



# Highlights on health in Ireland 2004

*Highlights on health* give an overview of a country's health status, describing recent data on mortality, morbidity and exposure to key risk factors along with trends over time. The reports link country findings to public health policy considerations developed by the WHO Regional Office for Europe and by other relevant agencies. *Highlights on health* are developed in collaboration with Member States and do not constitute a formal statistical publication.

Each report also compares a country, when possible, to a reference group. This report uses the 27 countries with very low child mortality and very low adult mortality, designated Eur-A by WHO, as the reference group. Eur-A comprises Andorra, Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Germany, Greece, Finland, France, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

To make the comparisons as valid as possible, data, as a rule, are taken from one source to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data in the reports is the European health for all database of the WHO Regional Office for Europe. Other data and information are referenced accordingly.

## Keywords

HEALTH STATUS  
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## Summary: findings and policy options

### Life expectancy

People in Ireland are living longer. Women continue to have a higher life expectancy (LE) than men. LE in Ireland is less than the average for the Eur-A countries by about one year for men and two years for women. Eighty-six per cent of adults in Ireland rated their health as good or very good, the highest proportion to give this rating among the Eur-A countries.

Compared to the Eur-A average, Ireland's population has a relatively large proportion of young people aged 0 to 14 years and a low proportion of people aged 65 and over. Ireland has the third highest birth rate and rate of natural increase in Eur-A. Nevertheless, as in other western European countries, the number of people aged 65 and over in Ireland is expected to grow, from approximately 11% in 2003 to almost 18% by 2030.

As the length of life increases, older people can respond with lifestyle changes that can increase healthy years of life. Correspondingly, health care systems need to shift towards more geriatric care, the prevention and management of chronic diseases and more formal long-term care. Since people are living longer, measures to improve health and prevent disease need to focus on people of working age.

*Ageing and employment policies* (OECD, 2004a)

*What are the main risk factors for disability in old age and how can disability be prevented?* (Health Evidence Network, 2003a)

### Infant mortality

In 2002, Ireland's infant and maternal mortality rates were at or near the Eur-A average for each indicator.

Antenatal care is one of the most important services in health care. Yet it can be expensive, with excessive, unneeded and unproven interventions sometimes provided. A simplified model of antenatal care, based on evidence of benefit, is available.

*Managing newborn problems: a guide for doctors, nurses and midwives* (WHO, 2003b)

*What is the efficacy/effectiveness of antenatal care?* (Health Evidence Network, 2003b)

*The WHO reproductive health library, version 6* (WHO, 2003e)

### Main causes of death

Noncommunicable conditions account for about 84% of all deaths in Ireland. Thirty-nine percent of all deaths are related to cardiovascular diseases (CVD), 27% to cancers, 14% to respiratory diseases, and almost 6% to external causes (intentional and unintentional injuries).

Compared to Eur-A average mortality rates for CVD, cancer and external causes, the largest excess mortality among males in Ireland results from external causes; among females, cancers cause the largest excess.

Preventive care, delivered through a country's primary care system, can improve all-cause mortality and premature mortality, particularly from CVD.

*A strategy to prevent chronic disease in Europe: a focus on public health action: the CINDI vision* (WHO Regional Office for Europe, 2004e)

*Towards a European strategy on noncommunicable diseases* (WHO Regional Office for Europe, 2004h)

*What are the advantages and disadvantages of restructuring a health care system to be more focused on primary health care services?* (Health Evidence Network, 2004a)

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## Injury and mental health

In Ireland, as in other Eur-A countries, neuropsychiatric conditions account for the greatest burden of disease as a result of the associated disability in daily living. Among Irish men, the annual mortality rates for suicide and self-inflicted injury have been above the Eur-A average rates since the late 1990s and they are increasing.

Better eating habits can prevent premature death from CVD, but people's chances for a healthy diet depend on what food is available and whether it is affordable. Food and nutrition policies need to cross sectors and be coordinated, so that non-health sectors give priority to public health. This also applies to the promotion of physical activity: policies to encourage active living over the life course need to be integrated across health and non-health sectors.

*Mental health in Europe: country reports from the WHO European network on mental health* (WHO Regional Office for Europe, 2001a)

*Mental health policy and practice across Europe: the future direction of mental health care: proposal for analytical study* (Knapp et al., 2004)

*Project Atlas: mapping mental health resources in the world* (WHO, 2003c)

*The world health report 2001: mental health: new understanding, new hope* (WHO, 2001)

## Gender and health

Relative to Eur-A averages for 2001, the largest overall excess mortality among males in Ireland was due to intentional and unintentional injuries. Among females, the largest overall excess mortality was related to cancers, with particularly high mortality rates due to lung and breast cancers.

