Population of Ireland



2008

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Foreword



Health status is one of the key indicators of the progress of a nation. For that reason the United Nations Development Programme includes life expectancy at birth as one of the most important parameters of its Human Development Index.

The mission of the Health Service Executive (HSE) is to enable people live healthier and more fulfilled lives. The purpose of this report is to give a picture of the health status of our population and the challenges that need to be met to achieve our health potential.

Health status in Ireland is on an all time high, with particularly significant improvements in recent years. Life expectancy, for example, has increased by about three years over the course of a decade and death rates from coronary heart disease have been falling dramatically for over two decades. However, we can do better. Much of the burden of illness, disability, and death is caused by chronic illnesses that have modifiable risk factors. Our future health is threatened by twin epidemics of obesity and diabetes, by very high consumption rates of alcohol, and by a stubbornly high prevalence of smoking in the adult population. This report outlines these and other factors, and also what is required to mitigate them. By systematically tackling, and thereby reducing the risk factors at individual and population level, we can further improve life expectancy and reduce the period of life spent in ill health, reducing demands on the health service.

Only by radically transforming our public health service can we meet the challenges ahead. To date there has been an over emphasis on acute hospital care in Ireland. The balance of the provision of health services needs to be changed so that at least 80% of care is provided outside of acute hospitals. There needs to be a focus on the health of the population and best possible health outcomes, with integrated services across the entire continuum of care, crossing organisational boundaries. This continuum of quality health and social care services should span health promotion, disease prevention, self-management support, primary care, and specialist care.

The HSE Transformation Programme requires a population health approach to deliver sustainable health services and continued improvement in health. This approach recognises that many of the determinants of health and social wellbeing are outside the direct control of the health services. However, they should not be outside our sphere of influence. To prevent disease, to reduce the burden of illness, and to reduce health inequalities, the HSE needs to engage in the development of integrated, healthy public policy, working with the Department of Health and Children, other government departments, other relevant agencies and the community and voluntary sector. This report provides essential information on the determinants of health which the health services and others need to address in partnership, so that we can continue to improve the health status of the population and achieve our true health potential.

This report was produced within the Health Intelligence sub-directorate of HSE Population Health. The main authors were Dr Bernadette O'Keefe, Ms Ita Hegarty, and Ms Aishling Sheridan of the Department of Public Health, Navan, County Meath, with contributions from people throughout the country who are listed at the back of the report.

The report is available in hard copy and also in PDF format on the HSE website, www.hse.ie. While the information in this health status report is at national level, health status information is also available at county level in the FactFile section of the HSE website.

A handwritten signature in black ink that reads "Patrick Doorley". The signature is written in a cursive, slightly slanted style.

Dr Patrick Doorley
National Director of Population Health

Réamhrá

Tá stádas sláinte ar cheann de na príomh eochairtháscairí atá ann chun forbairt náisiúin a mheas. Sin é an fáth a úsáideann Clár Forbartha na Náisiúin Aontaithe an t-ionchas saoil ag am na breithe mar cheann de na paraiméadair is tábhachtaí ar a n-Innéacs Forbartha Daonna.

Is é misean Fheidhmeannacht na Seirbhíse Sláinte (FSS) ná cuidiú le daoine saol níos folláine agus níos iomláine a chaitheamh. Is é cuspóir na tuairisce seo ná léiriú a thabhairt ar stádas sláinte ár ndaonra agus ar na dúshláin atá romhainn, nach mór dúinn aghaidh a thabhairt orthu chun ár lánacmhainneacht sláinte a chomhlíonadh.

Ní raibh stádas sláinte mhuintir na hÉireann riamh chomh h-ard agus tá feabhas suntasach tagtha air le blianta beaga anuas. Mar shampla tá fad de thrí bhliana curtha leis an t-ionchas saoil le deich mbliana anuas agus tá rátaí báis de bharr galar corónach croí ísliithe go suntasach le os cionn fiche bliain anuas. Is féidir linn níos fearr ná seo a dhéanamh áfach. Is iad na galair ainsealacha is cúis le formhór an tinnis, an mhí-chumais agus an bháis in ainneoin gur féidir na cúiseanna a tharraingíonn iad a mhaolú. Tá ár sláinte faoi bhagairt amach anseo ag an dá eipidéimí, titim i bhfeola agus diaibéitis, ag rátaí arda ólacháin alcóil agus ag an sior ard-ráta chaitheamh tobac, ráta atá ag fanacht ard i measc an daonra fásta. Tá cur síos sa tuarascáil ar na cúiseanna seo agus ar fhachtóirí eile chomh maith, agus a bhfuil ag teastáil chun iad a mhaolú. Ní mór dul i ngleic leis na cúiseanna go córasach, ag laghdú na fachtóirí ag leibhéal an duine agus an daonra go ginearálta. Ar an gcaoi sin, is féidir fad an t-ionchais saoil a fheabhsú tuilleadh agus an tréimhse saoil a chaitear i ndrochshláinte a laghdú, rud a laghdóidh éileamh ar na seirbhísí sláinte.

Is trí bunathraithe radacacha chun feabhais ar ár seirbhísí poiblí sláinte amháin gur féidir linn aghaidh a thabhairt ar na dúshláin atá romhainn. Bhí an iomarca béim curtha ar dhianchúram ospidéal in Éirinn go dtí seo. Ní mór an cothromas soláthar seirbhísí sláinte a athrú sa chaoi is go mbeidh ar a laghad 80% den chúram ag tarlú lasmuigh de na h-ospidéal géarchúrama. Ní mór béim a leagan ar shláinte an daonra agus ar thorthaí sláinte, le seirbhísí comhtháite leanúnacha trasna an réimse chúraim, agus ag trasnú teorainneacha eagraíochtúil. Ní mór leanúnachas agus ardchaighdeán seirbhísí chúram shóisialta a bheith fite fuaite i gcothú na sláinte, cosc galair, tacaíocht féin-bhainistíochta, cúram príomhúil agus sainchúram.

Teastaíonn ó Chlár Athraithe an FSS go mbeadh cur chuige sláinte daonra ann chun seirbhísí sláinte inmharthana agus feabhas sláinte leanúnach a sholáthar. Aithníonn an cur chuige seo nach bhfuil formhór de na deitearmanaint sláinte agus folláine shóisialta faoi thionchar díreach na seirbhísí sláinte. É sin ráite, ní chóir go mbeidís taobh amuigh dár réimse tionchair. Ar mhaithe le galair a chosc agus ualach tinnis agus neamhionannais sláinte a laghdú, ní mór don FSS tabhairt faoi fhorbairt comhtháite ó thaobh beartais phoiblí sláinte de, ag comhoibriú leis An Roinn Sláinte agus Leanaí, rannaí rialtais eile, gníomhaireachtaí cuí eile agus an earnáil dheonach agus pobail. Tá eolas riachtanach le haghaidh deitearmanaint na sláinte ar fáil sa tuairisc seo. Ní mór do na seirbhísí sláinte agus daoine eile tabhairt faoi le comhpháirtíocht ionas gur féidir linn stádas sláinte an daonra a fheabhsú agus chun ár lánacmhainneacht sláinte a bhaint amach.

An Fo-stiúarthóireacht um Fhaisnéis Sláinte de chuid FSS, Roinn Sláinte an Daonra, a scríobh an tuarascáil seo. Seo a leanas príomh scríbhneoirí na tuarascála:

Dr Bernadette O'Keefe, Ms Ita Hegarty, agus Ms Aishling Sheridan ó Roinn na Sláinte Poiblí, An Uaimh, Co. na Mí agus le cabhair ó dhaoine ar fud na tíre atá liostáilte ar chúl an tuarascáil.

Tá cóip crua agus leagan PDF den tuairisc seo ar fáil ar shuíomh idirlín an FSS, www.hse.ie. Baineann an fhaisnéis sa tuairisc seo leis an stádas sláinte ag leibhéal náisiúnta ach tá faisnéis stádas sláinte ar fáil chomh maith ag leibhéal an chontae sa mhír FactFile ar shuíomh an FSS.



Dr Patrick Doorley
Stiurthóir Náisiúnta ar Shláinte an Daonra

Executive Summary

The health of the Irish population has improved considerably over the years. Life expectancy in Ireland is at the highest level ever, and people generally rate their health as good. A wide variety of factors, including lifestyle, environment, and deprivation impact on the health of a population. Health services are only one of many influences.

The Irish health services are currently undergoing a change in structure and organisation, which is being implemented through the Transformation Programme. This document aims to inform the development of future health services. It is essential in planning health services that they are organised on the basis of identified need, and that priority is given to those areas that can produce the best potential benefit in improving health status. This is best catered for through a population health approach.

Profile of the Population

The Irish population has grown and changed in terms of characteristics and dynamics:

- Population numbers are at the highest level since 1861.
- Significant population growth is projected into the future.
- While the proportion of persons over 65 years is low compared to the EU-27, it is projected to rise dramatically in the coming years.
- Family structure has changed.
- There are smaller families and a lower proportion of married couples.
- More families have both partners in paid employment, requiring increasing time spent commuting to work and a greater requirement for provision of childcare.
- Despite the growth in the economy during the Celtic Tiger years, a significant proportion of the population remained at risk of poverty.

Health Determinants

A variety of different factors, including lifestyle and deprivation, can have an important impact on health. Throughout this report, examples are seen of poor health outcomes in sub-groups of the population. The diverse nature of health determinants indicates the need for all government departments and agencies to work together to improve the health of people in Ireland. A focus on health services alone is inadequate.

Lifestyle

One of the factors influencing health outcomes is health behaviour. While lifestyle is a product of individual choice, these choices are affected by levels of education, income, and cultural beliefs.

- The prevalence of overweight and obesity in Ireland is higher than most countries in the EU.
- While some aspects of the Irish diet have improved, it is of concern that consumption of fats and salts remain high.
- Over one fifth of Irish adults report taking no physical activity.
- While 29% of Irish adults are current smokers, the rate is higher in younger people and those in lower social class groups. In adults, males have higher smoking rates but among children, more females smoke.
- Ireland is one of the highest consumers of alcohol in Europe. A higher proportion of Irish adults report binge drinking compared to the EU population.
- Despite proven effectiveness in the reduction of death and disability from communicable diseases, uptake of vaccinations is still below the target level.

Causes of Death

One factor contributing to the increasing population in Ireland is the reduction in deaths.

- Death rates in Ireland are now similar to average rates in the EU-15.
- The main reduction in deaths is due to a fall in death from circulatory disease. Half the reduction in deaths from circulatory disease is estimated to be due to population risk factor reduction and half to treatments.
- The rates of infant mortality and premature death have both fallen, and are now below the EU-15 average.
- Cancer deaths have fallen and are below EU-15 rates for males, but above EU-15 rates for females.
- While respiratory death rates have fallen in males, they are still above EU-15 rates in males and females. Respiratory disease is the second highest cause of death for women in Ireland.
- Injury is an important cause of premature mortality in Ireland. Death rates from injuries are falling and are now below the EU-15 average.
- Suicide rates have fallen in males in recent years. While suicide death rates are below the EU-15 average for males and females overall, Ireland ranks 7th highest among 24 EU countries for youth suicide.
- Falls are the leading cause of fatal injuries in older people. Ireland has a similar rate to the EU average.

Causes of Illness

Over one third of the Irish population report having a chronic illness, including heart disease, respiratory disease, cancer, and diabetes. The proportion increases with age. The burden of ill health and cost to the health services from chronic diseases can be reduced using evidence-based strategies such as vaccination against infectious disease, smoking reduction measures, and access to treatment at an appropriate level of care.

There were more than one and a quarter million discharges from acute hospitals in Ireland in 2006.

- The most common acute illnesses for inpatients in Irish hospitals are circulatory disease, respiratory disease, cancer, and diseases of the digestive system.
- Hospital usage increases with age.

Despite the many advances in public health and medicine, communicable diseases remain a major threat to human health.

- Health care associated infections appear to be more common in recent times. Recent surveys have shown that Ireland's rate is below that of Northern Ireland, Scotland, England, and Wales.
- Notifications of sexually transmitted infections trebled between 1995 and 2006, suggesting considerable risk-taking behaviour.
- The falling level of vaccine-preventable diseases has shown the effectiveness of vaccination.

There have been major improvements in dental health over the years, with the goals in the health strategy 'Shaping a Healthier Future' having been achieved for adults but not for children.

While most people report good mental health, 14% have experienced mental health problems in the past year.

Health Inequalities

Health inequalities occur when a subgroup of the population suffers a disproportionate burden of ill health and premature death compared to the community as a whole.

- A complex combination of factors leads to health inequalities, which occur when there are differences in the standard of living in the home, at work or in the community.
- Differences are seen between socio-economic and occupational groups in mortality, morbidity, self-reported health, and lifestyle behaviours.
- There is a need for many different agencies, institutions, government departments and other public and private groups and individuals to play a role in tackling health inequalities.

Priorities for Improving the Health & Wellbeing of the Irish Population

This report shows that while there have been improvements in life expectancy and some areas of health outcome, there are new challenges relating to lifestyle-related risks, an ageing population, and increasing demands on the health services. There are a number of priority areas where action should be taken to enable people to live healthier and more fulfilled lives.

- A population health approach, which focuses on the health of the whole population, while recognising the role of individuals and communities, is necessary to achieve the best health outcomes.
- The population health approach will require a change in the way the services are delivered.
- There will be a strong emphasis on integration and holistic care, health promotion and prevention, and on reducing inequalities.
- There will also be a strong focus on quality, on a system of planning and evaluation of policy and service delivery, and on partnership with community and voluntary sectors.
- A number of risk factors need to be tackled as a priority. They include elevated blood pressure, tobacco use, inappropriate use of alcohol, high cholesterol, overweight and obesity, low fruit and vegetable intake, and low physical activity.

Tackling these priorities through the application of the population health approach will maximise our potential to improve the health status of the whole population.

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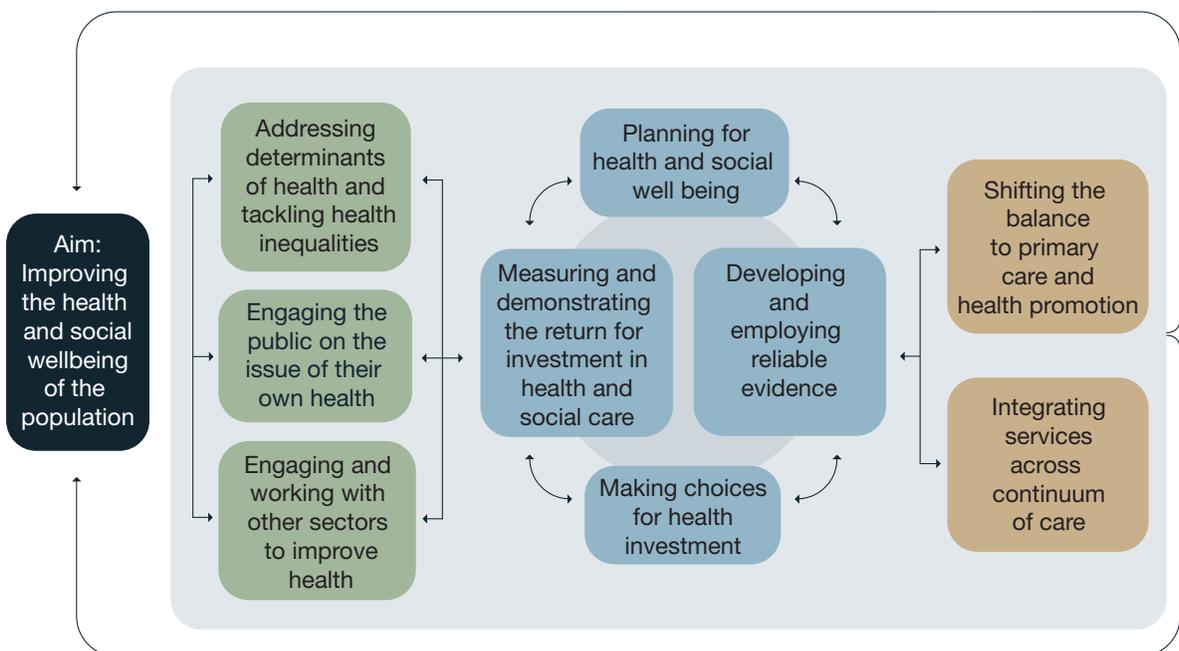
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Introduction

This document presents the health status of the Irish population and outlines the position across time, and in the international context. The purpose is to set the scene and delineate the current health of the population in Ireland at a time when there are many changes, including the ongoing transformation of the health services.

Improved understanding of the multiple factors influencing health and wellbeing has led to the development of a 'population health' approach. The traditional model of healthcare focuses on clinical factors and the delivery of health services, and is demand-led. The population health approach aims, proactively, to improve health and social-wellbeing through the promotion and protection of health, with a particular emphasis on reducing inequalities between sub-groups within the population. This approach acts on a wide range of factors that influence health and wellbeing, including demography, socio-economic factors, lifestyle, legislation, the social and physical environment, and technology. Complex interaction between these factors influences whether a population, and the individuals within it, are healthy or not. The illustration below outlines the principles of the population health approach in diagrammatic format.

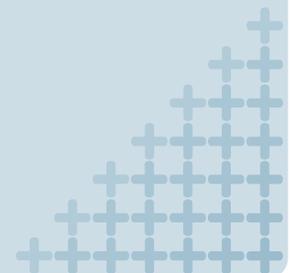


The population health approach also recognises the role of individuals and communities in promoting and protecting their own health and the health of others. This report looks at the position in regard to these complex issues and thereby addresses a broad range of influences on the health of the Irish population.

Profile of the Population

Key Points

- Irish population numbers are at the highest level since 1861. This is influenced by falling deaths, rising births and migration into the country. Significant population growth is projected into the future.
- Life expectancy in Ireland is at the highest level ever, and higher than the EU average.
- The profile of the population has changed, with a drop in the numbers of children and a rise in the middle-aged group.
- While the proportion of persons over 65 years is low compared to other EU countries, it is projected to rise dramatically in the coming years.
- Family structure has changed, with smaller families and a lower proportion of married couples.
- More families have both partners in paid employment, requiring increasing time spent commuting to and from work, and a greater requirement for provision of childcare.
- There has been an increase in the proportion of the population in paid work, with a drop in those involved in home duties. There has been a change in the type of work that people are engaged in, with an increase in employment in the services sector.
- Despite the growth in the economy during the Celtic Tiger years, a significant proportion of the population remains at risk of poverty.



Health Status

of the Population of Ireland

Profile of the Population

Section 1

1



2008

1. Profile of the Population

1.1 The Irish People

The Irish are traditionally thought of as being Celts, with influences from the Vikings and Normans. Genetic studies suggest, however, that the population results from a mix of the many peoples who invaded the island down through the centuries. Up until recently, there was little migration from other countries. Ireland was a country of emigration, with agriculture and farming the main industries.

Economic development led to a decline in farming and a movement of populations to more urban areas where jobs in manufacturing, information technology, and service sectors were available. The advent of free secondary education at the end of the 1960s harnessed a valuable resource, resulting in a country with well-educated young people who had the skills and knowledge to be successful abroad during times of emigration.

Most importantly, these educated young people were then a useful resource for companies who were attracted to Ireland by government incentives. An economic boom, commonly termed the 'Celtic Tiger', occurred in the mid 1990s which led to a requirement for additional labour from abroad. In 1996, for the first time, more people came to live in Ireland than left it, and the previous trend of young people being forced to leave Ireland for employment was dramatically reduced.

Many who emigrated in the past returned and migrant workers arrived, in particular, from the new European Union (EU) member states in Central and Eastern Europe. Another source of newcomers to Ireland was asylum-seekers. The recent change in the economic climate has seen a drop in the numbers coming to Ireland, with a proportion of migrants leaving the country and a number of Irish workers in sectors such as construction, again seeking employment abroad.

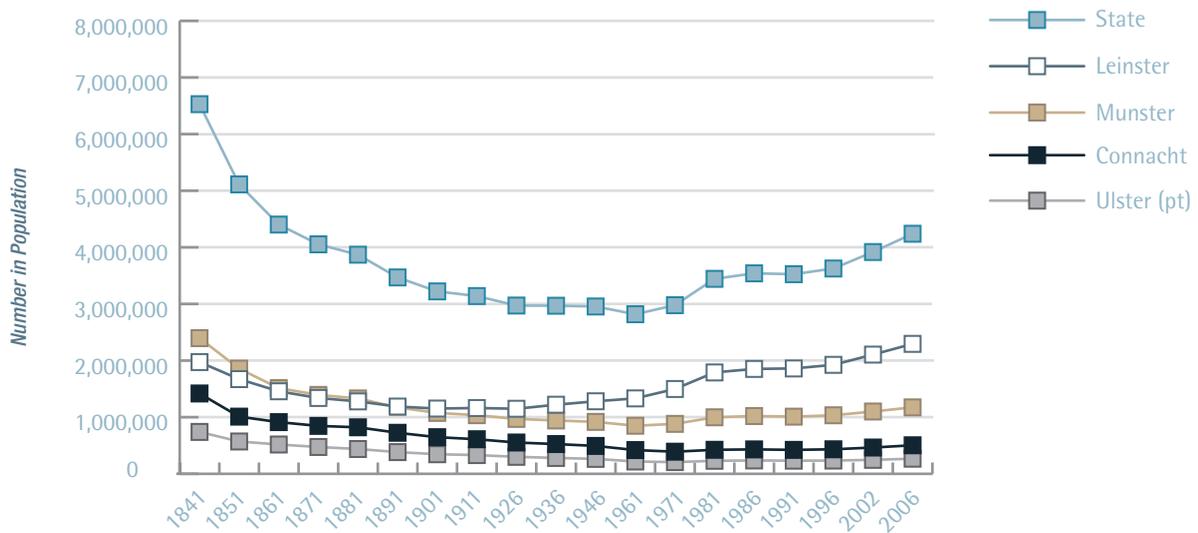
While some migrants will ultimately return to their home countries or to a different country, some will permanently settle in Ireland. Health and social policies will need to take into account the fact that migration has changed the profile of Irish society.

1.2 Demography

The 2006 census recorded the population of Ireland as 4,239,848. This is the highest level recorded since 1861. Preliminary estimates by the Central Statistics Office (CSO) put the population in 2008 at 4,422,100, an increase of more than 180,000 persons on the 2006 census figure.

Population growth in Ireland exceeds that of any other country in Europe, with figures since 2002 showing an annual growth of around 2%. Figure 1.1 shows changes in population numbers since 1841 in each of the four provinces of Ireland. After falling to the lowest point (2.8 million) in 1961, there has been a steady increase since. Growth has been most pronounced in Leinster, with modest growth in Munster.

Figure 1.1 Population of Ireland and of Leinster, Munster, Connacht, and Ulster (part of), 1841 - 2006



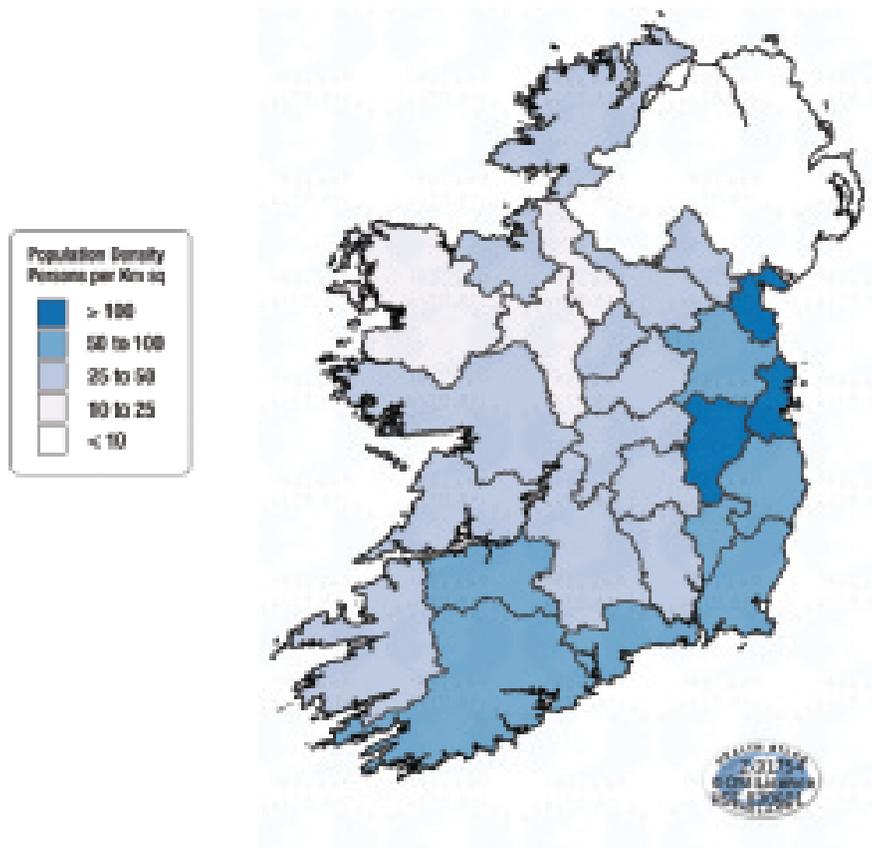
* April 2008 provisional estimates total population = 4,422,100

Source: Census 2006, CSO

1.2.1 Population Density

The east is the most densely populated area of the country. Figure 1.2 shows the population density of each county in Ireland. Looking at the HSE administrative areas set out in Table 1.1, HSE Dublin/North-East has the highest population density (134.0 persons per km²), with HSE West having the lowest (32.9 persons per km²). Ireland has a population density of 60.3 persons per km² compared to a European Union (EU-27) population density of 113.8 persons per km².

Figure 1.2 Population density of each county in Ireland, 2006



Source: Census 2006, CSO

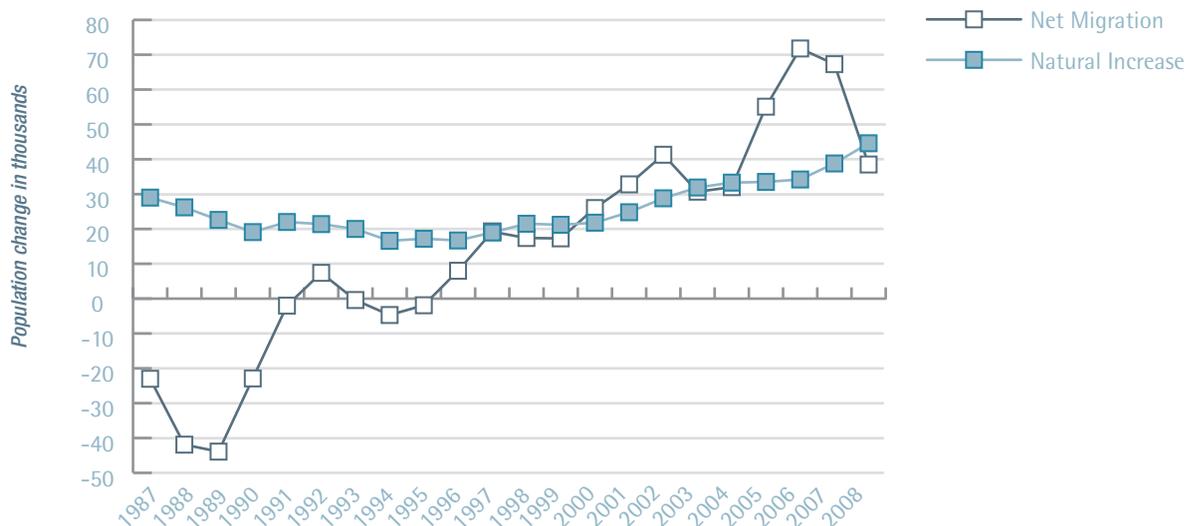
Table 1.1 Population density, along with male and female populations in Ireland, 2006

Geographic Area	2006 Population	2006 Male Population	2006 Female Population	M/F ratio	Density (persons per km ²)
South	1,081,968	543,581	538,387	1.01	49.7
Dublin/North-East	928,619	463,452	465,167	1.00	134.0
Dublin/Mid-Leinster	1,216,848	603,422	613,426	0.98	113.0
West	1,012,413	510,716	501,697	1.02	32.9
State	4,239,848	2,121,171	2,118,677	1.00	60.3

Source: Census 2006, CSO

1.2.2 Factors Influencing Population Change

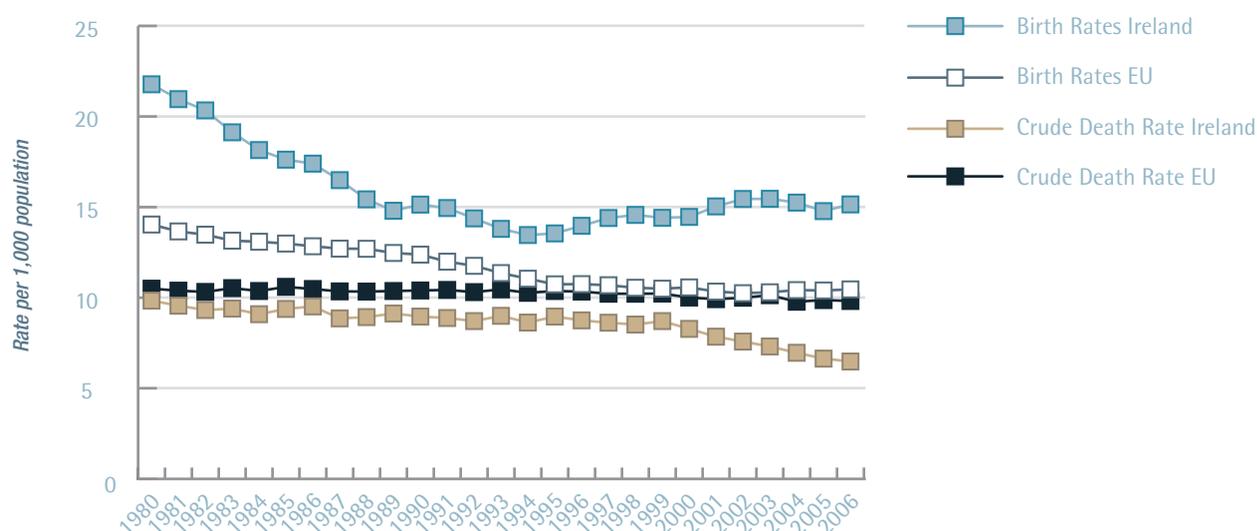
Ireland's high fertility rate, which is the highest in the EU (Ireland=2.03, EU-25 average=1.52), has contributed to a natural increase (births minus deaths) in the population, as illustrated in Figure 1.3. Migration is the second factor contributing to population growth and there has been an upward trend since 1990. The influence of migration is particularly noticeable in the 2004 to 2007 period, with the large increase in numbers coinciding with the 2004 accession of new states to the EU. Natural increase exceeded net migration in 2008, for the first time since 2004, and contributed to just over half (54%) of the increase in population in the year ended April 2008 (provisional figures).

Figure 1.3 Components of population change, 1987 - 2008

Source: Population and Migration Estimates, CSO, April 2008

The third factor influencing population size in Ireland is the recent decrease in the death rate. Figure 1.4 illustrates the birth rates and crude death rates for Ireland and the EU-27. Ireland's birth rate, despite a dramatic decline since the 1980s, is still substantially above that of the EU-27, with an upward trend since 1996. In contrast, the death rate has begun to decline and is now well below that of the EU-27 average. Of note is the fact that the EU-27 birth and death rates are approximately the same and run parallel to each other, while in Ireland, birth rates are over twice death rates, and the two are now diverging.

Figure 1.4 Birth rates and crude death rates, Ireland and EU, 1980 - 2006



Source: EHAD, 2007

1.2.3 Population Age-Distribution

(a) Life Expectancy

Currently, life expectancy in Ireland is at its highest level ever, at 76.8 years for males and 81.6 years for females (Life Tables, CSO). This is a large overall increase from an expectancy of 58 years during the 1925 to 1927 time-period. In 2006, life expectancy in the EU-15 was 77.1 years for males and 82.7 years for females. Much of Ireland's gain is attributable to reduced mortality of infants and children, and improved control and management of infectious diseases. Life expectancy for those aged 65 has also increased and is set out in Table 1.2. At 65 years of age, Irish males are now expected to live, on average, an additional 16.6 years compared to an additional 12.8 years in the 1925 to 1927 time-period. Females aged 65 years are now expected to live an additional 19.8 years compared to an additional 13.4 years in the 1925 to 1927 time-period. In 2006, life expectancy at age 65 in the EU-15 was 17.2 years for males and 20.8 years for females. Ireland's life expectancy has improved considerably in the past 80 years, but remains below that of countries with a similar economic profile (EU-15), both at birth and at age 65. This difference is more noticeable for females than males.

Table 1.2 Life expectancy in Ireland, 1925 - 2007, males and females, at birth and aged 65 years

Period	Males at birth	Females at birth	Males at 65 years (additional years expected after 65)	Females at 65 years (additional years expected after 65)
1925 - 1927	57.4	57.9	12.8	13.4
1935 - 1937	58.2	59.6	12.5	13.1
1940 - 1942	59.0	61.0	12.3	13.2
1945 - 1947	60.5	62.4	12.0	13.1
1950 - 1952	64.5	67.1	12.1	13.3
1960 - 1962	68.1	71.9	12.6	14.4
1965 - 1967	68.6	72.9	12.4	14.7
1970 - 1972	68.8	73.5	12.4	15.0
1978 - 1980	69.5	75.0	12.4	15.4
1980 - 1982	70.1	75.6	12.6	15.7
1985 - 1987	71.0	76.7	12.6	16.2
1990 - 1992	72.3	77.9	13.4	17.1
1995 - 1997	73.0	78.5	13.8	17.4
2001 - 2003	75.1	80.3	15.4	18.7
2005 - 2007	76.8	81.6	16.6	19.8

Source: Irish Life Tables No. 15, 2005-2007, CSO, 2009

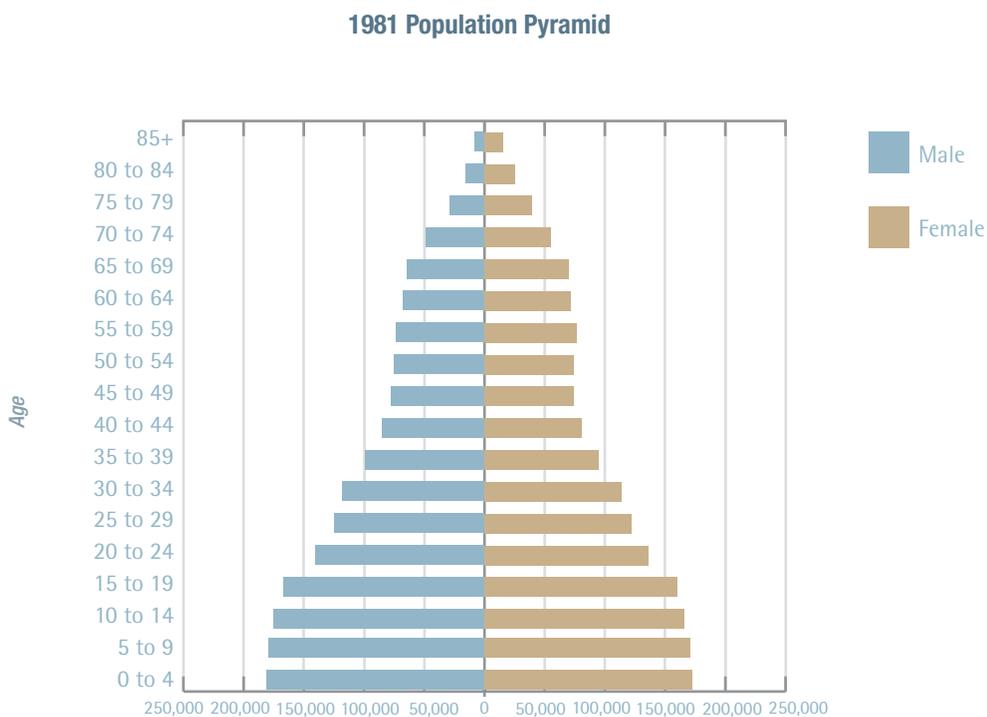
(b) Population Structure

A notable feature of the structure of the Irish population is population ageing:

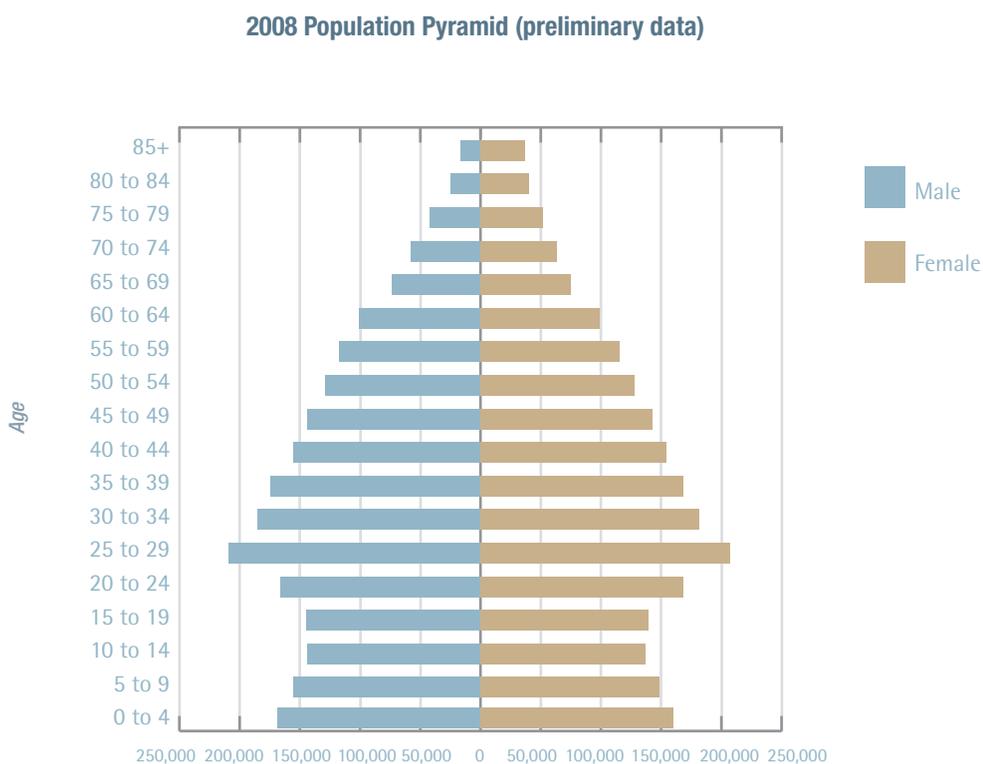
- The proportion of persons 65 years and over, currently at 10.9%, is relatively low compared to other countries (EU-27=16.8%).
- However, the number of persons in this age group has increased by 33.2% between 1979 (n=361,500) and 2008 (n=481,600), and is projected to increase by a further 88.7% to approximately 908,800 persons by 2026.

Figure 1.5 shows population pyramids which depict the proportion of males and females in each age group in 1981 and 2008. The difference in the two pyramids reflects the increasing proportion of the population that are middle-aged compared to the numbers of children.

Figure 1.5 Population pyramids of males and females in age groups, 1981 and 2008 (preliminary data)



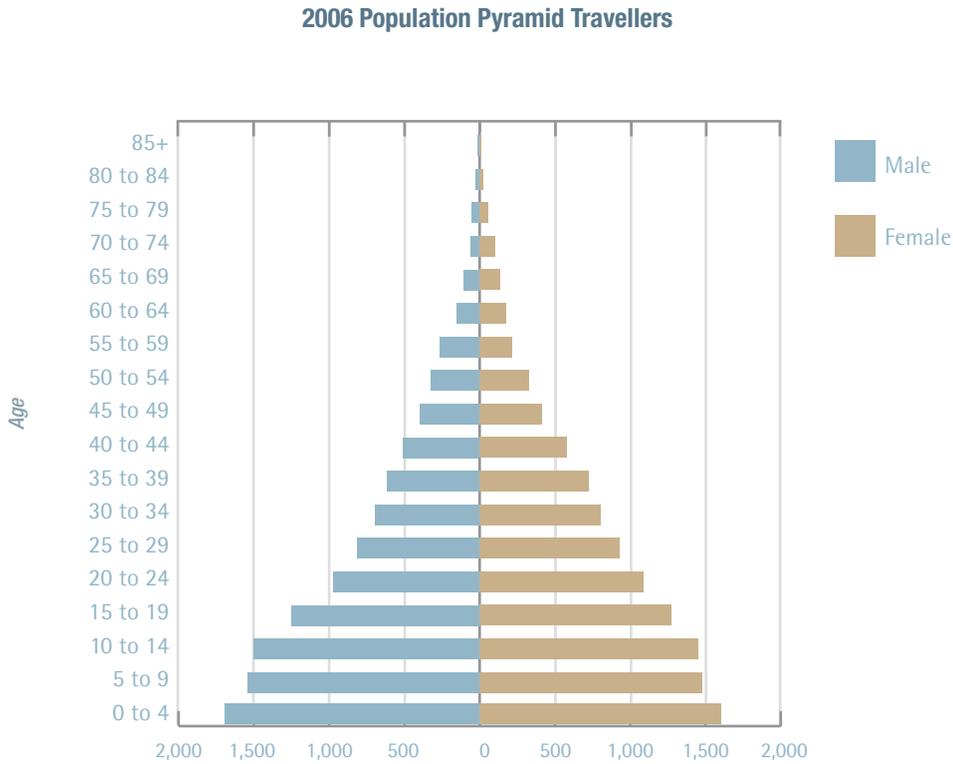
Source: Census 1981, CSO



Source CSO Preliminary data - Population and Migration Estimates, April 2008

Certain groups in society have poorer health status and consequently, a different distribution of age in their population. As an example, Figure 1.6 illustrates the age distribution of the 22,369 Travellers living in Ireland, and highlights the small proportions of individuals living into old age. In 2006, there were just 269 males and 322 females over 65 years of age, together comprising just 2.6% of the total Traveller population. Those over 65 years of age comprise 10.9% of the general population.

Figure 1.6 Age distribution of Travellers in Ireland

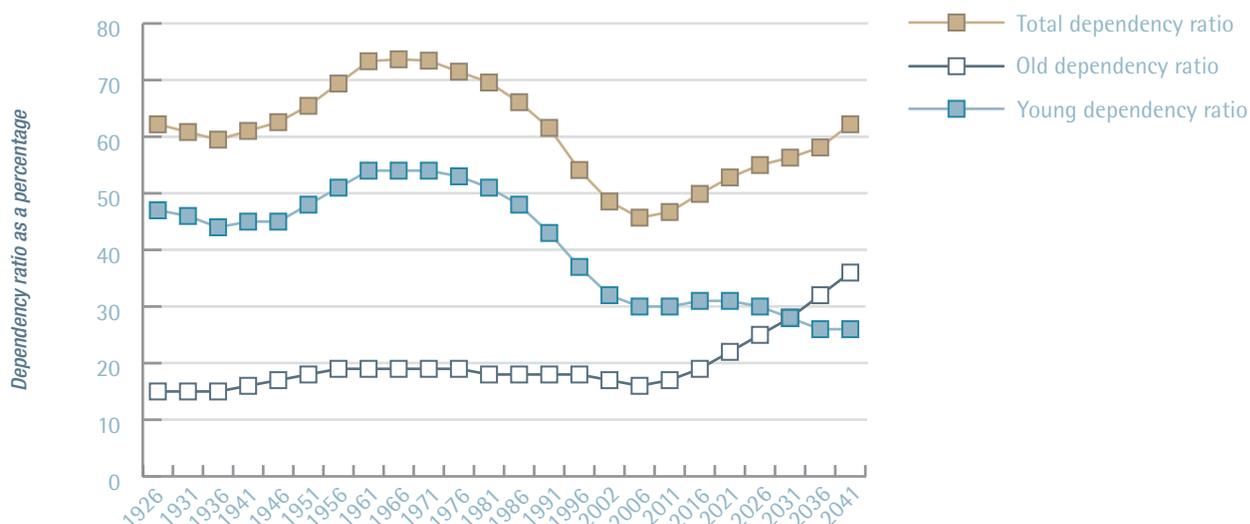


Source: Census 2006, CSO

1.2.4 Dependency Ratios

The dependency ratio is a figure used to describe the part of the population that is not available for work (typically calculated with those under 15 and over 64) as a proportion of those who are available. This ratio (expressed as a percentage) is important because as it increases, there is increased requirement on the productive or working part of the population to support the upbringing, pensions, and care of the economically dependent portion.

The total dependency ratio (young and old combined) in HSE West (49.0%) and HSE South (48.1%) is higher than Ireland overall (45.8%). The dependency ratio in the EU-27 is 48.6%, while in the UK it is 50.6%. Figure 1.7 illustrates old, young, and total dependency ratios in Ireland between 1926 and 2041 (projected figures). The number of children has decreased in Ireland in recent years and the population in the middle age groups has increased, leading to a decrease in the dependency ratios.

Figure 1.7 Dependency ratios in Ireland, 1926 - 2041

Source: Census 2006, CSO

The old dependency ratio is projected to rise to 25.0% in 2026 and 36.0% in 2041. Old dependency will continue to be higher in the EU-27 at 34.2% in 2025 and 45.4% in 2040.