Factors that determine health and ill health are not the same for women and men. To achieve the greatest standards of health in populations, health policies must recognize that women and men, owing to their biological differences and their gender roles, have different needs, obstacles and opportunities regarding their health and well-being. Gender mainstreaming in health is both a political and a technical process that requires shifts in organizational cultures and ways of thinking.

*Mainstreaming gender equity in health: the need to move forward* (WHO Regional Office for Europe, 2001c)

## Tobacco

In 2000, based on official statistics, the rate of smoking in Ireland exceeded the Eur-A average by about 12% more cigarettes per person. That year, the estimated incidence of lung cancer among Irish women was 47% higher than the average for all women in Eur-A; for Irish men, the estimated incidence was below the Eur-A average.

Between 1994 and 2002, smoking became less prevalent among men and women. Between 1997 and 2002, smoking decreased among 15-year-old boys and increased slightly among girls of the same age.

On 29 March 2004, Ireland passed legislation to prohibit smoking in the majority of workplaces, including bars and restaurants.

To reduce consumption across the whole population, policy-makers need permanently to raise prices for tobacco through taxes, and cessation policies need to target vulnerable groups. Increasing adults' cessation of tobacco use is cost-effective for public health in the short and medium terms.

*European Strategy for Tobacco Control* (WHO Regional Office for Europe, 2002b)

*Smoke-free workplace legislation implementation, Public health (tobacco) Acts 2002 and 2004, Progress Report, May 2004* (Office of Tobacco Control, 2004)

*Tobacco control database [online database]* (WHO Regional Office for Europe, 2004f)

*Which are the most effective and cost-effective interventions for tobacco control?* (Health Evidence Network, 2003c)

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*WHO European strategy for smoking cessation policy* (WHO Regional Office for Europe, 2003)

*WHO Framework Convention on Tobacco Control* (WHO, 2003d)

## Excess weight

About 10% of 15-year-old Irish boys are pre-obese and about 1% is obese. About 11% of 15-year-old girls are pre-obese and 2% are obese. The rates of excess weight in girls are among the highest in Eur-A.

Better eating habits can prevent premature death from CVD, but people's chances of a healthy diet depend on what food is available and whether it is affordable. Food and nutrition policies need to cross sectors and be coordinated, so that non-health sectors give priority to public health.

*CINDI dietary guide* (WHO Regional Office for Europe, 2000)

*Diet, nutrition and the prevention of chronic diseases* (WHO, 2003a)

*Food and health in Europe: a new basis for action* (Robertson et al., 2004)

*The potential contribution of increased vegetable and fruit consumption to health gain in the European Union* (Joffe & Robertson, 2001)

## Alcohol

Since 1980, pure alcohol consumption per person in Ireland has been increasing while the Eur-A trend is downward. In 2001, Ireland's level was the third highest in Eur-A, based on official statistics. Surprisingly, Ireland's mortality rate from chronic liver disease and cirrhosis (an indicator of harmful drinking) has consistently been considerably below Eur-A averages.

Alcohol consumption varies among countries and between different population groups within countries. The variation in drinking patterns affects rates of alcohol-related problems and has implications for the choice of alcohol control policies. Measures that are generally effective in reducing alcohol consumption and the associated harm include pricing and taxation and restricting the availability of alcohol, opening hours for sales outlets and the legal drinking age. Most drink-driving countermeasures have been effective as well. International trade agreements and common markets have weakened the ability of national-level decision-makers to establish national alcohol policies. Most notable are the converging trends in alcohol taxation in several countries in the European Union.

*Alcohol: no ordinary commodity. Research and public policy* (Babor et al., 2003)

*Alcohol control database [online database]* (WHO Regional Office for Europe, 2004a)

*What are the most effective and cost-effective interventions in alcohol control?* (Health Evidence Network, 2004b)

## HIV/AIDS

From 1996 to 2002, the rate of newly-diagnosed HIV infections in Ireland increased by a factor of 3.4. Most recently, between 1999 and 2002, the rate almost doubled. In 2002, 63% of new infections were attributed to heterosexual contact, over four-fifths of which were among immigrants.

Prevention, treatment and care programmes need to reach all people affected by HIV/AIDS, particularly those whose language, culture or immigrant status might limit their access to health services.

*Access to care: privilege or right? Migration and HIV vulnerability in Europe* (Broding et al., 2003)

*AIDS: epidemic update December 2003* (UNAIDS & WHO, 2003)

*The HIV/AIDS epidemic in Europe and central Asia* (WHO Regional Office for Europe, 2004e)

## Drug use and hepatitis C

Limited testing in Irish prisons in 1999 revealed that about 72% of the inmates who had injected drugs were infected with hepatitis C.

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The key to effective prevention of hepatitis C is to reduce the number of people who start to inject drugs and to encourage harm reduction among young and new injectors. A high proportion of those with the most serious drug use and addiction problems are found in prisons. Coordination of efforts within and between countries is a vital component of effective drug policy in the WHO European Region.

*Annual report 2003: the state of the drugs problem in the European Union and Norway (EMCDDA, 2003)*

*Declaration. Prison health as part of public health, Moscow, 24 October 2003 (HIPP, 2003)*

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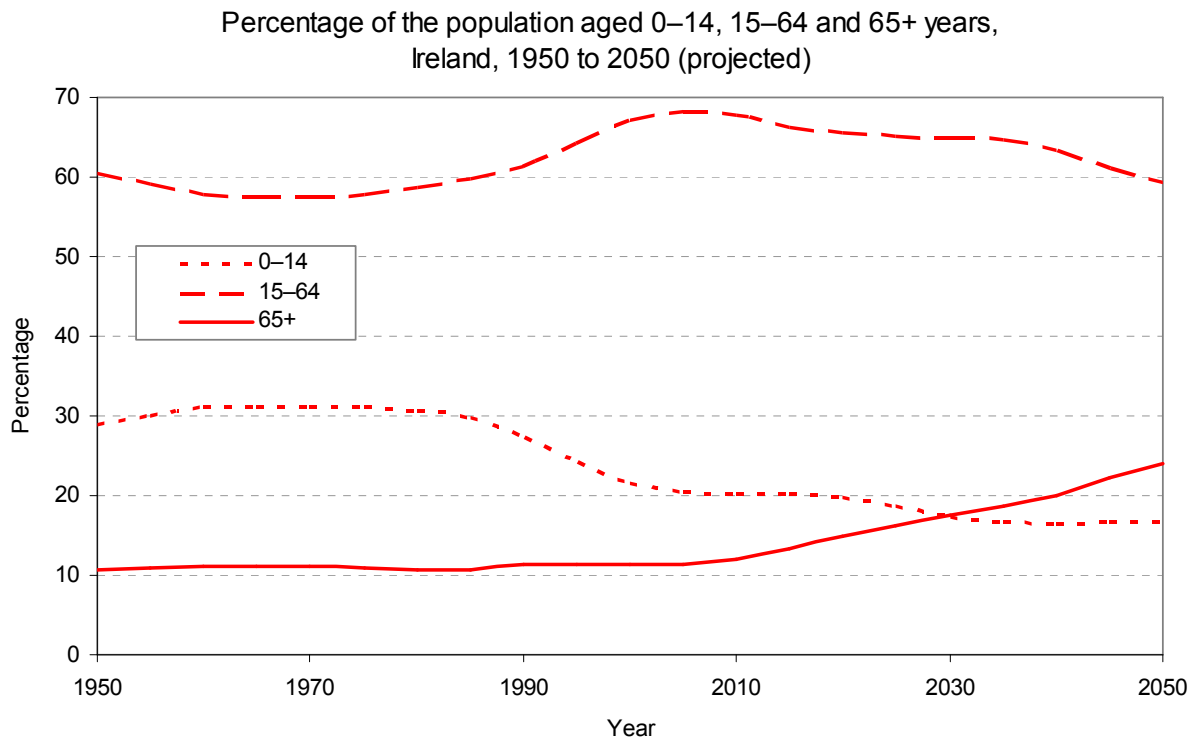


## Selected demographic information

### Population profile

Ireland had an estimated population of 4.04 million in April 2004 (Central Statistics Office, 2004b). Among Eur-A countries, Ireland has the fourth lowest percentage of urban population.

The percentage of people aged 0 to 14 in Ireland is the third highest in Eur-A, while the percentage of people aged 65 and over is the second lowest. The latter cohort is expected to grow from 11.2% of the population in 2003 (Council of Europe, 2003) to an estimated 17.6% in 2030 (Annex. Age pyramid).



Source: United Nations (2002).

Ireland's birth rate and rate of natural increase were both third highest in Eur-A in 2001. Between 1980 and 1994, the birth rate in the country fell from 21.78 to 13.46 per 1000 population then started to rise in 1995, reaching 15.4 per 1000 in 2002 (Central Statistics Office, 2002). For natural population growth, the rate fell in Ireland from 11.94 per 1000 in 1980 to 4.59 in 1995, and rose again to reach 6.39 in 2001, the third highest rate in Eur-A (Central Statistics Office, 2004b). Also in 2001, the rates of reported net migration were among the highest in Eur-A (Council of Europe, 2003).