1.2.5 Family & Social Structure

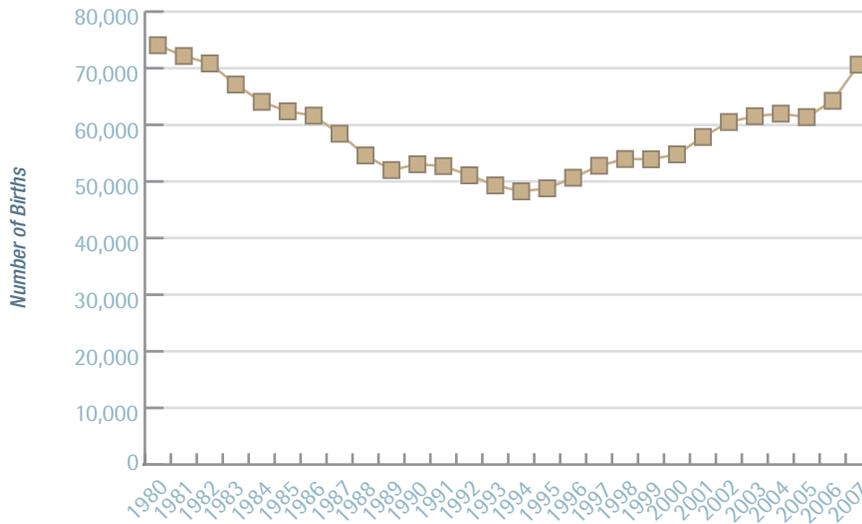
The family structure in Ireland has changed somewhat from the traditional family format of the past. In general, families are smaller and a lower proportion of couples are married.

(a) Marital Status

- While the rate of marriage (5.2 per 1,000 population) has not changed in the recent past, there has been a rise in the numbers who are separated or divorced. The number of separated (including divorced) persons rose from 133,838 in 2002 to 166,797 in 2006.
- The number of divorced persons rose by 69.5% from 35,100 in 2002 to 59,500 in 2006. Divorce legislation was introduced for the first time in Ireland in 1997.
- In the population aged over 15 years, 43.1% are single, 46.4% are married, 5.6% are widowed, and 4.9% are either separated or divorced.

(b) Births

There were 70,620 births in Ireland in 2007, a 9.9% increase on the 64,237 births in 2006. Birth rates fell steadily during the 1980s, from 21.8 per 1,000 population in 1980 to a low of 13.4 per 1,000 in 1994. This fall in rates was followed by a modest rise and levelling off to the current rate of 16.3 live births per 1,000 population. Figure 1.8 illustrates the number of births occurring per year between 1980 and 2007, with numbers now approaching those of the early 1980s.

Figure 1.8 Number of births, Ireland, 1980 - 2007

Source: Vital Statistics, CSO

The percentage of births outside marriage increased steadily from 5.0% in 1980 to 31.1% in 1999. While levelling off for a few years, births outside marriage rose to 32.8% (n=23,170) in 2007. The percentage of live births to teen mothers has fallen from 6.1% in 1999 to 3.5% (n=2,464) in 2007. In addition, the proportion of teen births that are to single mothers has risen from 34.8% in 1980 to 91.4% (n=2,251) in 2007.

(c) Household Type

The type of household in Ireland is changing:

- Just one-third of households now consist of husband, wife, and children.
- The average number of persons per private household is 2.8. This compares to 3.1 in 1996 and 2.9 in 2002.
- One-person households are the fastest growing ownership group, up 18.7% (n=51,877) since 2002, accounting for over one fifth of household types in 2006.
- Over one-third (36.8%) of one-person households are occupied by people over 65 years of age.
- It is estimated that by 2021, 30% of people aged 65 years or older will be living alone.

(d) The Family Unit

The make up of family units in Ireland is changing. Just half of family units consist of couples with children, and 17.9% are lone-parents with children.

A higher proportion of family units in the east (HSE Dublin/North-East 16.3%, HSE Dublin/Mid-Leinster 16.2%) are headed by lone mothers, compared to HSE West (14.4%) and HSE South (14.8%).

The unmarried, cohabiting couple is the fastest growing type of family unit (up from 8.4% in 2002 to 11.6% in 2006). Most family units are not large, with two-thirds (62.1%) having three or fewer persons, and only 5.5% having six or more persons.

(e) Home Ownership

Home ownership remains high at 74.7%, but has fallen from 79.9% in 2002. The highest level of home ownership, as set out in Table 1.3, is in the HSE West (77.0%). The lowest level is in HSE Dublin/Mid-Leinster (72.2%), which has the highest level of private rented housing (15.0% compared to 13.4% nationally) and local authority rented housing (8.0% compared to 7.2% nationally).

Table 1.3 Percentage of private households by various housing types for HSE areas and Ireland, 2006

Occupancy Type	South	Dublin/ North East	Dublin/ Mid-Leinster	West	State
Owner occupied*	75.7	74.2	72.2	77.0	74.7
Rented from Local Authority	7.4	7.5	8.0	5.9	7.2
Private rented (all)	12.3	13.4	15.0	12.6	13.4
Occupied free of rent	1.7	1.2	1.3	1.7	1.5
Not stated	2.9	3.8	3.5	2.8	3.2
Total	100.0	100.0	100.0	100.0	100.0

* Includes local authority housing that is in the process of being acquired by the tenant

Source: Census 2006, CSO

(f) Working in Ireland

During the Celtic Tiger years there was an increase in employment opportunities, and implications for other aspects of people's lives.

- A number of factors, including lifestyle, culture, rising house prices, opportunity, and changing expectations, have resulted in family units where both partners in a relationship are in paid employment. People are spending increasing amounts of time commuting to and from work and require child-minding while away from home.
- The proportion of women in the labour market has increased from a 45.9% participation rate in 1999 to 54.5% in the first half of 2008.
- Non-parental childcare is required for 40.3% of families with pre-school children, and 21.5% of those with primary school children.
- When travelling to work, school or college, greater numbers of people living in the east have a journey of one hour or more (HSE Dublin/North-East 13.0%, HSE Dublin/Mid-Leinster 10.4%) compared to the other HSE areas (4.8%).
- Over half of people (57.0%) travel to work, school, or college by car or motorcycle, while 14.3% use public transport. A higher proportion of people in HSE Dublin/North-East (19.2%) and HSE Dublin/Mid-Leinster (20.0%) travel by foot or bicycle.

(g) Community Life

In common with many other countries, Ireland has changed over the years from having a mainly rural population to a mainly urban one. Almost 61% of the population live in aggregate town areas (population clusters of 1,500 or more) in contrast to 1946 when 60% of the population lived in rural areas. Substantially more people (76.9%) live in an urban setting in the EU-15, however. In Leinster, three quarters of the population (75.2%) live in urban areas, in contrast to just over a quarter (26%) of those living in Ulster. Changing population dynamics can have an effect on social support and social participation. According to the Surveys of Lifestyle Attitudes & Nutrition (SLÁN) 2007:

- Participation in community activities has fallen from 59% of people in 2002 to 55% in 2007.
- Fourteen per cent of people (10% men, 17% women) reported often feeling lonely during the four weeks previous to the survey. The frequency of loneliness was higher in people over 65 years (17%) and people in lower social classes (16% in Social Class 5 to 6).
- Currently, 78% of people feel they have social support (that is, having people who show a friendly interest and can be counted on to help).
- The majority of people (74%) find it easy to get practical help (83% for people over 65 years).

1.2.6 Population Projections

CSO projections (based on the 2006 census) indicate significant growth in the future population, especially in those aged 65 years and over, with this group predicted to increase by almost two fifths by 2016, and to treble by 2041. When predicting how population numbers might change in the future, a range of possible scenarios relating to mortality, migration and fertility are included in the model to calculate the projections. Assuming improvements in life expectancy, and using three different migration assumptions, and two different fertility assumptions, six sets of population projections were produced. Irrespective of which migration scenario is chosen, the population numbers for people over 65 years is similar.

There are indications that, with the recent change in economic climate, the rate of inward migration is set to level off. Based on this premise, the medium migration scenario (M2F2) is most likely at this point in time. Using this medium assumption, the population of Ireland will have increased to almost six million by 2041. Figure 1.9 illustrates the projected population changes for this medium scenario within age groups, highlighting the manner in which the number of people aged 65 years and over will increase.

Figure 1.9 Projected population changes (M2F2) by age group in Ireland, 2006 - 2041

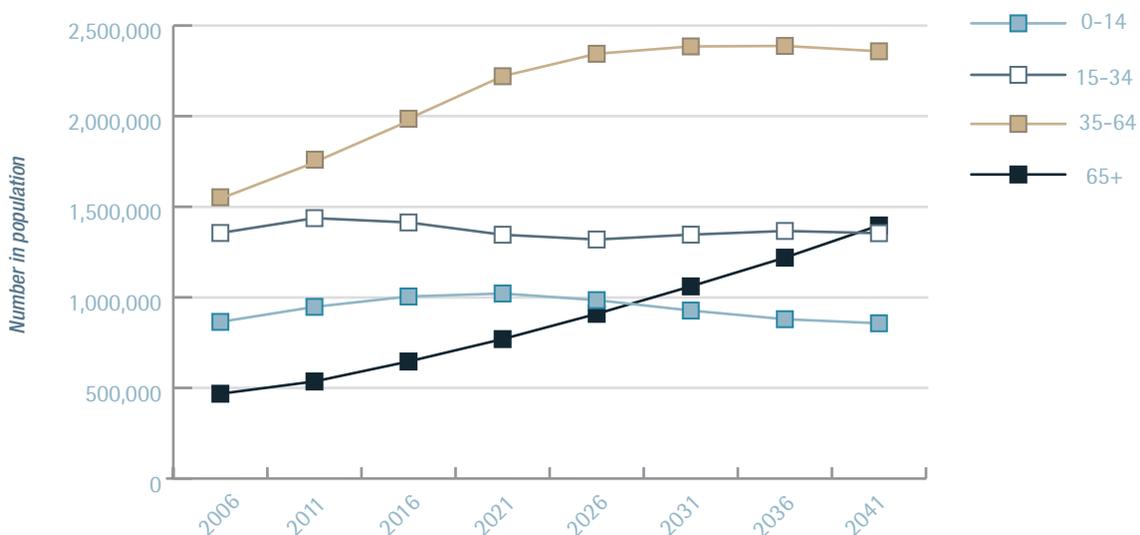


Table 1.4 details the projected percentage change in the population, across age groups over time, again highlighting the largest percentage increase by 2041 in those aged 65 years and over. The final row in Table 1.4 shows the projected change in the total population number (shown in 1,000s), growing from 4.6 million in 2011 to 5.9 million in 2041.

Table 1.4 Projected percentage change in population 2011 - 2041 using M2F2 assumptions

Age groups	2011	2016	2021	2026	2031	2036	2041
0-14	9.6	16.2	18.1	13.9	7.2	1.7	-0.9
15-34	6.0	4.3	-0.7	-2.7	-0.7	0.8	-0.1
35-64	13.1	27.9	43.0	51.0	53.6	53.8	51.9
65+	14.5	38.0	64.5	94.2	126.7	160.5	198.5
Total	10.3	19.1	26.3	31.1	34.9	38.0	40.7

	2011	2016	2021	2026	2031	2036	2041
Total number in population (1,000s)	4,676.0	5,049.7	5,356.4	5,556.8	5,718.5	5,852.1	5,965.4

Source: Population & Labour Force Projections 2011-2041, CSO

1.2.7 Disability

(a) Census 2006

In the 2006 Census, there were a number of questions regarding an individual's disability status which revealed that:

- 393,785 people, or 9.3% of the population, had a long-lasting health problem or disability - up from 8.3% four years earlier.
- The types of disability reported were physical (4.1%), sensory (1.8%), learning/intellectual (1.7%), psychological/emotional (1.5%) and chronic/other (3%).
- The prevalence of disability in 2006 was higher among females than males (9.6% compared to 9.0%).
- The prevalence of disability increased with age from 3.8% in children to 12.4% in middle age, and 29.5% for 65 years and over. Nearly two-thirds of those with a disability were aged 50 years or over.
- Among children aged 0 to 14 years, the number of boys (n=21,183) with a disability was much higher than the number of girls (n=12,073).
- In those who had disability, just over one-third (36%) had difficulty with school/working, 30% had difficulty going outside of home alone (mobility), almost one-third (29%) had difficulty with learning/memory/concentration, and nearly a quarter (22%) had difficulty with personal care/home.
- Approximately 78,000 workers (4.0% of all those at work), had a long-lasting health problem or disability in 2006. Males accounted for 58.5% of these workers.

(b) National Intellectual Disability Database

In 2007, there were 25,613 people registered on the National Intellectual Disability Database (NIDD). Of these, 14,737 have a moderate, severe, or profound intellectual disability. There are more males than females at all levels of intellectual disability, with an overall ratio of 1.3:1. The total number with moderate, severe, and profound intellectual disability has increased by 31% since the first census of Mental Handicap in the Republic of Ireland in 1974. Factors contributing to the increase in numbers are the general population growth over the period and an increase in the lifespan of people with intellectual disability.

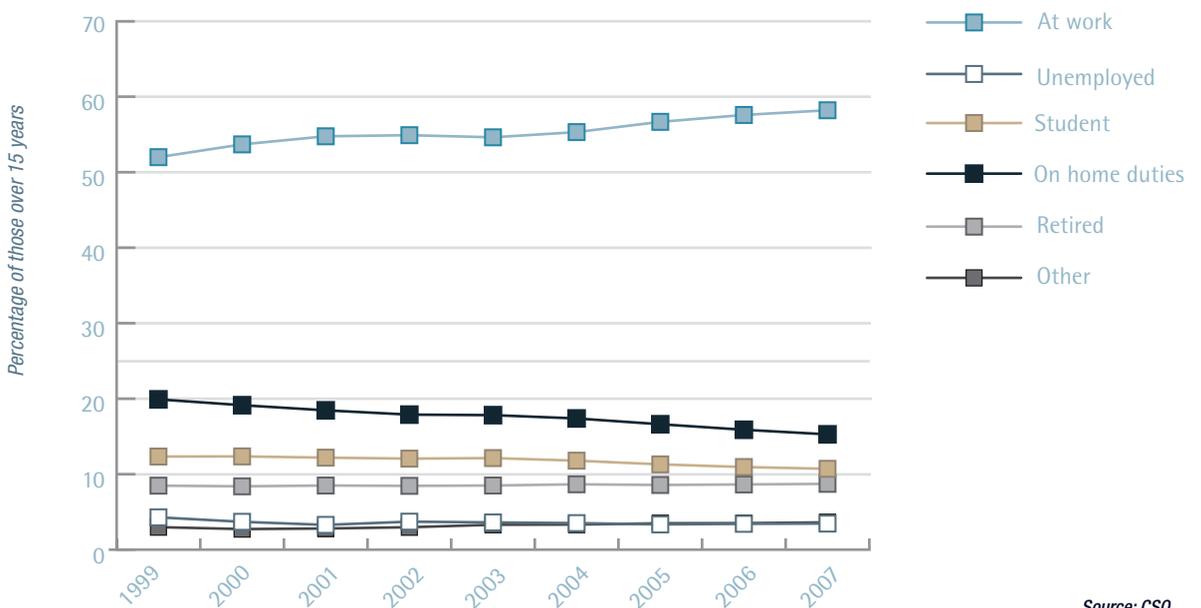
More than 2,000 people with an intellectual disability will need full-time residential care between 2008 and 2012. The unmet demand for full-time residential care is currently at its highest, which contrasts with the demand for day services, which is currently at the lowest level ever recorded, indicating that significant progress continues to be made in meeting the demand for day services.

1.2.8 Economic Status & Social Class

(a) Economic Status

Examination of the 'principal economic status' of persons in Ireland allows us to look at those participating in the labour force and those engaged in other activities. Figure 1.10 illustrates the various categories of economic status in those aged 15 years and over as a percentage of all persons aged 15 and over (1999 to 2007). The major change has been in the percentage at work, which has risen from 51.9% to 58.2% between 1999 and 2007. There were 2,101,600 people in the labour force in 2007, compared to just 1.6 million in 1999. The other notable change has been in those 'on home duties', which has fallen from 19.9% to 15.2%. There has been a small drop in the proportion of students, but those unemployed, retired and categorised as 'other', have remained relatively stable as a percentage of all those over 15 years of age.

Figure 1.10 Persons aged 15 and over by principal economic status



Source: CSO

Two key factors contribute to this growth in the proportion of persons in employment, namely the increase in the population of working age persons (due mainly to substantial migration into Ireland) and higher female participation in the labour force. Almost half of the increase in the number of persons at work between 2002 and 2006 was accounted for by non-Irish nationals. In 2007, 15% of the labour force was composed of foreign nationals. People from the EU accession states were the fastest growing category, with their numbers growing by 45,100 in the year 2007. Female labour force participation rose from 45.9% in 1999 to 54.5% in the first half of 2008.

The type of work that people are engaged in has changed over the years. The services sector has shown a major increase in the past ten years and now accounts for 67.1% of total employment, compared to just 27.7% for industry. Agriculture accounts for 5.4% of total employment in 2007 compared with over 50% in 1926.

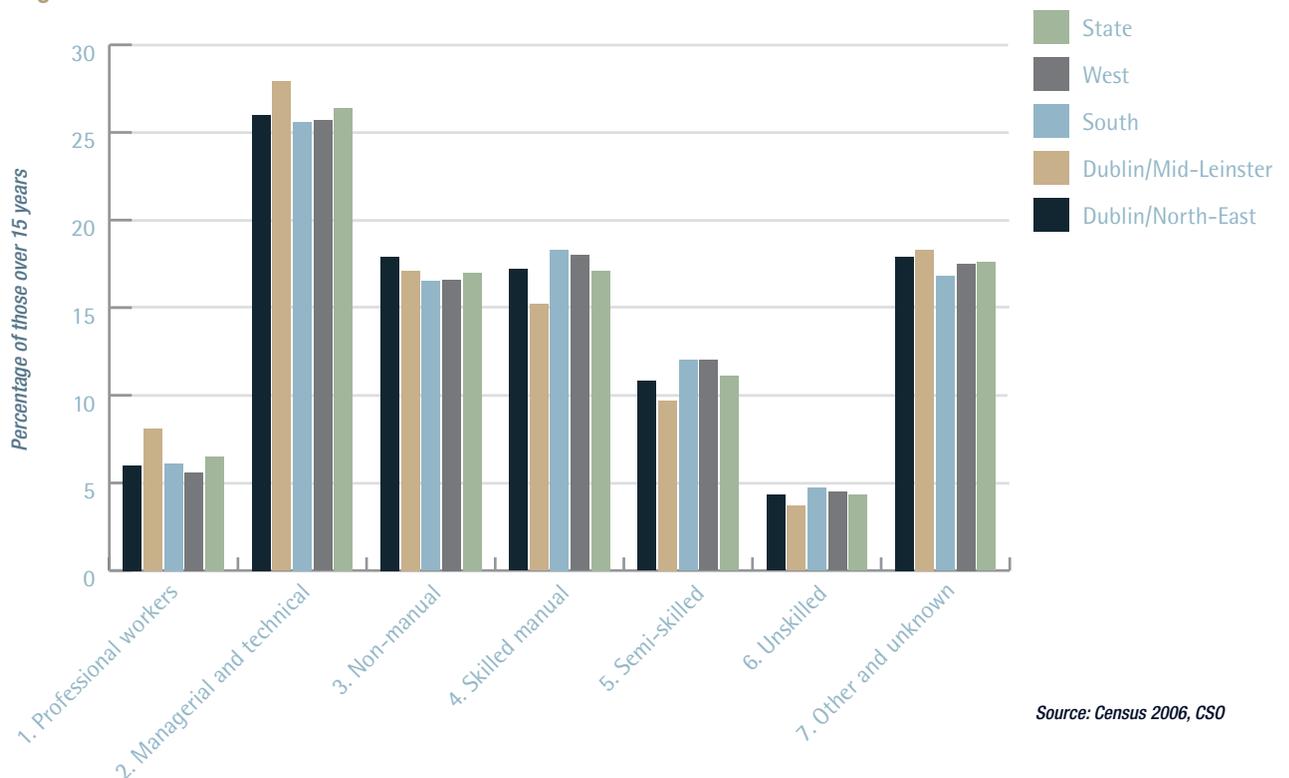
(b) Social Class

The entire population is classified by the CSO into one of the following social class groups which are defined on the basis of occupation:

1. Professional workers
2. Managerial and technical
3. Non-manual
4. Skilled manual
5. Semi-skilled
6. Unskilled
7. All others gainfully occupied and unknown

The occupations included in each of these groups have been selected in such a way as to bring together, as far as possible, people with similar levels of occupational skill. In determining social class no account is taken of the differences between individuals on the basis of other characteristics, such as education. The social classes are therefore established on the basis of occupation and employment status. Figure 1.11 illustrates the proportion of the Irish population belonging to each of these 'social classes', for the four HSE areas and the State. The highest proportions of Social Class 1 and 2 combined are in HSE Dublin/North-East (32.0%) and HSE Dublin/Mid-Leinster (36.0%), while the highest proportions of Social Classes 4 and 5 are in HSE South (Social Class 4 - 18.3%, Social Class 5 - 12.0%) and HSE West (Social Class 4 - 18.0%, Social Class 5 - 12.0%).

Figure 1.11 Social class distributions in the HSE areas and Ireland



1.2.9 Poverty

People are defined as living in poverty if their income and resources are so inadequate as to preclude them from having a standard of living which is regarded as acceptable by society generally. The EU Survey on Income and Living Conditions (EU-SILC) collects information on the income and living conditions of different types of households. It allows the calculation of a number of indicators on social inclusion and national targets such as the consistent-poverty* and the at-risk-of-poverty rates**

(a) At Risk of Poverty

Data from 2006 indicate that 17.0% of the Irish population is at risk of poverty:

- Households where there was a lone-parent had a 39.6% risk of poverty.
- Households headed by females had a higher risk of poverty (21.7%) compared to those headed by males (14.2%).
- There was a higher risk of poverty among individuals who were unemployed (44.0%) and individuals who were ill or disabled (40.8%).
- The at-risk-of-poverty rate for persons aged 65 and over was 13.6%, which had fallen from a rate of 20.1% in 2005.
- There has been a drop in the at-risk-of-poverty rates across time, from 19.7% in 2003 to 19.4% in 2004, 18.5% in 2005, and 17.0% in 2006.

(b) Consistent Poverty

Almost seven per cent (6.9%) of the Irish population was found to live in consistent poverty. The overall consistent-poverty rate remained unchanged when compared with results from the previous survey. The groups with the highest level of consistent poverty were those where the head of household was unemployed (31.3%) and members of lone-parent households (32.5% - an increase from 27.2% in 2005).

1.2.10 Material Deprivation

It is known that, on average, people who live in materially deprived or disadvantaged areas have lower health status than those living in more affluent areas. The Small Area Health Research Unit (SAHRU) based at Trinity College, Dublin identified five census-based variables that are recognised to represent, or to be determinants, of material deprivation. These variables are unemployment, low social class, not having a car, rented accommodation, and overcrowding. A national deprivation index was first produced by SAHRU in 1997 using data from the 1991 census. It was repeated for the 2002 census and the 2006 census. In the 2006 census, overcrowding showed less variability and was not used by SAHRU as an indicator of deprivation for this analysis. In order to enable comparison between 2002 and 2006, the 2002 results were recomputed based on the four indicators used in the 2006 analysis.

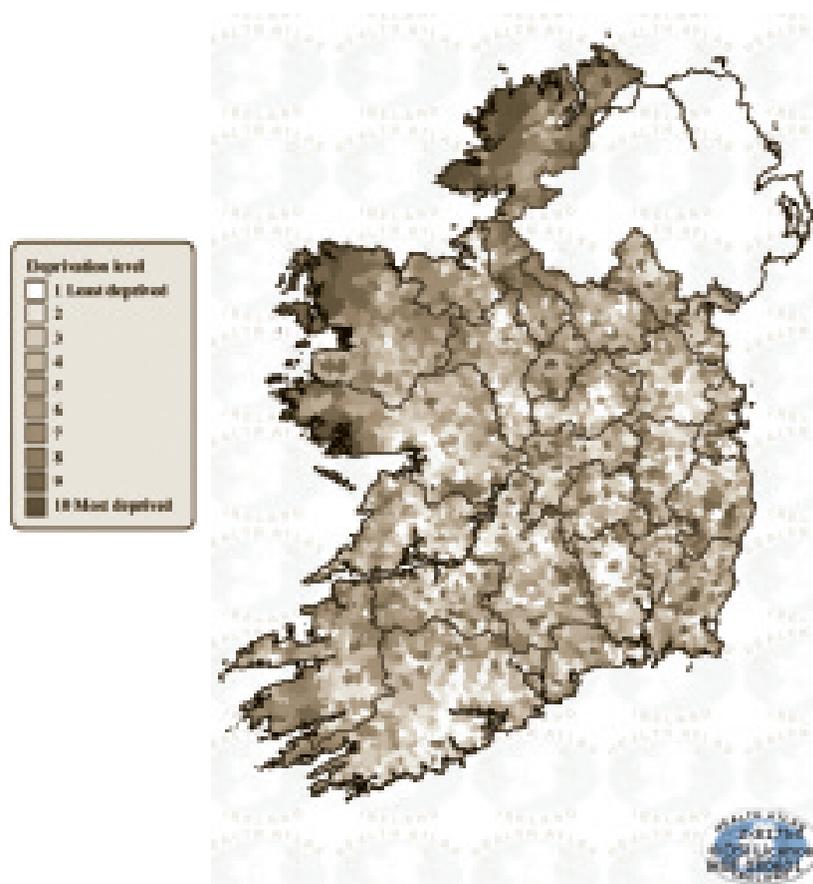
* *The consistent-poverty rate is a measure that looks at those persons who are defined as being at risk of poverty and assesses the extent to which this group may be excluded and marginalised from participating in activities which are considered the norm for other people in society. The identification of the marginalised or deprived is currently achieved on the basis of a set of eight basic deprivation indicators.*

** *The at-risk-of-poverty rate is the share of persons with an equivalised income below a given percentage (usually 60%) of the national median income. The rate is calculated by ranking persons by equivalised income from smallest to largest and the median or middle value is extracted. Anyone with an equivalised income of less than 60% of the median is considered at-risk-of-poverty at a 60% level.*

Using mathematical modelling, deprivation scores were calculated for each electoral division in Ireland. The index is scaled from one to ten, with approximately equal numbers of electoral divisions (340) per decile. A score of one is classified as 'most affluent' and a score of ten is 'most deprived'. The scale is relative and reflects degree of material deprivation of one electoral division relative to other electoral divisions.

The darker areas in Figure 1.12 show the electoral divisions with the highest deprivation scores.

Figure 1.12 Deprivation scores in Ireland by electoral division



- Selected coastal areas, particularly in the north-west and west of Ireland experience high levels of deprivation.
- While they are highly visible on the map, many of these rural areas are sparsely populated.
- Many urban centres, with large populations, also experience high levels of deprivation, particularly in Dublin, Cork, Galway, Limerick, and Waterford.

There were 341 electoral divisions with a score of 10 (that is, the most deprived 10% of electoral divisions). The majority were located in the east of the country (Dublin, Kildare and Wicklow) and the North-West (Donegal, Sligo and Leitrim). There were 803,719 persons (19% of the population) living in these 341 electoral divisions. Not all of these persons living in the deprived electoral divisions are themselves deprived.

The locations with the highest number of persons living in the most deprived electoral divisions were:

- Dublin City (246,458 persons, 41% of the population).
- Cork City (58,577 persons, 49% of the population).
- South Dublin, (57,057 persons, 37% of the population).
- Louth (39,903 persons, 36% of the population).
- Donegal (31,639 persons, 22% of the population).

When 2002 and 2006 were compared, almost 77% of all electoral divisions retained the same index, or moved up or down one level. The remaining electoral divisions showed greater change, but the majority of these had small populations which are more susceptible to large changes.

Health Determinants

Key Points

- A variety of different factors, including lifestyle and deprivation, can have an important impact on health.
- Throughout this report examples are seen of poor health outcomes in sub-groups of the population.
- It is not uncommon for adverse determinants to be clustered together, for example, poverty, unemployment, poor housing, low educational attainment, adverse early childhood experiences, social exclusion, and adverse environmental conditions.
- The diverse nature of health determinants indicates the need for all government departments and agencies to work together to improve the health of the Irish population. A focus on health services alone is inadequate.

Health Status

of the Population of Ireland

Health Determinants

Section 2



2008

2. Health Determinants

2.1 Introduction

The World Health Organization (WHO) defines health in the Ottawa Charter as 'a complete state of physical, mental and social wellbeing' which is 'a resource for everyday life, not the objective of living; it is a positive concept emphasising social and physical resources as well as physical and mental capacity'. The health determinants model, illustrated in Figure 2.1, was developed by sociologists to explain ill health and incorporates health determinants relating to the immediate and greater political, economic, and social environment in which people live. The model recognises the influence of these wider determinants on an individual's exposure to health risks and their ability to deal with these risks or their consequences. This model of health organises health determinants in layers around the individual:

- The individual at the centre is exposed to individual risk factors such as age, gender, and genes, over which they have no control.
- Outside of this are individual lifestyle factors, such as smoking, diet, and physical activity.
- Although the individual has some control over these factors, they are also affected by social position, income and the material and social environment.
- The next two layers of influence include wider social determinants of health, such as social and community networks, and living and working conditions.
- The outer layer is formed by economic, cultural, and environmental conditions which operate at a societal level, and which affect all other influences.

Figure 2.1 Health determinants health model



2.2 Specific Determinants of Health

Table 2.1 sets out some specific determinants of health which will each belong to one of the layers discussed above. The health service is just one of a list of factors that influence an individual's health. The remainder of this chapter looks at some of these health determinants in more detail.

Table 2.1 Factors determining an individual's health

• Genetics / family history	
• Age	
• Gender	
• Marital status	
• Housing and housing tenure	
• Ethnicity / culture	
• Child development and early life experiences	
• Education/educational attainment	
• Income	
• Social status	
• Local economy	
• Employment and working conditions	
• Personal health practices and coping skills	
• Social support	
• Social environment	
• Natural environment	
• Water, sanitation and air quality	
• Built environment	
• Agriculture and food production	
• Health services	

2.2.1 Gender

In Ireland, statistics on inequalities in mortality (1989-1998) show that men are more likely than women to die prematurely from most major causes of death. In those under 65 years, for example, 28% of men versus 15% of women die from circulatory diseases. Throughout this report further gender differences in health outcomes are seen.

2.2.2 Child Development & Early Life Experiences

Increasing evidence exists that prenatal and early childhood events can have a significant impact on an individual's health throughout life. The Lifeways Cross-generation Study was established in Ireland in 2001 to follow a cohort of children from birth to five years of age, and explores the relationship between health status and social circumstances. Some of the early findings to date indicate that:

- Unfavourable socio-demographic and lifestyle factors are associated with smaller-weight babies.
- A diagnosis of asthma in children is more likely in a child with a medical card, whose mother is unemployed, or whose parent or parents have a lower income.
- A mother's diet during pregnancy is related to the prevalence of asthma in children at three years of age.

2.2.3 Education

An individual's level of educational achievement influences his or her job prospects, future income, and social status. Education also enables people to exert more control over their own lives, including health-related decisions.

Table 2.2 contains data from the 2006 census relating to those aged 15 years and over, who have completed full-time education, classified by the highest level of education completed. Almost one-fifth (18%) of this population have received either no formal education, or just primary level education. A further one-fifth (20.1%) have just completed lower secondary level education. In total, almost 30% have completed some category of third level education, with 18.5% of the population aged 15 years and over having completed third level education to degree level or higher. A higher proportion of females (31.7%) completed third level education compared to males (26.5%).

Table 2.2 Educational level attained in those age 15 years and over, Ireland, 2006

Highest level of education completed	Total persons n=2,850,333		Male n=1,425,964		Female n=1,424,369	
	%	n	%	n	%	n
Primary or no formal education	18.0	514,085	18.8	268,716	17.2	245,369
Lower Secondary	20.1	573,411	21.4	304,732	18.9	268,679
Upper Secondary	28.2	803,498	28.7	409,588	27.7	393,910
Third Level non-degree	10.5	301,327	9.0	127,965	12.2	173,362
Third Level degree or higher	18.5	527,775	17.5	249,442	19.5	278,333
Not stated	4.6	130,237	4.5	65,521	4.5	64,716

Source: Census 2006, CSO

2.2.4 The Built Environment

The places in which we live, work and play may contribute to illness, chronic disease, and death. Buildings, in which we spend most of our day, can impact on our health through:

- Temperature and humidity.
- Indoor air quality and noise.
- Light and space.
- Accessibility and safety.

The environment around buildings and in neighbourhoods can also impact on our health. Neighbourhood deprivation is linked to an individual's physical and mental health. Certain features of good urban planning enhance health including:

- Increased probability of social interaction while affording sufficient privacy.
- Easy access to amenities, parks, recreation facilities, and a town or neighbourhood centre.
- Pedestrian-friendly spaces, facilitated cycling, and restricted motor traffic.
- Access to modern, efficient public transport systems and reduced exposure to air pollution.

Increased housing costs, a feature of Ireland's recent economic history, can reduce the amount of disposable income available for such necessities as food and heat. Urban sprawl, another feature, has been linked to obesity, increased air pollution, road traffic injuries, stress, and social isolation - all of which have a negative effect on an individual's health.

2.2.5 Personal Health Practices & Coping Skills

Health behaviours are a product of choice and personal responsibility, influenced by the individual's knowledge, attitude, and coping skills. Knowledge, attitude, skill, and behaviour are affected, in turn, by levels of education, income, and cultural beliefs. Social circumstances also influence health choices, for example, the prevalence of smoking remains very high in areas of deprivation. A recent study carried out in the north-east of the country found a smoking prevalence of 55% in deprived areas, which compares unfavourably to the national prevalence, reported as 29% in SLÁN 2007. Chapter 3 will examine the distribution of lifestyle factors and choices in Irish society.

2.2.6 Unemployment

Unemployment is linked to ill health, primarily through the material effects and chronic stress it entails. Unemployment deprives an individual of his or her social role, a meaningful daily existence, and can produce social isolation through reduced contact with others. Research suggests that the unemployed experience more illness, poorer psychological health, and increased mortality.

2.2.7 Working Conditions

Although unemployment negatively impacts on health, physical and psychosocial work environments also have a negative effect. The physical environment can expose workers to hazardous situations. In Ireland in 2007 there were 67 work-related deaths, and in 2005 there were 24,000 non-fatal injuries reported to the Health and Safety Authority (HSA). In recent years, the effect of the psychosocial environment on an individual's health has been recognised with, for example, the introduction of policies to deal with workplace stress and bullying. A national survey by the Economic, Social & Research Institute (ESRI) in 2007 found that eight per cent of the workforce had experienced bullying at work in the last six months, equivalent to 159,000 individuals. In 2008, stress was reported as the second highest work-related health issue in the EU-15 member states. The HSA estimated that at any given time, thousands of workers in Ireland are out of work, or underperforming at work, due to some form of mental health disorder.

2.2.8 The Social Environment

The biological processes that occur in illness cannot be separated from the social settings in which people live. The impact of the social environment on an individual was recognised in the late 19th century when Durkheim contended that 'the group thinks, feels and acts entirely differently from the way its members would if they were isolated'. The extent of connectedness and solidarity within society, known as social cohesion, is an important determinant of health. Social capital, an indicator of cohesion, is comprised of social structures which act as resources for individuals and facilitate collective action, for example, neighbourhood residents' associations, parent-teacher associations, and trade unions. There are correlations between levels of trust, extent of membership of civic groups, collective efficacy within communities, and outcomes such as violent crimes and mortality from most major causes of death.

A 2003 study in Ireland on inequalities in perceived health by the Institute of Public Health examined the relationship between self-reported measures of social capital and self-reported health outcomes. Social capital measures were strongly related to self-reported general health and mental health. Some measures were also related to health satisfaction, quality of life, and the presence of limiting long-term illness.

2.2.9 Social Support

An individual's degree of social support influences his or her health and ability to cope with illness. Measures of social support include marital status, frequency, and number of contacts with friends and family, and membership of community groups. Social support can provide an individual with practical and emotional support, and consequently, can influence physical health by mediating susceptibility to disease that occurs during times of stress. SLÁN 2007 included a number of questions relating to social support and found that:

- Seventy-eight per cent knew three or more people they could count on in times of difficulty.
- Eighty-one per cent reported that other people take a friendly interest in what they are doing.
- Seventy-four per cent found it 'easy' or 'very easy' to get practical help from their neighbours.
- Fourteen per cent often felt lonely in the last 4 weeks.

A very important finding in SLÁN 2007 was that the number of respondents attending at least one community activity on a regular basis had decreased from 59% in 2002 to 55% in 2007.

The changes in family and social structure that have occurred in Ireland are described in Chapter 1. Many of these changes to the family and household construction have had a negative impact on social capital and social support. Young adults in particular, have had to move long distances from the family home and support, may face long commutes to work on a daily basis, and leave neighbourhoods with weak community cohesion and children being cared for outside of the home for long periods of time.

2.2.10 Social Status

Social status, which can be measured by wealth, income, occupation, and educational attainment, has been shown to be a very strong predictor of health status and mortality. Chapter 1 describes the social class structure of the Irish population and the profile of poverty and material deprivation in our society. An association is seen between poverty and unemployment, lone-parent households, illness and disability. A person's social status is directly related to their health status, with lower social status being related to poorer health. This relationship will be discussed in greater detail in Chapter 4, with a particular focus on the evidence in Ireland of the relationship between social position, health, and death, and on the inequalities that exist here.

2.3 Distribution of Health Determinants in Irish Society

The preceding section briefly describes how a variety of different factors can have a very important impact on health. There is a particular concern for the way these factors are distributed in society. It is argued that social structures that lead to an unequal distribution of health determinants place people at differential risk for disease and disability, and affect resources that can be used to improve these conditions.

It is not uncommon for adverse determinants to be clustered together, for example, poverty, unemployment, poor housing, low educational attainment, adverse early childhood experiences, social exclusion, and adverse environmental conditions. Spatial inequity is often a feature of deprived areas. For example, people living in deprived areas are exposed to a disproportionate burden of noise, air pollution, and traffic congestion, despite a low rate of car ownership in these areas. The variation of health determinants across the population is considerable and contributes to the inequalities in health and mortality which are seen in this country. This is discussed in greater detail in Chapter 4.

2.4 Commentary

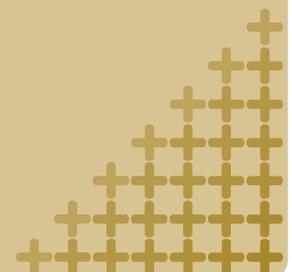
The diverse nature of health determinants indicates the need for all government departments and agencies to work together to improve the health of the Irish people. A focus on healthcare and health services alone is inadequate. The assumption that illness is located solely within the individual, and that responsibility lies with the individual and the health services, encourages policies that address specific diseases at an individual and a clinical level. The broader concept of health and its determinants must be applied, and issues must be addressed at a population level to improve further the country's health status. The unequal distribution of health determinants in our society must also be addressed in any policy decisions that are made.

A population health approach will improve the health of our whole society by working with all relevant agencies and government departments to develop policies that result in a safer, healthier environment, providing high quality services when needed. Such an approach requires a combination of approaches including legislation, finance, and organisational change.

Lifestyle

Key Points

- The majority of Irish adults and children rate their own health as good, although almost 40% of adults report at least one health condition.
- While some aspects of the Irish diet have improved, it is of concern that consumption of fats and salts remains high.
- The prevalence of overweight and obesity in Ireland is higher than most countries in the EU. There is a large underestimation of body weight by individuals.
- Compared to 1948, children are now taller and heavier. This increase in weight is disproportionate to the increase in height.
- Over one-fifth of Irish adults report taking no physical activity. In children, exercise participation decreases with age, particularly among teenage girls. There has been little change in physical activity levels in recent years.
- While 29% of Irish adults are current smokers, the rate is higher in younger people and those in lower social class groups. One in ten smokers is actively trying to give up. In adults, males have higher smoking rates, but among children, more females smoke. There is a large increase in smoking rates from age 13 to 15 years.
- Ireland is one of the highest consumers of alcohol in Europe. A higher proportion of Irish adults report binge-drinking compared to the EU population.
- Ireland has a higher level of cannabis use among 15-year-olds than the European average.
- While vaccination rates have improved, they still fall short of the target level of 95%.



Health Status

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Lifestyle

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3. Lifestyle

'A healthy lifestyle adds years to life and life to years'

(WHO)

This section provides an overall view of the lifestyle of Irish adults and children, and compares them to adults and children both in Europe and internationally, with an emphasis on the following areas:

- **General Health**
- **Healthy Eating**
- **Body Weight and Weight Control**
- **Physical Activity**
- **Smoking**
- **Alcohol**
- **Use of Illicit Drugs**
- **Health Protective Behaviours**

The main sources of information for this section are:

- The Surveys of Lifestyle Attitudes & Nutrition in Ireland carried out in 2006 and 2007 (SLÁN 2007). This is the third national study on attitudes to lifestyle and nutrition among adults in Ireland. It involved face-to-face interviews with approximately 10,000 Irish adults (aged 18 years and over), in addition to, for the first time, a physical examination of approximately 2,174 adults.
- The Irish Health Behaviour in School-aged Children Studies HBSC 2006 (HBSC 2006). This is the third survey of the health behaviours, wellbeing, and lifestyle of Irish young people (aged 10 to 18 years). The survey runs on a four-year basis, and is part of a larger international survey (HBSC International), which is run in collaboration with the World Health Organization (WHO). Forty-one countries took part in the most recent survey during the academic year of 2005 and 2006. For the first time in 2006, nine-year-olds were also included. Irish data collected from the 11, 13, and 15-year-olds in the 2005/2006 survey was included in the HBSC International report on health inequalities. Results from this report are cited in this section.
- Finally, recent results from the CSO's Quarterly National Household Survey (QNHS, Q3, 2007) are included.

3.1 General Health

3.1.1 Adults' General Health

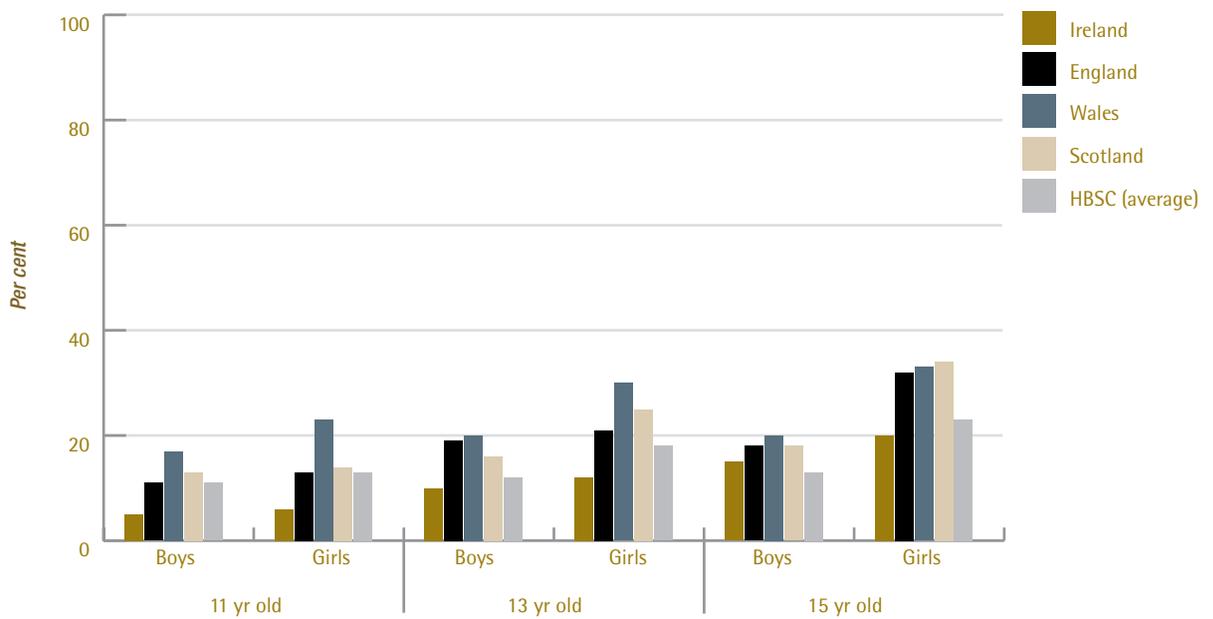
The QNHS (Q3, 2007) on Health Status and Health Service Utilisation reported that the majority of Irish adults rate their own health as 'good' (40%) or 'very good' (47%). Eleven per cent rated their health status as 'fair', with few (2%) reporting their health as 'poor'. The proportion of adults who reported their health status as 'good' or better decreased with age, with 69% of those aged 70 years and over, rating their own health status as 'good' or better.

Almost 40% of adults (41% women, 36% men) reported at least one health condition, most commonly hypertension (10%), back pain (8%), and high cholesterol (8%). For most conditions, a higher prevalence of the condition was reported among older adults.

3.1.2 Children's General Health

HBSC 2006 reported that almost 90% of Irish children (89% boys, 86% girls) rated their health as 'excellent' or 'good', with a small increase on previous years in those reporting 'excellent' health. Figure 3.1 illustrates levels of poor health among 11, 13, and 15-year-olds in Ireland, part of the UK and the HBSC average, with ratings of poorer health increasing with age. Overall, Irish children consider themselves to have better health than their international counterparts.

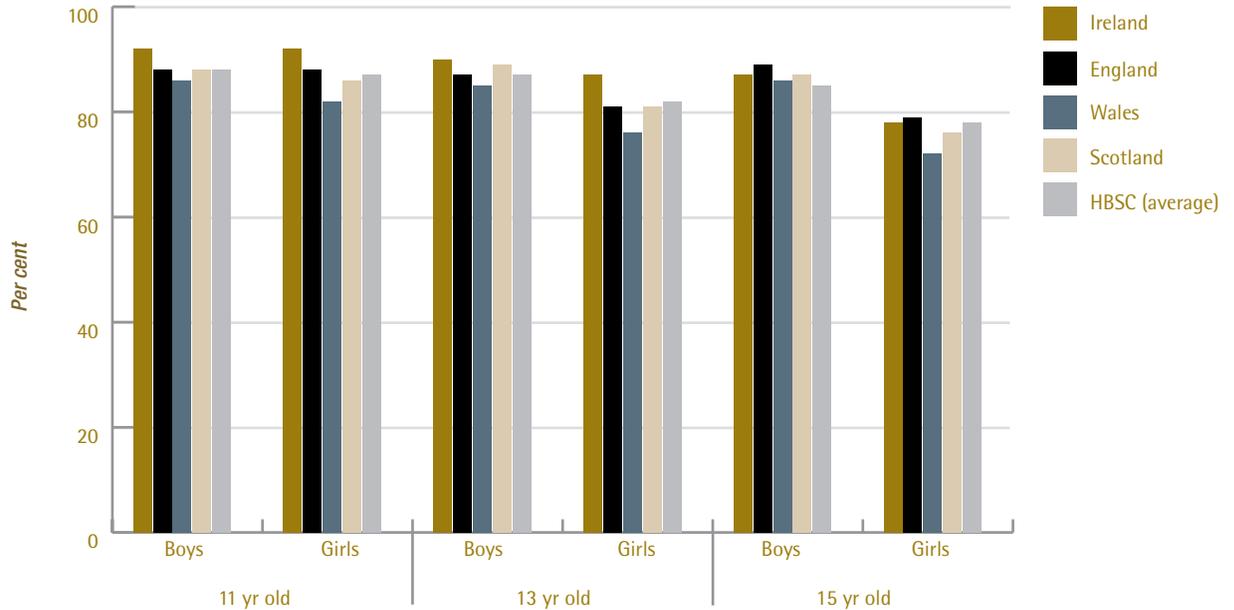
Figure 3.1 Proportion of 11, 13, and 15-year-olds with ratings of fair/poor health



Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

In 2006, 79% of boys and 74% of girls in Ireland reported high life satisfaction. Figure 3.2 details levels of high life satisfaction among 11, 13, and 15-year-olds in Ireland, part of the UK and the HBSC average.

Figure 3.2 Levels of high life satisfaction among 11, 13 and 15-year-olds



Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

The Irish findings are similar to the international and UK averages, with boys more likely to report high life satisfaction by age 15, than girls. Irish children reported slightly higher levels of life satisfaction than their European neighbours until age 15 when boys in England have the highest levels.

3.2 Healthy Eating

3.2.1 Adults' Eating Habits

Using the food pyramid as a guide, Table 3.1 sets out the proportion of Irish adults consuming the recommended number of daily servings of particular foods, as reported by SLÁN 2007.

Table 3.1 Consumption (%) of recommended daily servings of particular foods by Irish adults, 2007

Food	% of Irish adults
6+ daily servings of cereals, breads and potatoes	26%
4+ daily servings of fruit and vegetables	65%
3 daily servings of milk and dairy products	20%
2 daily servings of meat, fish, poultry and alternatives	39%

Source: SLÁN 2007. *National Health & Lifestyle Surveys, 2007*

Since 2002, there has been a decrease in the percentage of people consuming the recommended servings of cereals, breads and potatoes, and milk and dairy products. Conversely, there has been an increase in the percentage consuming the recommended daily servings of fruit and vegetables. The consumption of meat, fish, and poultry remained similar.

Of major concern is the fact that the majority (86%) of adults surveyed consumed more than three daily servings of foods high in fat, sugar, and salt, with two-thirds (62%) adding salt to cooked/uncooked food, and half (48%) snacking between meals. Overall, 10% reported not eating breakfast.

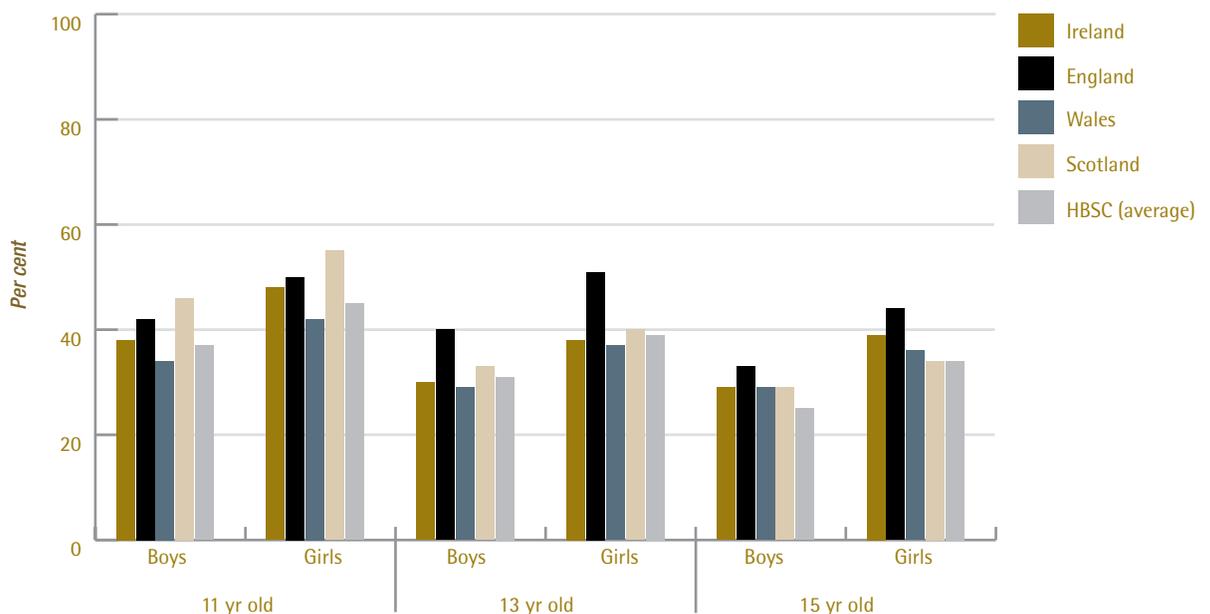
The majority (96%) of respondents reported being able to afford to buy enough food for their household.

3.2.2 Children's Eating Habits

Approximately one-fifth (19%) of children reported consuming fruit more than once a day, with rates of fruit consumption higher in girls (23%) than boys (16%) across all age groups. HBSC International reports that children from higher social classes are more likely to report frequent fruit consumption.

Figure 3.3 illustrates the proportions of children who reported eating fruit daily, in Ireland, part of the UK, and the HBSC average, with consumption higher among girls across all ages.

Figure 3.3 Proportion of 11, 13, and 15-year-olds who reported eating fruit daily



Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

Almost 40% of Irish children reported eating sweets daily, or more frequently. This was a decrease, however, on sweet consumption in recent years, particularly among the 10 to 11-year-olds. Older Irish children, especially boys, reported drinking soft drinks daily, or more frequently, as was the case in most countries involved in HBSC International 2006.

Overall, 14% of Irish children reported never eating breakfast during school days, with rates of non-consumption increasing with age. More girls than boys, both in Ireland and internationally, reported not having breakfast on school days. Children from the highest social classes are least likely to report never having breakfast on school days.

3.2.3 Breastfeeding

WHO guidelines recommend that babies are breastfed exclusively for the first six months of their lives, with complementary breastfeeding until at least two years of age. According to WHO, less than 35% of infants worldwide are exclusively breastfed for even the first four months of life.

SLÁN 2007 reported that 42% of Irish women surveyed breastfed at least one of their children, an increase from 32% in 2002, with the increases observed across all age groups, most notably among younger women (18-29 years).

3.3 Body Weight & Weight Control

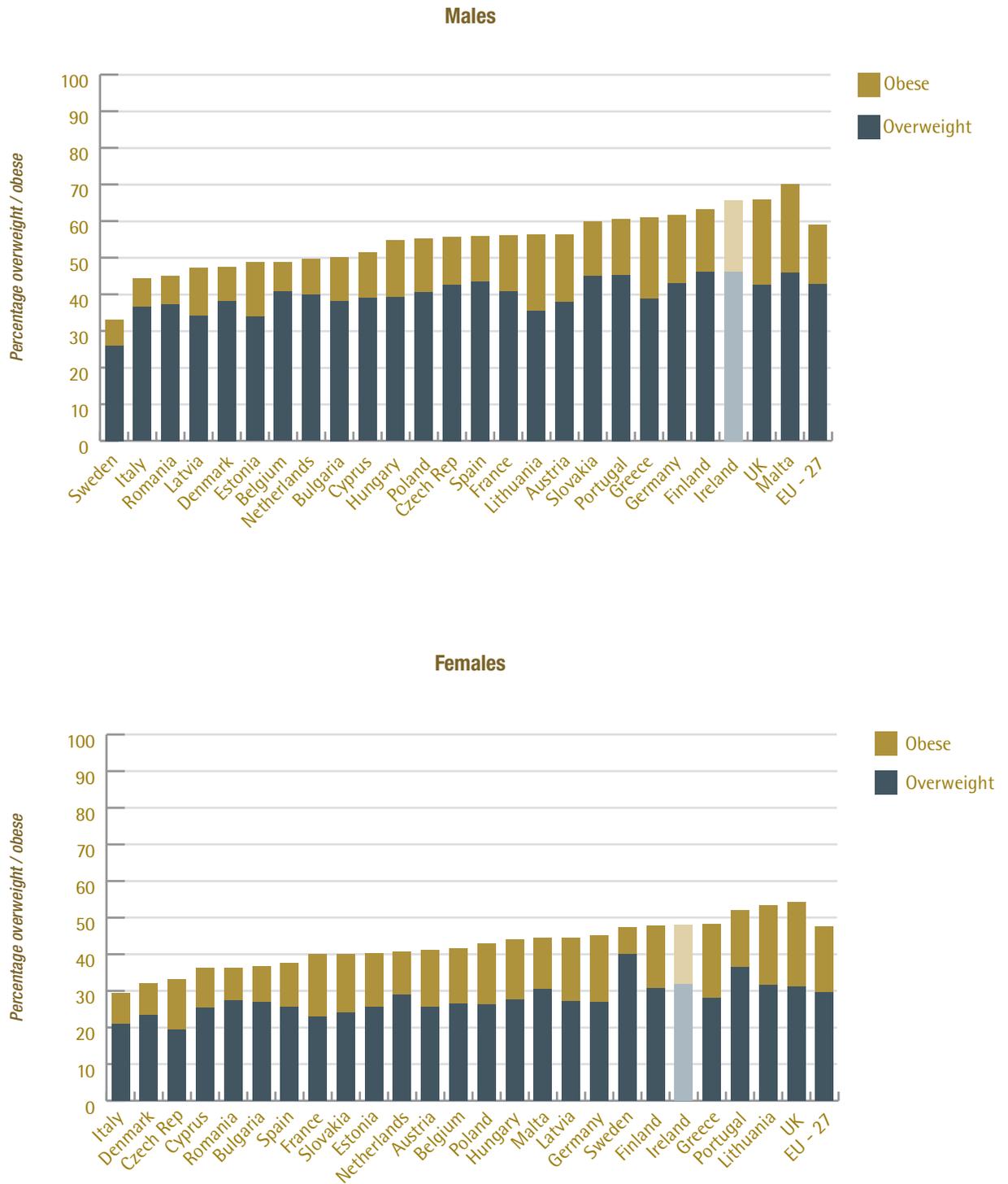
3.3.1 Adults' Body Weight & Weight Control

SLÁN 2007 recorded the Body Mass Index (BMI) of 2,174 adults over 18 years of age (1,207 over-45s and 967 under-45s). The prevalence of overweight and obesity among this group of Irish adults was as follows:

- Thirty-eight per cent were overweight.
- Twenty-three per cent were obese.

These individuals were also asked to estimate their own weight and height measurements in order to calculate a BMI score. Overall, there was a large underestimation of body weight by individuals. Obesity is quickly becoming a major public health problem in Europe, with estimates suggesting that between 10% to 20% of men and 10% to 25% of women are obese, as evidenced in Figure 3.4. Both Irish males and females have high prevalence of overweight and obesity compared to most countries in the EU.

Figure 3.4 Estimated EU-27 country prevalence of overweight and obesity in males and females



Source: Overweight & Obesity in the EU-27. International Association for the Study of Obesity (IASO), July 2008

In the EU-27, it is estimated that 35.9% of adults are overweight (BMI 25-29.9) and a further 17.2% are obese (BMI \geq 30). More males than females are overweight (not including obese), while more females than males are obese. According to SLÁN 2007, one in ten Irish adults reported being previously advised by a health professional to manage their weight, with almost half (43%) trying to do so.

3.3.2 Children's Body Weight & Weight Control

As part of a North/South Survey of Children's Oral Health, conducted during the academic year 2001/2002, the height and weight of a representative sample of children and adolescents aged four to 16 years was measured. In the absence of agreed BMI criteria for overweight and obesity in children, criteria proposed by the International Obesity Task Force (IOTF) were adopted. Applying these criteria gave the following results:

- Almost one in four boys (23%) and over one in four girls (28%) were either overweight or obese.
- About one in 20 boys (6%) and about one in 15 girls (7%) aged four to 16 years were obese.
- The overall prevalence of overweight (overweight or obese) was higher among females than males (28% versus 23%), as was the prevalence of obesity (7% versus 6%).

Data were also collected on snacking habits and time spent watching television, computers, or other screens. Multivariate analysis identified a number of factors associated with obesity including:

- Obesity increased with age.
- Females and children of less well-off parents were more likely to be obese, as were those who spent a greater amount of time watching screens.

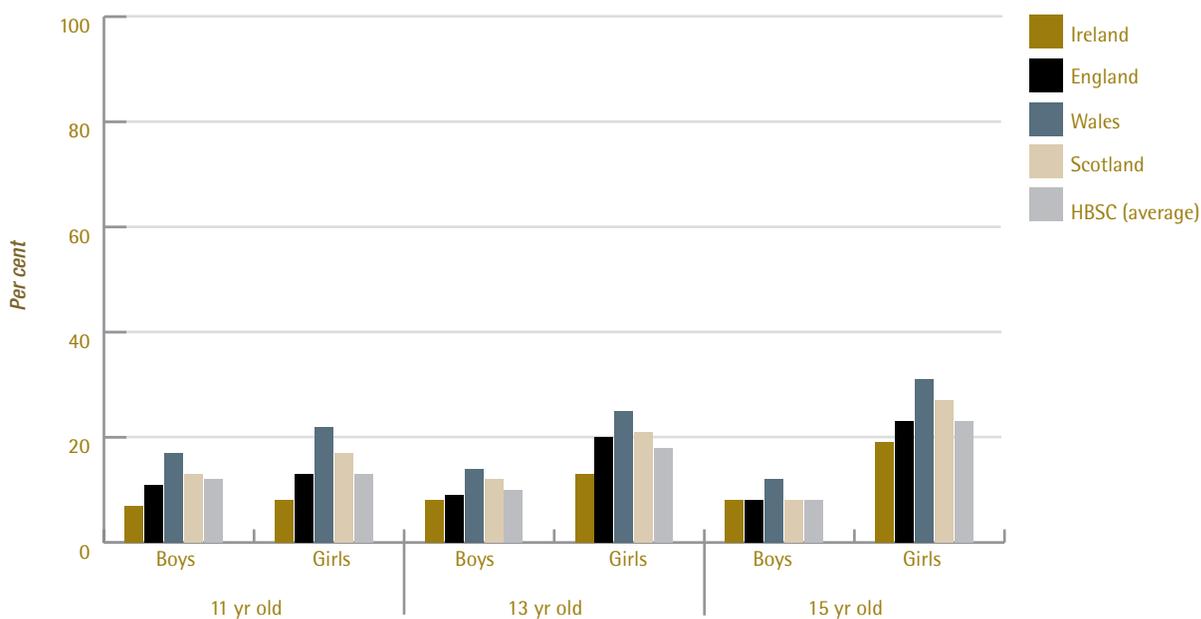
Children's heights and weights were compared with data from the 1948 National Nutrition Survey. The comparison revealed:

- Children's heights and weights have changed considerably since 1948.
- Children were taller and heavier in 2002, and the increase in weight was disproportionate to the increase in height.

According to HBSC, girls were more likely than boys to report that they were currently on a weight-reducing diet (15% versus 8%) or that they needed to be on a weight-reducing diet (26% versus 15%). HBSC International reports that attempting to lose weight is a common feature of girls' lifestyles by the age of 13, especially in western and northern Europe, including Ireland.

Figure 3.5 details the level of engagement in weight reducing behaviours among 11, 13, and 15-year-olds, with the levels of weight-reducing behaviour not as high in Ireland as in some other countries.

Figure 3.5 Proportion of 11, 13, and 15-year-olds who engage in weight reducing behaviour



Source: *Inequalities in young people's Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

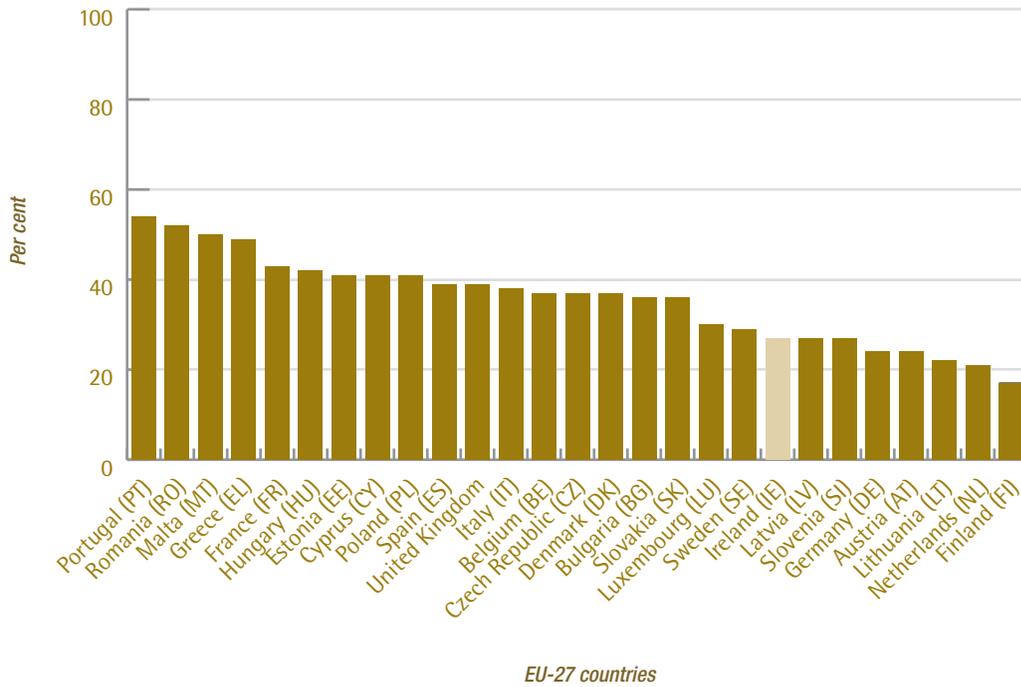
3.4 Physical Activity

3.4.1 Physical Activity Among Irish Adults

SLÁN 2007 reported that just over half (55%) of Irish adults engaged in physical activity two to three times per week for a minimum of twenty minutes. A quarter reported activity levels, but were not considered 'physically active'. A further 22% reported physical inactivity. There was little change in levels of physical activity since previous studies.

Of those who were physically inactive, less than half (41%) were thinking of becoming active, with the main reason cited by respondents for inactivity being 'no time' (41%). In the older age groups, injury, disability, or having a medical condition, were the main reasons for inactivity. Figure 3.6 details the level of inactivity among populations in the EU member states in 2006, with Ireland having relatively low levels of inactivity compared to many of their European neighbours.

Figure 3.6 People interviewed (%) in EU-27 who take no physical activity, 2006



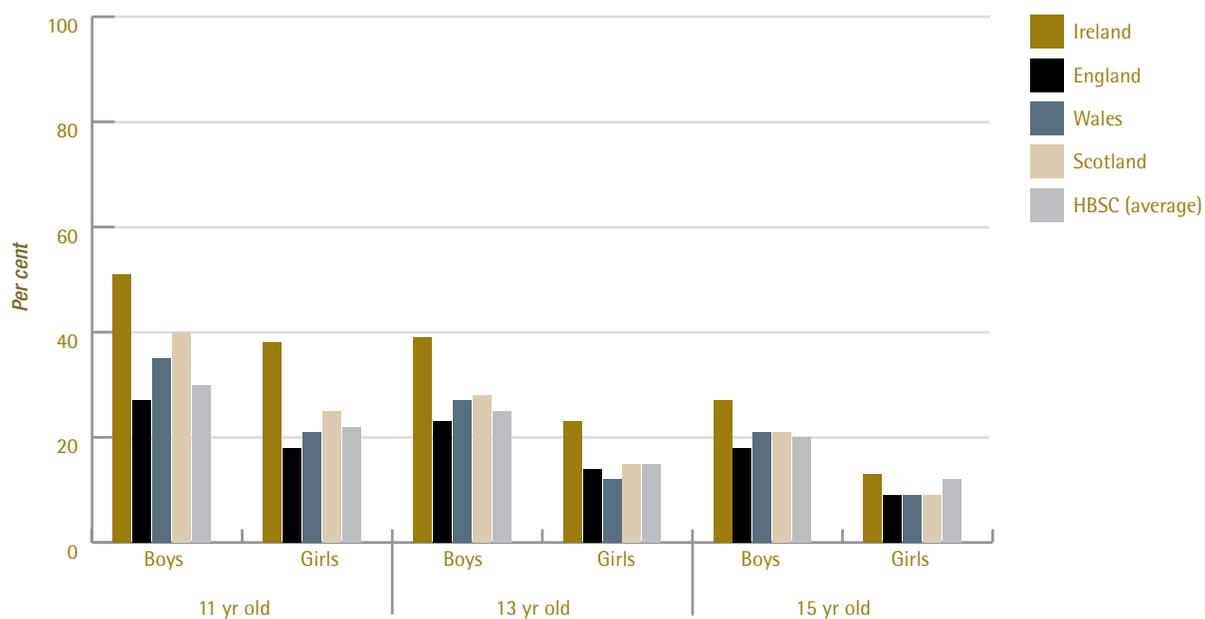
Source: Euro barometer 64.3 Health & Food - Special Euro barometer. European Commission, November 2006

3.4.2 Physical Activity Among Irish Children

There has been little change in physical activity participation rates in recent years, with 53% of children (63% of boys, 43% of girls) exercising four or more times a week (48% in 2002).

Exercise participation decreases with age and this is particularly noticeable among girls, dropping from 58% of 10 to 11-year-olds to 28% of 15 to 17-year-olds. Internationally, younger children participate more in physical activities than older children, with boys more active than girls at all ages, in all countries. Figure 3.7 illustrates the proportion of 11, 13, and 15-year-olds reporting one hour of moderate to vigorous exercise daily, with more Irish children doing so at all ages than their counterparts.

Figure 3.7 Proportion of 11, 13, and 15-year-olds reporting one hour of moderate to vigorous exercise daily



Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

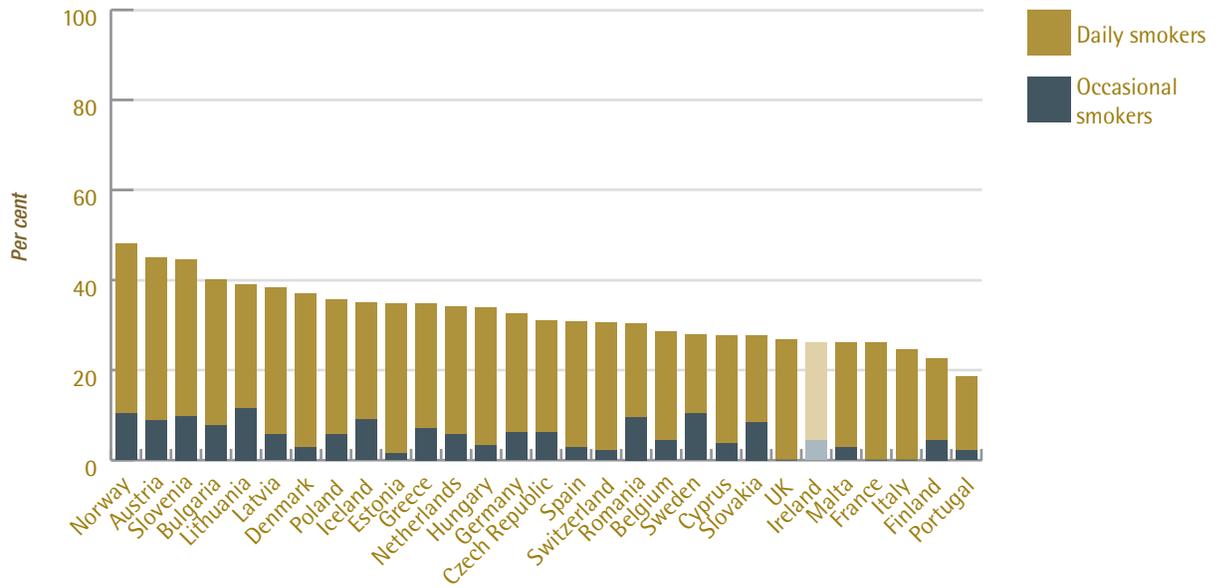
3.5 Smoking

3.5.1 Smoking Habits Among Irish Adults

In 2007, almost half of Irish adults (48%) reported having smoked at some point in their lives, with rates of having 'ever smoked' higher in men (53%), in Social Classes 5 and 6 (55%), and in the middle age groups (30-44 yrs=51%, 45-64 yrs=50%).

Overall, in 2007 29% (31% men, 27% women) of Irish adults reported being current smokers, a reduction from 33% in 1998. There has, however, been a small increase in smoking rates since 2002 when 27% of people reported smoking. In 2007, younger people were more likely to currently smoke (18-29 years=35%), as were those in lower social class groups (Social Class 5-6=37%). Figure 3.8 details the percentage of occasional and daily smokers in EU countries, with Ireland ranked sixth-lowest for smoking rates.

Figure 3.8 Percentage of occasional and daily smokers by European country



Source: National Health Interview Surveys. Eurostat, July 2008

Almost one in ten (9%) Irish smokers (SLÁN 2007) reported actively trying to quit, with an additional 50% reporting being in various stages of thinking about quitting. Most people have some rules about smoking in their homes, with the majority not allowing any smoking inside their accommodation, while others reported that smoking was limited.

3.5.2 Smoking Habits Among Irish Children

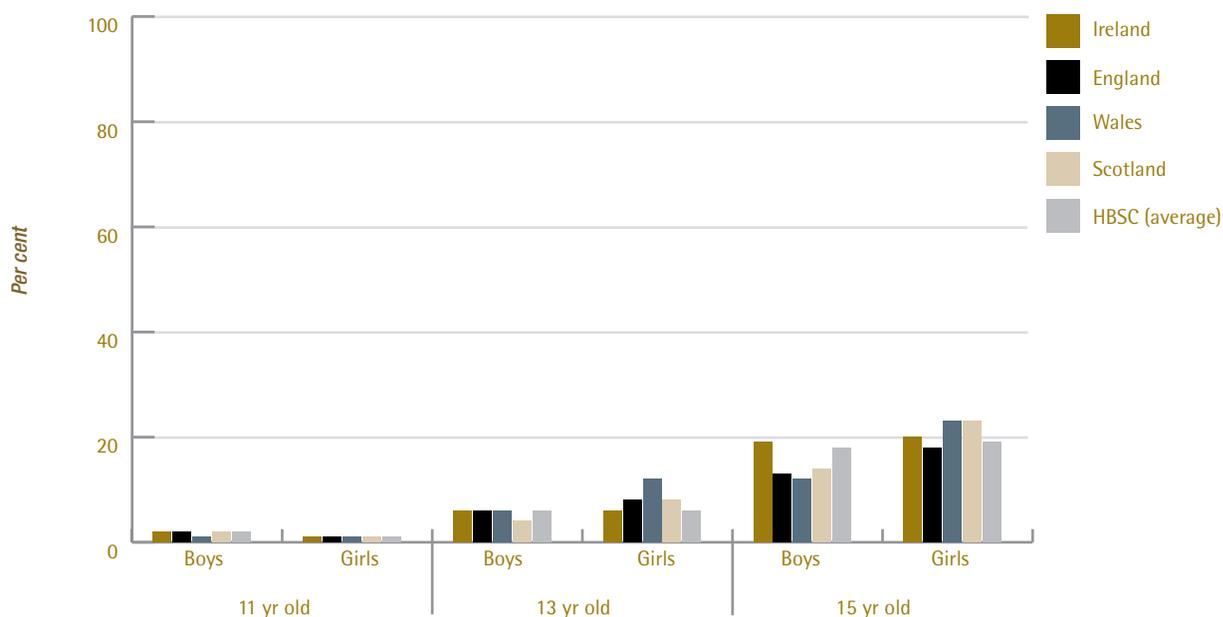
In 2006, less than one-sixth (15%) of Irish children reported being current smokers, a reduction from 21% in 1998 and 19% in 2002. There has also been a decline in reports of 'ever smoking', with 36% (41% 2002) of children reporting that they had on some occasion smoked tobacco. As detailed in Table 3.2, young initiation of smoking was more common in boys than girls internationally, but this was not the case in Ireland or neighbouring countries.

Table 3.2 Proportion of 15-year-olds who reported first smoking at age 13 or younger

Country/Region	15-Year-Olds	
	Boys	Girls
Ireland	29%	33%
England	19%	27%
Wales	26%	34%
Scotland	25%	34%
HBSC (average)	31%	28%

Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

Figure 3.9 illustrates the proportion of 11, 13, and 15-year-olds who reported smoking at least once a week. The most notable feature of this graph is the large increase in weekly smoking rates from age 13 to 15, with girls' weekly smoking rates higher than boys' rates in most countries. Also of note is the fact that Irish weekly smoking rates for 15-year-old boys and girls are higher than HBSC average rates.

Figure 3.9 Proportion of 11, 13, and 15-year-olds reporting weekly smoking

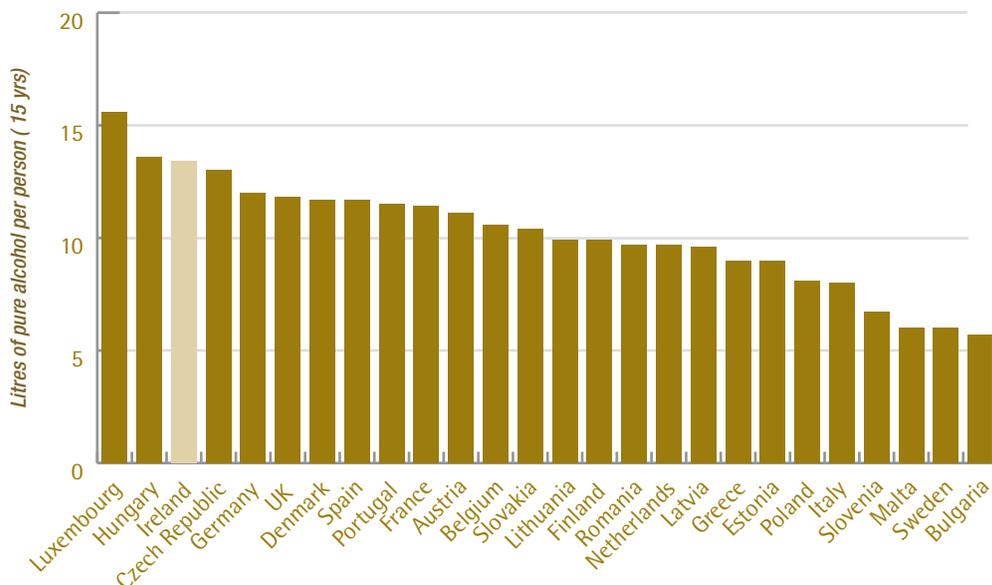
Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

3.6 Alcohol

3.6.1 Alcohol Consumption Among Irish Adults

SLÁN 2007 reported that most men (85%) and women (77%) surveyed drank alcohol on some occasion in the last year, with one-quarter (28%) reporting excessive drinking (six or more standard drinks on one occasion). Ireland remains one of the highest consumers of alcohol in Europe, with Figure 3.10 comparing rates across Europe in 2003. The data for Ireland are for 2006.

Figure 3.10 Alcohol consumption (litres of pure alcohol per person), enlarged EU, 2003



Note: Figures for Ireland 2006, Finland 2004, all others 2003, no data for Cyprus.

Source: Hope A (2007). Alcohol consumption in Ireland 1986-2006. Health Service Executive - Alcohol Implementation Group

SLÁN 2007 reported decreases in the proportion of Irish adults consuming over the recommended weekly alcohol limits (21+ units for men, 14+ units for women) from 13% (2002) to 8% (2007). However, the Eurobarometer survey (2007) on attitudes towards alcohol reported that 34% of Irish drinkers consumed at least five drinks per occasion, compared to just 10% of the EU population. In addition, 28% of Europeans stated they drank an excess of five drinks at least once a week compared to 54% of respondents in Ireland.

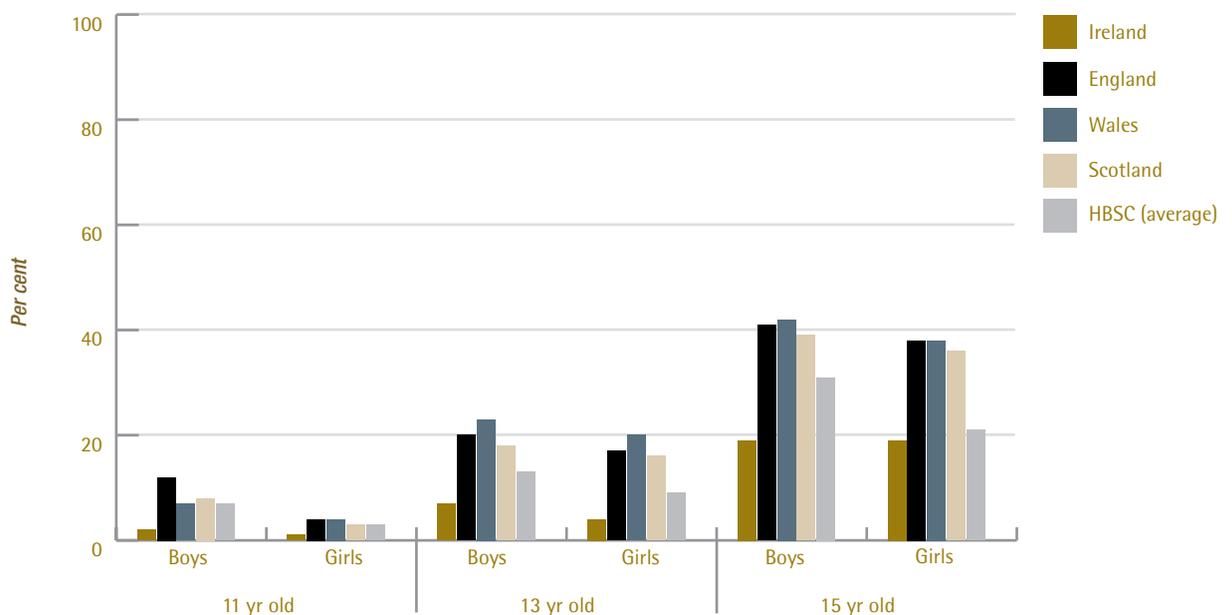
SLÁN 2007 also reported a reduction in the percentage of drivers who reported driving a car after consuming two or more standard drinks, from 16% in 2002 to 12% in 2007.

3.6.2 Alcohol Consumption Among Irish Children

Overall, 47% of Irish children reported that they have never had an alcoholic drink - an improvement from 40% in 2002 and 31% in 1998. More girls were non-drinkers (52%) compared to boys (43%).

Despite this increase in non-drinkers, the proportion of current drinkers (consumed a drink in the past month) has remained the same in recent years (26%). Figure 3.11 illustrates the proportion of 11, 13, and 15-year-olds who report drinking alcohol at least once a week. Overall, there were fewer children reporting weekly drinking in Ireland, at all ages, compared to our UK neighbours and the overall HBSIC international levels. As in most other countries, the numbers drinking alcohol increases dramatically between ages 13 and 15.

Figure 3.11 Proportion of 11, 13, and 15-year-olds who drink alcohol at least once a week



Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

3.7 Use of Illicit Drugs

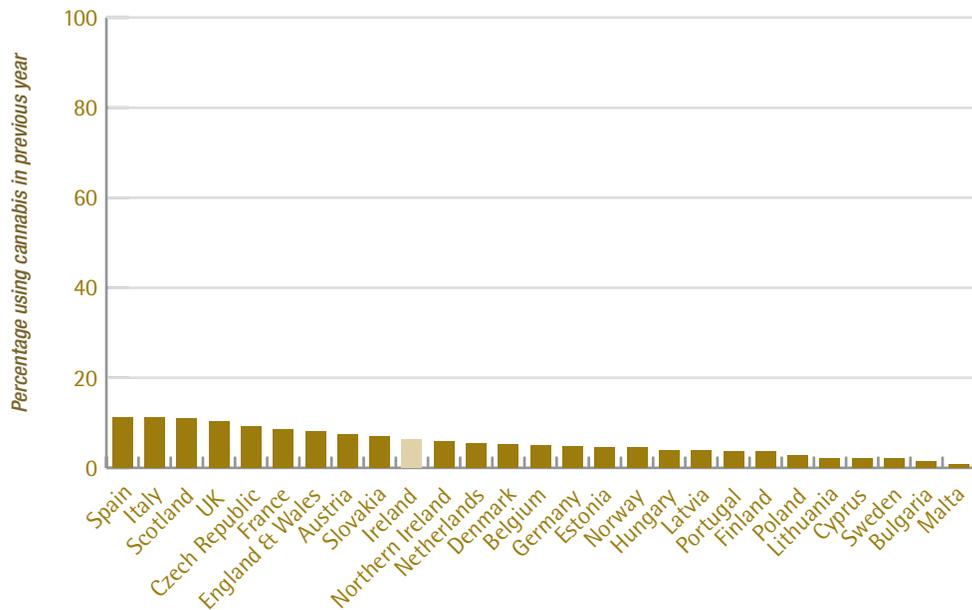
3.7.1 Drug Use Among Irish Adults

Use of illicit drugs in the previous twelve months was higher for men (9%) than women (4%), with the overall rates of drug use changing little in 2007 (6%) compared to 1998 (8%) or 2002 (7%). The European Monitoring Centre for Drugs & Drug Addiction (EMCDDA) estimates that:

- One in five of all 15 to 64-year-old Europeans have used cannabis at least once.
- Seven per cent of all 15 to 64-year-old Europeans have used cannabis in the last twelve months.

Figure 3.12 illustrates the 12-month prevalence of cannabis use among EU member states. Ireland is positioned in the upper section of the graph with usage at 6.3%.

Figure 3.12 Prevalence of cannabis use in previous year among 15 to 64-year-olds



Source: Statistical Bulletin 2008. General Population Surveys. European Monitoring Centre for Drugs & Drug Addictions, Lisbon. 2008

3.7.2 Cannabis Use Among Irish Children

HBSC International reports that cannabis use among young people appears to be a normative behaviour in North America and several European countries.

- In 2006, one in six (16%) Irish children (10 to 17-year-olds) reported using cannabis during their lifetime, compared to 12% in 2002.
- Approximately 12% (11% in 2002) reported cannabis use in the past 12 months, with more boys (8%) than girls (5%) reporting recent use.

Table 3.3 details the proportion of 15-year-olds who have used cannabis, with lifetime cannabis use higher in Ireland and neighbouring countries than in other countries involved in HBSC international.

Table 3.3 Proportion of 15-year-olds who have ever used cannabis in their lifetime

	15-Year-Olds	
	Boys	Girls
Ireland	26%	21%
England	26%	23%
Wales	30%	32%
Scotland	29%	27%
HBSC (average)	21%	16%

Source: Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008

Table 3.4 details recent use of cannabis among 15-year-olds, and again, internationally there was great variation among countries. Unlike most countries where there were similar levels of recent cannabis use among boys and girls, Ireland had higher rates of recent cannabis use among boys than girls.

Table 3.4 Proportion of 15-year-olds who reported recent use of cannabis (last 30 days)

	15-Year-Olds	
	Boys	Girls
Ireland	11%	7%
England	10%	8%
Wales	12%	11%
Scotland	13%	11%
HBSC (average)	8%	6%

Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

3.8 Health-Protective Behaviours

Health-protective behaviours are behaviours performed by persons, regardless of their health status, in order to protect, promote, or maintain their health. This section looks at three health protective behaviours, namely, breast screening, cervical screening, and immunisation.

3.8.1 Breast Screening

Breast screening is helping to lower deaths from breast cancer. Screening programmes in other countries have greatly reduced the number of women dying from the disease. Northern Ireland has shown a reduction in deaths from breast cancer by 20% in the last ten years following the introduction of their breast screening service. Currently in Ireland, there are approximately 2,000 new cases of breast cancer diagnosed every year, with 650 deaths.

The National Breast Screening Programme in Ireland, BreastCheck, was established in 1998. The programme aims to reduce the number of deaths from breast cancer in Ireland among women aged 50 to 64 years. The service invites women in the target age group for a free breast x-ray (mammogram) every two years. The following is summary data regarding BreastCheck in Ireland, as reported in the BreastCheck annual report (2006/2007):

- In 2006, BreastCheck invited 83,491 women for a free mammogram, with 81,011 then eligible for screening.
- In total, 63,271 women attended. This was the highest number of women screened to date.
- Seventy-eight percent of eligible women accepted the invitation to screening, an increase on previous years, and in excess of the programme's target of 70%.
- Of the 63,271 women screened in 2006, 1,903 (3.0%) were recalled for assessment.
- Of those recalled, 337(17.7%) were diagnosed with cancer, representing 5.3 cancers per 1,000 women screened.
- The majority of women attending for first screening were in the 50 to 54 year age group, with acceptance of invitation to screening highest in this cohort. As in previous years, there was a fall in acceptance to invitation for screening with increasing age at first invitation.
- In all age groups, acceptance to invitation for subsequent screening was high.

3.8.2 Cervical Screening

The National Cervical Screening Programme, CervicalCheck was launched in 2008. The overall aim of CervicalCheck is to reduce the incidence and the death rate from cervical cancer in Ireland. CervicalCheck will provide free smear tests through the primary care setting to women aged 25 to 60 years in Ireland, with tests provided every three years to women aged 25 to 44 years, and every five years to women aged 45 to 60 years.

This programme is being implemented by the National Cancer Screening Service (NCSS), and funded by the Department of Health & Children. The NCSS has provided a contract for the provision of smear-taking services by General Practitioners (GPs) and medical practitioners in primary care settings throughout the country. GPs are invited to register for the programme, and provide free smear tests to women in their area. Once registered, women will be invited to attend for free smear tests every three or five years, depending on age. This programme aims to achieve a coverage rate of 80% of the eligible population of approximately 1.1 million women and has the potential to cut mortality rates from cervical cancer by up to 80%. Currently, there are approximately 170 new cases of cervical cancer in Ireland every year, with 76 deaths.

3.8.3 Uptake of Immunisations

Vaccination comes second in importance only to clean water as a factor in improving health in a population and has achieved some historic milestones, such as the elimination of smallpox in 1980. As recently as 1946 in Ireland, 117 children died from whooping cough and there were 139 deaths from diphtheria. Vaccination protects not only the individual child but also the community ('herd immunity'). When enough people are vaccinated, there is less disease in the population and it is harder for infection to spread from one susceptible person to another. The unvaccinated are thus protected by the vaccinated. The level of vaccine uptake required to create this effect depends on the infectiousness of the disease in question. Most childhood vaccination campaigns aim for an uptake of 95%.

The HSE National Immunisation Office (NIO) plans and organises national vaccination campaigns as well as providing media campaigns, training materials, and information leaflets. It also manages the National Cold Chain delivery service. The HSE Primary Community and Continuing Care (PCCC) directorate is responsible for implementation of most vaccination programmes, and the service is delivered by GPs, practice nurses, community health doctors, public health nurses, and support staff. In addition to vaccinating children, the HSE also offers some other vaccinations to vulnerable adults and children (for example, Influenza vaccine) and persons who may be at risk through contact with relevant communicable diseases (for example, hepatitis A).

The national immunisation schedule has been amended to include hepatitis B and pneumococcal conjugate vaccine (PCV) for all children born after July 1st 2008. The new schedule for children born after July 1st 2008 and the schedule for children born on or before June 30th 2008 are set out in Table 3.5. Vaccines are a safe, cost effective, and efficient way to prevent sickness and death from infectious disease. A high uptake of vaccination, as recommended by the National Immunisation Advisory Committee, is crucial to maintaining public health. It is important that every effort is made to ensure that uptake of vaccines meet the national target rates.

Table 3.5 Vaccination schedule for babies born on or after July 1st 2008 and on or before June 30th 2008 respectively

Age	Vaccination	
	Born after July 1st, 2008	Born on or before June 30th, 2008
Birth	BCG	BCG
2 months	6 in 1 + PCV	5 in 1 + Men C
4 months	6 in 1 + Men C	5 in 1 + Men C
6 months	6 in 1 + PCV + Men C	5 in 1 + Men C
12 months	MMR + PCV	MMR + Hib
13 months	Men C + Hib	-
4-5 years	4 in 1 + MMR	4 in 1 + MMR
11-14 years	Td	Td

Explanation of vaccinations:

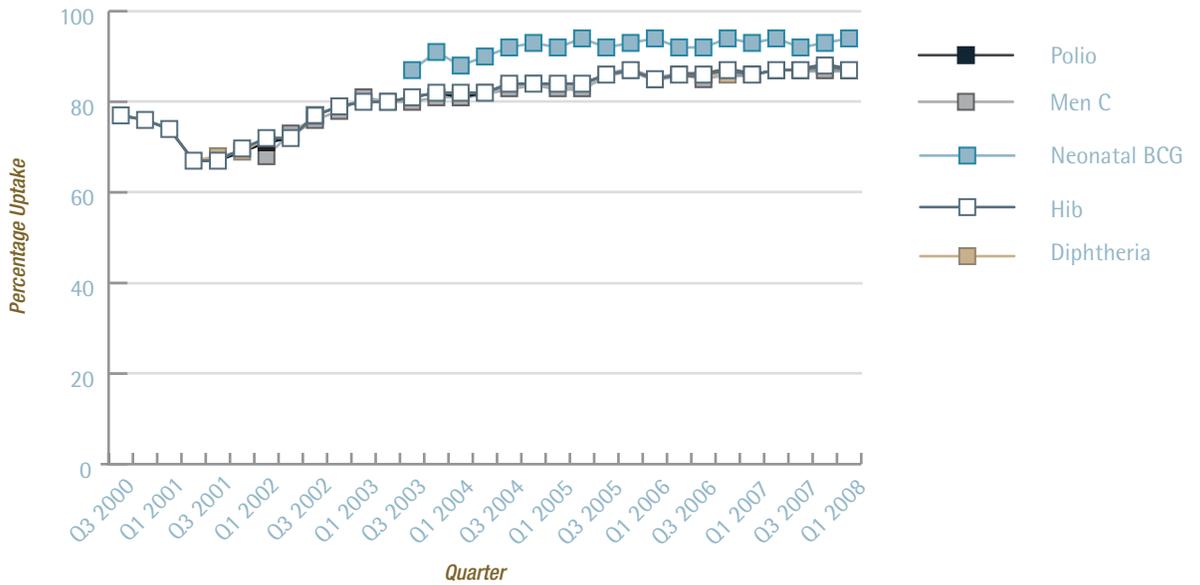
BCG	Bacille Calmette-Guérin (against TB)
6 in 1	Diphtheria, tetanus, pertussis (whooping cough), polio, <i>Haemophilus influenzae</i> type b, hepatitis B
5 in 1	Diphtheria, tetanus, pertussis, polio, <i>Haemophilus influenzae</i> type b
PCV	Pneumococcal conjugate vaccine
Men C	Meningococcal C
MMR	Measles, mumps, rubella
Hib	<i>Haemophilus influenzae</i> type b
4 in 1	Diphtheria, tetanus, pertussis, polio
Td	Tetanus, diphtheria

(a) Childhood Immunisation Rates

Target uptake rates are set at a level which will provide community protection in the population i.e. there will be sufficient number of immunised persons to prevent spread of disease if it is introduced. The target uptake rates for 'Five-in-one' (polio, diphtheria, tetanus, pertussis, *Haemophilus influenzae* type B), MenC (meningococcal Group C) and MMR (measles, mumps and rubella) vaccinations are all set at 95%. While there have been improvements in recent quarters, actual uptake rates remain below this target level.

The uptake rates for childhood vaccines at age 12 and 24 months are illustrated in Figures 3.13 and 3.14 respectively. The BCG vaccine is offered to most children shortly after birth (neonatal vaccination), and protects against serious forms of tuberculosis during childhood. The uptake level in areas providing neonatal BCG and data on uptake is shown in Figure 3.13. Although the uptake is high in these areas, it must be noted that it is not a national uptake figure.

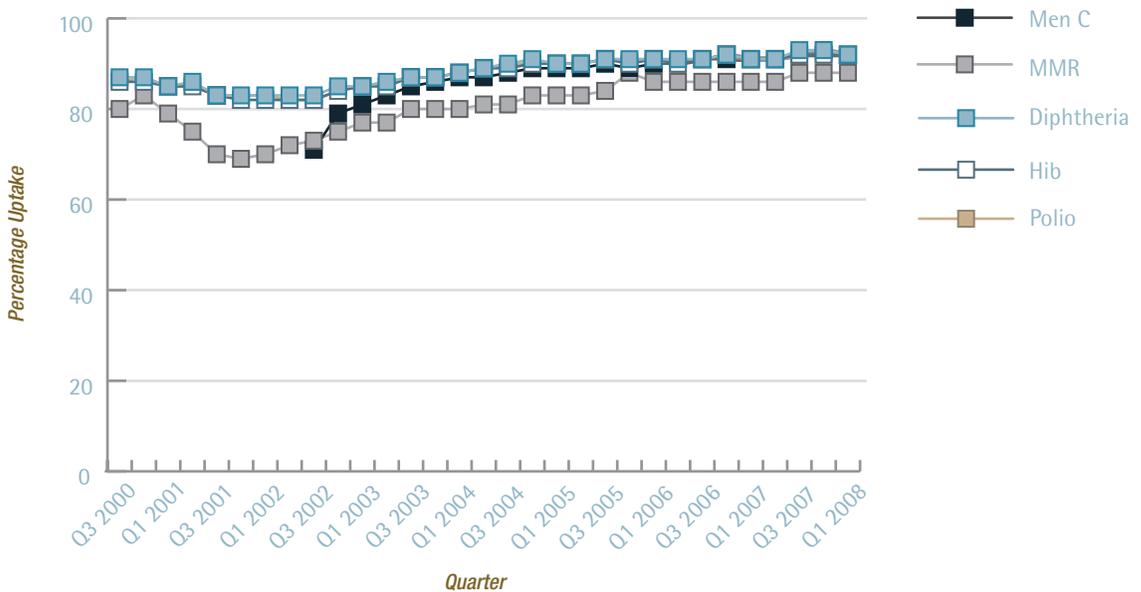
Figure 3.13 Quarterly immunisation uptake rates at 12 months of age, Q3 2000 - Q1 2008



Source: HPSC

The uptake levels, where applicable, are for fully completed courses of vaccination. All are national uptake figures apart from neonatal BCG which is not provided in some HSE areas.

Figure 3.14 Quarterly immunisation uptake rates at 24 months of age, Q3 2000 - Q1 2008

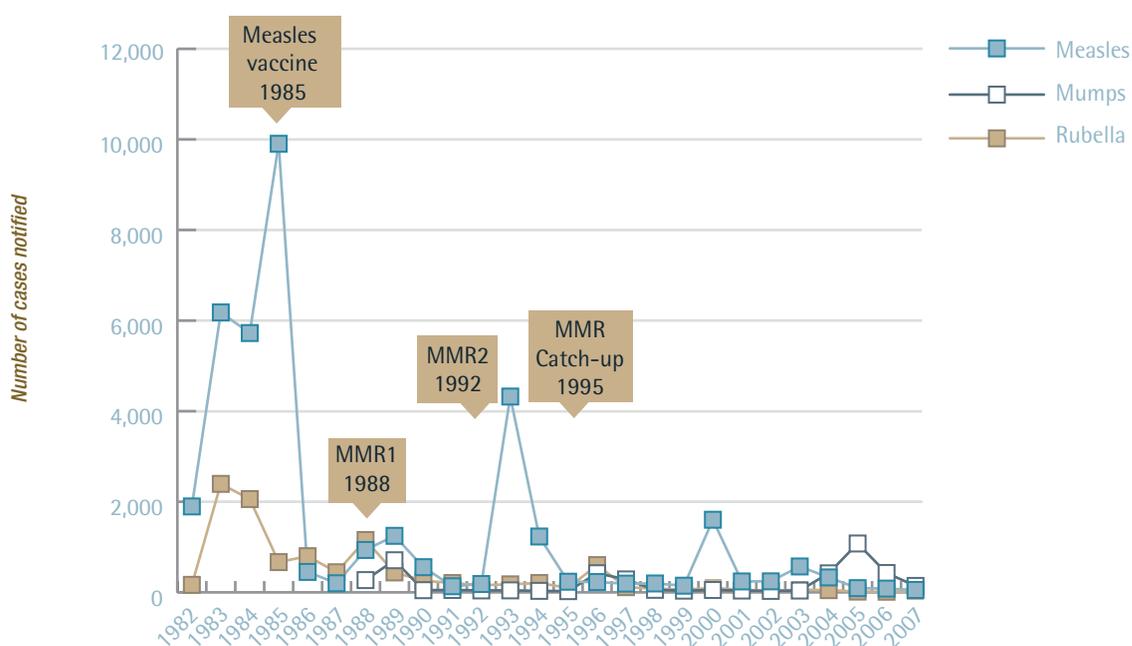


Source: HPSC

The uptake levels, where applicable, are for fully completed courses of vaccination.

- (i) **Measles, mumps and rubella infections:** The level of MMR uptake has remained consistently below the target level of 95% and dropped to as low as 69% in 2001. A number of outbreaks of these diseases have occurred. The most recent measles outbreak occurred in Ireland in 2000, with over 1,600 cases reported, and three associated deaths. Figure 3.15 shows the numbers of measles, mumps and rubella infections notified from 1982 to 2007. In 1985, the year when measles vaccine was introduced, 9,903 cases were reported. The number of cases notified in subsequent years dropped significantly. Since then, due to relatively low levels of uptake, a number of major outbreaks occurred despite the immunisation programme.
- (ii) **History of MMR vaccination in Ireland:** The MMR vaccine was incorporated into the primary immunisation schedule in October 1988. In July 1992, a second MMR injection for both boys and girls ages 10 to 14 years was introduced (replacing the previous selective rubella vaccine programme for pre-pubertal girls only). A catch-up campaign was introduced in 1995 aimed at children aged 5 to 12 years of age who were susceptible to measles. In 1999 it was decided to lower the age for routine administration of the second MMR dose from 10 to 14 years to children aged four to five years of age to improve immunisation coverage and decrease measles transmission.

Figure 3.15 Vaccination milestones and numbers of cases of measles, mumps, and rubella notified for the years 1982 to 2007 (where available)



Source: HPSC

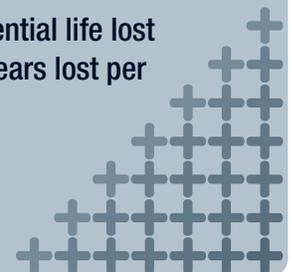
(b) Influenza Vaccination

Influenza vaccination is now recommended for all persons aged 50 years and over and for persons at risk due to other illness or occupation (Immunisation Guidelines for Ireland, 2008). The influenza vaccine used provides 70% to 90% protection against the disease in persons less than 65 years of age. Although the protective effect is lower in those over 65 years old, morbidity and mortality is significantly reduced. The target uptake among the GMS population aged 65 years and over was set nationally at 65%. The uptake level for this age group has failed to meet this target and was 58% in the most recent 'influenza season' (1st September 2007 to 29th February 2008). It is hoped that a target of 75% will be reached by 2010 (National Service Plan, 2008).

Causes of Death in Ireland

Key Points

- Death rates in Ireland have been falling, and are now similar to rates in the EU-15.
- The rate of premature deaths has fallen and is now below that of the EU-15.
- The relative contribution of each condition to the overall death burden has changed. The proportion of deaths from circulatory disease has fallen and the proportion of deaths from cancers has increased.
- Infant mortality has fallen and is now just below that of EU-15.
- Coronary heart disease deaths have fallen but are still above those of the EU-15.
- Cerebrovascular disease deaths have fallen and are lower than the EU-15.
- Cancer deaths have fallen and are below EU-15 rates for males, but above EU for females.
- Despite falling rates in male deaths from respiratory diseases in Ireland, both male and female rates remain above EU-15 rates. Respiratory disease is the second highest cause of death for women in Ireland.
- Ireland ranks 6th lowest for death by suicide among 21 OECD countries. Suicide rates have fallen in males in recent years and are now below EU-15 for males and females. However, a greater proportion of suicides in Ireland occur in younger age groups, with Ireland ranking 7th highest among 24 EU countries for youth suicide.
- Road traffic collision death rates have fallen in males in Ireland and are now below EU-15 rates. Female rates in Ireland and the EU-15 are much lower than male rates, with female rates in Ireland being slightly lower than our EU-15 counterparts.
- Falls are the leading cause of fatal injuries in older people. Ireland has a similar rate to the EU average.
- As a cause of death, cancer causes the greatest number of years of potential life lost from the population, but injuries cause the highest number of average years lost per individual.



Health Status

of the Population of Ireland

Causes of Death in Ireland

Section 4



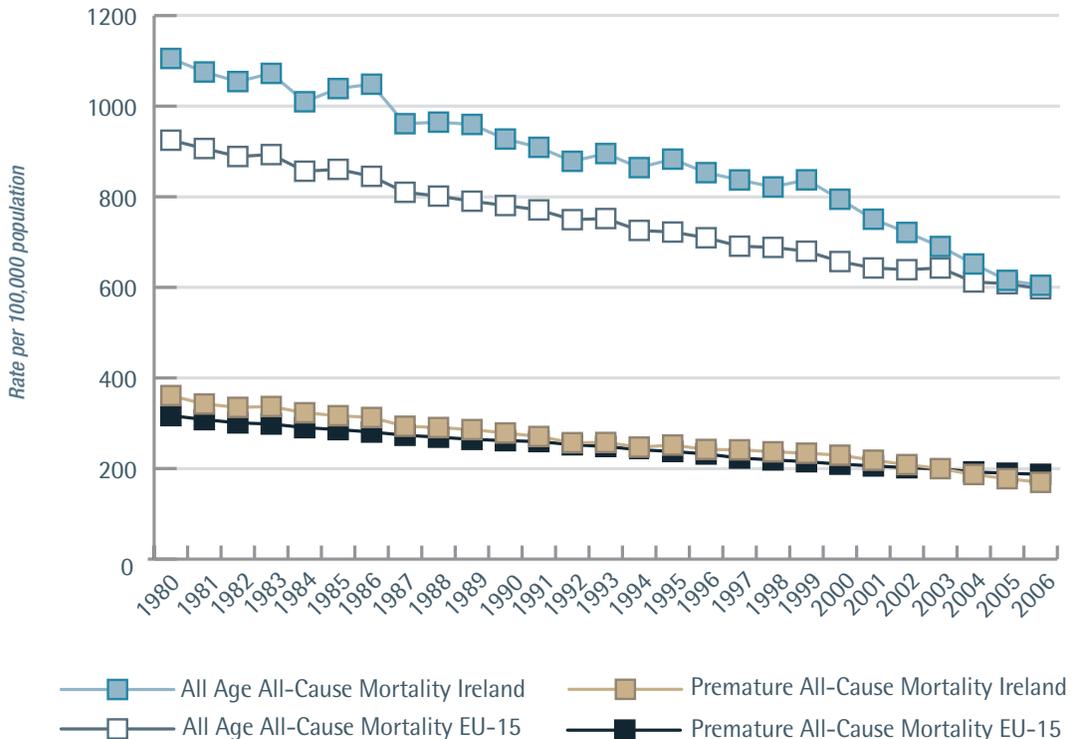
2008

4. Causes of Death in Ireland

4.1 All-Cause Mortality

In 2007, 28,050 people died in Ireland. The greatest number of deaths were due to diseases of the circulatory system (n=9,931), followed by cancer (n=7,844), respiratory diseases (n=3,541) and injury and poisoning (n=1,676). Figure 4.1 illustrates all causes of death (age-standardised mortality rates) and premature causes of death (deaths in those under 65 years) in Ireland and the EU-15 between 1980 and 2006.

Figure 4.1 Age-standardised all-cause and premature (<65 years) mortality rates per 100,000 population, 1980-2006, Ireland and EU-15



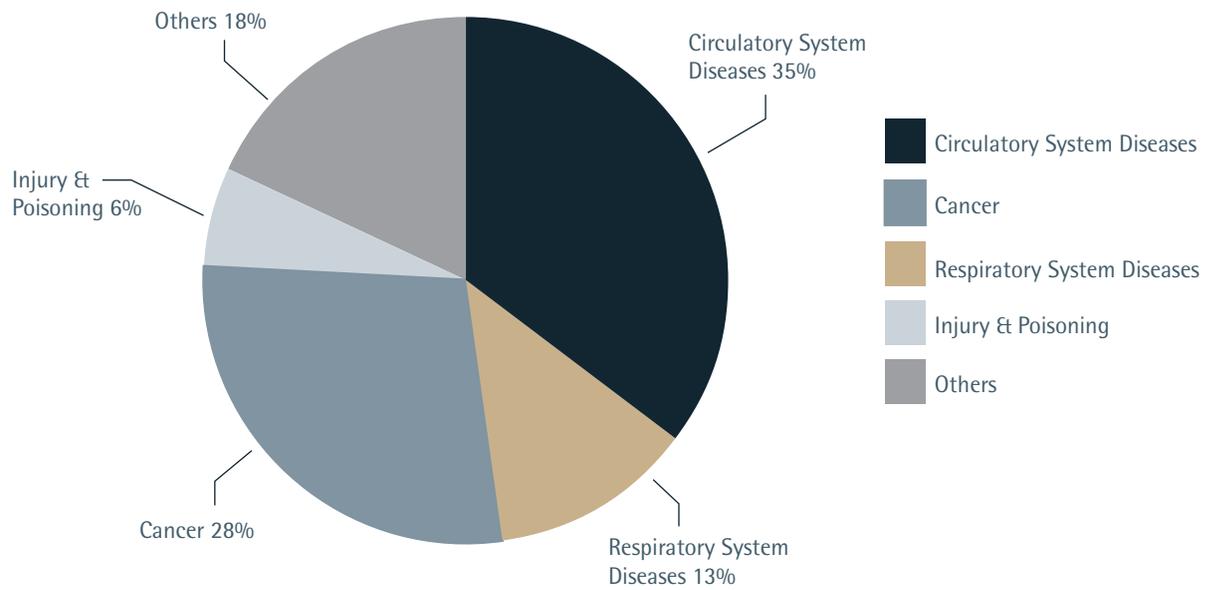
Source: European Health for all Database (November 2007), WHO Regional Office for Europe.

Overall, death rates in Ireland have been falling across time, with a more rapid decline in recent years. All-cause mortality in Ireland is now just marginally above that of the EU-15, while the rate for premature mortality in Ireland has been below that of the EU-15 since 2004.

4.2 Main Causes of Death

Figure 4.2 illustrates the main causes of death in Ireland, with diseases of the circulatory system accounting for 35% (n=9,931) of all deaths. Coronary heart disease comprises over half (50.3%) of these circulatory system diseases.

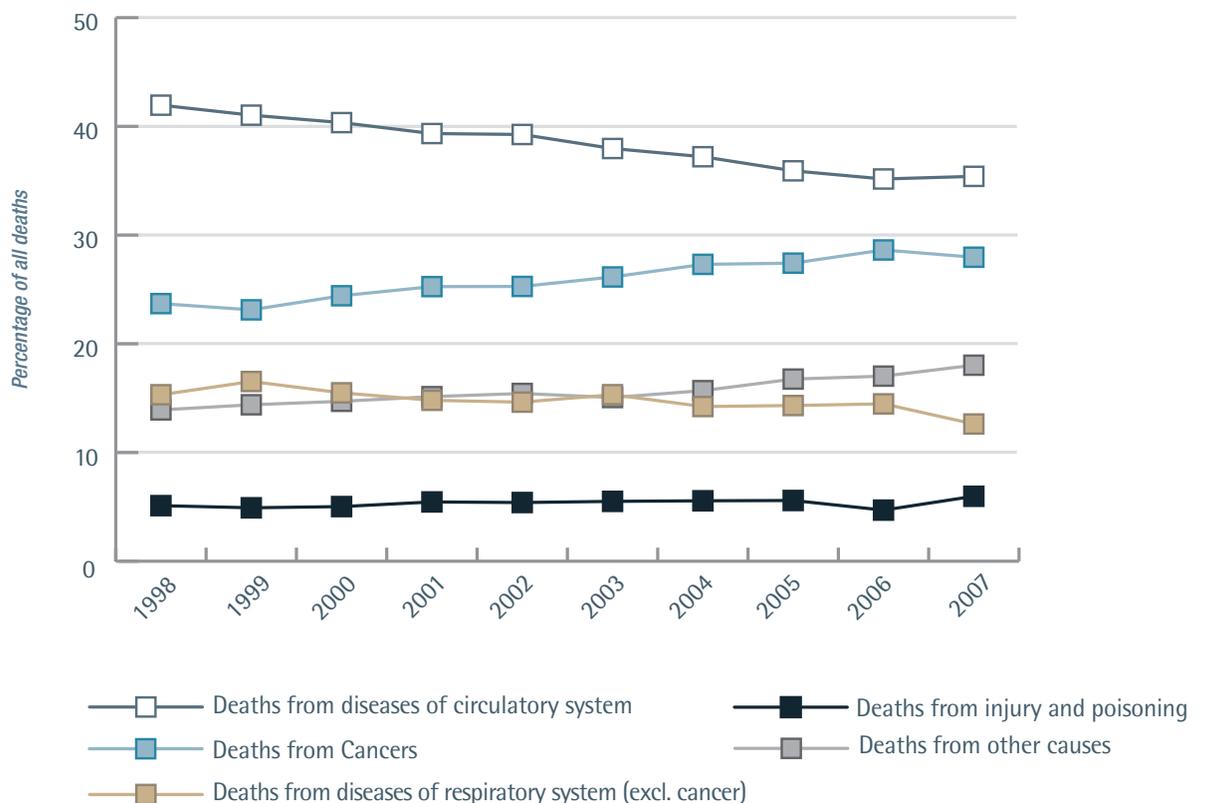
Figure 4.2 Principal causes of death in Ireland, 2007



Source: Vital Statistics, CSO.

Over time, there have been changes in the relative contribution of each condition to the overall death burden, as illustrated in Figure 4.3, with deaths from circulatory disease falling and deaths from cancers increasing (as a percentage of all deaths).

Figure 4.3 Percentage contributions of main causes of death to total number of deaths, 1998 - 2007

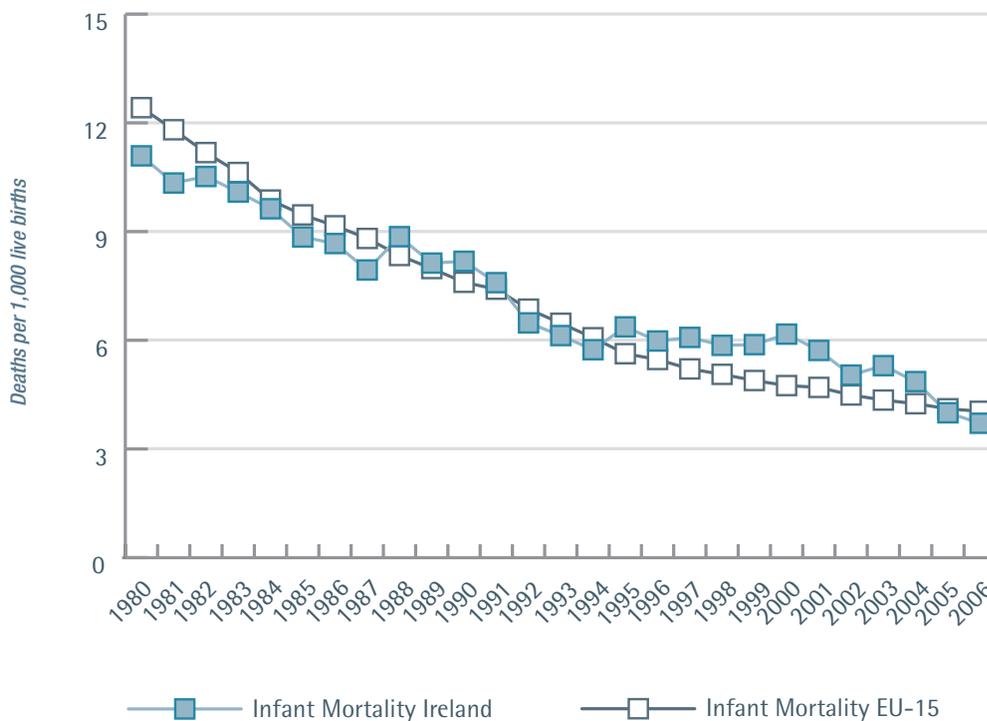


Source: CSO

4.3 Infant Mortality

Infant mortality (the number of deaths in all infants aged less than one year per 1,000 live births) is an indicator that reflects the underlying health and wellbeing of the population. The main causes of infant deaths are congenital anomalies and perinatal factors. Figure 4.4 illustrates a steady decline in infant deaths in Ireland and the EU-15. Mortality in Ireland exceeded that of the EU-15 in the years between 1995 and 2004. Rates have now fallen just below the EU-15, resulting in an infant mortality rate in 2006 of 3.7 per 1,000 live births compared to an EU-15 average of 4.0 per 1,000.

Figure 4.4 Infant mortality rates in Ireland and EU-15, 1980 - 2006



Source: European Health for all Database (November 2007), WHO Regional Office for Europe.

4.4 Years of Potential Life Lost

Years of potential life lost (YPLL) is a statistical measure that is defined as the number of years of potential life lost by each death occurring before the individual's life expectancy, traditionally set at age 65 years. It is calculated by subtracting a person's age of death from their life expectancy.

In regard to premature deaths, cancer accounts for 38% of deaths, circulatory disease 27%, injuries (accidents, suicide, homicide) 11%, respiratory disease 4% and digestive disease, 4%. Table 4.1 sets out YPLL for these causes of death. Mortality from cancer has the largest impact, with almost 100,000 years of potential life lost overall from the population. However, road traffic collisions, injuries, poisoning and suicide, and self-inflicted injuries, cause the greatest number of average years lost per individual as these generally occur when people are much younger. Together, these three injury-related categories of death account for 20.5% of all YPLL.

Table 4.1 Number of years of potential life lost by principal cause of death, 2006

Principal Cause of Death	Number of deaths	Years of Potential Life Lost (YPLL)	Average YPLL per person
Cancer of the Lung (ICD 162)	1,608	19,514	12.1
Cerebrovascular Disease (ICD 430-438)	1,903	15,742	8.3
Suicide and Self-Inflicted Injury (ICD E950-E958)	409	15,003	36.7
Breast Cancer (ICD 174)	667	11,116	16.7
Motor Vehicle Accidents (ICD 810-819)	281	11,003	39.2
Cancer of the Colon (ICD 153)	584	6,158	10.5
Cancer of the Rectum (ICD 154)	370	4,250	11.5
Diabetes (ICD 250)	516	4,227	8.2
Cancer of the Prostate (ICD 185)	532	3,609	6.8
All Cancers (ICD 140-208)	7,868	99,321	12.6
All Circulatory System Diseases (ICD 390-459)	9,662	81,773	8.5
All Ischemic Heart Disease (ICD 411)	4,860	41,411	8.5
All injuries and Poisonings (ICD 800-999)	1,292	39,270	30.4
All Causes	27,479	318,115	11.6

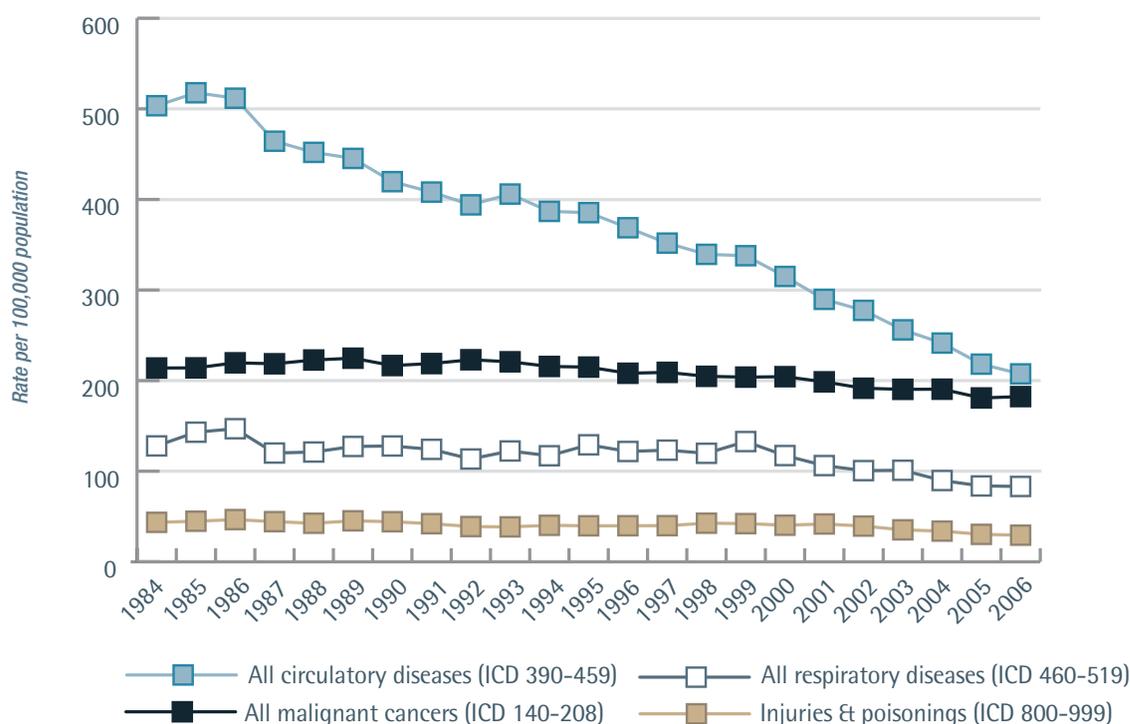
*Mortality codes are based on International Classification of Diseases (ICD-9) codes. Figures for 2006 are provisional and based on year of registration.

Source: Public Health Information System, version 10. 2008

4.5 Death from Individual Conditions

4.5.1 The Major Conditions

Figure 4.5 illustrates the four major causes of death (age-standardised mortality rates) from 1984 to 2006, highlighting the marked reduction in deaths from circulatory disease. It is estimated that half of this reduction is due to population risk factor reduction and half to treatments. Reductions across time in other conditions are small.

Figure 4.5 Leading causes of death (age-standardised mortality rates) for Ireland, 1984-2006

Source: Public Health Information System, version 10. 2008

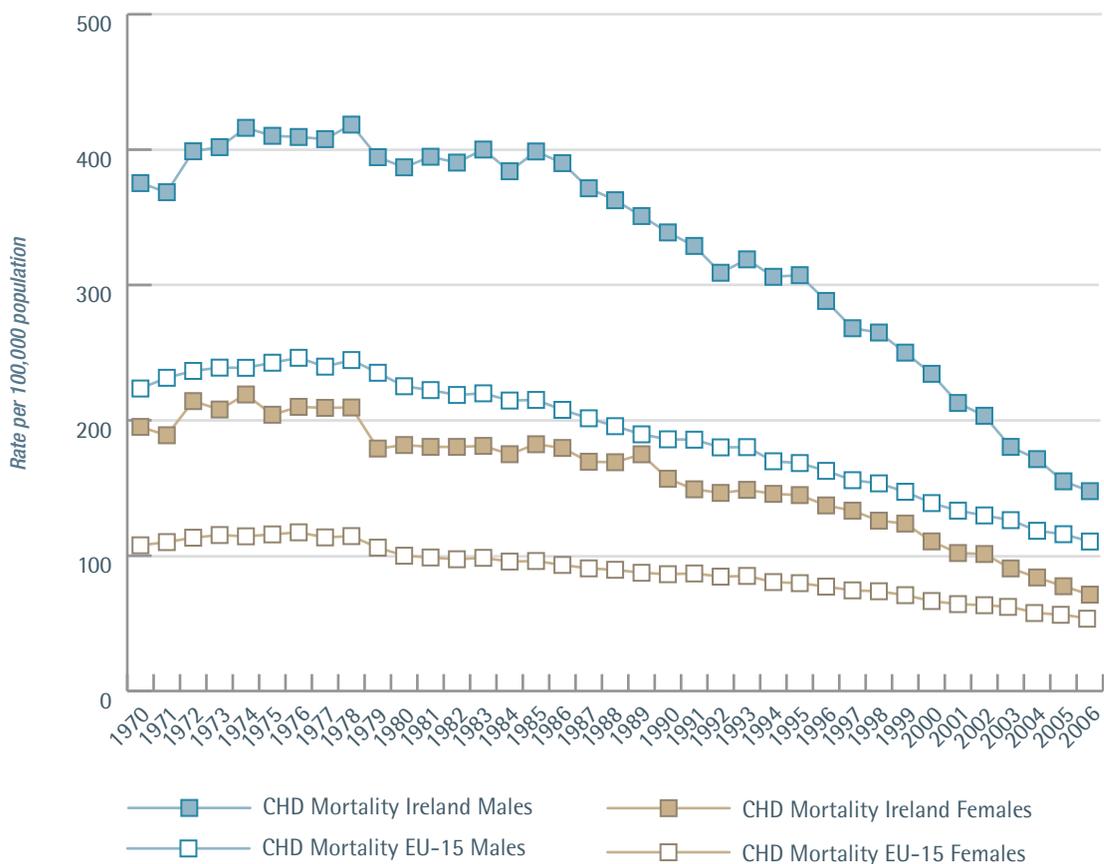
4.5.2 Circulatory Disease

Circulatory disease is the most common cause of death in Ireland. It accounts for over one third (35%) of all deaths. Circulatory diseases include coronary heart disease (heart attacks), angina, cerebrovascular disease (stroke), hypertension (elevated blood pressure), peripheral artery disease, rheumatic heart disease, congenital heart disease, and heart failure. The major causes of circulatory disease are tobacco use, physical inactivity, an unhealthy diet, high cholesterol, and genetic factors. In Ireland, there has been a steady decrease in mortality rates for all diseases of the circulatory system for both males and females.

(a) Coronary Heart Disease

Coronary heart disease (CHD), the most common form of heart disease, is caused by the accumulation of plaques (fat, cholesterol, calcium and other substances) in the coronary arteries, causing narrowing, which reduces blood supply to the heart muscles. Reduced blood supply may cause angina, or a clot may block the narrowed coronary artery, causing a heart attack (myocardial infarction). Chronic CHD can lead to heart failure and heart rhythm disturbances. Figure 4.6 illustrates deaths from CHD for males and females in Ireland and the EU-15 from 1970 until 2006.

Figure 4.6 Deaths from CHD (age-standardised mortality) per 100,000 population, males and females, Ireland and EU-15, 1970 - 2006

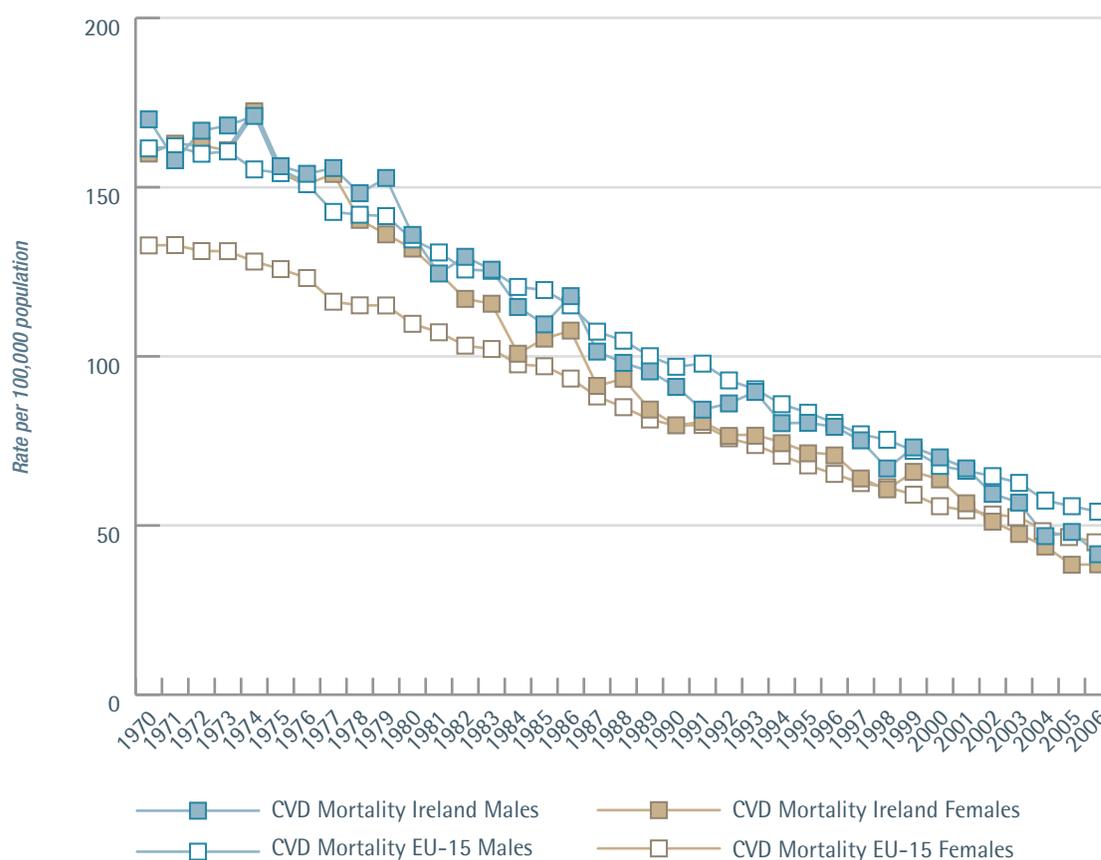


- Each year there are about 5,500 deaths from CHD in Ireland, accounting for one-fifth (19%) of all deaths.
- Death rates from CHD have declined across all age groups in Ireland in the past 20 years, dramatically so for males, with rates falling from a high of 418.5 per 100,000 in 1978 to 154.9 in 2006.
- Men die more often from CHD than women, particularly in the under 65s, where 28% of men compared to 15% of women die from circulatory disease.
- People in lower socio-economic groups have a higher mortality from CHD.
- In the 1990s, despite declining CHD mortality rates, Ireland had the highest premature mortality rate for men and women in the EU-15. While CHD mortality has declined dramatically since then for both men and women in Ireland, rates are still higher than those for the EU-15.

(b) Cerebrovascular Disease

A cerebrovascular accident, or stroke, occurs when the blood supply to the brain is interrupted, depriving it of oxygen. A stroke causes death in one third of patients by six months and leaves another third permanently dependent on the help of others. Figure 4.7 illustrates how deaths from cerebrovascular disease (CVD) have been falling for males and females in Ireland, in tandem with their EU-15 counterparts.

Figure 4.7 Deaths from cerebrovascular disease in Ireland and the EU-15, 1970 - 2006



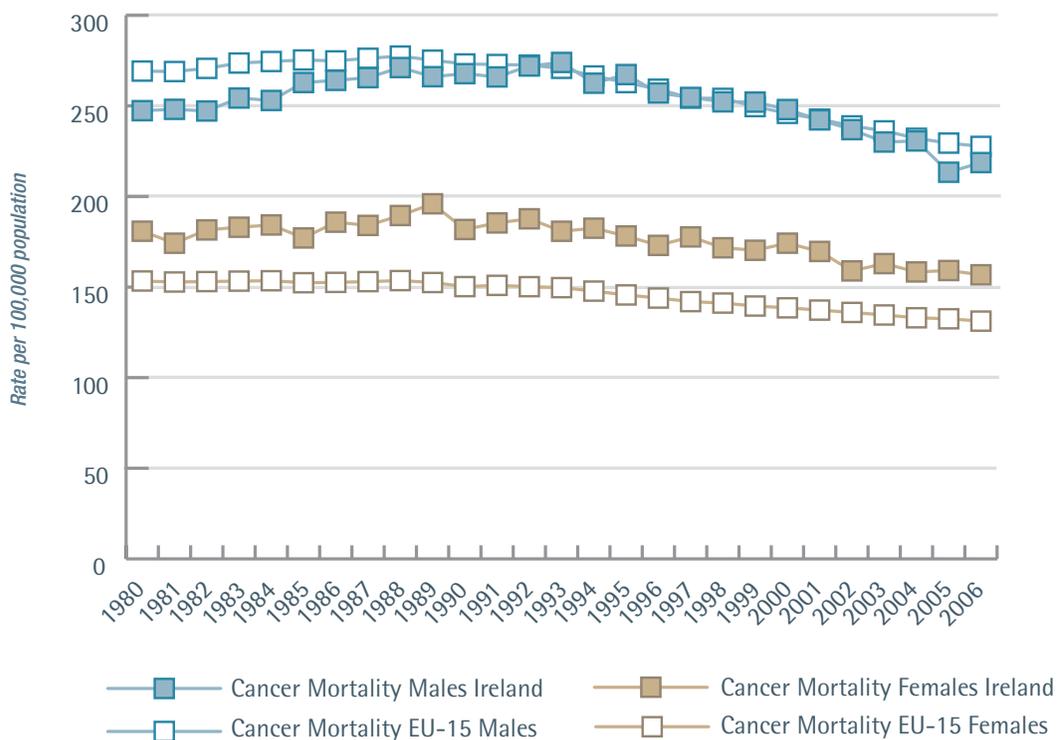


- In 2006 in Ireland, more males than females died from CVD (41.5 versus 38.5 per 100,000 population).
- This trend has been relatively consistent across time in both Ireland and the EU-15.
- Since 2002, deaths from CVD have been lower for both males and females in Ireland when compared with their EU-15 counterparts.

4.5.3 Cancer

The term 'cancer' is used to describe a group of illnesses where there is an overgrowth of tissue cells, commonly leading to the development of a tumour. These illnesses have distinctive risk factors and treatments. Cancer is the second most common cause of death and the leading cause of premature mortality in Ireland, with one in three Irish people developing invasive cancer during their lifetime. Every year, there are about 7,500 cancer deaths in Ireland. The most common causes of cancer death in Ireland are lung cancer (20%), followed by colorectal cancer (12.3%), and breast cancer (8.6%). Figure 4.8 illustrates deaths from cancer in males and females for Ireland and the EU-15 from 1980 until 2006.

Figure 4.8 Deaths from cancer for males and females, Ireland and EU-15, 1980 - 2006



Source: European Health for all Database (November 2007), WHO Regional Office for Europe

Deaths from cancer have fallen in recent years, with mortality in people under 70 years of age having fallen more than 20% between 1994 and 2006.

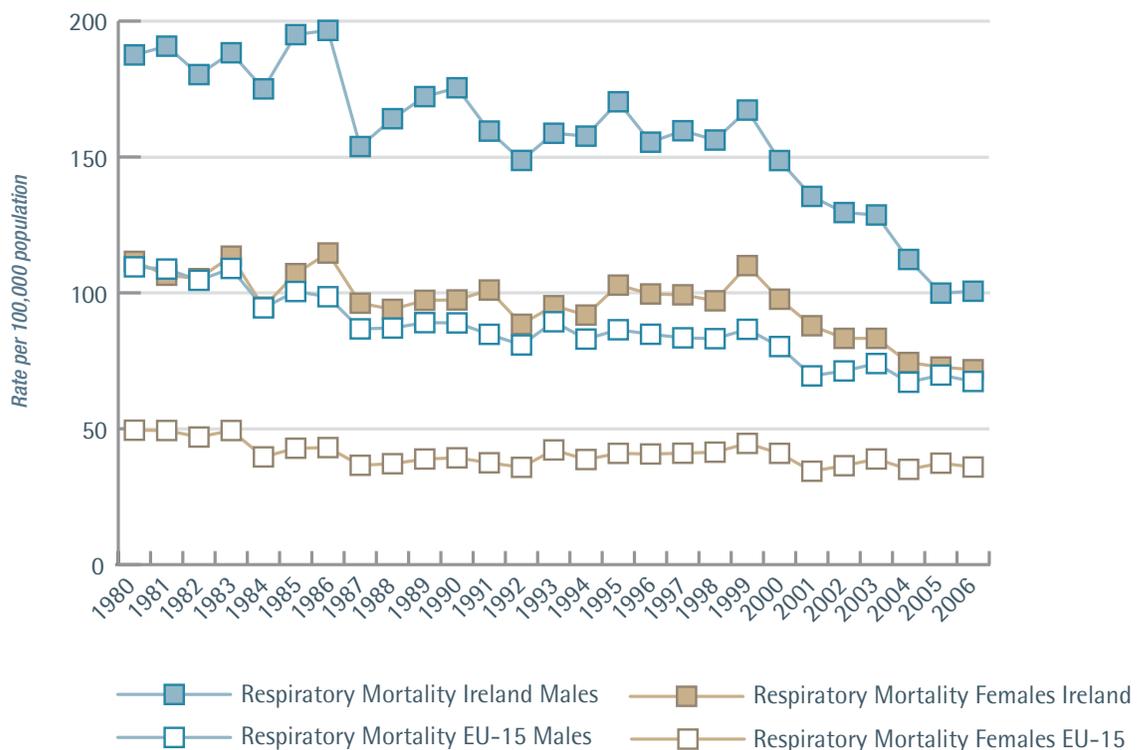
- There is a striking difference in death rates between men and women, in both Ireland and the EU-15. The higher rate of deaths from cancer for men is consistent across all cancers.
- Mortality rates in Ireland and the EU-15 have decreased for both males and females. In recent years, survival for Irish males has been above the EU-15 average, but survival for Irish females has been below the EU-15 average.
- An Institute of Public Health report of 2001 found a clear occupational class gradient in mortality from invasive cancers. The lowest occupational class had an annual standardised mortality rate that was over 110% higher than the rate in the highest occupational class. A higher rate was found for all cancers assessed other than prostate and skin cancer.

4.5.4 Respiratory Disease

A range of conditions, including cancer, affect the respiratory (breathing) system. Chronic obstructive pulmonary disease (COPD) is a term that encompasses several chronic lung diseases which cause limitations in lung airflow. Asthma is a chronic disease characterised by recurrent attacks of breathlessness and wheezing, which may vary in frequency and severity from person to person. Another major respiratory disease is pneumonia, or inflammation of the lung tissue, most commonly caused by infective agents such as bacteria and viruses.

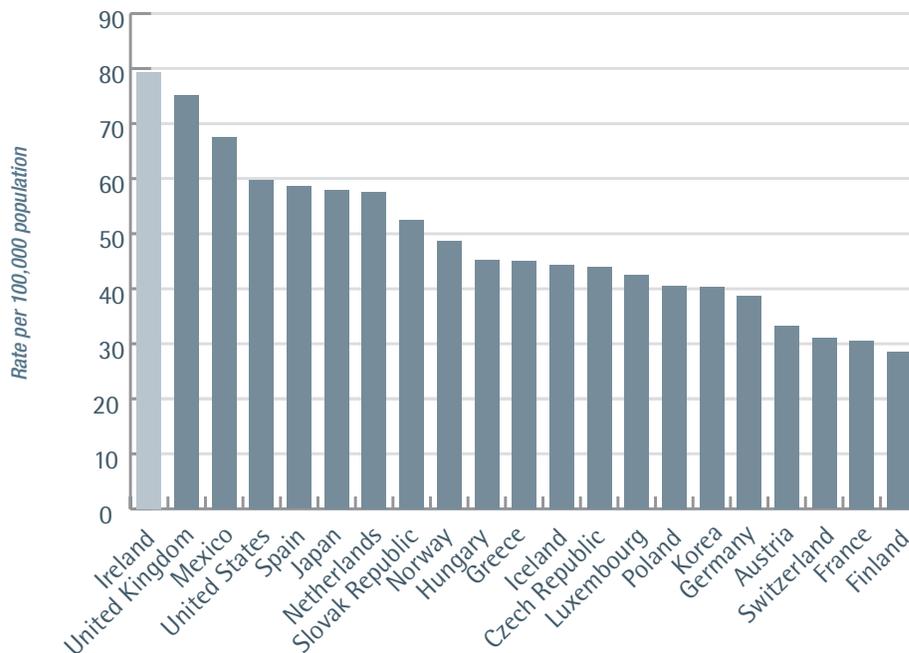
Diseases of the respiratory system, including malignant neoplasms, cause one in five deaths in Ireland, with over 5,500 deaths each year. The leading cause of death from respiratory disease is pneumonia (34%, n=1,913), followed by cancer of the respiratory system (29%, n=1,608) and COPD (22%, n=1,259). Figure 4.9 illustrates deaths from all non-cancer respiratory conditions for males and females in Ireland and the EU-15 between 1980 and 2006. Deaths from cancer of the lung (n=1,603) were included in the previous section.

Figure 4.9 Deaths from respiratory conditions for males and females in Ireland and the EU-15, 1980 - 2006



Death rates from respiratory disease in Ireland are consistently above EU-15 counterparts. While male deaths rates have fallen substantially from 196.6 per 100,000 in 1986 to 100.6 in 2006, rates for females have shown a different pattern. Between 1980 and 2000 female death rates from respiratory disease remained relatively constant, with the peak rate occurring in 1999 (110.0 per 100,000). Thereafter, rates for Irish females began to fall. Despite this reduction, however, the most recent Irish female death rate from respiratory disease is almost double the EU-15 average. Respiratory disease is the second highest cause of death for women in Ireland. Figure 4.10 shows Ireland with the highest mortality rate for diseases of the respiratory system of 21 countries with recorded data in 2005.

Figure 4.10 Deaths from diseases of the respiratory system, Ireland and 21 countries, 2005

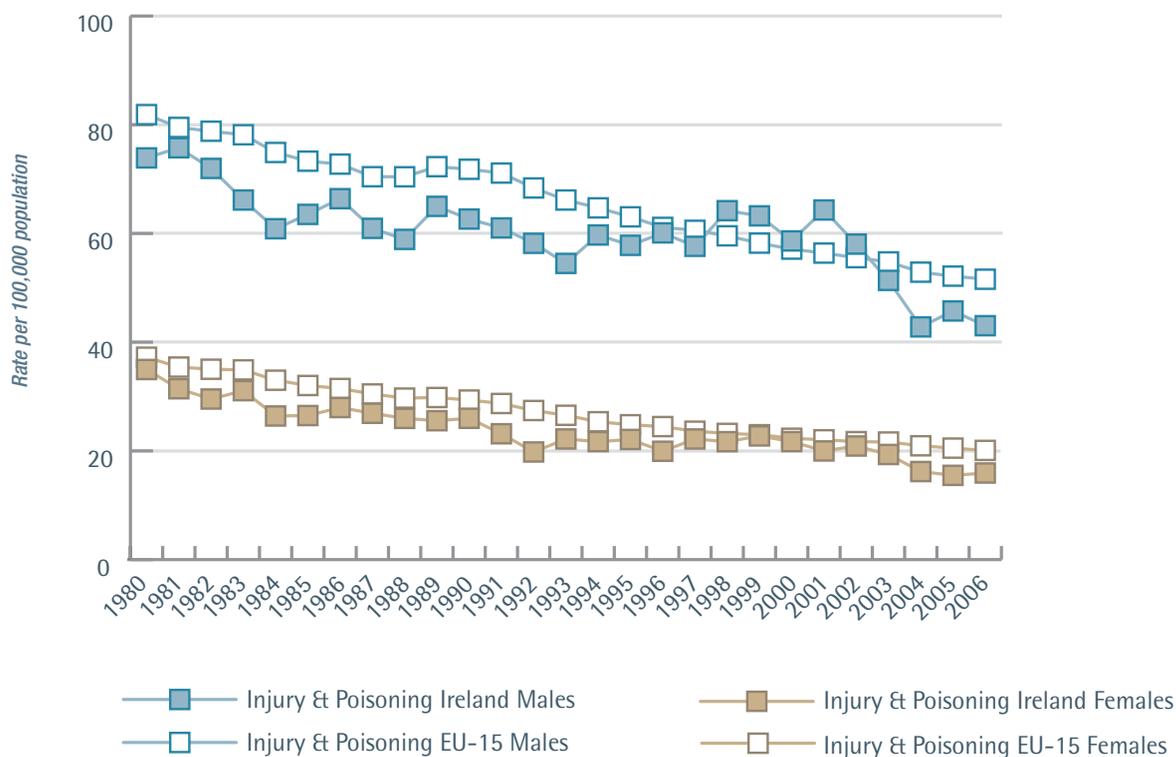


Source: OECD Health Data 2005, Version June 2008

There is a strong relationship between social class and death from respiratory disease in Ireland. The death rate from respiratory disease is 200% higher in the lowest occupational class compared to the highest occupational class.

4.5.5 Death from Injuries

Injuries are a leading cause of morbidity and premature mortality worldwide, with the majority of these injuries being preventable. Every year approximately 1,300 people die in Ireland from injuries and poisoning, accounting for 5% of all deaths. The most common causes of deaths from injury are suicide and self-inflicted injuries (31.6%), followed by motor vehicle collisions (21.7%) and falls (19.8%). Figure 4.11 illustrates deaths from injuries and poisonings for males and females in Ireland and the EU-15 between 1980 and 2006.

Figure 4.11 Deaths from injuries and poisonings in males and females, Ireland and the EU-15, 1980 - 2006

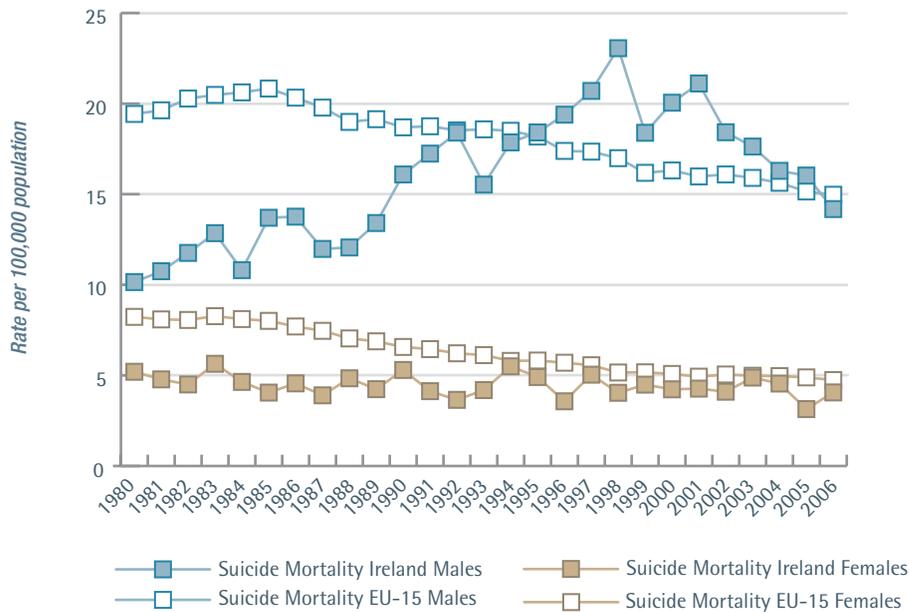
Source: European Health for all Database (November 2007), WHO Regional Office for Europe

- Deaths from injuries and poisonings have been lower across time, for the most part, in Ireland than in the EU-15, for both males and females. The exception occurred in the period from 1998 to 2002 when male rates exceeded EU-15 rates, and female rates approximately equalled EU-15 rates. Thereafter, rates fell for both sexes, with Ireland's age-standardised death rate in 2006 of 29.4 per 100,000 population, slightly lower than the EU-15 average of 35.2 per 100,000 population.
- Deaths from injury and poisoning are decreasing in both Ireland and the EU-15, but currently more so in Ireland.
- This drop in injury mortality (from 50.0 per 100,000 in 1980 to 29.4 per 100,000 in 2006) is due to a significant decrease in road traffic collision (RTC) mortality and all other unintentional injury mortality.
- Although injury and poisonings account for a relatively small number of total deaths in Ireland, the fact that these deaths occur mainly in the younger population means that the years of potential life lost is very large, at almost 40,000 years.
- The social class gradient for injuries is steeper than for many other causes of death, with a much higher incidence among those in lower socio-economic groups.
- In childhood, the injury death rate for children from families in the unskilled social classes is five times higher than that of children from families in the professional social classes.

(a) Death from Suicide

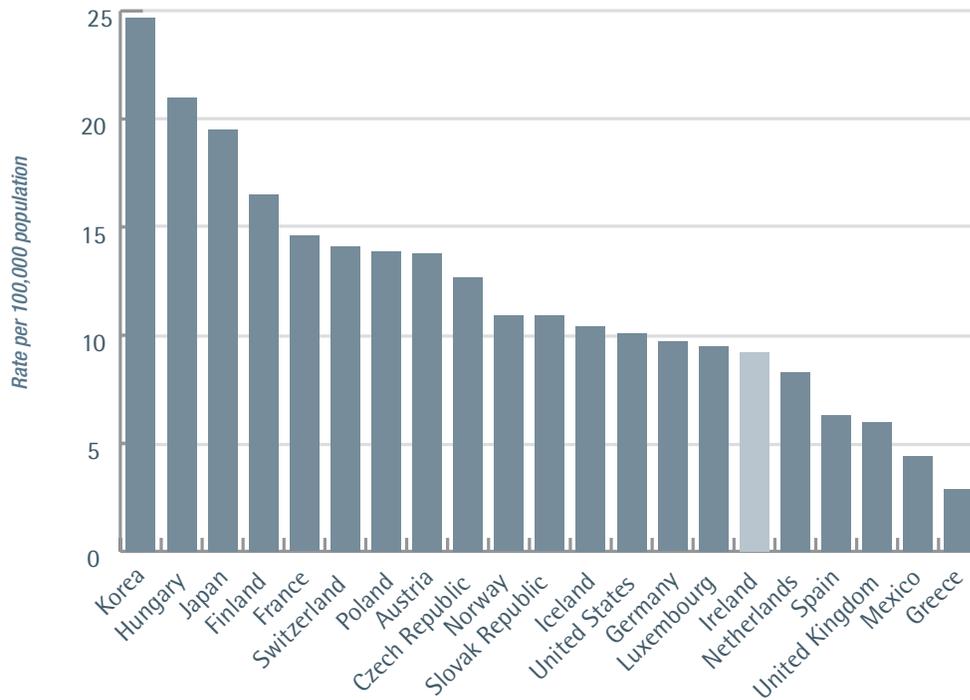
Suicide is the act of ending one's own life. In 2007, there were 460 deaths from suicide in Ireland. The majority were male, with people under 50 years of age accounting for 70% of suicide deaths. Figure 4.12 illustrates deaths from suicide in Ireland and the EU-15 across time. Male rates, which exceeded EU-15 rates between 1995 and 2005, are now falling below EU-15 rates.

Figure 4.12 Deaths from suicide in males and females, Ireland and EU-15 1980 - 2006



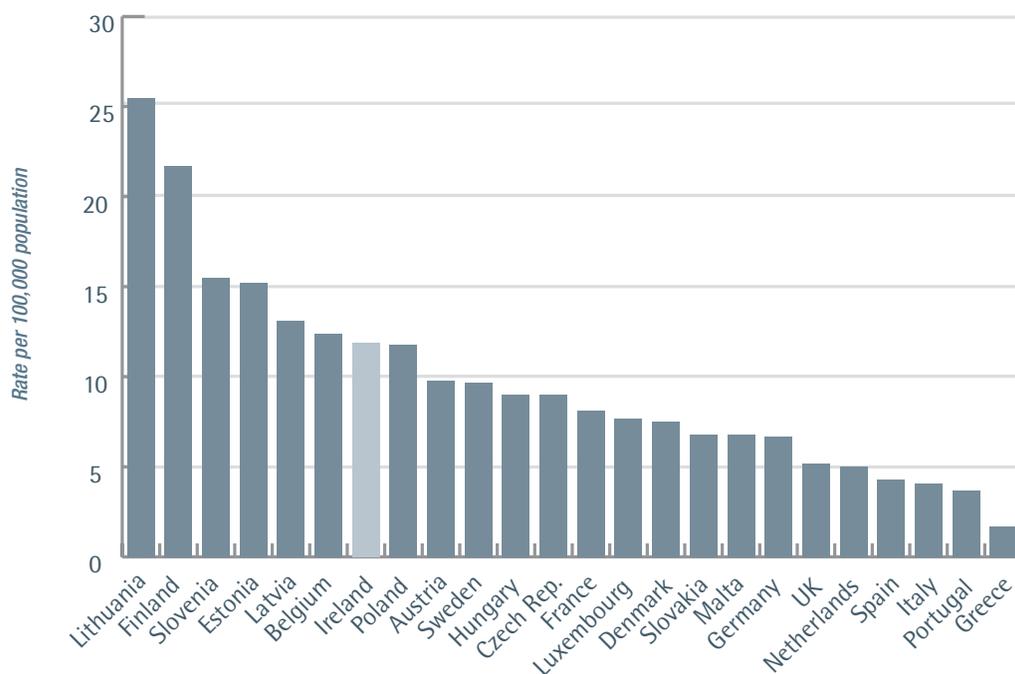
Source: European Health for all Database (June 2008), WHO Regional Office for Europe.

- There was a continuous rise in suicide reported in Ireland between 1980 and 1998. It's not known what effect differences in reporting and coding have made to these figures. Between 1998 and 2006 suicide numbers fell by 20%, with the rate for males decreasing from 23.1 to 14.2 per 100,000 population.
- Female suicide rates have remained relatively unchanged across this time, matching those of the EU-15.
- Deaths from suicide in 2006 have resulted in 15,003 years of potential life lost based on current life expectancy figures.
- Suicide is higher in the lower socio-economic groups, with suicide and intentional self-harm being in excess of 170% higher in the lowest occupational class compared to the highest, with a clear occupational class gradient.
- OECD data in Figure 4.13 shows Ireland ranked sixth lowest for death by suicide (for all ages) in 2005 of 21 OECD countries. In 1998, Ireland ranked 15th of 26 OECD countries.

Figure 4.13 Deaths from suicide in 21 OECD countries, 2005

Source: OECD Health Data 2005, Version June 2008

In contrast, a greater proportion of suicides in Ireland have occurred in the younger age groups (15-29 years). Figure 4.14 illustrates the youth suicide rate (age 15-24 years) per 100,000 population for 24 European countries, with Ireland ranking 7th highest among the 24 countries.

Figure 4.14 EU youth suicide rate per 100,000 population, 15 to 24-year-olds, 2006

Source: Annual Report 2006. National Office for Suicide Prevention



A note of caution should accompany the interpretation of suicide data. Under-ascertainment is likely, due to the following reasons:

- Deaths may be unknowingly or deliberately certified as natural.
- Information submitted to the CSO may be insufficient and lead to inaccurate classification as undetermined or accidental.
- Suicidal deaths occurring in one year may not appear in that year's statistics, but rather in the year of registration which can be delayed by the inquest process.
- Deaths registered as accidental may in fact result from suicide, for example, in the case of single occupant single vehicle motor accidents.
- A number of people who go missing are not found and may have committed suicide in Ireland or elsewhere.
- Deaths by suicide committed abroad are not registered in Ireland.

(b) Deaths from Road Traffic Collisions

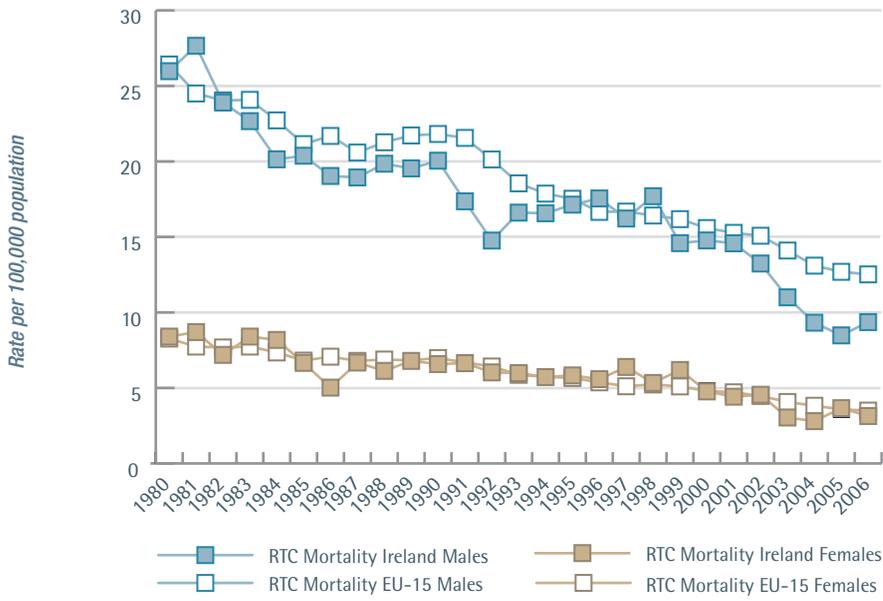
In 2006, 368 people were killed in fatal road traffic collisions (RTCs) on Irish roads. The majority of those killed were male (n=262, 71.1%), most commonly aged between 25 and 34 years of age. The most common age group for females who were killed was 65 years and over.

The primary causes of RTC deaths and injuries are:

- Speed inappropriate for, or inconsistent with, the prevailing circumstances or driving conditions.
- Impaired driving through alcohol, drugs (prescription or non-prescription) or fatigue.
- Failure to use, or properly use, seatbelts and child safety restraints.
- Unsafe behaviour towards/by vulnerable road-users. Vulnerable road-users are pedestrians, motor cyclists, cyclists, young children, and older people.

Figure 4.15 illustrates deaths from RTCs in Ireland and the EU-15 between 1980 and 2006, with male deaths being twice those of female deaths in both areas. Deaths for males have dropped considerably since the early 1990s, but more so for males in Ireland, whose rate of death is now 9.4 per 100,000 population, compared with 12.5 per 100,000 population for the EU-15.

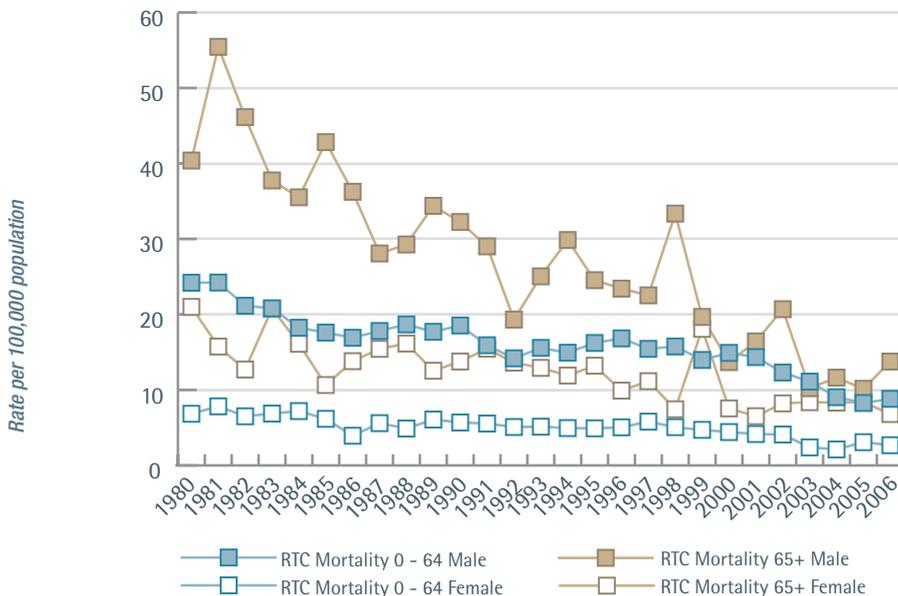
Figure 4.15 RTC deaths, Ireland and EU-15, 1980 - 2006



Source: European Health for all Database (June 2008), WHO Regional Office for Europe

Figure 4.16 illustrates age-standardised death rates for males and females under and over 65 years of age, with reductions evident for all groups. Of note, however, is the scale of the reduction in deaths for males over 65 years, from a high of 55.4 per 100,000 population in 1981 to 13.8 per 100,000 in 2006. Deaths in females of this older age group remain higher than their younger female counterparts, with rates being similar to those for males under 65 years of age. More young males than older males are killed on our roads, resulting from the fact that there are greater numbers of young males in the population. As a proportion of their age group, however, more older males are killed.

Figure 4.16 Deaths per 100,000 population (age-standardised) from RTCs, males and females under and over 65, Ireland, 1980 - 2006



Source: European Health for all Database (June 2008), WHO Regional Office for Europe

A report by the Road Safety Authority showed that 25% of car drivers and 9% of front seat passengers involved in fatal collisions were not wearing a seat belt. Analysis of fatal road crashes in Ireland in 2003 showed that alcohol was a factor in 37% of fatal crashes in which 123 people were killed. Forty-two per cent of drivers killed had a positive blood alcohol level (BAL), of whom 81% were over the legal limit. Over the last ten years much progress has been made in reducing the number of fatalities from RTCs:

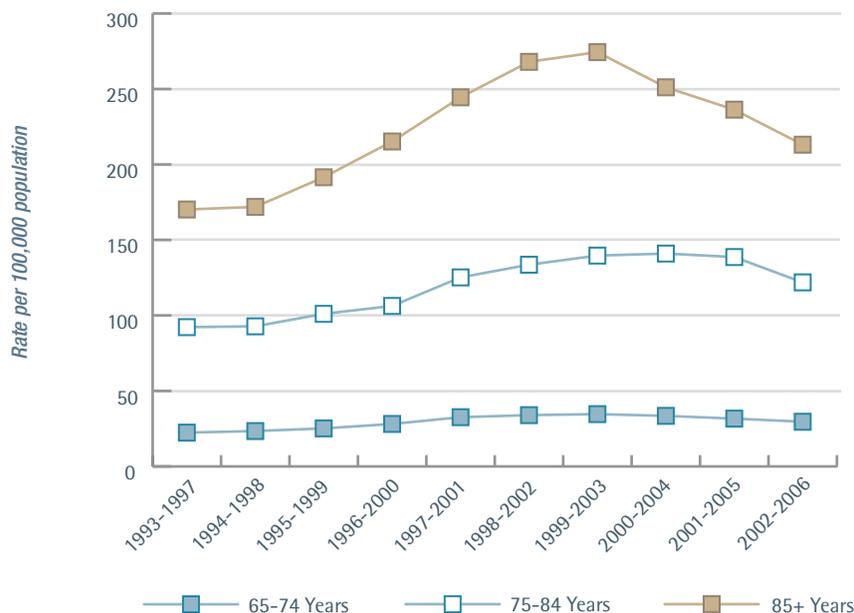
- In 1996, the fatality rate per million registered vehicles was 338.
- By 2006, the rate had fallen to 159 per million registered vehicles.
- This reduction in fatalities has occurred in the context of a large increase in road users.
- The trend continues of a higher numbers of deaths for males, particularly young males. In the 2003 analysis of fatal road crashes, 90% of drivers for whom alcohol was a contributory factor in the road death were male.
- The 281 RTC deaths recorded in 2006 represent 11,003 years of potential life lost (YPLL) based on current life expectancy.

(c) Fall-Related Deaths in Ireland

The recent publication of a *Strategy to Prevent Falls and Fractures in Ireland's Ageing Population* reported that:

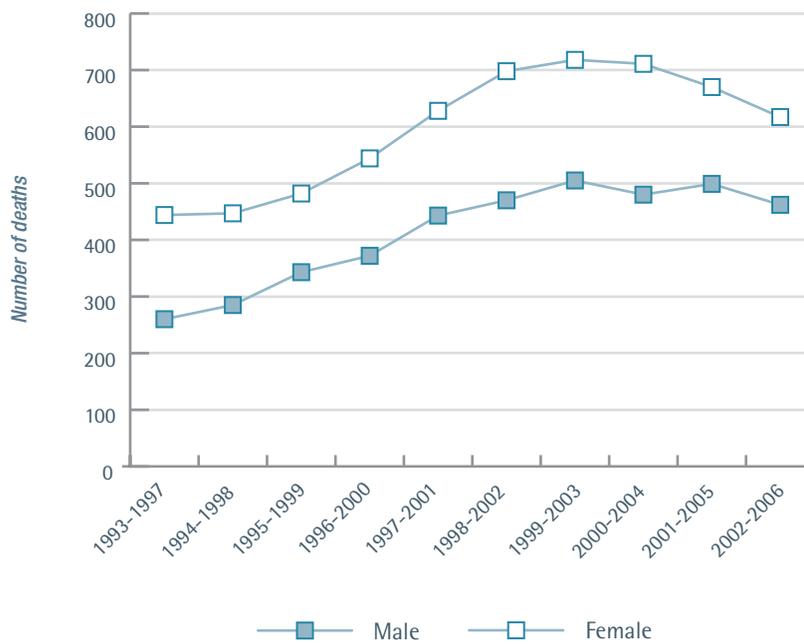
- Every year, 10% of all older people need treatment following an injury. Falls cause 75% of these injuries.
- In Ireland, three-quarters of all fall-related deaths (approximately 250 deaths each year) occur in people aged 65 years and older. Figure 4.17 illustrates how deaths, which showed a marked increase after 1995, particularly for the 85+ age group, are now beginning to fall for all groups.

Figure 4.17 Age-specific rates for deaths due to accidental falls among people age 65+, Ireland, 1993 - 2006 in 5-year blocks



Fall-related deaths increase with age over 65 years and they are more frequent in older females, as illustrated in Figure 4.18. As with the age groups, fall-related deaths are decreasing for both genders.

Figure 4.18 Numbers of deaths due to accidental falls among people aged 65 years and over by gender, Ireland, 1993-2006 in 5-year blocks



Source: PHIS, version 10. 2008

Falls are the leading cause of fatal injuries in older people in most of the EU member states, accounting for 40% to 50% of injury deaths. Ireland's death rate (61.7 per 100,000 population 65 years and over) is approximately average in the EU.

Causes of Illness in Ireland

Key Points

- Over one third of the Irish population report having a chronic illness, including heart disease, respiratory disease, cancer, and diabetes. The proportion reporting a chronic illness increases with age.
- There were over one and a quarter million discharges from acute hospitals in Ireland in 2006. The most common acute illnesses for inpatients in Irish hospitals are circulatory disease, respiratory disease, cancer, and diseases of the digestive system. Hospital use increases with age.
- Much of the burden of chronic and acute disease in our population can be reduced by lifestyle changes, lifestyle choices such as vaccination, and risk factor modification. Where disease does occur, the burden can be reduced by receiving timely, accessible, evidence-based treatment and follow-up.
- Despite the many advances in public health and medicine, communicable diseases remain a major threat to human health. The falling incidence of vaccine-preventable diseases has shown the effectiveness of vaccination.
- Health care associated infections appear to be more common in recent times. Recent surveys have shown that Ireland has a lower rate than England, Scotland, Wales, and Northern Ireland, but rates vary depending on the type of hospital.
- There have been major improvements in dental health over the years. The goals for oral health in the health strategy *Shaping a Healthier Future* have been achieved for adults, but not for children.
- While most people report good mental health, 14% have experienced mental health problems in the past year. The majority of people are willing to seek help, with a GP being the preferred source of help.



Health Status

of the Population of Ireland

Causes of Illness in Ireland

Section

5



2008

5. Causes of Illness in Ireland

5.1 Health

Health is defined by the WHO as the 'state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'. Good health contributes to the quality and enjoyment of life. While not everyone achieves the perfect health suggested by this definition, there is a range within which a person would be considered healthy. How people view their health can vary over time and can depend on their expectations, which in turn can be influenced by education, age, culture, and other variables. An individual's perception of his or her own health may not always match that of a medical practitioner.

- In Ireland, 87% of the population consider their health status to be good or very good.
- When asked, approximately one-tenth (11%) report a long-term illness, health problem or disability that limits their daily activity. This increases to 25% in people over 65 years of age.

5.2 Illness & Disease

Disease entails a set of signs and symptoms which can be objectively diagnosed. Illness is said to relate to the way a person experiences a disease. Once an individual becomes aware that they may be unwell, various steps can be taken, including inaction, self-care or consultation with a health professional or alternative practitioner.

There are a range of settings (public and private) and types of care that people in Ireland may receive, including hospital and primary care, rehabilitation, palliative care, and long-term care. The majority of people who become ill are treated in their community. Some attend hospital and a small proportion of people require admission. Most people who become acutely or suddenly ill will recover. For some, the condition may recur or may persist, resulting in chronic ill health. Thanks to medical advances, some conditions, which at one time would have led to early death, can now be controlled.

5.3 Acute Illness

In healthcare, an acute disease is one with a rapid onset and/or a short course, and need not be severe. A minor illness of sudden onset and/or short duration is also defined as 'acute'. The vast majority of people who become acutely ill and seek medical help are diagnosed and cared for in the community, principally by their GP. The SLÁN survey found that 74% of people had attended a GP in the previous 12 months. A small proportion of these patients will need evaluation in a hospital setting, with a proportion of these requiring admissions. Some people who become acutely ill present directly to a hospital setting or are brought there by ambulance.

This chapter addresses the key areas of illnesses or morbidity experienced by the Irish population. Some of these conditions involve one or multiple acute episodes, with normal life continuing afterwards, or in between, while others involve chronic conditions with varying degrees of illness or disability throughout. Acute conditions caused by injury usually involve no underlying disease, but nevertheless, may result in chronic conditions after the initial acute episode.

The level of health and ill health that is experienced within the population is difficult to quantify accurately based on currently available information systems. There is little information available from community services, including general practice. Data are available, however, in relation to acute public hospital usage for both public and private patients.

5.4 Chronic Disease

Chronic diseases are those long-term conditions which can be treated and controlled but not cured. These diseases or conditions may involve some level of impaired function or disability. One may be born with the condition, but generally they have a gradual onset. Chronic diseases such as heart disease, cancer, and diabetes are leading causes of death and disability in Ireland.

In Ireland, there is a lack of epidemiological data on the prevalence of chronic diseases. However, data from secondary sources such as hospital data and survey data show that there is a considerable burden placed on both the population and health services by chronic illness:

- Over one third (38%) of the Irish population report that they have a chronic illness. This increases with age. Sixty-two per cent of persons aged 65 years and over report having a chronic illness.
- Almost 21% of persons with a chronic illness or health problem are at risk of poverty.
- Chronic diseases are responsible for about 60% of deaths.

Examples of conditions that result in chronic illness include heart disease, respiratory disease, asthma, some cancers, dementia, mental health problems, and musculoskeletal diseases. The Quarterly National Household Survey (Q3, 2007), found that the most commonly reported health problems were hypertension, high cholesterol, back conditions (chronic), asthma, anxiety (including depression), arthritis, bronchitis, angina, cancer and diabetes. For the majority of conditions, a higher prevalence was found among older persons.

People with diagnosed chronic illness can be divided into three categories depending on the level of complexity of their illness. Individuals may move between each of the levels as they improve or disimprove.

- Level one, which accounts for 80% of patients, describes people with a single chronic illness which is well controlled by the patient, with primary care support.
- Level two patients (15% of patients) have more complex illness, possibly with more than one condition, but they are well managed in the community and do not require hospitalisation.
- Level three describes patients with complex conditions, often associated with complications, who require specialist care.

The main databases used to inform this chapter are the Hospital Inpatient Enquiry system (HIPE), the Public Health Information System (PHIS) and the National Cancer Registry of Ireland (NCRI). The key conditions covered are:

- **Circulatory disease**
- **Cancer**
- **Lung disease**
- **Injury**
- **Diabetes mellitus**
- **Communicable diseases**
- **Oral health**
- **Mental health**

These key conditions will be set in context by firstly looking at all usage in Ireland's public hospitals, as described by HIPE. The leading causes of morbidity will then be addressed individually.

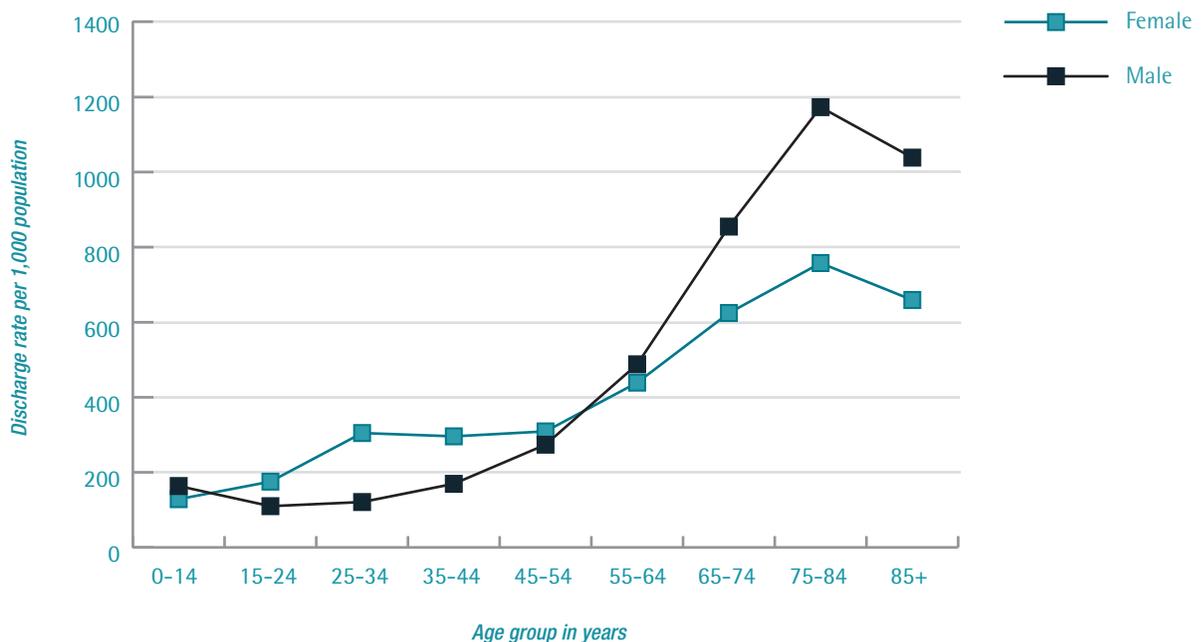
5.5 Illness in Acute Hospitals

The HIPE data system collects data on all patients who are discharged from public acute hospital services as a day case or inpatient, including private patients in public hospitals. It does not gather information on persons attending Emergency Departments (EDs), outpatient departments or private hospitals. Data are collated at the time of discharge and reported as 'discharges'. The discharges relate to episodes of care rather than to individual patients. If an individual is admitted on multiple occasions, all admissions are entered as separate episodes. Consequently, in the absence of a unique patient identifier, it is not possible to determine exactly how many individuals have used the service in a particular year. It is only possible to enumerate the number of individual episodes.

- There were 1,231,346 discharges from acute hospitals in Ireland in 2006, (including for the first time, renal dialysis day cases).
- Of these, 577,955 (46.9%) were male and 653,391 (53.1%) were female.
- Inpatients accounted for 575,542 (46.7%) discharges and used 3,634,824 bed days.
- Inpatients had an average (mean) length of stay of 6.3 days (median=3 days).

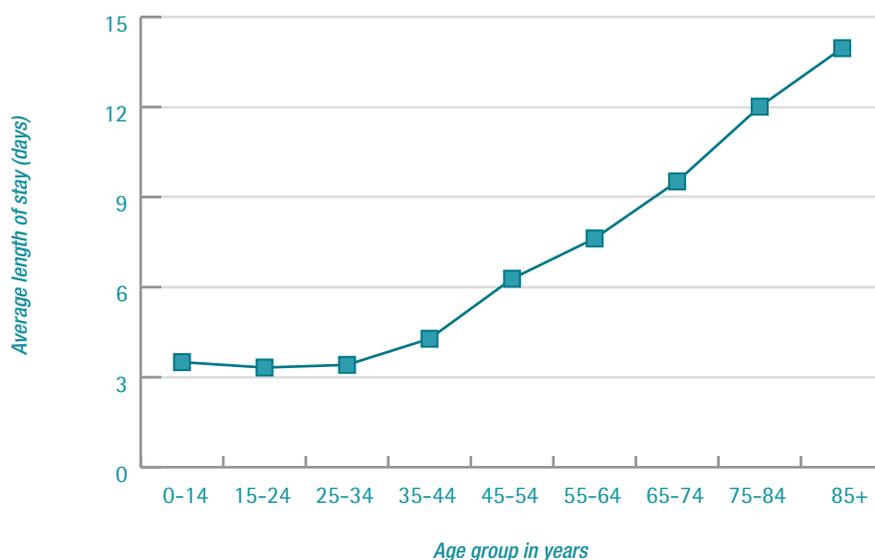
Figure 5.1 illustrates the rate of discharges per 1,000 population, by age groups, for males and females. With the exception of childhood, females have a higher rate of discharges than males up to the fifth decade of life. Thereafter, males have a higher rate of discharge.

Figure 5.1 Rate of discharges for males and females across age groups, 2006



Source: Public Health Information System (PHIS), version 10. 2008

Figure 5.2 shows that the average length of stay increases dramatically after middle age, with the average stay for those over 85 years being three times that of persons between 0 and 45 years of age.

Figure 5.2 Average length of stay across age groups, 2006

Source: Public Health Information System (PHIS), version 10. 2008

Table 5.1 shows the five conditions using most bed days during 2006. While those admitted as a result of diseases of the digestive system had the most encounters, those with diseases of the circulatory system consumed the highest number of bed days (n=531,169). Cancer patients have the longest average length of stay (mean length of stay=12.3 days).

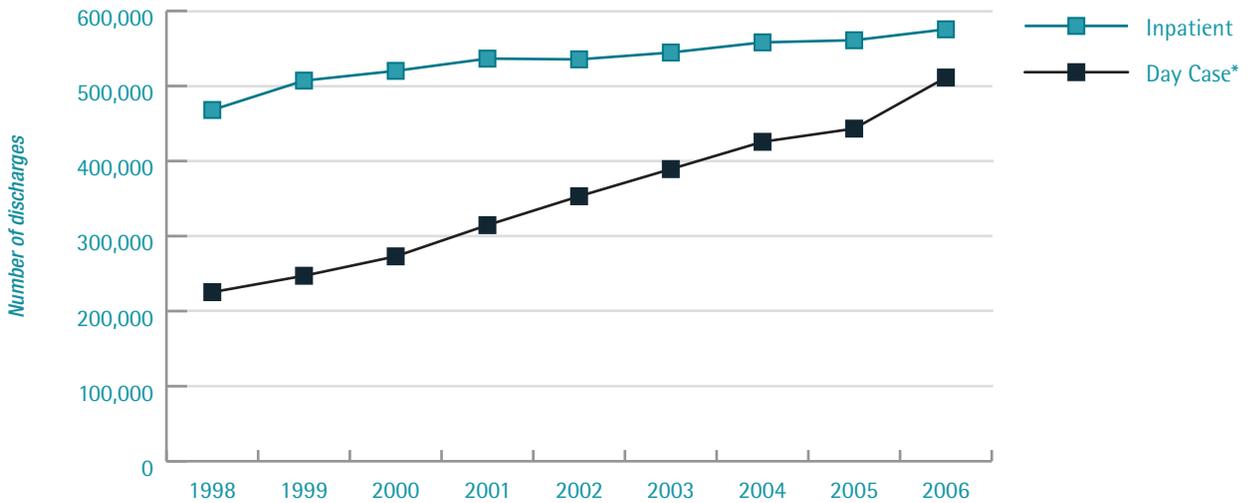
Table 5.1 Conditions using greatest number of bed days, 2006

Condition (ICD-10-AM Code)	All Discharges	Inpatient	Day case	LOS (mean)	Bed days
Disease of the circulatory system (I00-I99)	71,511	52,025	19,486	10.2	531,169
Disease of the respiratory system (J00-J99)	63,904	59,050	4,854	6.9	408,775
Malignant Neoplasms (Cancer) (C00-C97)	75,101	31,003	44,098	12.3	382,344
Disease of the digestive system (K00-K93)	116,337	52,157	64,180	6.4	333,716
Injury & poisoning (S00-T98)	59,639	56,333	3,306	5.8	329,005

Source: Public Health Information System (PHIS), version 10. 2008

The number of inpatient and day case discharges rose from 693,391 in 1998 to 1,086,824 in 2006 (excluding renal dialysis day cases from the 2006 data), as illustrated in Figure 5.3. The increase in day cases has been more marked than for inpatients.

Figure 5.3 Day cases and inpatients in public hospitals in Ireland, 1998 to 2006

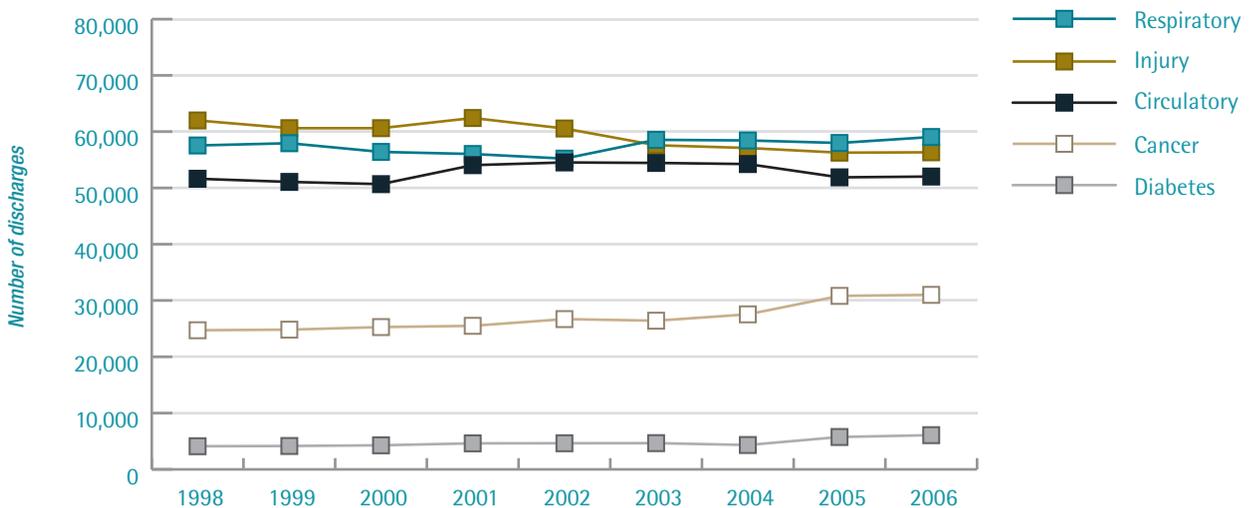


*Day cases do not include renal dialysis patients

Source: Public Health Information System (PHIS), version 10. 2008

Figure 5.4 shows the trend in hospital inpatient discharges for selected conditions from 1998 to 2006. While there has been a reduction in discharges from injuries, there has been an increase in discharges for cancer.

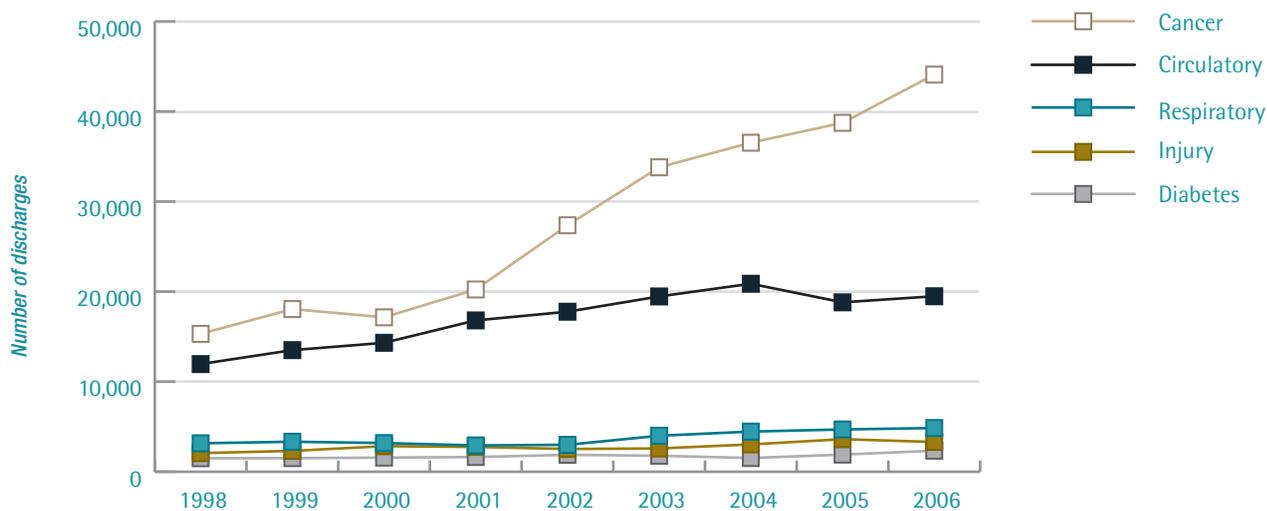
Figure 5.4 Inpatient discharges for selected conditions, 1998 to 2006



Source: Public Health Information System (PHIS), version 10. 2008

Figure 5.5 illustrates day case discharges across the years, with the most noticeable trend being the marked increase for cancer, and the less dramatic, but nonetheless noticeable rise for circulatory disease.

Figure 5.5 Day case discharges for selected conditions, 1998 to 2006



Source: Public Health Information System (PHIS), version 10. 2008

Between 1998 and 2006, bed days used increased by 53.0% for diabetes, 22.1% for cancer, 6.1% for injury, and 5.4% for respiratory illness, but remained almost unchanged for circulatory disease. Hospital activity for some individual conditions is described later in this chapter.

5.6 Individual Conditions

5.6.1 Circulatory Disease

Circulatory diseases include coronary heart disease (CHD) (heart attacks and angina), cerebrovascular disease (stroke), elevated blood pressure, peripheral artery disease, rheumatic heart disease, congenital heart disease, and heart failure. Circulatory disease is the most common cause of death in Ireland, accounting for over one-third (35%) of all deaths. It is also a major cause of illness, accounting for 14.6% of all bed days used in acute hospitals. Circulatory disease is both acute and chronic in nature. Patients present with acute episodes, such as a heart attack or stroke, but also live with conditions such as angina and heart failure and the debilitating consequences of stroke. In addition, in many cases, progressive deterioration over time will see further acute episodes and increasing levels of debilitation.

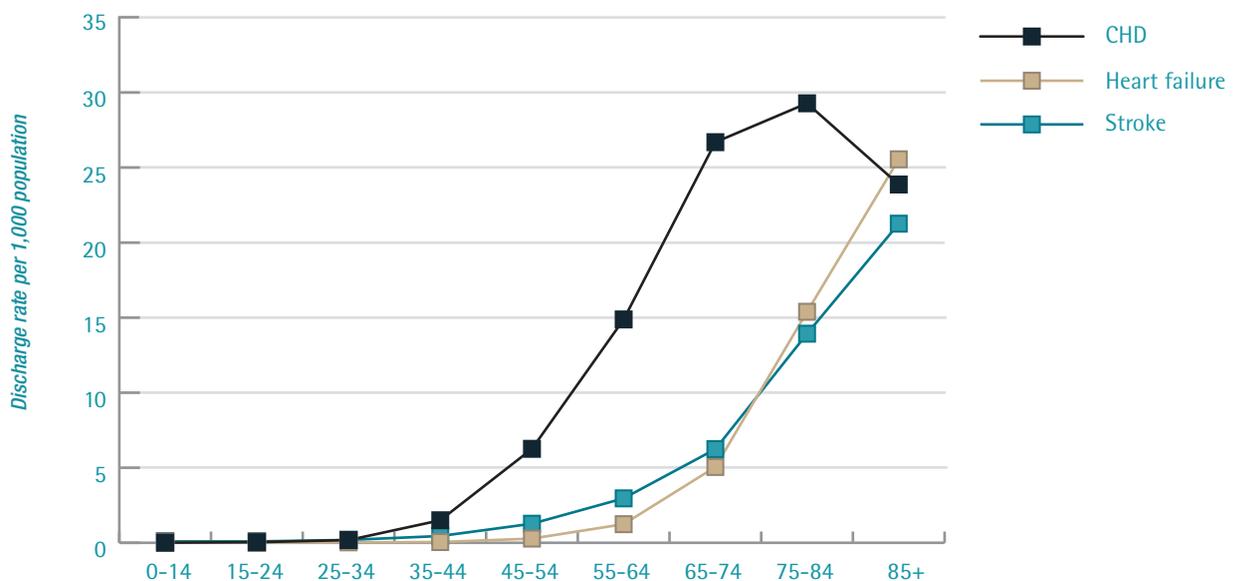
CHD, heart failure, and stroke are the major conditions within the circulatory group causing a considerable burden of illness on the population and on the health services. The major risk factors for heart disease and stroke are tobacco-use, physical inactivity, elevated blood pressure, an unhealthy diet, high cholesterol, and hereditary factors. All these risk factors, with the exception of hereditary factors, can be reduced through lifestyle changes.

The SLÁN 2007 survey showed that:

- Six out of ten Irish adults aged 45 years and over, have elevated blood pressure. The vast majority were either not on treatments or the treatment was not adequate to control the condition.
- Eight out of ten Irish adults aged 45 years and over had raised cholesterol. Most of these (62%) were not on treatment, and for 20% of those who were, the treatment was inadequate.
- One in three Irish adults aged 45 years and over, was obese.

Figure 5.6 illustrates the manner in which hospital usage for these conditions increases with age, with this trend occurring earlier and much more dramatically for CHD.

Figure 5.6 Hospital discharge rates for CHD, heart failure and stroke across age groups, 2006



Source: Public Health Information System (PHIS), version 10. 2008

(a) CHD

CHD is the leading cause of death in the developed world. The disease is characterised by reduced blood supply to the heart muscle, usually due to coronary artery disease (atherosclerosis of the coronary arteries). The condition may result in angina pectoris or an acute myocardial infarction (heart attack). The risk increases with age, and risk factors include smoking, high cholesterol levels, diabetes, and elevated blood pressure. It is more common in men and those who have close relatives with CHD.

The exact prevalence of CHD in Ireland is not known, as there is no comprehensive population register for the condition. However, several studies have estimated the prevalence. Bennett *et al.*, using GMS prescribing data showed that:

- There was a significantly increasing prevalence of CHD from 1990 to 2002 in both men and women, from 24.6 to 66.7 per 1,000 GMS population in men and 12.2 to 40.0 per 1,000 for women.

A Cork and Kerry diabetes and heart disease study of 50 to 69-year-olds estimated that:

- The overall prevalence of circulatory disease (for example, angina, or a history of heart attack or stroke) was 13.5%.
- Prevalence was higher in males than in females (17.8% versus 9.5%), and increased with increasing age.

CHD is a major cause of inpatient care in acute hospitals. The numbers of inpatient discharges in 2006 was 17,766, which was a decrease of 0.8% on the number of inpatient discharges in 1997. However, over the same time period the number of day cases doubled to 5,679. The reduction in inpatient discharges at a time when the population was increasing is a reflection on both the changing epidemiology of heart disease and the availability of a wider range of treatments.

The direct age-standardised inpatient discharge rate for CHD in 2006 was 570 per 100,000 population. Twelve counties have statistically significantly higher inpatient discharge rates for CHD than the national rate: Sligo, Donegal, Laois, Cavan, Monaghan, Louth, Kildare, Carlow, Wexford, Waterford, Roscommon, and Westmeath.

(i) Access to cardiac interventions

Coronary angioplasty is a surgical procedure where a blocked coronary artery is unblocked by inflating a small balloon device within the artery. The technical name for coronary angioplasty is percutaneous transluminal coronary angioplasty (PTCA). In most, but not all cases, a stent is also inserted to keep the arteries open. While there has been a marked increase in coronary angioplasty over the last ten years, data from HIPE show that there is a statistically significant geographical variation with, residents of Dublin having the highest rates of PTCA. The standardised rate for PTCA for the residents of Dublin is significantly higher than the rate in all other counties in Ireland other than Offaly, Westmeath, Longford and Carlow. The standardised procedure rate for PTCA for Dublin residents in 2004 (PHIS) was 159 per 100,000 population (95% CI:152-167) compared to an overall rate of 112 per 100,000 (95% CI:109-116) for Ireland. This would suggest that people outside of the Dublin area have significantly less access to cardiac interventions. It is noteworthy that all the counties with significantly high CHD discharge rates, with the exception of Westmeath, have significantly low rates for PTCA.

(ii) Drug treatments

There has been a two to three-fold increase in prescriptions for beta-blocking, renin-angiotensin system and antihypertensive agents from 2000 to 2005, and more than a four-fold increase in serum lipid reducing agents. These are therapies used in the primary treatment of hypertension and high cholesterol, and in the secondary prevention of CHD. This rise in use of prescription medications underlines the extent and growing chronic nature of heart disease.

(b) Heart Failure

Heart failure is a condition in which the heart loses its ability to pump blood efficiently throughout the body. The three most common causes of heart failure are CHD, elevated blood pressure, and diseased or enlarged heart muscle (cardiomyopathy). Accurate data regarding the prevalence of heart failure in Ireland are not available. Using estimates from other populations with a similar risk factor profile, for example, Scotland, the level can be estimated as follows:

- The prevalence of heart failure in Ireland is approximately one per cent of the total population, and up to four per cent among those over 70 years of age.
- Using this information, it is estimated that up to 45,000 people have heart failure in Ireland.

Patients with heart failure use considerable hospital resources. In 2006 there were 5,652 inpatient discharges of patients with a principal diagnosis of congestive heart failure. These patients used 70,835 bed days, or the equivalent of approximately 200 acute hospital beds in the year.

(c) Stroke

Stroke is the third leading cause of death and a major cause of disability worldwide. A stroke is caused by a blockage of an artery supplying blood to the brain (cerebral thrombosis) or a bleed into the brain from a burst blood vessel (cerebral haemorrhage). The major risk factors for stroke are tobacco use, elevated blood pressure, existing heart disease, diabetes, high cholesterol, and physical inactivity. Elevated blood pressure and smoking are the most significant modifiable risk factors.

Stroke is mainly a disease of the elderly and is uncommon in people under 40 years of age. A person's chance of having a stroke more than doubles for each decade of life after age 55. In 2006, there were 7,033 inpatient discharges from acute hospitals in Ireland with stroke as a principal diagnosis. This is an 8.6% increase on the number of inpatient discharges in 1997. Stroke patients used 151,395 bed days in 2006, or the equivalent of over 400 beds in the year.

It is estimated that around one in five patients die within the first year of having a stroke, with the remainder returning to their families and communities. It is also estimated that there are currently over 30,000 people living with a stroke-related disability in Ireland. One-fifth of these cannot walk as a result of their stroke, and half require assistance with daily living activities, such as washing and dressing.

(i) Access to treatment

Given the high mortality and disability rates that result from stroke it is essential that evidence-based management and treatments are available to stroke patients. The recent report from the National Audit of Stroke Care (2008) found that:

- Just one out of 37 Irish hospitals (2.7%) has a fully resourced stroke unit, compared with 91% of similar UK hospitals. Stroke units reduce mortality and disability and are the recommended standard to deliver optimal care for acute stroke. It has been estimated that between 350 and 500 lives could be saved annually if stroke units were introduced to Irish hospitals.
- Provision of thrombolysis was almost non-existent in Irish hospitals (only 1% of Irish stroke patients received thrombolysis).
- Optimal acute care improves patient status at discharge but only 28% of Irish patients were assessed as independent in activities of daily living when discharged from hospital compared to 39% in the UK.
- There was little or no organised system of care for the prevention and management of stroke in primary care in Ireland.

Unless stroke care is addressed in an organised and systematic way, from prevention to continuing care, the burden placed on patients, their families, and the health services will increase markedly with our ageing population.

5.6.2 Cancer

Cancer is a term used to describe a group of illnesses where there is an overgrowth of tissue cells. All of these illnesses have individual risk factors and treatments. One in three Irish people will develop cancer during their lifetime. In the last 30 years our understanding of the prevention and treatment of cancer has increased greatly, with consequent improvements in overall cancer survival. Half of all cancers are preventable by changes to lifestyle. Tobacco-use, poor diet and obesity, low physical activity, excess alcohol, and excess exposure to sunlight are the major preventable causative factors. Information is available on new cancer cases from the National Cancer Registry of Ireland (NCRI), and on hospital activity related to cancers from HIPE.

There are approximately 25,000 new cancers, including non-melanoma skin cancer (NMSC), diagnosed each year in Ireland. After NMSC, the most common cancers are prostate (9.0%), breast (8.9%), colorectal (8.2%) and lung cancer (6.9%). Table 5.2 shows the number of cancers and the rate of new cases per 100,000 population for males and females in 2005.

Table 5.2 Number of cancers and the rate of new cases per 100,000 population by gender, 2005

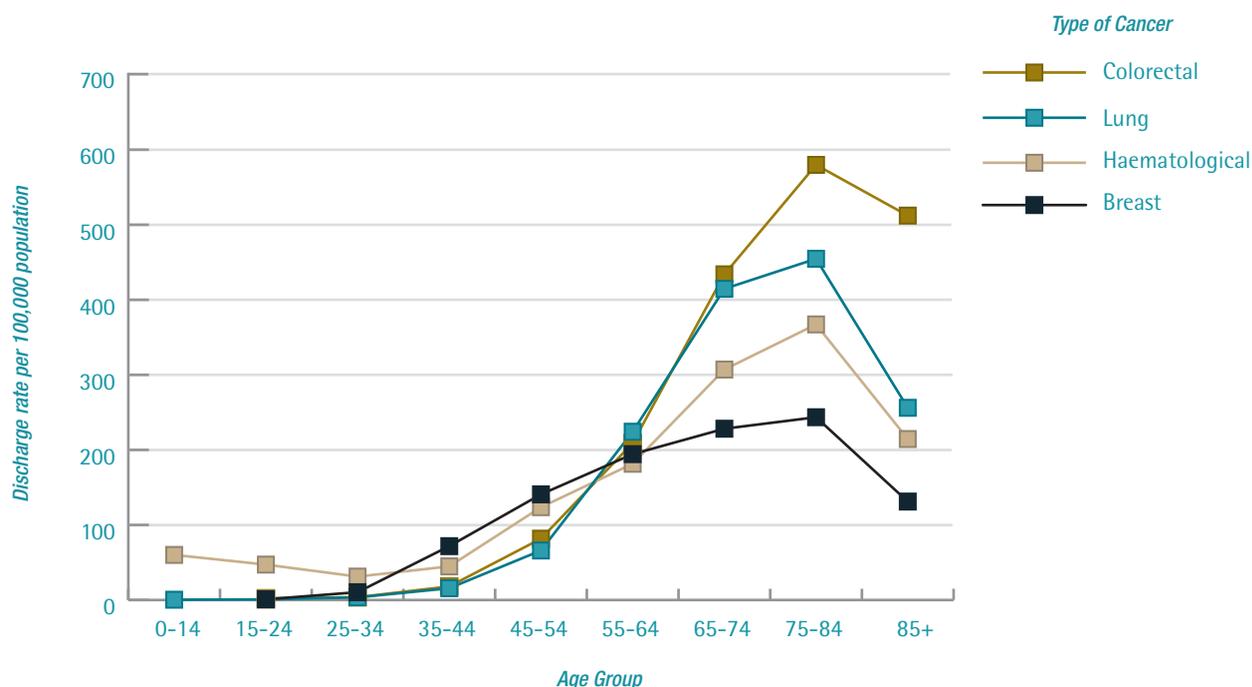
	Female		Male		Total
	n	rate	n	rate	n
All cancers	13,901	577.9	12,875	646.6	26,776
All invasive cancers except non-melanoma skin cancer	8,001	343.1	8,578	429.9	16,579
Non-melanoma skin	2,860	123.0	3,336	175.3	6,196
Prostate	-	-	2,407	102.7	2,407
Breast	2,352	105.7	27	0.9	2,379
Colorectal	936	40.5	1,248	65.0	2,184
Lung	750	30.3	1,092	62.7	1,842

Source: National Cancer Registry Ireland, *Cancer in Ireland 1994-2005, A Summary*

The number of cancers diagnosed in Ireland is increasing each year. By the year 2020, the number of new cancer diagnoses is expected to double that of those diagnosed in the period between 1998 and 2002. This upward trend is mostly due to the increase in population numbers and the increasing proportion of elderly persons. The trend is also influenced by the increase in breast and prostate cancer cases detected as a result of organised breast screening and opportunistic prostate specific antigen (PSA) testing.

(a) Access to Treatment

In 2006, there were 69,218 discharges from hospital with a principal diagnosis of malignant cancer (excluding NMSC). The largest proportion (29.4%) were due to haematological cancer (leukaemia, lymphoma, multiple myeloma), followed by colorectal cancer (11.6%), breast cancer (11.4%) and lung cancer (8.6%). Figure 5.7 shows discharges for the four most common cancers, across ages for 2006. The discharge rate increases dramatically after 35 years of age for all cancers, and peaks among the 75 to 84 year age group.

Figure 5.7 Standardised discharge rate per 100,000 population for the most common cancers, 2006

Source: Health Atlas Ireland, Health Information Unit, HSE. 2008

The number of cancer-related discharges rose between the years 1998 to 2006. This increase has occurred across all age groups, but is more marked in the older age group. There were 75,312 discharges of patients with cancer in 2006 compared to 39,981 in 1998. The number of day cases increased dramatically (44,188 day cases in 2006 versus 15,214 in 1998) compared to a modest increase in inpatient activity (31,124 inpatients in 2006 versus 24,767 in 1998). While the number of cancer discharges almost doubled between 1998 and 2006, the number of bed days has risen by only 30%, indicating improved efficiencies during that time period. Table 5.3 shows hospital activity for selected cancers in 2006, with haematological cancers having the greatest numbers of episodes.

Table 5.3 Hospital activity for selected cancers in 2006

Type of cancer	All Discharges	Inpatient	Standardised Discharge Rate	LOS (Mean)	Bed Days
All Cancers (C00-C96)	75,312	31,124	762.5	13.8	428,706
All Cancers excl NMSC	69,218	30,158	740.9	13.8	416,084
Haematological Ca (C81-C96)	20,321	4,175	102.4	16.6	69,102
Colorectal Ca (C18-C21)	8,049	3,734	90.7	15.8	59,128
Lung Ca (C34)	5,976	3,293	82.0	14.0	45,973
Breast Ca (C50)	7,871	3,084	77.3	10.6	32,715
Prostate Ca (C61)	2,788	1,437	35.1	15.9	22,853
Non-melanoma skin Ca (C44)	6,094	966	21.6	13.1	12,622

Source: Health Atlas Ireland, Health Information Unit, HSE. 2008

Patients with haematological cancers also used the greatest number of bed days in 2006, followed closely by colorectal cancer. A large proportion of bed days are emergency rather than elective (planned) admissions. A number of factors explain dependence on emergency bed days, including late presentation, suboptimal bed-utilisation, leading to poor access to elective beds, and longer lengths of stay for unplanned admissions.

Although cancer is predominantly a disease of older people, older people are less likely to receive treatment.

- An NCRI report found that older women were less likely to receive treatment for cancer than their younger counterparts.
- A national lung audit in England and Wales found that older people were less likely to receive radical treatment.
- An Irish study on oesophageal cancer found that patients aged 60 to 69 years were 25% to 43% less likely to be treated than those under 60 years.

A number of changes in treatment have occurred in Ireland in recent years:

- Between 1997/1998 and 2005/2006, for example, there has been an increase in surgical activity for lung cancer (up 25%), colorectal cancer (up 24%), breast cancer (up 31%), and prostate cancer (up 717%).
- The increase in prostate cancer surgical activity is paralleled with an increase in PSA testing in the same period.
- Expansion of radiotherapy services in Dublin, Cork, and Galway has made radiotherapy treatment more accessible to people with cancer throughout Ireland.
- The National Cancer Control Programme (NCCP) is working to reorganise cancer services in Ireland to provide the best outcomes for people with cancer.

Internationally, there is a strong relationship between socio-economic deprivation and cancer outcomes. This is also found in Ireland:

- In women with cancer, treatment and survival rates are lowest amongst disadvantaged women.
- Men in the lowest occupational class have a significantly higher mortality rate from cancer (over 110%) than those in the highest class.

(b) Commentary

- It is important to recognise that while many survivors put their illness behind them and return to normal life, others will require ongoing support of a medical or psychological nature, or both.
- Much of the success in dealing with cancer over the past twenty to thirty years can be attributed to reduced smoking rates in adults. However, the gains in the prevention of tobacco-related cancers run a risk of being offset by the increase in obesity rates, rising alcohol consumption and excess exposure to ultraviolet rays from sun holidays and use of cosmetic tanning salons.
- Advances in medical science present great opportunities to improve cancer care, but will also present cost and capacity obstacles. Surgical techniques continue to improve with the introduction of minimally invasive techniques. Progress in imaging is improving cancer staging and provides hope for a reduction in invasive diagnostics. New therapies for cancer with the advent of targeted treatments continue to be developed.
- Timely accessible information is essential to monitor and improve cancer services. The NCRI has pioneered the development of very good quality information on cancer incidence, mortality, survival, and treatment patterns. However, a proper surveillance system with a broader scope needs to be established. The process of development has begun through the National Cancer Control Programme and the NCRI.

The NCCP plans to reconfigure cancer centres to ensure an equitable service in terms of standards of care and outcomes to all cancer patients. To this end, care that can be delivered locally to the patients will be kept local, and where necessary to improve outcomes, services will be centralised. By the end of 2009, it is envisaged that 90% of surgery for cancer will be transferred to eight designated centres. There is also the challenge of reorienting cancer services into an ambulatory model along the lines of international best practice.

5.6.3 Lung Disease

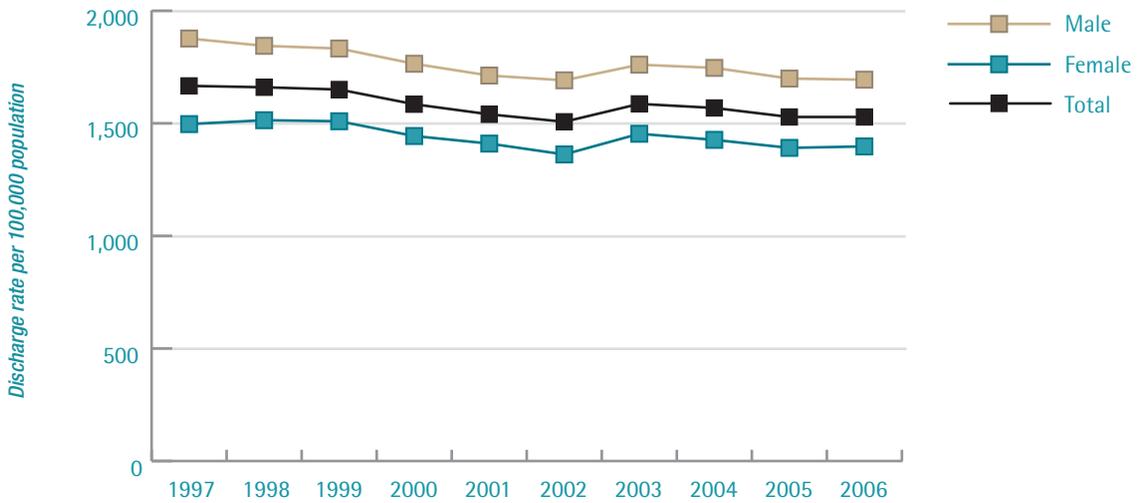
(a) Respiratory Diseases (excluding cancer)

Respiratory diseases are responsible for one in every seven deaths in Ireland, and are a major cause of morbidity, either as an acute illness such as pneumonia or influenza, or a chronic condition such as bronchitis or asthma.

- There were 59,050 inpatient discharges from acute hospitals in Ireland in 2006 as a result of respiratory illnesses. This represents 10.3% of all inpatient discharges, and is the largest proportion for any single group of conditions.
- More than one-tenth (11.2%) of all beds used in acute hospitals are for the care of patients with respiratory disease.

Figure 5.8 shows that the standardised discharge rate for respiratory illness from acute hospitals has remained consistent over the last ten years.

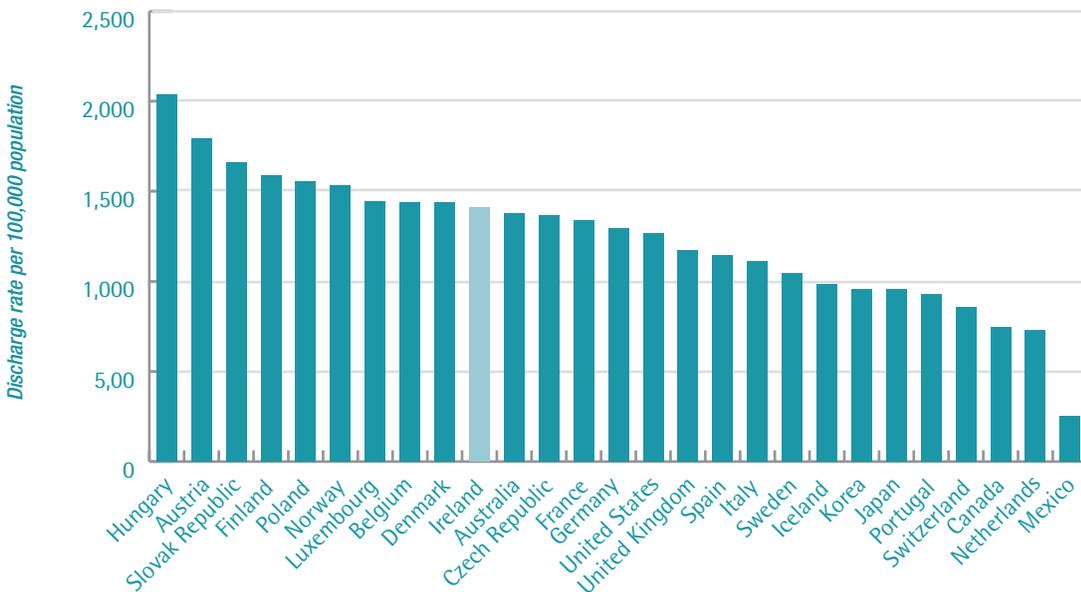
Figure 5.8 Trends in hospital discharge rates for disease of the respiratory system, 1997 - 2006



Source: PHIS, Version 10, 2008

In 2005, discharge rates in Ireland for respiratory system diseases were ranked 10th among 27 countries, as illustrated in Figure 5.9.

Figure 5.9 Discharge rates for all respiratory diseases in OECD countries, 2005



Source: OECD Health Data 2005, version June 2008

(b) Chronic Lung Disease

Chronic lung disease includes chronic obstructive pulmonary disease (COPD) and asthma. The exact number of people with chronic lung disease in Ireland is not known. However, a 16-country survey showed that Ireland was second only to Spain in terms of the prevalence of chronic bronchitis (approximately 8% versus a median prevalence of 2.6% for all centres).

Chronic lung disease is a major cause of ill health:

- In 2006 there were 30,118 inpatient discharges of patients with a principal diagnosis of COPD or asthma. These patients used 126,395 bed days, or the equivalent of over 340 acute hospital beds.
- In the 18 to 44 year age group, respiratory disease is the most commonly reported long-term illness, with asthma more common in this group than any other long-term condition.
- Eight per cent of adults report chronic airways disease (combining asthma with chronic bronchitis).
- In the phase one ISAAC study, Ireland was amongst the four countries with the highest 12-month prevalence of asthma symptoms in children aged 13 to 14 years of age. The highest prevalence was about 20 times higher than the lowest prevalence.
- A follow up study (ISAAC phase three) again showed a very high prevalence of asthma symptoms in 13 to 14-year-old children in Ireland. There was a small decline in prevalence from 29.1% in phase one to 26.7% in phase three. Ireland remained in the top four countries, however.

The burden of ill health and the cost to the health services in respect of respiratory diseases can be reduced using systematic and evidence-based strategies. For example:

- Smoking is a major factor in chronic lung disease. Increasing taxes has been shown to be the most effective policy to reduce smoking. The evidence-base shows that a 10% price increase could effect a 4% reduction in adult smoking prevalence which would result in a reduction in the number of smokers in Ireland by 37,600.
- Vaccination against influenza and pneumonia both reduce hospitalisation and mortality.

Such strategies would also reduce health inequalities. Chronic bronchitis in persons from Social Classes 5 and 6 (lowest socio-economic groups) is almost four (3.9) times (95% CI: 2.56-5.90) more common than in persons from Social Classes 1 and 2 (highest socio-economic groups). The prevalence of asthma was not shown to be related to social class.

5.6.4 Injury

Injuries, which are in the main, preventable, create a substantial burden on the health service and society. By focussing only on deaths that result from injury, there is a serious underestimation of the overall burden of injuries on the health service. Unintentional and intentional injuries are estimated to be the main cause of chronic disability in the young, leading to an enormous loss of potential years in good health. Among people over 65 years of age, accidents and injuries are a major cause of death and disability, and are often the trigger for a fatal deterioration in their health.

The vast majority of accidental injuries are unrecorded. While data on injuries are gathered at some locations, there is no comprehensive surveillance system, and good information is not available on the prevalence of injury in Ireland. It is estimated that for every death caused by injury, there are 40 inpatient admissions, 150 visits to the EDs, and 400 GP consultations.

- The SLÁN survey (2007) found that nine per cent of people experienced injuries requiring a medical consultation in the past year. Over half (51%) of those injured required three or more days off work.
- Injuries were more common in younger people (14% in 18 to 29-year-olds, compared to five per cent in over 65-year-olds).
- The HBSC found that 43% of children (boys 51%, girls 34%) suffered an injury requiring treatment in the past year.
- Children were more likely to sustain an injury during a sports activity or cycling.

More than 1.2 million people attend Ireland's EDs every year, an average of 3,300 each day. A recent Irish survey found that 39% of these attendances are due to injury. In 2006, there were a total of 56,333 hospital discharges due to injury, accounting for 329,005 bed days.

- Males have higher rates of hospital discharges due to injury than females.
- There has been a reduction in inpatient discharges for injury in recent years.
- Ireland's hospital discharge rate for injuries and poisonings at 1,383.7 per 100,000 is lower than the EU average (1,507.0 per 100,000).

The most common mechanisms of injury among inpatients in 2006 were falls (39.5%), road traffic collisions (RTCs) (11.1%), self-harm (5.7%), and assault (5.0%). Table 5.4 sets out the top five injury categories resulting in hospital discharges in 2006, with 22,391 fall-related discharges resulting in 158,638 bed days. Assault and self-harm accounted for approximately 10,000 bed days each.

Table 5.4 Top five reasons for inpatient admission for accidents and injuries, 2006

Principal Diagnosis (E-Code)	All Discharges	Inpatient	LOS (Mean)	Bed Days
Accidental Falls (E880-E888)	22,391	21,838	7.2	156,638
Other External Causes *	15,575	14,086	3.5	48,978
Land Transport Accidents (RTCs) (E800-E848)	6,132	6,064	5.9	36,101
Intentional Self-Harm (E950-E958)	3,196	3,193	3.2	10,098
Assault (E960-E968)	2,937	2,807	3.2	9,109

* E830-E845 - involving water, air, and space transport accidents
 E890-E929 - fire
 E959 - late effects of self-inflicted injury
 E969 - late effects of injury purposefully inflicted by other
 E970-E978 - Effects of injury due to legal intervention
 E990-E999 - Injuries resulting from operations of war

Source: Public Health Information System (PHIS), version 10. 2008.

The majority of discharges after assault (2,556, 87.0%) were male, and almost three-quarters (n=2,126, 72.4%) were under 35 years old. While relatively small in number, poisoning and burns are important, as a substantial proportion occur in children:

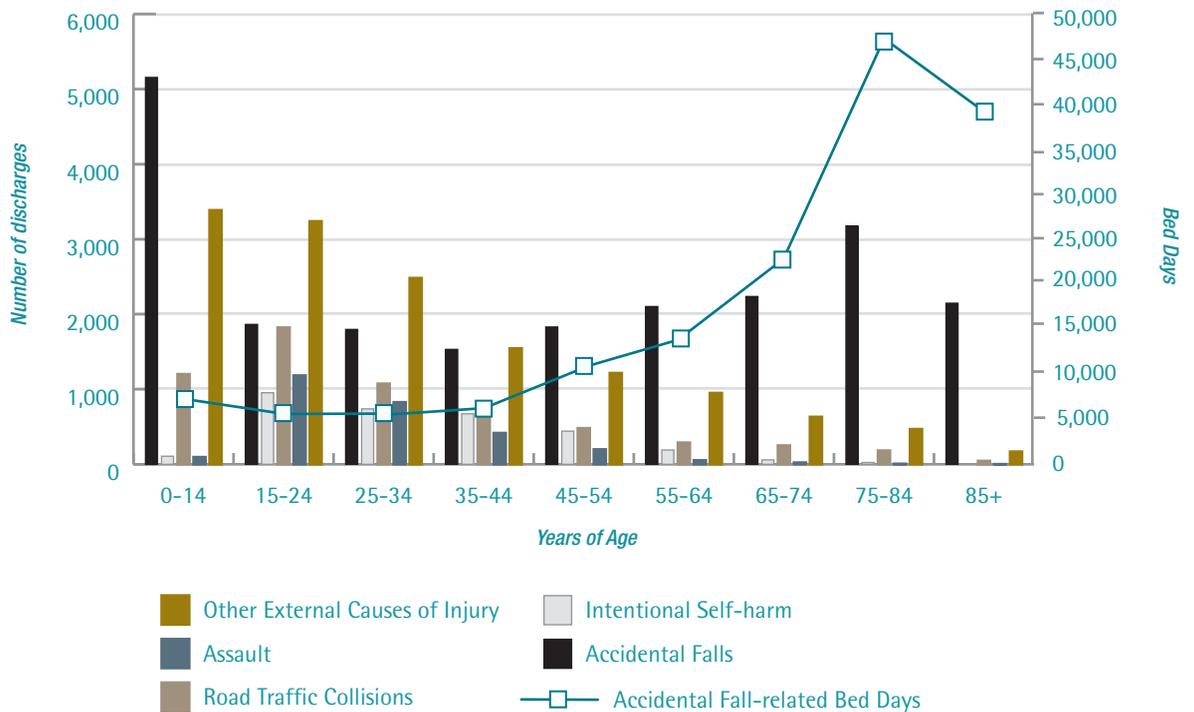
- In 2006, there were 935 discharges due to poisoning, with 41.3% being 14 years of age or less.
- There were 903 discharges due to burns, with 43.1% aged 14 or less. There was an average length of stay of 8.9 days resulting in 7,996 inpatient bed days.

Many individuals who suffer an injury are left with a residual disability. Falls and injuries due to RTCs will be dealt with in this section, while self-harm will be dealt with in the mental health section.

(a) Fall-Related Injuries

Figure 5.10 shows hospital discharges due to falls in the context of all admissions due to injury. Falls account for the largest numbers of bed days used in the injury category (n=158,729) and are more common in children and older people. While the biggest number of accidental falls occurs in those aged 14 or less, the highest number of bed days is used by those in the 75 to 84 age group. Bed days used as a result of falls increase across age and decrease slightly for those aged 85 years and over.

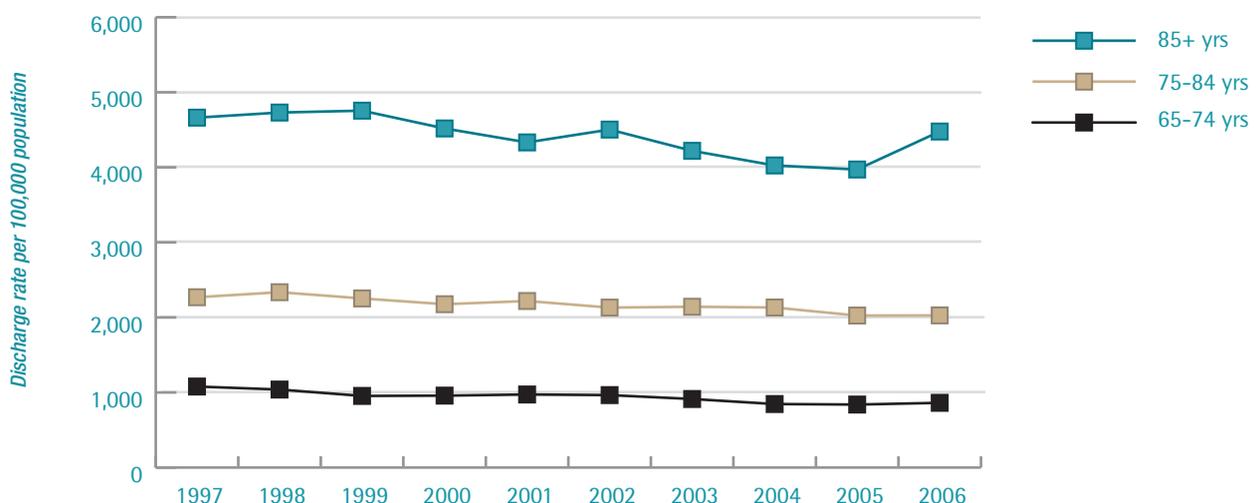
Figure 5.10 Age-specific inpatient discharges for the main types of injury, with fall-related bed days, 2006



Source: Public Health Information System (PHIS), version 10. 2008.

The Strategy to Prevent Falls and Fractures in Ireland's Ageing Population reported that one in three older people fall every year, and two-thirds fall again within six months. Injuries resulting from falls represent a large expenditure to the health service, with most of these falls being preventable. Figure 5.11 illustrates the discharge rate for those hospitalised due to falls over 65 years of age, with the rate decreasing slightly for those aged 65 to 84 years, but increasing in 2006 for those over 85 years. In total, these hospitalisations amounted to 7,559 in those over 65 years of age in 2006.

Figure 5.11 Inpatient hospitalisations due to accidental falls among people aged 65 years and over, 1997-2006



Source: Public Health Information System (PHIS), version 10. 2008

Hip fractures are among the most serious injuries resulting from a fall (approximately 2,800 hospital admissions each year). Eighty per cent of admissions after hip fracture are in those over 75 years of age, with these older patients having an average length of stay of 18 days. Less than one-third of hip fracture patients go directly home after their hospital treatment. The inpatient cost of treating a hip fracture is €12,600.

- The inpatient cost of fall-related injury hospitalisations among older persons is currently estimated at €59 million. Inpatient hip fractures cost is estimated at €35 million.
- The full picture of the impact of falls is greater than the data above indicates, as figures are not readily available from hospital EDs, primary care, and convalescent care facilities.
- With people living longer, if rates remain at current levels, by 2031 the number of deaths and hospital admissions from fall-related injuries among older people could double, having a huge impact on health services.
- Fall-related injuries in older people currently cost €402 million to the economy.
- It is estimated that the cost of dealing with falls will escalate dramatically, and by 2030 the cost will be €1,587 to €2,043 million.

The falls strategy document also showed that osteoporosis is the most common metabolic bone disease in Ireland. It is characterised by bone fragility due to low bone mass. One in three women and one in five men in Ireland over the age of 50 may have the condition. Many of them do not know they have this condition, as it is generally not apparent until the first fracture occurs. This means that up to 300,000 Irish people aged 50 years and over may have osteoporosis. The prevalence is rising as the population ages.

(i) Risk factors for falls and osteoporosis

- There are many risk factors for falls. These can be broadly classified as intrinsic (for example, muscle weakness), extrinsic (for example, medication), or environmental (for example, hazards in the home).
- For osteoporosis, modifiable risk factors include, amongst others, smoking, low calcium intake, sedentary lifestyle, and low body weight. Non-modifiable risk factors include age, female gender, and family history of osteoporosis.

(ii) Prevention of falls

The burden of ill health and the cost to the economy resulting from falls can be reduced by a population health approach where there is a multi-agency involvement in prevention and care, with all relevant agencies and professions working together. The falls strategy calls for (i) prevention to be a priority and, (ii) the systematic use of evidence-based interventions that are used in an equitable manner, and available to all. Much of the pain, disability, and cost resulting from falls can, and should be prevented by the implementation of such a strategy

(b) Injury Due to RTCs

According to Garda Síochána road collision statistics, 8,575 people were injured in RTCs in 2006. The Road Safety Authority estimates that for every one road fatality, eight serious injuries occur. This in the context of international evidence which indicates that RTC statistics are liable to suffer from under reporting.

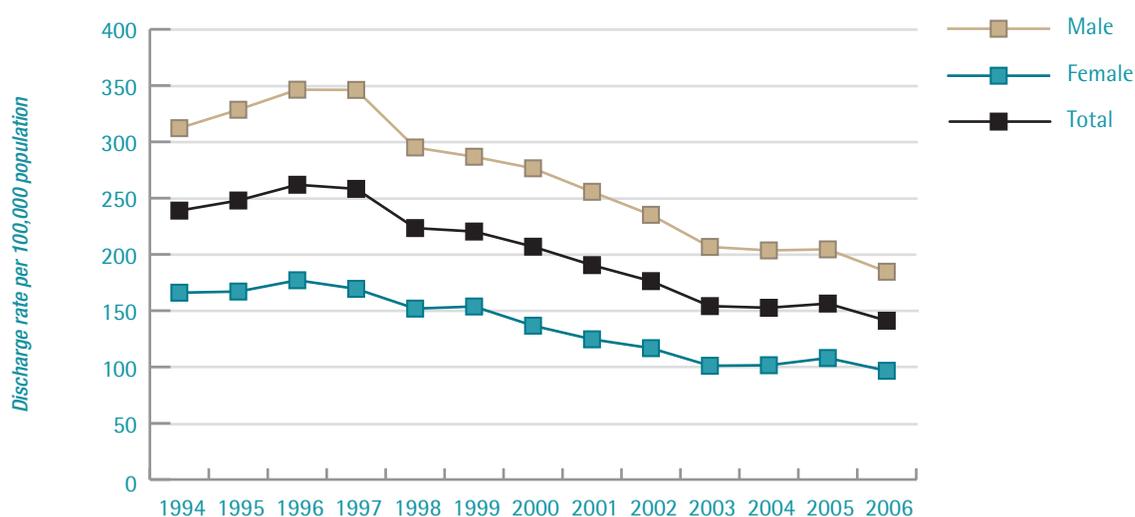
The number of serious injury collisions has been steadily falling since 1996. Injuries per million vehicles registered have fallen from 9,950 in 1996 to 3,734 in 2006. Injuries per million population have fallen from 3,670 in 1996 to 2,020 in 2006. Young men are consistently over represented in statistics relating to the number of injuries from road traffic collisions. Older men are also at risk, particularly as pedestrians. As a proportion of their age group, more older men are killed. Ireland ranks 7th lowest for RTC deaths, with a rate of 144 per 100,000 population - well below the EU average of 264 per 100,000. Table 5.5 sets out hospital activity for RTCs, with these patients consuming over 36,000 bed days in 2006. Males have twice the discharge rate from hospital due to RTCs as females (males=184.6 per 100,000, females=96.6 per 100,000).

Table 5.5 Hospital activity in relation to RTCs, 2006

All Discharges	6,132
Inpatient	6,064
Day case	68
LOS (mean)	5.95
LOS (median)	2
Bed days	36,101
Total hospital discharge rate per 1,000 corresponding population for inpatients and day cases combined	1.45

Source: Public Health Information System (PHIS), version 10. 2008

Figure 5.12 illustrates rates for RTC-related discharges from Ireland's public hospitals, with rates for both genders falling since 1997. Rates have now begun to level off.

Figure 5.12 Hospital discharge rates for RTCs, 1994 - 2006

Source: Public Health Information System (PHIS), version 10. 2008

5.6.5 Diabetes Mellitus

Diabetes is a condition that results from a lack of or resistance to insulin, a hormone produced by the pancreas. Lack of insulin means that the body cannot effectively harness glucose from food or control sugar levels in the blood. There are two types of diabetes. Type I (insulin dependent diabetes) most commonly occurs in young people. Type II (often but not always, non-insulin dependent) most commonly develops in adults. Diabetes is the leading cause of blindness, renal failure, and non-traumatic amputation of the lower limbs. It is a major risk factor for circulatory disease. The actual prevalence (number of cases) of diabetes in Ireland is not known.

It is known, however, that the number of people affected by Type II diabetes is increasing rapidly due to the increasing levels of obesity. It is thought that one in 20 people in Ireland may have diabetes, with half still undiagnosed. A report published by the Institute of Public Health provides the best available estimates of the population prevalence of diabetes (diagnosed or undiagnosed) in Ireland. This report estimates that:

- In Ireland, 141,063 persons have adult diabetes (Type I and II combined), that is, 4.7% of all adults aged 20 years and older. Type 2 diabetes accounts for approximately 90% of all cases of diabetes.
- Females have a higher prevalence of diabetes than males.
- Prevalence of diabetes increases with age from 0.6% for persons aged 20 to 29 years, to 3.0% for persons aged 30 to 59 years, and 13.8% in those aged 60 years and over.
- The prevalence of diabetes is projected to rise unless preventive action is taken.
- It is estimated that the prevalence of diabetes in 2015 will be 5.6% (194,000 adults with diabetes), representing an increase of 37% over ten years. This will be largely due to an increase in the incidence of Type II diabetes owing to the increases in childhood and adolescent obesity.

People with diabetes are five times more likely to require hospital admission. In 2006, there were 8,418 hospital discharges where the principal diagnosis was diabetes. This is a 56% increase compared to the 5,391 discharges in 1997. Inpatients increased by 38% compared to an 18% increase for day cases. Bed days used by diabetes-related admissions increased from 34,661 in 1997 to 54,601 in 2006. People with diabetes have a two to four times higher risk of coronary heart disease, and 75% to 80% die from circulatory disease. The risk of cerebrovascular disease and peripheral vascular disease is significantly higher in Type II diabetes. It is estimated that 5% to 15% of healthcare spending is related to diabetes care, with 60% of this cost being spent on treating complications.

- The risk of major medical complications for people with diabetes is up to 11 times that for people without diabetes.
- Many of the complications of diabetes can be prevented. Even the onset of Type II diabetes itself can be prevented.
- Foot complications, which are the most costly diabetes outcomes, are preventable in 80% of cases.
- Secondary prevention is the core of clinical diabetes care.
- Good primary care has a hugely beneficial effect on the mortality and morbidity from diabetes.
- There is also a large role for the patient and their family in diabetes care.
- If left unchecked, the cost of caring for people with diabetes will increase by up to 25% by 2040.

5.7 Communicable Diseases

Communicable diseases are diseases that result from infections caused by micro-organisms (viruses, bacteria, and protozoa/parasites) that have the potential to be transmitted from an infected person or animal to another person or animal. Despite the many advances in public health and medicine, communicable diseases remain a major threat to human health. Prevention of these diseases remains a significant public health priority, both in Ireland and internationally. The main communicable disease problems in Ireland today are:

- Food-borne illnesses.
- Vaccine-preventable diseases.
- Sexually transmitted infections.
- Blood borne infections.
- Healthcare acquired infections and emergence of antimicrobial resistance.

There is also concern about vector-borne diseases (transmitted by an animal), new and emerging diseases such as Severe Acute Respiratory Syndrome (SARS), as well as the threat of an intentional release of a biological agent.

This section focuses on communicable diseases that are designated notifiable under the 1981 Infectious Disease Regulations. Notifications of communicable diseases in Ireland (with the exception of the sexually transmitted infections, the organisms reported through the European Antimicrobial Resistance Surveillance System (EARSS) and tuberculosis) are collated on the national Computerised Infectious Disease Reporting (CIDR) system and reported nationally by the Health Protection Surveillance Centre (HPSC). Unless otherwise stated, the figures presented in this section are based on data extracted from the CIDR system on the 21 August 2008 and may differ from those published previously, due to ongoing updating of notification data on CIDR. The focus of this section will be data for the years 2004 to 2007 inclusive, where available. Incidence rates were calculated using 2006 Census of Population as denominator data.

(a) Disease Notifications

Table 5.6 overleaf shows the number of cases of notifiable diseases* in Ireland for the years 2004 to 2007 inclusive. The table is ranked according to numbers of notifications in 2007. For most infections, the numbers notified are likely to be a fraction of the true number occurring since not all cases attend GPs or hospital. Even when patients do attend GPs or hospitals the disease may not be notified to the relevant authorities.

Table 5.6 Number of cases of each notifiable disease notified in Ireland, 2004 to 2007

Notifiable Disease	2004	2005	2006	2007
Acute infectious gastroenteritis	1,897	2,398	2,306	2,520
Campylobacter infection	1,705	1,801	1,812	1,891
Hepatitis C	1,130	1,432	1,220	1,558
Noroviral infection	1,123	1,045	1,635	1,317
Hepatitis B (acute and chronic)	715	874	811	863
Cryptosporidiosis	431	568	367	609
Salmonellosis	415	347	422	456
Tuberculosis	432	450	NA	NA
Pneumococcus infection (invasive)	175	271	293	361
Influenza	79	316	276	280
Enterohaemorrhagic <i>Escherichia coli</i>	67	134	174	192
Meningococcal disease	198	203	209	179
Mumps	420	1079	427	142
Pertussis	92	83	62	78
Malaria	27	44	96	71
Giardiasis	52	57	65	62
Streptococcus group A infection (invasive)	35	49	61	57
Measles	330	93	83	53
Toxoplasmosis	33	45	44	49
Viral meningitis	23	35	148	46
Shigellosis	56	36	54	43
Bacterial meningitis (not otherwise specified)	36	29	46	33
Hepatitis A (acute)	47	56	39	32
<i>Haemophilus influenzae</i> disease (invasive)	38	34	38	31
Brucellosis	60	53	29	28
Leptospirosis	14	15	20	22
Listeriosis	11	12	7	21
Rubella	49	17	14	19
Q fever	7	10	12	17
Legionellosis	4	9	13	16
Typhoid	5	5	9	9
Viral encephalitis	5	6	16	8
Yersiniosis	6	3	1	6
Paratyphoid	4	0	1	4
Creutzfeldt Jakob disease	4	4	6	3
Trichinosis	0	0	0	2
Tetanus	1	0	0	1
Acute anterior poliomyelitis	0	0	0	0
Anthrax	0	0	0	0
Bacillus cereus food-borne infection/intoxication	1	0	0	0
Botulism	0	0	1	0
Cholera	0	0	0	0
<i>Clostridium perfringens</i> (type A) food-borne disease	5	1	0	0
Creutzfeldt Jakob disease (variant)	0	2	1	0
Staphylococcal food poisoning	3	6	0	0
Diphtheria	0	0	0	0
Echinococcosis	0	0	0	0
Plague	0	0	0	0
Rabies	0	0	0	0
Severe Acute Respiratory Syndrome (SARS)	0	0	0	0
Smallpox	0	0	0	0
Tularaemia	0	0	0	0
Typhus	0	0	0	0
Viral haemorrhagic fevers	0	0	0	0
Yellow fever	0	0	0	0
Total	9,735	11,622	10,818	11,079

* 1. Ano-genital warts, chancroid, *Chlamydia trachomatis* infection (genital), gonorrhoea, *Granuloma inguinale*, herpes simplex (genital), *Lymphogranuloma venereum*, non-specific urethritis, syphilis and trichomoniasis notifications are notifiable but not included in Table 5.6.

2. Enterococcal bacteraemia, *Escherichia coli* infection (invasive) and *Staphylococcus aureus* bacteraemia are notifiable but not included in Table 5.6.

3. *Streptococcus pneumoniae* is another term for *Pneumococcus*

Disease notifications - Key Points:

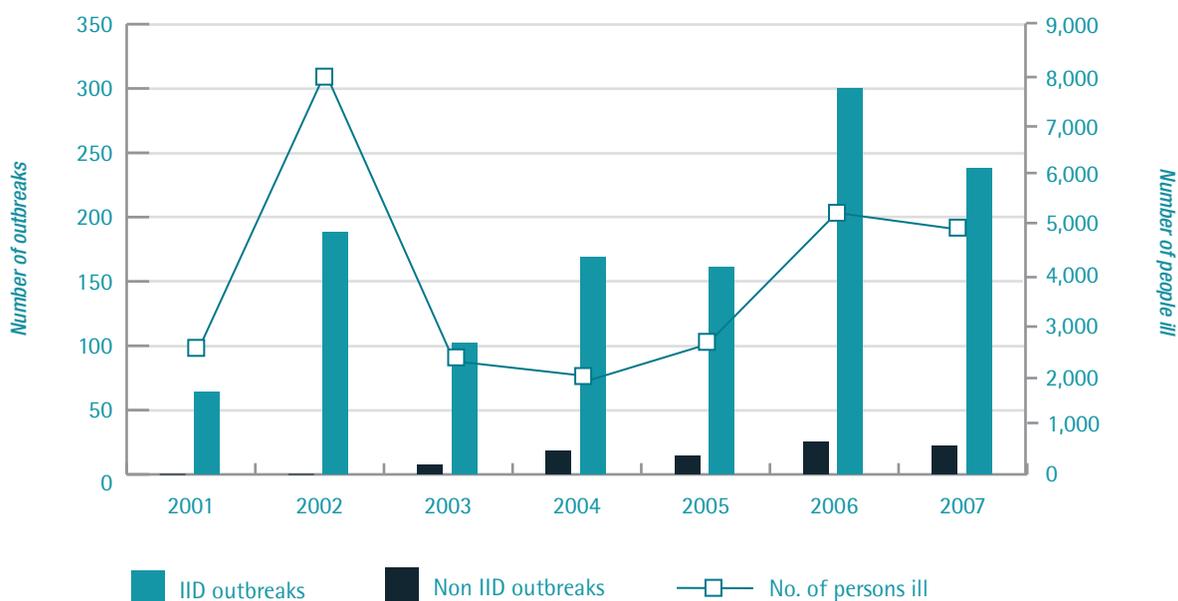
- Acute infectious gastroenteritis is the most commonly notified disease. In 2007, 2,520 cases of acute infectious gastroenteritis were notified, the highest number for the four-year period 2004 to 2007.
- Increasing numbers of cases of the food-borne illnesses salmonellosis, campylobacteriosis, and enterohaemorrhagic *Escherichia coli* (EHEC) are being notified.
- In 2007, there was a 66% increase (n=242) in the number of cases of cryptosporidiosis notified when compared to 2006, most likely attributable to a large water-borne outbreak of cryptosporidiosis that occurred in Galway during the spring/summer of 2007.
- In 2007, the number of cases of noroviral infection notified was down on the number of cases notified for the previous year, but increased on the number notified for 2004 and 2005. The majority of noroviral infections notified are associated with hospital outbreaks.
- In 2007, there were 1,558 cases of hepatitis C notified, an increase of over 400 notifications from 2004 (n=1,130). In 2005, 1,432 cases were notified, with a decrease in notifications to 1,220 in 2006.
- There was a notable increase in the number of cases of viral meningitis notified in 2006: 148 cases were notified in 2006 compared to 23 cases in 2004, 35 cases in 2005 and 46 cases in 2007.

(b) Disease Outbreaks

An outbreak of infection may be defined as two or more linked cases of the same illness. It may also be defined as a situation where the observed number of cases exceeds the expected number. During 2007, there were 260 outbreaks of infectious disease notified and 4,714 associated cases of illness. Eight hundred and ninety cases were reported to have been hospitalised (it is unknown if the pathogen was acquired while an inpatient or if a case was hospitalised as a result of their infection).

General outbreaks accounted for 73.9% (n=192) of all outbreaks notified. The remaining outbreaks were considered family/household outbreaks (26.1%, n=68). One hundred and seventy eight (68.5%) outbreaks were gastrointestinal/ infectious intestinal disease (IID). These resulted in at least 4,595 people becoming ill. Norovirus/suspected viral outbreaks continue to be the most prevalent cause of IID outbreaks, continuing the trend observed in previous years. Figure 5.13 shows the number of outbreaks notified for the years 2001 to 2007, along with the associated number of people experiencing illness.

Figure 5.13 Number of outbreaks and persons ill, notified by year and type, 2001-2007



Most outbreaks are due to gastrointestinal or IID. The most common cause of IID is norovirus infection. After norovirus (n=111), the next most commonly reported IID outbreaks were acute infectious gastroenteritis (n=53), enterohaemorrhagic *Escherichia coli* (EHEC or toxin-producing *E.coli*) (n=21), cryptosporidiosis (n=16), salmonellosis (n=10) and campylobacter (n=9). Investigation of outbreaks is an important function for both public health and environmental health departments. It is important that the source of the outbreak is identified and that control measures are initiated as soon as possible to prevent additional cases.

(c) Food-borne Illnesses

(i) Campylobacter

Campylobacter is the most commonly notified bacterial cause of gastroenteritis in Ireland and the world, with the incidence rates increasing, as seen in Table 5.6. Most raw poultry meat has campylobacter on it, and eating undercooked chicken, or other foods contaminated with juice drippings from raw chicken, are considered as the most frequent sources of infection. Campylobacteriosis is the human illness associated with this bacterium. In 2007, 1,891 cases of campylobacter infection were notified, the highest number since 1999. In 2007, of the cases where age was provided, 25.7% (n = 483) were less than five years of age. It is likely that the higher rates observed for these children are attributable to higher numbers of specimens being submitted for testing from this age group. Campylobacter has a well-documented seasonal distribution, with a peak in cases seen every year in early summer.

(ii) Salmonella

Salmonella are a major group of bacteria commonly found in eggs, milk, pork, beef, and poultry. These bacteria cause salmonellosis in humans. The bacteria can easily be passed from the intestinal tract to the hands and onto food. In 2007, 456 cases of salmonellosis were notified in Ireland, the highest number reported for the four-year period 2004 to 2007 (see Table 5.6). In 2007, of the 456 cases notified, 23.7% (n=108) of the cases were less than five years of age.

(d) Vaccine-preventable Diseases

(i) Notifications of vaccine-preventable diseases

Table 5.7 shows the number of cases of vaccine-preventable diseases that were notified in Ireland, and the corresponding crude incidence rates per 100,000 population, for the years 2004 to 2007.

Table 5.7 Number of cases of vaccine-preventable diseases notified and crude incidence rates (CIR) per 100,000 total population, 2004 to 2007

	2004	2005	2006	2007	2004	2005	2006	2007
Disease	n	n	n	n	CIR	CIR	CIR	CIR
Pertussis	92	83	62	78	2.2	2.0	1.5	1.8
Measles	330	93	83	53	7.8	2.2	2.0	1.3
Mumps	420	1,079	427	142	9.9	25.5	10.1	3.4
Rubella	49	17	14	19	1.2	0.4	0.3	0.5
Meningococcal Group C	5	4	4	2	0.1	<0.1	<0.1	<0.1
<i>Haemophilus influenzae</i> Type B	18	18	14	7	0.4	0.4	0.3	0.2
Tetanus	1	0	0	1	<0.1	<0.1	<0.1	<0.1
Diphtheria	0	0	0	0	0	0	0	0
Polio	0	0	0	0	0	0	0	0
Tuberculosis	432	450	NA	NA	10.2	10.6	NA	NA
Pneumococcus (invasive)	175	271	293	361	4.1	6.4	6.9	8.5

Table 5.7 highlights the following:

- The number of cases of pertussis notified in Ireland has varied little in recent years.
- Although a slight increase in the number of cases of rubella was noted in 2007, the number of cases notified in recent years has declined.
- The number of cases of meningococcal serogroup C notified has decreased dramatically since the introduction of the MenC vaccine in Oct 2000. In 2007, only two cases of meningococcal serogroup C were notified, compared to 139 cases in 2000.
- Measles notifications in Ireland have declined in recent years. In 2007, 53 cases were notified, and this is the fewest number since measles was specified as a notifiable disease under the Health Act, 1947.
- In 2007, the number of cases of mumps (n=142) notified decreased substantially when compared to the previous three years. The higher numbers notified from 2004 to 2006 were consistent with a national outbreak that began in November 2004, continued throughout 2005, and waned in the latter half of 2006.
- In 2007, seven cases of *H. influenzae* type b were notified, the fewest number for the four-year period 2004 to 2007. This decrease is likely to be attributable to the booster catch-up campaign for children under four years of age that was run in November 2005.

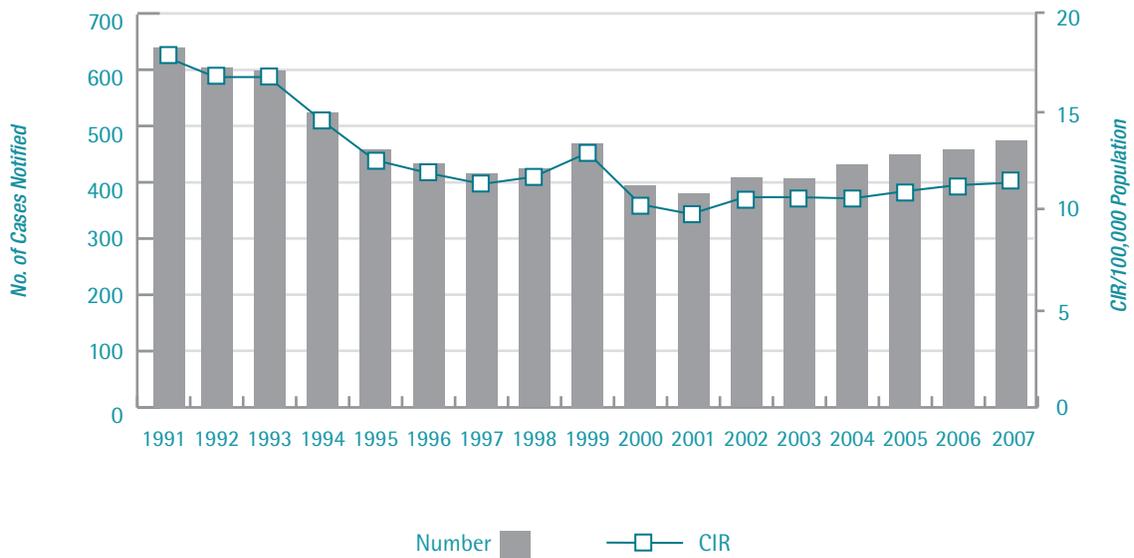
In 2007, 361 cases of pneumococcus (invasive) were notified, the highest number reported for the four-year period 2004 to 2007. Over half of all cases notified in 2007 were in the very young or elderly, with 18.8% (n = 68) of cases in children less than five years of age, and 41.6% (n = 150) in cases 65 years and over. In September 2008, a new pneumococcal conjugate vaccine was added to the Primary Childhood Immunisation schedule for infants born on or after 1st July 2008. For many years, persons at risk and those over 65 years old have been offered a polysaccharide pneumococcal vaccine (PPV).

(ii) Tuberculosis

Tuberculosis (TB) is a communicable disease, caused by the micro-organism *Mycobacterium tuberculosis*. It usually affects the lungs, however, it can also attack other body organs. Transmission is through inhalation or ingestion of bacteria. Tuberculosis continues to be a major public health concern today. BCG is a vaccine made from a weakened form of TB bacteria and is recommended for all newborn children as it protects against the serious consequences of TB infection especially during childhood.

Figure 5.14 illustrates these numbers and incidence rates across time in Ireland. The overall incidence rate in countries of the EU was 18.7 per 100,000 in 2005, ranging from 4.4 per 100,000 in Cyprus to 75.0 per 100,000 in Lithuania. The rate in Ireland in 2007 of 11.2 per 100,000 has been gradually increasing since the lows reached in 2000 (10.1 per 100,000) and 2001 (9.7 per 100,000).

Figure 5.14 Number of cases of tuberculosis notified and crude incidence rates per 100,000 total population, 1991 - 2007



Source: Report on the Epidemiology of Tuberculosis in Ireland 2005 - HPSC. 2006 and 2007 figures provisional

The highest age-specific rate for TB in 2007 occurred among those aged 65 years and over ($n=87$, 18.6 per 100,000 population) and was similar to the rate observed in this age group in previous years. There were 45 cases in children under 15 years of age, giving an age-specific incidence rate of 5.2 per 100,000 population. The rate among males ($n = 287$) was higher than for females ($n = 184$) and the male-female ratio (1.56:1) reported in 2007 was consistent with the rate reported in 2006 (1.5:1). In 2007, 36.9% ($n = 175$) of TB cases notified were in people born outside of Ireland, an increase on the 33% ($n = 151$) notified in 2006, 33.8% notified in 2005, 30% notified in 2004 and 21.9% notified in 2003. Of these notifications, the highest number of non Irish-born persons infected was from India ($n=25$), followed by Nigeria ($n=19$) and Pakistan ($n=10$).

In 2007 there were ten drug resistant cases of TB notified, and of these four were multi-drug-resistant (MDR-TB). In 2005, one case of extensively-drug-resistant TB (XDR-TB) was notified, and was the first XDR-TB case to be notified in Ireland. *The Global Plan to Stop TB 2006-2015* was launched in 2006, and aims to reduce the global prevalence of, and deaths due to TB, by 50% in 2015 relative to 1990. In addition, the plan proposes to eliminate TB as a public health problem (<1 case per million population) by 2050.

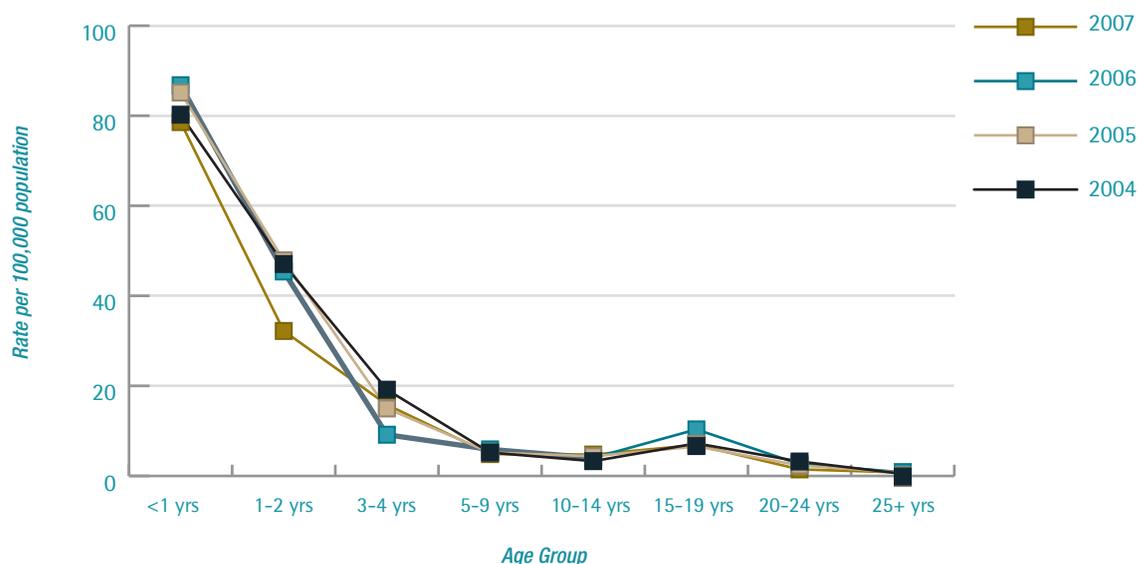
(iii) Meningococcal Disease

Meningitis is the term used to describe inflammation of the protective membranes covering the brain and spinal cord, which are called the meninges. The condition may develop as a result of infection with bacteria, viruses and other infectious agents, but also as a result of injury, cancer or certain drugs. Some forms of meningitis are mild and little intervention needed. However, meningitis infection is a potentially life threatening condition due to proximity of the brain and spinal cord. Bacterial meningitis requires close observation and treatment with antibiotics. Some forms of meningitis, such as those caused by Group C meningococcus, mumps virus, *Haemophilus influenzae* type b, or pneumococcus may be prevented by vaccination.

Invasive meningococcal disease is a significant cause of morbidity and mortality in children and young adults in Ireland, and therefore continues to be treated as a serious public health concern. In 2007, 179 cases of invasive meningococcal disease (IMD) were notified in Ireland, of which 90% were laboratory confirmed. This was the fewest number of cases notified for the four-year period 2004 to 2007, as set out in Table 5.6. Since the introduction of the MenC vaccine in October 2000 incidence rates of IMD have decreased substantially. Prior to its introduction, incidence rates in excess of 14 cases per 100,000 total population were occurring annually, compared to 4.2 per 100,000 total population in 2007.

The peak age-specific incidence rate for IMD is in infants under one year of age, with a second, albeit much lesser peak, occurring in teenagers. The age-specific incidence rate of IMD cases notified per 100,000 population, by age group, for the years 2004 to 2007 is illustrated in Figure 5.15.

Figure 5.15 Age-specific incidence rate of IMD cases notified per 100,000 of population, by age group, 2004 - 2007



Source: CIDR system 21 August 2008

Currently in Ireland, *Neisseria meningitidis* serogroup B is the pathogen most commonly associated with IMD, accounting for over 80% of all annual notifications. Table 5.8 sets out the IMD serogroups for the period 2004 to 2007. In 2007, two serogroup C cases (0.05 per 100,000 total population) were notified, the smallest number since IMD became notifiable. This contrasts with incidence rates of 3.5 cases per 100,000 population for the years prior to the introduction of the MenC vaccine, and reflects the successful impact of this intervention.

Table 5.8 Number of cases of invasive meningococcal disease notified and crude incidence rates per 100,000 total population, by serogroup, 2004 - 2007

Type of Infection	2004	2005	2006	2007	2004	2005	2006	2007
Serogroup	n	n	n	n	CIR	CIR	CIR	CIR
Group B	163	169	168	157	3.8	4.0	4.0	3.7
Group C	5	5	4	2	0.1	0.1	0.1	<0.1
Other Serogroups	4	8	6	2	<0.1	0.2	0.1	<0.1
No Organism Detected	26	21	31	18	0.6	0.5	0.7	0.4
Total	198	203	209	179	4.7	4.8	4.9	4.2

There were 28 IMD-related deaths notified in Ireland for the four-year period from 2004 to 2007. Seven of these deaths occurred in 2007 (case fatality ratio of 3.9%). The case fatality rate (CFR) was highest in the one to two year old age group at 10.2% (4 deaths out of 39 cases). Six of the deaths in 2007 were laboratory confirmed and related to serogroup B disease. No serogroup C deaths occurred in 2005, 2006 or 2007. Since 2001, no young person has died in Ireland from serogroup C disease.

Although significant advances have been made in the control of meningococcal disease, until an effective MenB vaccine suitable for use in infants comes on the market, IMD remains a significant public health concern.

(e) Sexually Transmitted Infections (STIs)

The surveillance of STIs in Ireland is largely based on notifications to departments of public health from STI clinics, and to a lesser extent from laboratories and GPs. Aggregate data on STIs are collated quarterly by the HPSC. Table 5.9 outlines the type and number of STIs notified, and the corresponding crude incidence rates per 100,000 total population for the years 2004 to 2006.

Table 5.9 Notifications of sexually transmitted infections (n) and crude incidence rates (CIR) per 100,000 total population, 2004 to 2006

Type of infection	2004 n	2005 n	2006 n	2004 CIR	2005 CIR	2006 CIR
Ano-genital warts	4,174	3,456	3,494	98.4	81.5	82.4
<i>Chlamydia trachomatis</i> infection (genital)	2,803	3,353	3,144	66.1	79.1	74.2
Non-specific urethritis	2,746	2,106	2,161	64.8	49.7	51.0
Herpes simplex (genital)	411	441	455	9.7	10.4	10.7
Gonorrhoea	270	342	431	6.4	8.1	10.2
Syphilis	144	282	134	3.4	6.7	3.2
Trichomoniasis	60	83	52	1.4	2.0	1.2
Hepatitis B (acute or chronic)	85	80	20	2.0	1.9	0.5
Chancroid	1	0	1	0.0	0.0	0.0
Granuloma inguinale	1	0	0	0.0	0.0	0.0
Lymphogranuloma venereum	0	1	0	0.0	0.0	0.0
Total	10,695	10,144	9,892	252.2	239.3	233.3

Source: Sexually Transmitted Infections 2006 - HPSC

- In 2006, 9,892 STIs were notified, an apparent 3% decrease compared to 2005. The apparent decline was, however, largely attributable to the inability of one particular STI clinic to provide aggregate data.
- Despite the decrease in STI notifications noted in 2006, STI notifications have almost trebled between 1995 (n=3,365) and 2006 (n=9,892).
- During 2006, three STIs accounted for 89% of all notifications: Ano-genital warts (35%, n=3,494); *Chlamydia trachomatis* (32%, n=3,144); Non-specific urethritis (22%, n=2,161).
- The total number of notifications among males generally exceeds that of females. In 2006, men accounted for 63% (n = 6,198) of STI notifications, women 37% (n = 3,652), and unknown gender 0.4% (n = 42).
- In 2006, young adults aged 20 to 29 years accounted for 65% (n=6,376) of STI notifications.

These data highlight the burden of disease due to STIs in Ireland and are suggestive of considerable risk-taking behaviour. Disease prevention is a primary objective of public health, and the data presented suggest that there is considerable scope for improvement in the provision of services for both STI diagnosis and prevention in Ireland.

(f) Blood-Borne Viruses

The most common serious viruses carried in human blood are hepatitis C, hepatitis B and human immunodeficiency virus (HIV). Hepatitis C became notifiable in 2004, and since then the number of cases notified each year has been high, with 5,357 cases notified between 2004 and 2007. Approximately three-quarters of these cases were notified by the HSE Eastern region. The largest risk group for Hepatitis C infection are injecting drug users (IDUs).

The number of hepatitis B notifications to HPSC increased almost 30-fold between 1997 (n=31) and 2007 (n=863). Some of this increase can be attributed to mandatory laboratory notification since 2004 and some to new screening programmes. In September 2008, hepatitis B vaccine was added to the primary childhood immunisation schedule for infants born on or after 1st July 2008.

HIV is not a notifiable disease. Data on HIV in Ireland are obtained from the national HIV case-based reporting system, a voluntary anonymous surveillance system. By the end of 2006, 4,419 diagnoses of HIV were reported in Ireland. The number of newly diagnosed HIV infections increased considerably to a peak of 399 cases in 2003, followed by a decrease to 318 cases in 2005. A 6% increase to 337 newly diagnosed HIV infections occurred in 2006. However, these trends must be interpreted with caution. There has been a decrease in heterosexually-acquired cases primarily due to a decrease in infections diagnosed in people born in Sub-Saharan Africa. New infections in heterosexuals born in Ireland and IDUs remain steady. In addition, there has been an increase in new infections in men who have sex with men.

(g) Healthcare Associated Infections

When a person contracts an infection while receiving medical treatment in a hospital, an outpatient clinic, nursing home, or other health care setting, it is known as a healthcare associated infection (HCAI). HCAI is not new and has always been a potential complication of medical treatment. The prevalence or frequency of HCAI varies depending on, amongst other things, the type of patient and the hospital or healthcare facility's environment and infection control practices. In the acute hospital setting, approximately 1 in 10 (10%) to 1 in 20 (5%) patients develop HCAI following admission.

There are many reasons why HCAI appears to be more common at present including:

- More 'high-risk' immuno-compromised patients, for example, those receiving treatment for cancer.
- Increased movement of patients between wards due to pressures on hospital beds.
- Hospital infrastructure with a lack of suitable isolation facilities for patients with HCAI.
- Improved diagnosis, recognition, and reporting of HCAI.

Data derived from recent prevalence surveys across the EU-25 suggest that 3,000,000 patients acquire a HCAI annually. Approximately 50,000 deaths are estimated to occur every year as a consequence of such infections. Across the EU, the most frequent infections are urinary tract infections (28%), followed by respiratory tract infections (25%), surgical site infections (17%), bacteraemia (10%), and others (including diarrhoea of which *Clostridium difficile* accounts for an increasing proportion).

A recent prevalence study of HCAI in hospitals was carried out by the Hospital Infection Society (HIS) within England, Northern Ireland, Ireland, and Wales from February to May 2006, and by an NHS task force in Scotland between October 2005 and October 2006. The prevalence rate for all HCAs was:

- Scotland 9.0%.
- England 8.2%.
- Wales 6.3%.
- N. Ireland 5.4%.
- Ireland 4.9%.

Although the overall HCAI prevalence rate was 4.9% in Ireland, the rate was dependant on the type of hospital surveyed; 6.0% in regional/tertiary hospitals, 4.2% in general hospitals, and 2.0% for specialist hospitals.

Approximately 20% to 30% of HCAs are considered to be preventable by intensive infection prevention and control programmes, including surveillance. Surveillance data on a number of target areas are now being published on a regular basis which allows hospitals to identify quality improvements in relation to reducing HCAs. The HSE is committed to preventing and controlling HCAI and minimising antimicrobial resistance by building on pre-existing initiatives and utilising the expertise and commitment of all healthcare workers. The HSE is also availing of the assistance and cooperation of the public in improving the quality of patient care.

The HSE has set the following targets and have developed a strategy to achieve this:

- Reduce all HCAI by 20% over five years.
- Reduce MRSA infections by 30% over five years.
- Reduce antimicrobial prescribing by 20% over five years.

A targeted action plan has been put in place which will address areas such as education and increasing public awareness, surveillance, developing and improving antibiotic stewardship programmes, improving infrastructure, making best practice available, and ensuring appropriate governance arrangements are in place throughout the system.

5.8 Oral Health

There have been major improvements in dental health in Ireland over the years. Water fluoridation, which was introduced in Ireland in the 1960s, is recognised as a major contributing factor to the reduction in dental decay. Currently, an estimated 71% of the population receive fluoridated domestic water supplies. In addition, the introduction and increased use of fluoride toothpaste in Ireland since the mid 1970s is a contributory factor to dental health improvements in fluoridated and non-fluoridated areas.

Data on oral health are available for this section from two main sources:

- National surveys of children (1984 and 2000-2002)
- National surveys of adults (1989-1990 and 2000).

Tooth decay levels are described using a measurement called the DMFT index. This measurement counts the number of teeth which are either decayed (D), missing (extracted) due to decay (M), or filled due to decay (F). The level of natural teeth (edentulousness) is described using mean number of natural teeth present or 18 or more sound untreated natural teeth (18+ SUNT).

5.8.1 The Current Situation

The goals for oral health by 2000 set out in the health strategy *Shaping a Healthier Future* (1994) have been achieved for adults. In spite of declining caries (tooth decay or cavities) levels over time in children, the goals for 5-year-olds and for 12-year-olds in fluoridated areas were not attained. Dental caries is the most common chronic dental disease:

- Dental caries affect 79% of 15-year-olds in Ireland.
- The level of dental caries increases with age and is almost ubiquitous among adults.
- Children in fluoridated areas have 41% less decay in their primary teeth (1.3 teeth) than those in non-fluoridated areas (2.2 teeth).

There is a high level of periodontal inflammation and disease in the adult Irish population. Among 16 to 24-year-olds, 35 to 44-year-olds, and those over 65 years, the percentage with shallow and deep pocketing is 11.9%, 40.2%, and 49.6% respectively.

Retention of natural teeth is an important goal in dental health because of the role of natural teeth in the basic functions of daily living. Where teeth are lost, there may be a significant effect on diet, nutrition, general wellbeing, and quality of life. Residents of non-fluoridated communities are more likely to have no natural teeth. The proportion of adults with 18 or more sound untreated natural teeth is less in non-fluoridated compared to fluoridated communities:

- In 16 to 24-year-olds (non-fluoridated: 87.0% versus fluoridated: 92.7%)
- In 35 to 44-year-olds (non-fluoridated: 25.2% versus fluoridated: 47.0%).

Traumatic injury can lead to loss of teeth. Traumatic injuries to permanent incisors occur in 6% of 8-year-olds, 20% of 12-year-olds, and 22% of 15-year-olds. A high proportion of traumatic injuries to the permanent incisors remain untreated.

Dental health has improved in Ireland over the past 30 years:

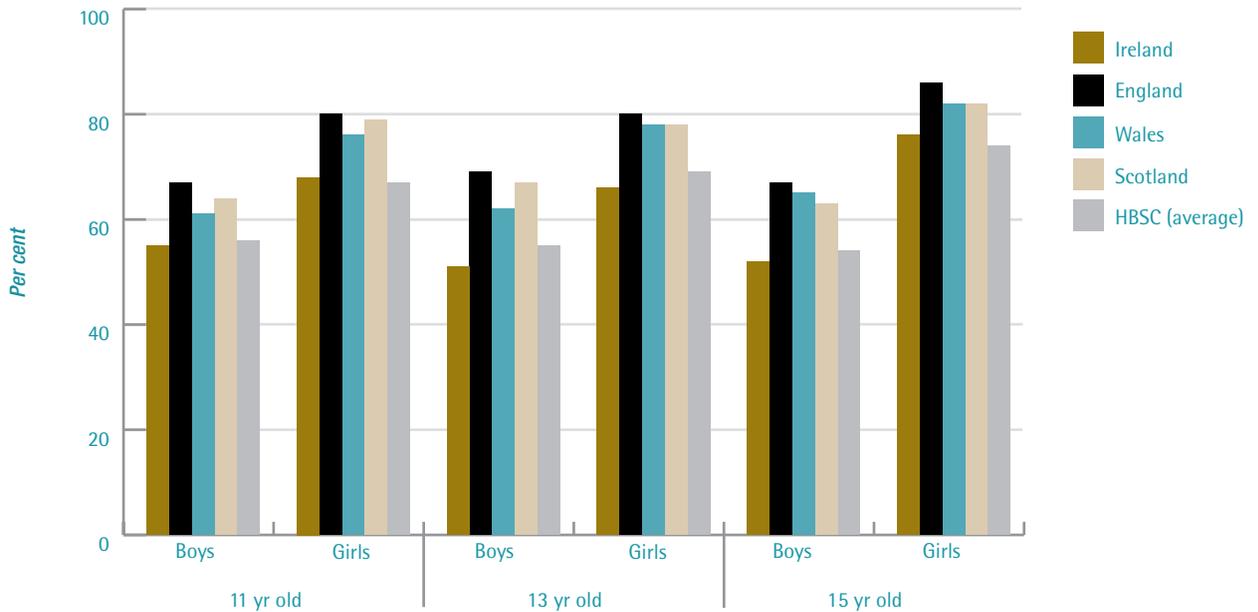
- The proportion of adults with no natural teeth has fallen since 1979.
- The level of dental caries in children and adults has fallen since 1984.
- Between 1984 and 2000/02, the mean number of DMF permanent teeth for 15-year-olds fell by 49% (from 4.1 to 2.1) in fluoridated areas and by 41% (from 5.4 to 3.2) in non-fluoridated areas.
- In adults, the mean number of DMF permanent teeth for 35 to 44-year-olds fell by 30% (from 18.9 to 13.3).
- The prevalence of dental fluorosis in children rose since 1984.

5.8.2 International Comparisons

The oral health of Irish children living in fluoridated areas is favourably ranked (DMFT 1.2 teeth) compared to the average of 16 European countries and the USA (DMFT 1.1 teeth). The HBSC (2006-2007) survey of 41 countries found that Irish children have risk factors, which if tackled, could result in improved dental health:

- Daily (or more often) soft drink consumption among Irish adolescents were similar to the average for the whole HBSC survey.
- For both boys and girls in Ireland, higher levels of soft drinks consumption were associated with lower family affluence.
- Tooth brushing frequency (twice daily or more often) among Irish girls is lower than the HBSC average for girls (67% compared to 73%), with the rate for Irish boys similar to the HBSC average for boys (54% compared to 52%), as displayed in Figure 5.16.

Figure 5.16 Rates of tooth brushing twice daily or more often in 11, 13 and 15-year-olds



Source: *Inequalities in young people's health. Health Behaviour in School-aged Children International Report 2005/2006. WHO 2008*

Given these relatively unfavourable habits, the level of dental caries in Ireland is remarkably low. This is likely to be due to the fluoridation of water supplies.

5.8.3 Inequalities in Dental Health

Disparities exist in oral health between sub-groups of the population:

- In general, caries levels are higher among the less well off.
- Medical cardholders are more likely to have no natural teeth.
- Dependents of medical cardholders are less likely to have had orthodontic treatment than those without medical cards (17% versus 26%).
- Adults eligible for PRSI dental treatment benefit scheme have the greatest number of teeth present and lowest treatment needs overall.
- Males are more likely to have no natural teeth.
- In children, the prevalence of traumatic injuries to permanent incisors is higher among males than among females.

5.8.4 Dental Visiting & Treatment

Much of the unmet treatment need could be either prevented or remedied, by greater utilisation of services:

- Among the 65+ age group, only 2% of those with no teeth, and 38% of those with some natural teeth attend the dentist for regular check ups.
- Seventy per cent of those with no teeth and 24% of those with some natural teeth report that they have not visited a dentist within the last three years, citing 'no need' as their reason.
- Thirty-six per cent of 12-year-olds and 29% of 15-year-olds are recorded as having definite need for orthodontic treatment.
- Among 15-year-olds, 23% have undergone or are currently undergoing orthodontic treatment.

5.8.5 The Future

Recent reports of a link between oral health and general health underscore the importance of a common risk factor approach to health promotion and disease prevention among children and adults. An inter-sectoral approach targeting a small number of risk factors has the potential to impact on a wide range of diseases including oral health. While there have been improvements in dental health in recent decades, there are a number of areas that could be addressed in order to achieve further gains including prevention of oral disease, improving access to services, and health promotion initiatives. There are also some challenges, particularly in relation to disadvantaged groups, children, and adults with special needs, and smokers.

5.9 Mental Health

The WHO defines mental health as 'a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community'. Therefore, mental health refers to more than just 'the absence of disease', but includes 'a state of complete physical, mental and social wellbeing'.

Psychological distress is viewed as an emotional condition that involves negative views of oneself, other people and of the world we live in. Those experiencing psychological distress can experience feelings of tension, anxiety, worthlessness, and irritability. These feelings can interfere with the person's ability to manage the normal range of life experiences such as sadness, psychological pain, and disappointment. People who experience psychological distress may be well most of the time, but experience repeated episodes throughout life, often of worsening severity as time goes on. While many people experience psychological distress and go on to live full and happy lives afterwards, others are born with, or develop more severe mental illness and distress.

5.9.1 Prevalence of Mental Health Problems

In order to address the gap in knowledge regarding psychological wellbeing and distress in the general Irish population, the Health Research Board commenced the National Psychological Wellbeing and Distress Survey (NPWDS) in 2007, and surveyed by telephone a nationally representative random sample of 2,711 adults aged 18 years and over, living in private households.

Baseline results showed that:

- The majority of the respondents reported 'good' or 'very good' mental health in the past year, with 15% reporting 'less than good' mental health.
- Those aged 50 to 64 years were most likely to report less than good mental health.
- A total of 14% (one in seven) of respondents reported experiencing mental health problems in the previous year, with females more likely to report mental health problems, and the youngest and oldest age groups least likely to report such problems.
- Current psychological distress was evident in a total of 12% of the sample (one in eight).
- Females reported that they were more willing to disclose distressing information to others than males, but this willingness decreased with increasing age.

Further analysis of the data in 2008 (HRB, 2008) revealed that:

- Almost 10% of the sample had spoken to a GP about mental health problems in the previous year, with an average of 4.4 visits per person recorded. More than two-thirds (71%) had attended a GP for physical health problems, with an average of 3.9 visits per year. Of those who reported mental health problems, almost 60% had discussed mental health problems with a GP in the previous year.

- The projected figures from the total population aged 18 years and over suggest that 320,381 people will attend a GP for mental health problems, 160,190 people will attend outpatient clinics, 51,261 will attend day centres, and 19,222 will use inpatient mental health facilities over a one-year period.
- The most frequently reported barriers to attending a GP were cost of visits, the length of time involved in visits, and embarrassment/feeling awkward. Barriers were present for 16% of the sample.
- Approximately 6% of the adult population surveyed reported having been prescribed medication for mental health problems in the previous year, and this increased for females across age groups.
- For males, the highest proportion reporting use of prescribed medication for mental health problems was in the age group 30 to 39 years. Few males aged 65 years and over reported using prescribed medication.
- Antidepressants were more frequently prescribed than tranquillisers. The majority of respondents reported that they had been prescribed the medication by a GP.
- Ninety-three per cent of respondents were willing to seek help for mental health problems if required, and a GP was the preferred source of help, followed by a psychiatrist, counsellor, or psychologist. While almost 90% were willing to contact a GP, only 31% to 48% were willing to contact a psychiatrist, counsellor, or psychologist.

The HRB Mental Health Unit have extrapolated findings from this and other available sources of information on mental health to the general population, and Table 5.10 illustrates the findings.

Table 5.10 Summary of available statistics in Ireland for point prevalence and prevalence of mental health problems and use of mental health facilities, rate per 100,000 population aged 18 and over

Description of data	Number in population	Rate per 100,000	Data Source	Date of Study
Point prevalence - psychological distress at any point in time	384,457*	11,999*	2	Dec '05, Jan & Apr '06
Residents in private and public psychiatric units and hospitals on census date	3,839	106	1	31 Mar '06
Residents in 24 hour nursed community residential facilities on census date	1,412	44	1	31 Mar, '06
Self-reported mental health problems in previous year	448,533*	13,999*	2	Dec '05, Jan & Apr '06
Self-reported attendance at GP over previous year for mental health problems	320,381*	10,000*	2	Dec 2005, Jan & Apr 2006
Self-reported attendance in inpatient services over the previous year	19,222*	600*	2	Dec 2005, Jan & Apr 2006
Admissions to private and public psychiatric units and hospitals	20,288	633	1	Jan to Dec 2006

Source of data 1 NPIRS, census and yearly data

Source of data 2 HRB NPWDS

*Estimated from sample

5.9.2 Utilisation of Acute Psychiatric Services by Children & Adults

In Ireland, information is collected on all patients admitted to 56 general hospital psychiatric units, psychiatric hospitals, private hospitals, child and adolescent units, and the Central Mental Hospital (CMH). The data, which are obtained from the National Psychiatric Inpatient Reporting System (NPIRS) are collated by the Mental Health Research Division of the HRB, and published annually.

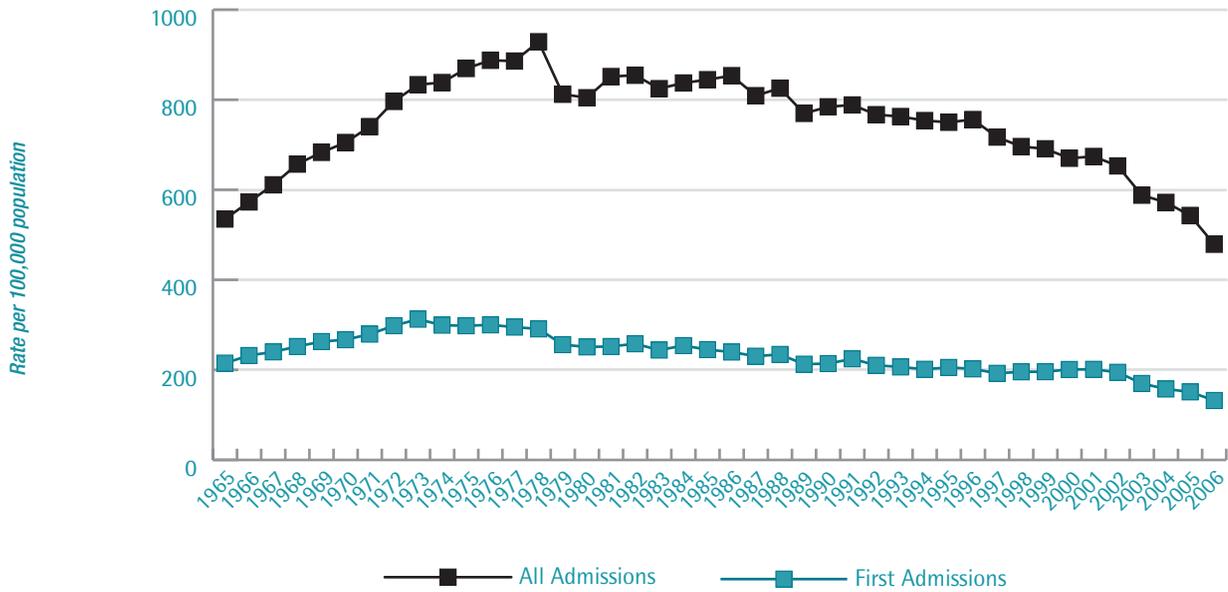
(a) Hospital Inpatient Activity - Children & Adolescents

- There were 398 admissions for children and adolescents (under 18 years of age) in 2006 and 271 of these were first admissions. Males accounted for over half (55%) of all and first admissions.
- Forty-two per cent of all admissions were aged 17 years at admission, one-quarter were aged 16 years, 18% were aged 15 years, 8% were aged 14 years, and a further 8% were aged 6 to 13 years.
- Depressive disorders accounted for 29% of all, and 30% of first admissions for persons under 18 years of age. Ten per cent had a diagnosis of schizophrenia, 8% had a diagnosis of neuroses, and 8% had a diagnosis of behavioural and emotional disorders of childhood and adolescence.
- Thirty-nine per cent of children and adolescents admitted in 2006 had been discharged within one week of admission, 14% were discharged within one to two weeks, and a further 20% were discharged within two to four weeks.
- The average length of stay for children and adolescents admitted and discharged in 2006 was 23.2 days. Average length of stay was longest in child and adolescent units, at 37.7 days, followed by private hospitals (19.0 days), general hospital psychiatric units (15.7 days), and psychiatric hospitals (14.0 days).

(b) Hospital Inpatient Activity - Adults

- There were 20,288 adult admissions (478.5 per 100,000 population) to acute psychiatric hospitals in Ireland in 2006. Of these, 5,601 were first admissions (132.1 per 100,000), with the balance (72%, n=14,687, rate 346.4 per 100,000) being repeat admissions.
- Figure 5.17 illustrates all and first admission rates (per 100,000 population) since 1965. While all admissions have reduced substantially from a high in the 1970s, first admissions have seen a less dramatic reduction. The dramatic fall in all admissions reflects, in part, emphasis on treatment in the community, with consequent reductions in the numbers of readmissions to acute facilities.

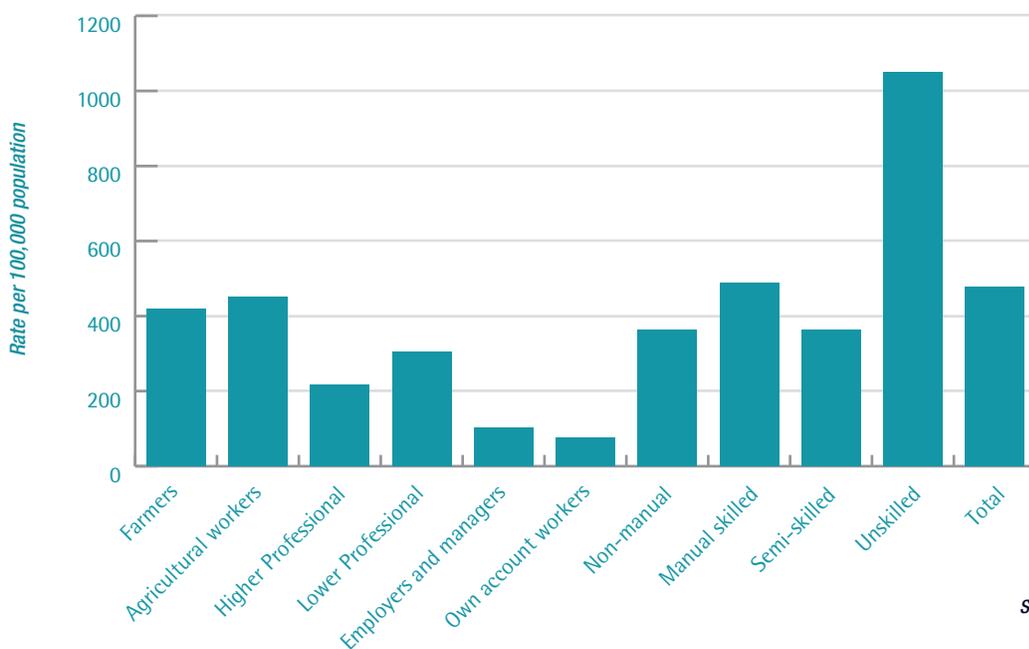
Figure 5.17 All and first admission rates (per 100,000 population) to psychiatric hospitals, 1965 - 2006



Source: NPIRS, HRB, 2007

- Males accounted for over half of all (51%) and first (55%) admissions and had higher rates of all (483.6) and first (144.1) admissions compared with females (473.4 and 120.1, respectively). The 45 to 54-year-old age group had the highest rate of all admissions, at 763.1 per 100,000, while the 18 to 19 age group had the highest rate of first admissions, at 194.7 per 100,000.
- Divorced persons had the highest rate of admissions. Single males had higher rates of all admissions compared to females, while females who were married, widowed, or divorced had higher rates of admission than their male counterparts.
- Figure 5.18 illustrates the rates per 100,000 population of all admissions to psychiatric hospitals by socio-economic group, with the unskilled occupational group having the highest rate of all (1,050.0) and first (212.6) admissions, while own-account workers (self-employed without employees) had the lowest rates, at 75.9 and 27.1 per 100,000, respectively.

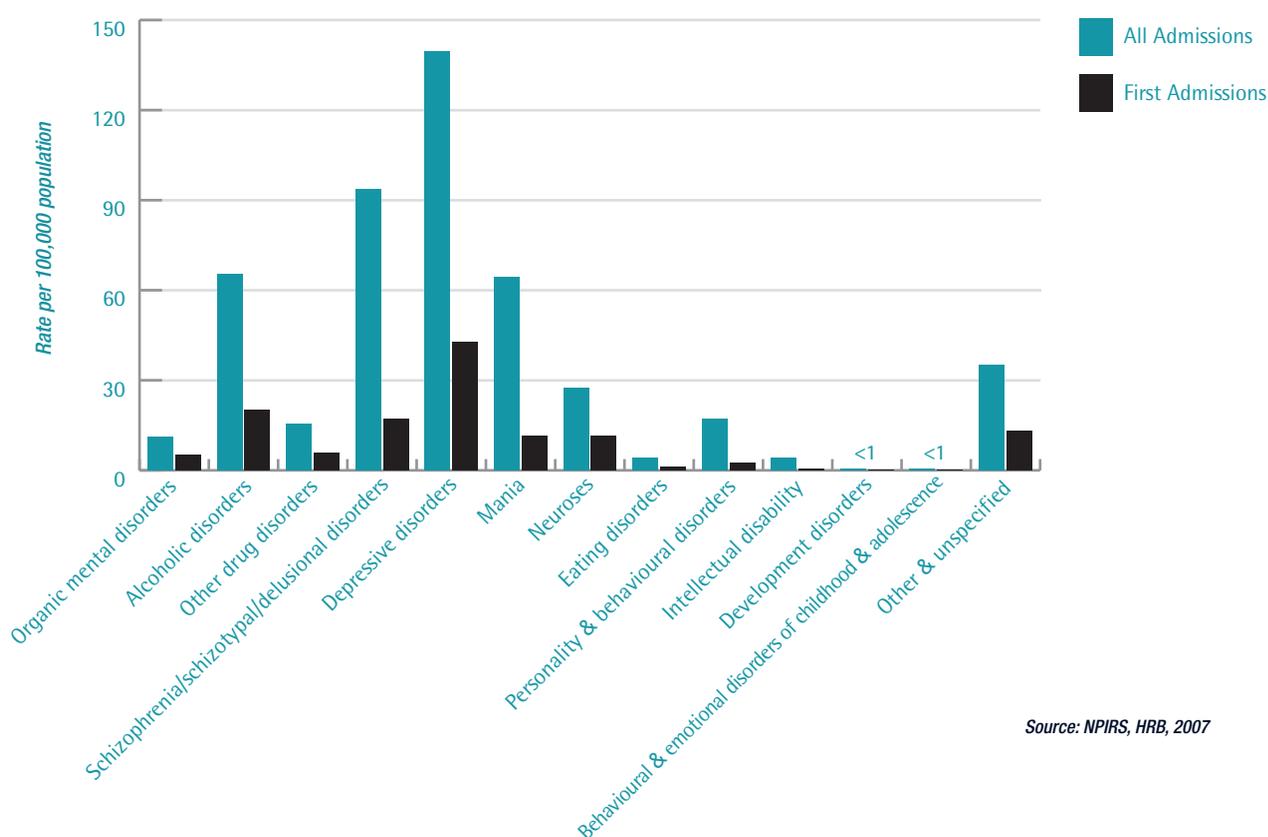
Figure 5.18 Rates per 100,000 population of all admissions to psychiatric hospitals by socio-economic group, 2006



Source: NPIRS, HRB, 2007

- Nationally, depressive disorders accounted for almost one third of admissions, schizophrenia accounted for 20% of all and 13% of first admissions, while alcoholic disorders accounted for 14% of all and 15% of first admissions.
- Figure 5.19 illustrates the diagnosis of all and first admissions. Schizophrenia had the second highest rate of all admissions nationally, while alcoholic disorders had the second highest rate of first admissions nationally.

Figure 5.19 Diagnosis of all and first admissions, 2006



Source: NPIRS, HRB, 2007

- There were 20,098 discharges from and 161 deaths in, Irish psychiatric units and hospitals in 2006. Of the 161 deaths, 87 (54%) were male and 74 (46%) were female. Sixty-one per cent of deaths were aged 75 years and over.
- Forty-one per cent of those who were discharged with alcoholic disorders, 27% who were discharged with depressive disorders, and 19% with schizophrenia, were discharged within one week of admission. Almost all discharges for alcoholic disorders (98%), schizophrenia (86%), and depressive disorders (95%) occurred within three months of admission.
- The increasing trend towards shorter episodes of inpatient care continued, with 47% of discharges in 2006 occurring within two weeks of admission, 68% within 4 weeks, and 93% within three months of admission. Just two per cent of discharges occurred after one year or more in hospital.
- The average length of stay was 27.5 days. Almost one-third of discharges from general hospital psychiatric units (31%), and 34% from psychiatric hospitals occurred within one week of admission, compared with 10% from private hospitals. Private hospitals had the longest average length of stay, at 34.7 days. However, the proportion of re-admissions to private hospitals was slightly lower (67%) than that to general hospital psychiatric units (72%) or to psychiatric hospitals (76%).

5.9.3 High Support Community Residences 2006

A census of high support community residences in Ireland was carried out on the night of the 31 March 2006. All residences operating under the provisions of the Mental Health Act (2001) were reviewed. Excluded were residences which catered only for patients with intellectual disabilities or learning disabilities.

- There were 113 residences with 1,412 people resident (46.6 per 100,000 population).
- All residents were aged 16 years or more.
- There were more males than females.
- The majority of male residents were diagnosed with schizophrenia.
- About half of the residents were aged between 45 and 65 years.
- Just over one third of the residents were aged 65 years or over. Just 18% were under 45 years of age.
- Less than 17% of the residents had lived in their current accommodation for under a year, with almost half (45%) having been resident in the high support facilities for five years or more.
- Few residents were employed, either in sheltered or mainstream employment. The majority were attending day centres.

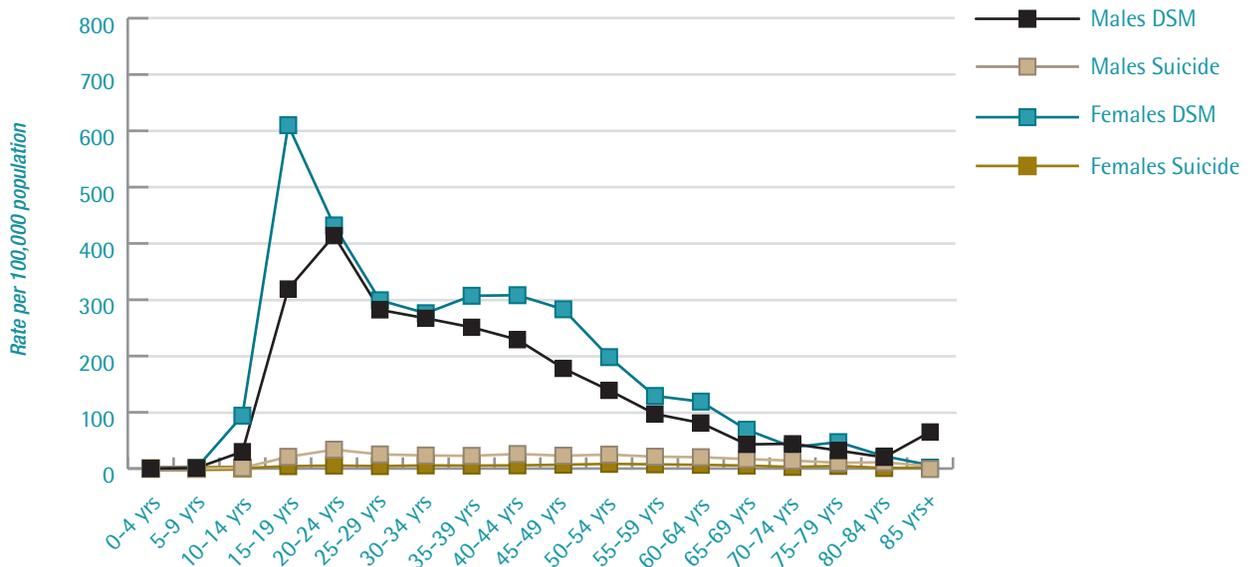
5.9.4 Deliberate Self-harm

In 2007 the National Registry of Deliberate Self-harm recorded approximately 11,100 deliberate self-harm presentations to hospital, made by approximately 8,600 individuals.

- The female rate in 2007 was one-third higher at 215 per 100,000 compared to 162 per 100,000 for males.
- Deliberate self-harm was largely confined to the younger age groups. Almost all (88%) were by people aged less than 50 years. The majority of these were by people under 30 years of age.
- The highest rate for females was in the 15 to 19 years age group (600 per 100,000) and for males in the 20 to 24 year age group (392 per 100,000).
- Almost a quarter (23%) of all deliberate self-harm presentations were due to repeat acts, with these repeats more common for males than females.
- Drug overdose was the most common method (74%) of self-harm, and was more common in females (80%) than males (65%).
- Self-cutting was the second most common method of self-harm, used by a fifth (21%) of cases, with these cases being more likely to repeat their actions. This method was more common in males (26% for males versus 18% for females).
- Alcohol was consumed in 41% of all incidents of deliberate self-harm, more commonly for males (44%) than females (38%). Alcohol may be one of the factors underlying the pattern of presentation with deliberate self-harm, which shows peaks late at night and at weekends.
- Admission to psychiatric inpatient care directly from the emergency department was most common for cases where hanging (34%) and attempted drowning (28%) were used. However, one in three of these cases were not admitted following emergency treatment and the emergency department was the only treatment setting for more than half of all deliberate self-harm patients.

Figure 5.20 illustrates deliberate self-harm rates per 100,000 population for males and females in 2007, along with suicide rates. Self-harm and acts of parasuicide far exceed the suicide rate, especially so for females aged 15 to 19 years of age.

Figure 5.20 Deliberate self-harm (DSM) and suicides per 100,000 population, males and females, Ireland, 2007

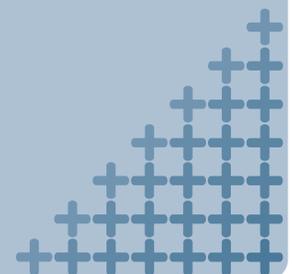


Sources: National Registry for Deliberate Self-Harm & CSO

Health Inequalities

Key Points

- A complex combination of factors leads to health inequalities, which occur when there are differences in the standard of living in the home, at work, or in the community.
- Differences are seen between socio-economic and occupational groups in mortality, morbidity, self-reported health, and lifestyle behaviours.
- There is a need for many different agencies, institutions, government departments, public and private groups, and individuals to play a role in tackling health inequalities.



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6. Health Inequalities

Health inequalities exist when a subgroup of the population suffers a disproportionate burden of ill health and premature death compared to the community as a whole. Health inequities are unnecessary, avoidable, unfair, and unjust. One of the four principles underlying Ireland's current health strategy is the principle of equity and fairness. The strategy states that everyone should have a fair opportunity to attain full health potential and no one should be disadvantaged from achieving this potential, if it can be avoided.

Many theories exist as to the cause of health inequalities. One example is the theory that poverty and inequality in material wellbeing underlie health inequalities. The role of health services in addressing inequalities is recognised, but as described in the Black Report 'measures to reduce differences in material standards of living at work, in the home and in everyday social and community life are of even greater importance'. Increasing evidence indicates that it is not just the extent of material deprivation (absolute poverty) experienced by an individual, but the gap between the richest and poorest within a country (relative poverty), that plays a role in determining health inequalities. Table 6.1 sets out factors identified in the literature as contributing to health inequalities.

Table 6.1 Factors contributing to health inequalities

Factors contributing to Health Inequalities
Geographical location
Gender
Age
Ethnic background
Sexual orientation
Disability
Mental health status
Homelessness
Substance use
Lone parenthood

It is likely that a complex combination of factors is at play. This highlights the need for many different agencies, institutions, government departments and other public and private groups and individuals to play a role in tackling health inequalities.

6.1 Evidence of Health Inequalities in Ireland

Establishing an evidence-base for health inequalities has not been easy. Problems exist with deficits in population health data, commitment to address these deficits, socio-economic group (SEG) coding practices, and the availability of data that are comparable with other jurisdictions. The following section looks at health inequalities in relation to morbidity, mortality, perceived health, and lifestyle choices.

6.1.1 Evidence with Regard to Mortality

A report published by the Institute of Public Health in Ireland in 2001 on inequalities in mortality was the first to provide evidence of the substantial health inequalities that exist in Ireland. Results demonstrated that:

- There is a greater than 200% higher death rate in the lowest SEG compared to the highest SEG for most individual disease categories.
- There are very high differential rates for some diseases, such as mental and behavioural disorders, diseases of the respiratory system, and diseases of the digestive system.
- Male unskilled manual workers are more likely to die from an accidental cause than professional men.
- There is a steep gradient in mortality across SEGs for many diseases.

Perinatal statistics in 1999 demonstrated a three times higher perinatal mortality rate (based on father's occupation) for children of unskilled manual workers than for those born to parents in the higher professional category.

6.1.2 Evidence with Regard to Morbidity

A report from Trinity College, Dublin, in 2001 found an association between social position and ill health. Some of the key findings included:

- Male unskilled manual workers were almost four times more likely to be admitted to hospital for the first time for schizophrenia compared to higher professional men.
- Persons in the 'unskilled manual' SEG had worse health than professional groups in all years and for all conditions analysed.
- Women in the 'unemployed' SEG were more than twice as likely to give birth to low birth weight babies compared to women in the higher professional group.

A more recent report by the Institute of Public Health in Ireland analysed data on all singleton births in the Republic of Ireland in 1999 and found an association between parents' occupational status and low birth-weight:

- Babies of parents in the lower occupational group had a 60% greater chance of having a low birth-weight than babies of parents in the highest occupational group.
- Babies of parents whose SEG was recorded as unknown, unemployed or home duty had twice the risk of being of low birth weight than babies of parents in the highest SEG.

This finding in 1999 shows no improvement on similar findings from the early 1990s. International research shows that babies born with low birth weight have poorer health outcomes in the long term than babies of normal weight.

SLÁN 2007 carried out sub-studies that involved the physical measurement of BMI, waist circumference, blood pressure, and blood cholesterol. Objective evidence of social class differences in risk factors was found:

- Lower social class groups had a higher percentage of obesity, and a gradient was found across the social classes.
- Hypertension was more prevalent in the lower social class groups.
- There was no evidence of a clear social class pattern in cholesterol levels.

When risk factors were combined there was evidence of social class difference and a social class gradient, as can be seen in Table 6.2 below.



Table 6.2 BMI, cholesterol and social class

Social Class	BMI ≥ 30	BMI ≥ 30	Cholesterol ≥ 5	BMI ≥ 30
	+ Cholesterol ≥ 5	+BP $\geq 140/90$	+ BP $\geq 140/90$	+ Cholesterol ≥ 5 +BP $\geq 140/90$
	%	%	%	%
1-2	21	19	48	16
3-4	23	23	48	19
5-6	28	27	54	22

BMI - kg/m²
Cholesterol - mmol/L
BP - mmHg

Source: SLÁN 2007. National Health & Lifestyle Surveys, 2007.

6.1.3 Evidence with Regard to Perceived or Self-reported Health

A social capital and health survey in 2001 by the Institute of Public Health in Ireland revealed inequalities in perceived health:

- Self-rating of general health varied with level of educational attainment. People with no formal, or just primary education, rated their general health as poorer.
- Quality of life varied with income and housing tenure. A lower quality of life was reported by those with the lowest incomes and those renting in the public sector.
- Poor general mental health and long-term illnesses were more likely in those who were unemployed.

A study of general practice patients in Ireland and Northern Ireland in 2006 found similar associations between self-reported health and socio-demographic factors, including income. Respondents were asked about long-term illness, perceived general health, and feelings associated with depression:

- A steep social class gradient was clearly seen across seven income bands.
- Those in the highest income band had a much greater chance of reporting better health status in all three areas.
- Tenure of accommodation (renting) was related to feelings of depression.
- Lower levels of education were associated with poor general health.

A study of household survey data from 1995 to 2004 by the Combat Poverty Agency revealed:

- A clear link between lower social class, lower educational qualifications, lower incomes, and poor health.
- Those with the highest incomes, social class, or education had the best health.
- Health declined uniformly as income, class, and education decreased.
- Those experiencing income poverty were less likely to report good or very good health and those experiencing consistent poverty were even less likely to do so.
- Chronic illness was more prevalent in the unskilled manual social class and for those with lower incomes.

The most recent SLÁN survey found evidence of health inequalities in self-reported health status:

- Respondents in the lower social class groups were more likely to:
 - ◆ Rate their health as 'poor'.
 - ◆ Report chronic illness.
 - ◆ Report limitation in their daily activity due to long-term illness.
- Respondents in the higher social classes were more likely to report having a 'good' or 'very good' quality of life.
- Respondents in the lower social classes had lower levels of positive mental health and wellbeing and higher levels of psychological distress.
- Generalised anxiety disorders and a history of major depression were more prevalent in the lower social classes.

6.1.4 Evidence with Regard to Lifestyle Factors

SLÁN 2007 found evidence of inequalities in self-reported lifestyle factors:

- Physical activity:
 - ◆ Lower levels of physical activity were reported by the lower social class groups.
 - ◆ Reasons for inactivity in the lower social class groups were mainly lack of interest or injury/disability/medical condition, compared to the higher social class groups who were more likely to cite lack of time.
- Diet and nutrition:
 - ◆ There was clear evidence of a poorer diet in the lower social class groups.
 - ◆ Respondents in Social Classes 5 and 6 were more likely to eat food from the top shelf of the food pyramid and more likely to add salt while cooking or at the table. Dietary advisors recommend a sparing intake of food from this shelf of the pyramid.
 - ◆ Respondents in Social Classes 5 and 6 were less likely to meet the daily recommendations from the other shelves of the pyramid.

Lower social class groups were less likely to snack between meals. They were also more likely to consume their main and light meal at home, suggesting the opportunity for greater control over their diet, and therefore an area for public health intervention.

- Smoking and alcohol:
 - ◆ Higher rates of former and current smoking were observed in the lower social class groups, with a lower percentage reporting attempts to quit.
 - ◆ The higher social class groups were more likely to report drinking alcohol two to three times a week or more, and the lower social class groups were more likely to report having six or more standard drinks on at least one occasion per week.



6.1.5 Commentary

The evidence above has been presented according to socio-demographic factors such as income, occupation, and level of educational achievement. Certain groups within our society are particularly vulnerable and certain groups demonstrate even greater inequalities in health status to that presented above.

The population pyramid for Travellers (Chapter 1) demonstrates the much lower life expectancy experienced by this group when compared to the general population. Perinatal and infant mortality is much higher among the Traveller community, as is the incidence of congenital anomalies and sudden infant death syndrome (SIDS).

The homeless population is also at greater risk of experiencing a disproportionate amount of morbidity and premature death.

One in every nine children in Ireland lives in consistent poverty. Children bear a disproportionate burden of poverty. Children under 15 years of age comprise only 20% of the population, but account for 30% of all those living in consistent poverty. Despite our recent history of being one of the best performing economies in the EU, data from the ESRI would indicate that we are one of the worst performers on child poverty.

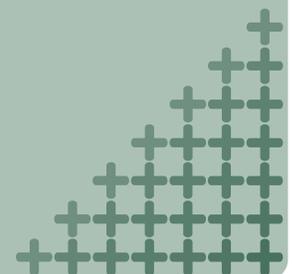
There is increasing evidence that health in later adult life may be a result of complex combinations of circumstances taking place over time, and that events during childhood determine health status in later years. Children are 20% of the population but 100% of the future and therefore, health inequalities experienced by children should be specifically targeted and eliminated.



Priorities for Improving the Health & Wellbeing of the Population of Ireland

Key Points

- A population health approach, which focuses on the health of the whole population while recognising the role of individuals and communities, is necessary to achieve the best health outcomes.
- The population health approach will require a change in the way the services are delivered. There will be a strong emphasis on integration and holistic care, health promotion and prevention, and on reducing inequalities. There will also be a strong focus on quality, on a system of planning and evaluation of policy and service delivery, and on partnership with community and voluntary sectors.
- A number of risk factors need to be tackled as a priority. These factors include elevated blood pressure, tobacco-use, inappropriate use of alcohol, high cholesterol, overweight and obesity, diet, and low physical activity.
- Tackling these priorities through the application of the population health approach will maximise our potential to improve the health status of the whole population.



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7. Priorities for Improving the Health & Wellbeing of the Population of Ireland

The mission of the Health Service Executive (HSE) of Ireland is 'to enable people live healthier and more fulfilled lives'. The HSE Transformation Programme has identified key challenges in how we will deliver health and social care services, and improve health and social wellbeing into the future. The international experience emphasises the importance of adopting a population health approach if we are to maximise this transformation process.

There is growing recognition that healthcare systems cannot be isolated from the rest of society. In order to be more effective, they must take account of the social, economic, and demographic context. While it is important to ensure that health systems provide quality health and social care services, there is a need to recognise that many of the determinants of health are outside the healthcare system and include education, income, social status, poverty, transport, and the environment. Included in the many issues that pose a challenge to health and wellbeing in Ireland are:

- The population is increasing, is now at its highest level since 1861, and will increase beyond five million by 2020. In addition to growing in size, it is becoming increasingly diverse.
- Life expectancy has increased considerably over the past few decades, and an ageing population will have implications for the provision of most services.
- The increasing incidence and prevalence of chronic illness among the middle aged and older age groups will require the development of appropriate models of care for chronic illness.
- Despite the rise in prosperity, and overall improvements in the health of the Irish population, rates of mortality and morbidity are consistently higher for lower socio-economic groups.
- Expectations and demands for services are increasing, and costs are rising.
- The health of the population cannot be improved by the action of the health services alone. A broader approach is required to deal with the determinants of health.

Action is now required to shift the focus from a national sickness service, which treats disease, to a national health service which focuses on promoting health, preventing ill health and providing the best quality care for those who require it, in the most appropriate setting. A population health approach is one which promotes and protects the health of the whole population or sub-groups, with particular emphasis on reducing health inequalities.

In changing the way we do our business, a continuum of quality health and social care services, spanning health promotion, prevention, self-management support, primary care, and specialist care, will need to be available to the whole population. There is an increasing need to focus on the health of the population and best possible health outcomes, while moving to a person-centred approach, with integrated services across the entire continuum of care, crossing organisational boundaries.

The implications of not adopting this approach are:

- Less than optimal health outcomes.
- Increasing pressure on an already compromised health and social care service.
- An increase in health inequalities.
- Spiralling, unsustainable costs.

The key elements of the HSE population health approach are outlined below. It needs to be recognised that this is an integrated model encompassing all of the elements, and not a menu of activities from which to pick and choose:

1. Addressing the wider determinants of health and tackling health inequalities.
2. Planning for health and social wellbeing and not just health and social care services.
3. Developing and employing reliable evidence to improve health and social care outcomes.
4. Making choices for health investment.
5. Measuring and demonstrating the return for investment in health and social care services.
6. Shifting the balance from hospital to primary care and health promotion.
7. Integrating services across the continuum of care.
8. Proactively engaging and working with other sectors to improve health.
9. Engaging the population on the issue of their own health.

The population health approach also recognises the role of individuals and communities in promoting and protecting their own health and the health of others. Using this model, two challenges that require priority attention are:

1. To change the way services are delivered to ensure that more people are cared for in the community through integrated services.
2. Tackling the risk factors to prevent illness and reduce the burden of chronic illness.

7.1 Changing the Way Services are Delivered

To prevent disease, reduce the burden of illness, and to reduce health inequalities, it is essential that the HSE proactively engages in the development of integrated, healthy public policy, working with the Department of Health and Children, other government departments, statutory agencies, and the community and voluntary sector.

An essential element of the population health approach is that services are integrated across the continuum of care. When services are being developed they should be built, not as hospital services or community services, but as integrated services, with the patient at the centre. The integration of hospital and community services was identified as one of the organisation's key priorities when the HSE launched its Transformation Programme in 2006. The HSE is currently developing a structure to best deliver an integrated service to patients and clients.

It will be necessary to develop a culture of team and multidisciplinary working at all levels of the health service. As seen in the data provided in this report, the major burden of illness and the main demand on services, are derived from chronic illnesses that can be largely prevented and managed in primary care settings, with primary care teams as the cornerstone of the integrated service.

It is therefore necessary to shift the balance from hospital to primary care and health promotion. In this context, there is a need to develop and provide high quality, integrated, evidenced-based clinical and curative services at the appropriate level and setting. Equally important is the need for a greater emphasis on the provision of health promotion and prevention services which support individuals and communities in a more holistic way. Chronic diseases need to be managed in systematic evidence-based programmes.

The population health approach is clearly demonstrated as a model of how to approach chronic illness and other major illness by the Strategy for Cancer Control in Ireland. The following elements which make up the cancer strategy should be the template for future service development if the mission of the HSE 'to enable people live healthier and more fulfilled lives' is to be achieved:

- A whole population approach to care, with a strong emphasis on integration and holistic care.
- A greater emphasis on health promotion and prevention.
- An emphasis on reducing inequalities.
- A strong focus on quality and development of a culture of measurement and quality assurance.
- A system of planning and evaluating policy and service delivery, based on scientific needs-assessment.
- Partnership with community and voluntary sectors.

If real change is to be achieved and we are to realise our health potential, this approach must be used, underpinned by a major shift to looking after patients in primary care. By doing this, illness and premature death can be prevented in the first place (for example, by effective and well-designed immunisation programmes and screening programmes). Secondly, the effects of illness can be reduced (for example, providing access to diagnoses, secondary prevention, and early treatment) in primary care, freeing up specialist care facilities to treat the small proportion of care required at that level.

7.2 Reducing Risk Factors

In Ireland, the greatest burden of death, illness and disability results from non-communicable diseases (NCDs) and injuries, as outlined in this report. In 2005, the WHO European Health Report highlighted the burden of these conditions on society, and in 2006, introduced their strategy 'Gaining Health', which seeks to prevent and control NCDs and injuries in Europe. NCDs and injuries now cause more than 80% of deaths in Europe and in Ireland, and the focus for public health authorities when seeking to improve the health of the population should be in this area.

Table 7.1 sets out the diseases or conditions contributing to the overall burden of disease (measured as disability adjusted life years - DALYs) and death in Europe, with cardiovascular disease causing 23% of all years spent with a disability and 52% of all deaths.

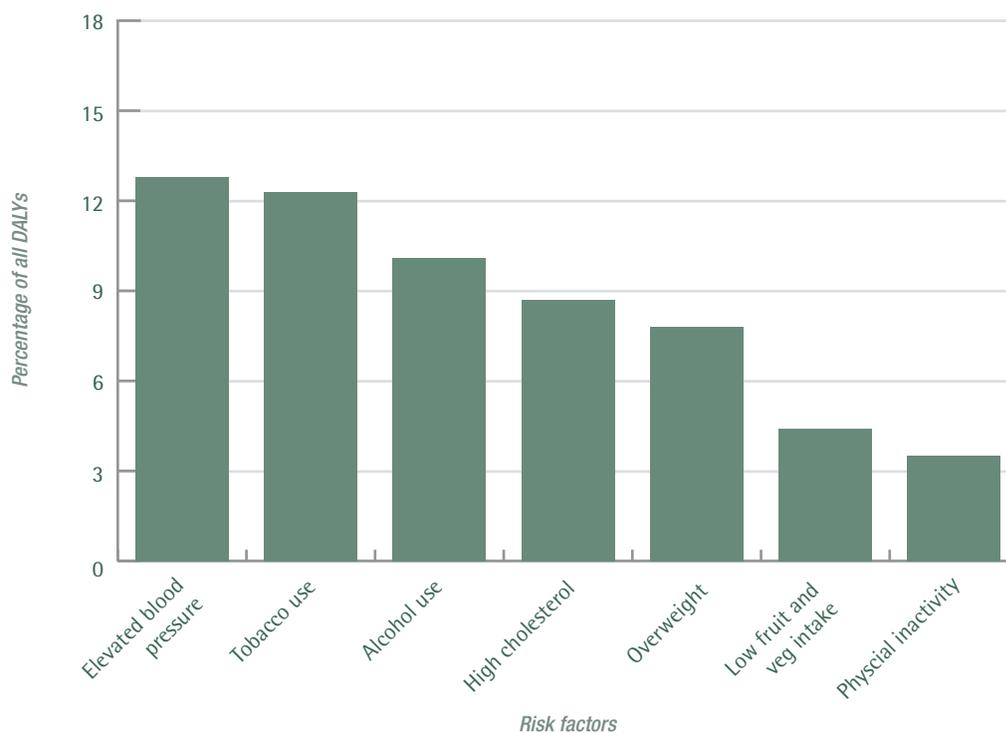
Table 7.1 The burden of disease and deaths from NCDs and road traffic collisions in Europe, 2005

Cause	Disease burden (DALYs)	Per cent of all (DALYs)	Deaths	Per cent of all causes of death
Cardiovascular disease	34,421,000	23%	5,067,000	52%
Neuropsychiatric conditions	29,370,000	20%	264,000	3%
Cancer	17,025,000	11%	1,855,000	19%
Digestive diseases	7,117,000	5%	391,000	4%
Respiratory diseases	6,835,000	5%	420,000	4%
Sense organ disorders	6,339,000	4%	0,000	0%
Musculoskeletal disorders	5,745,000	4%	26,000	<1%
Diabetes mellitus	2,319,000	2%	153,000	2%
Oral conditions	1,018,000	1%	0,000	2%
Road Traffic Collisions	1,233,000	<1%	46,000	<1%
All NCD	115,339,000	77%	8,210,000	86%
All causes	150,322,000		9,564,000	

DALYs: Disability adjusted life years
Source: WHO, 2006

The WHO cites seven major risk factors known to contribute to the major causes of death and illness/disability, and states that interventions addressing the seven leading risk factors can largely prevent the major conditions. The estimated percentage contribution of these seven risk factors to all years of life adjusted by disability (DALYs) is illustrated in Figure 7.1, with elevated blood pressure being the largest risk factor. These are the risk factors that need to be prioritised for action.

Figure 7.1 Risk factor contribution (%) to all disability adjusted life years (DALYs)



Source: WHO, *European Health Report, 2005*

7.2.1 Priorities for Prevention

(a) Elevated Blood Pressure

Persistent or chronic hypertension, or elevated blood pressure, is a major risk factor for strokes, heart attacks, heart failure and arterial aneurysm, and is a leading cause of chronic renal failure. Moderate elevation of blood pressure can shorten life expectancy, while very high pressures (50% or more above average) can result in a person living no more than a few years, unless appropriately treated.

Elevated blood pressure is related to unhealthy diet, high salt intake, a sedentary lifestyle, overweight and obesity, and risky use of alcohol. There were 2,698 admissions to Irish hospitals in 2006 with a primary diagnosis of hypertension, consuming 8,417 bed days. There were a further 61,361 admissions where hypertension was listed as a condition co-existing with the patient's primary diagnosis.

SLÁN 2007 reported that 60% of Irish adults aged 45 years and over, had elevated blood pressure, and approximately 60% of these individuals were not on medication to reduce blood pressure. Of those on medications, 70% were not controlled to normal levels. Given these findings, it is vital to increase the population's awareness of the need to having their blood pressure measured and treated if required. It is also important to remember that hypertension is a long-term, chronic condition that needs continual monitoring and management, and that this can be undertaken in the primary care setting.

(b) Tobacco-Use

Almost one million adults (29%) in Ireland use tobacco, with higher use in younger people (35% in 18 to 29-year-olds). Half of these tobacco users can expect to die from a tobacco-related disease (cerebrovascular diseases, cancer and respiratory diseases). While smoking rates have fallen in Ireland, and major strides have been made with the ban on smoking in enclosed workplaces/public places, price increases, product warnings, and access to cessation therapies, it is obvious from these figures that major work remains to be done.

Six proven, effective tobacco-control policies, as recommended by the WHO Report on the Global Tobacco Epidemic-The *MPOWER* Package, need to be implemented. These are:

1. Monitor tobacco use and prevention policies.
2. Protect people from tobacco smoke.
3. Offer help to quit tobacco use.
4. Warn about the dangers of tobacco.
5. Enforce bans on tobacco advertising, promotion, and sponsorship.
6. Raise taxes.

(c) Alcohol

Of all the WHO regions, Europe had the highest intake of alcohol. Within Europe, Ireland has been shown in repeated studies to be amongst the highest users of alcohol. This use is compounded by our high level of binge-drinking.

Unlike risk factors such as hypertension, alcohol harms health early in life and abuse has been linked to more than 60 types of disease or injury. Even moderate drinkers can suffer from alcohol-related conditions, particularly if it is used to intoxicating levels. Inappropriate use of alcohol also contributes to death and disability as a result of intentional injury, such as self-harm, suicide and assault/homicide, and unintentional injury such as falls and drink-driving related incidents.

The more a population drinks, the greater the level of harm that population suffers. It is therefore essential, as outlined in the Strategic Task Force on Alcohol (STFA) reports, that the overall level of consumption in Ireland needs to be reduced. This can be done by implementing the evidence-based strategies outlined in the STFA reports and in the report of the Government's Alcohol Advisory Group (2008). These call for a reduction in availability and access to alcohol through increased taxes, limiting the number of outlets and hours of sale, reducing advertising and promotion of alcohol, the implementation of drink-driving measures including lowering the legal limit for driving, and increased availability of treatment services.

(d) High Cholesterol

A high level of certain types of cholesterol in the blood results in the laying down of fatty deposits in the arteries, and is a major risk factor for circulatory diseases. In 2000, high cholesterol was estimated to cause 18% of global cerebrovascular disease and 56% of global coronary heart disease. In Ireland, SLÁN 2007 carried out physical examinations on approximately 1,200 adults aged 45 years and older, and reported that just 18% of this age group had normal cholesterol levels (<5.0 mmol/L) without the use of cholesterol lowering medications. The prevalence of normal levels was higher among men (22%) than women (15%).

Both population and individual approaches are needed and have been shown to be effective in lowering high cholesterol levels. In the main, patients with high cholesterol levels can be managed in primary care.

(e) Overweight & Obesity

Overweight and obesity is a risk factor for a number of conditions, including diabetes, cardiovascular diseases, joint diseases, and cancer. In particular, obesity has a negative effect on quality of life. In some countries, it is estimated that seven per cent of the health budget is spent on obesity-related costs.

In many European countries, over half the adult population is overweight, with an additional 20 to 30 per cent categorised as clinically obese. In Ireland, SLÁN 2007 measured the height and weight of Irish adults, and reported that 39 per cent were overweight, with an additional 25 per cent obese. Many Irish adults underestimated their body mass index score. In a comparison of European countries, Irish adults, both males and females, had high prevalence of overweight and obesity.

The National Task Force on Obesity (2005) reports that adults and children are consuming more energy-dense foods, and are becoming less physically active. The Task Force recommends that:

1. A balance of food intake and physical activity is necessary for a healthy weight.
2. Adults should be involved in 45 to 60 minutes of moderate physical activity per day.
3. Children should be involved in at least 60 minutes of activity per day in order to prevent excessive weight gain.
4. Government must look at policies that influence the type and supply of food that its citizens eat, and the opportunities for people to engage in physical activity.

(f) Low Fruit & Vegetable Intake

Fruit and vegetables are important components of a healthy diet, and are important in the prevention of diseases such as cardiovascular diseases and gastrointestinal cancer. Low intake of fruit and vegetables is estimated to cause about 18 per cent of gastrointestinal cancer, 28 per cent of coronary heart disease, and 18 per cent of stroke.

Consumption of fruit and vegetables is linked to national wealth, as well as an individual's access to these foods. Using the food pyramid as a guide, SLÁN 2007 reported that 65 per cent of Irish adults were consuming the recommended four or more servings of fruit and vegetables per day. This was an increase on previous years. Among children, fruit and vegetable consumption was higher among girls than boys, with international evidence of higher fruit consumption among children from higher social class backgrounds (HBSC International, 2005/2006).

Public health policies should promote the desire for, and affordability of healthy diets, in order to control the diet-related conditions such as circulatory diseases, cancer, obesity, and non-insulin-dependent diabetes.

(g) Physical Inactivity

In Western Europe, more than 30 per cent of adults are not sufficiently active, and levels of physical activity are continuing to decline. Physical activity is one of public health's most cost-effective tools because it reduces the risk of conditions such as circulatory diseases, diabetes and obesity, as well as improving people's physical coordination, therefore reducing the risk of falls. Physical activity also contributes to an individual's overall mental wellbeing.

The WHO encourages 30 minutes of physical activity daily. SLÁN 2007 reported that three-quarters of Irish adults reported some level of physical activity, as defined, by taking part in sport two to three times per week for 20 minutes, or taking part in more general activities four to five times per week, for 30 minutes. More men than women reported being physically active, as did the younger age groups. For those who did not participate, the main barrier was 'no time'. In addition, young boys also reported higher participation rates in physical activities than girls, with exercise participation rates particularly low among girls aged 15 to 17 years (28%) (HBSC, Ireland, 2006).

Research suggests that interventions which encourage walking, and do not require attendance at a sports facility, are more likely to lead to sustained increases in overall physical activity.

Prioritising the reduction of these risk factors, through the application of the population health approach, will maximise our potential to reduce health inequalities, premature mortality, and disability, substantially improving the health status of the population.



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Explanation of European Union (EU) Areas

EU-15 Countries	EU-25 Countries	EU-27 Countries
Austria	Austria	Austria
Belgium	Belgium	Belgium
Denmark	Cyprus	Bulgaria
Finland	Czech Republic	Cyprus
France	Denmark	Czech Republic
Germany	Estonia	Denmark
Greece	Finland	Estonia
Ireland	France	Finland
Italy	Germany	France
Luxembourg	Greece	Germany
Netherlands	Hungary	Greece
Portugal	Ireland	Hungary
Spain	Italy	Ireland
Sweden	Latvia	Italy
United Kingdom	Lithuania	Latvia
	Luxembourg	Lithuania
	Malta	Luxembourg
	Netherlands	Malta
	Poland	Netherlands
	Portugal	Poland
	Slovakia	Portugal
	Slovenia	Romania
	Spain	Slovakia
	Sweden	Slovenia
	United Kingdom	Spain
		Sweden
		United Kingdom

In this report, unless otherwise specified, EU denotes EU-27



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