Selected demographic indicators in Ireland and Eur-A,  
2001 or latest available year

Indicators	Ireland	Eur-A		
	Value	Average	Minimum	Maximum
Population (in 1000s) <sup>a</sup>	4040.0	–	–	–
0–14 years (%)	21.5	–	–	–
15–64 years (%)	67.3	–	–	–
65+ years (%)	11.2	–	–	–
Urban population (%) <sup>b</sup>	59.3	79.5	49.2	100.0
Live births (per 1000) <sup>c</sup>	15.4	11.3	8.7	21.2
Natural population growth (per 1000)	6.4	1.1	–2.4	15.5
Net migration (per 1000) <sup>d</sup>	7.4	3.5	–9.6	17.3

<sup>a</sup> As of April 2004.

<sup>b</sup> Including Andorra and Monaco.

<sup>c</sup> 2002 data for Ireland. Range and average include Andorra.

<sup>d</sup> Including Andorra.

Sources: Council of Europe (2003), WHO Regional Office for Europe (2004d); Central Bureau of Statistics of Israel (2003) for data on Israel; Central Statistics Office (2004b) for data on Irish population.

## Vulnerable populations

### Income

The evidence on determinants of health shows that people who are socioeconomically disadvantaged bear the greatest burden of disease. Among determinants, income is related to an accumulation of factors that affect mortality (Martikainen et al., 2001). For example, it influences and is influenced by education and employment.

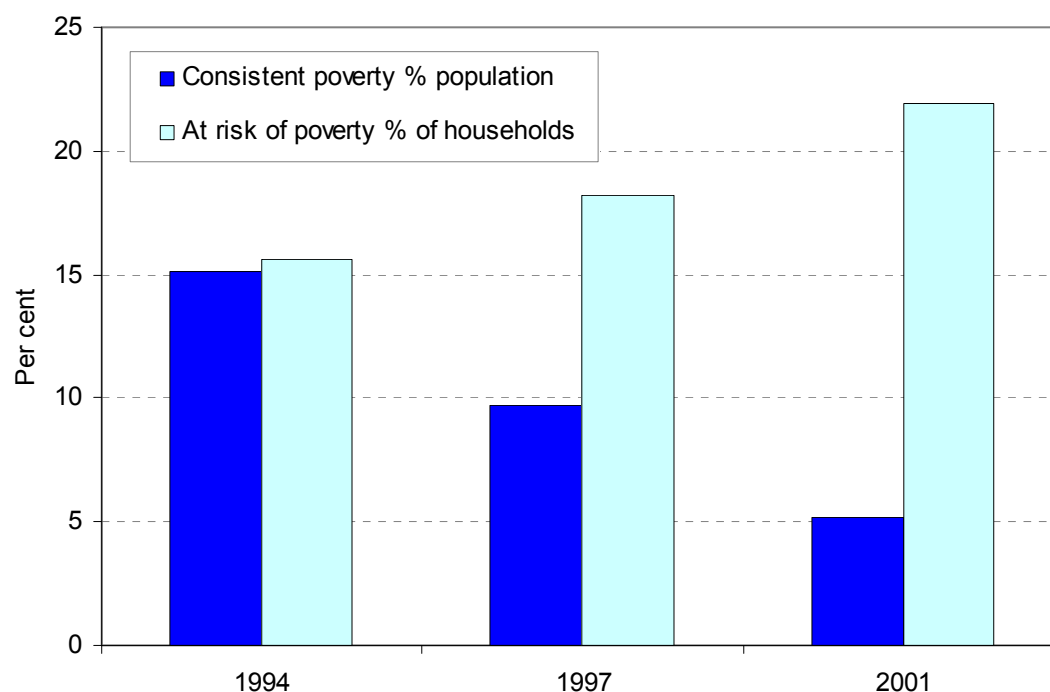
Even in the richest Member States in the WHO European Region, wealth is not equitably distributed and pockets of relative poverty exist (WHO Regional Office for Europe, 2002a; WHO, 2002). The association between poverty and urban areas is particularly important in Europe. As populations migrate and become more urban, there are increases in the number of urban poor whose housing, employment conditions and diet expose them to greater risk of illness and disease (WHO Regional Office for Europe, 2001b). The nature and impact of poverty on people can vary according to factors such as gender and age group (Ziglio et al., 2003).

According to the GINI index, Ireland's income inequality was rated at 35.9 in 1996, which is relatively high when compared to the Eur-A average of 30.8 (WHO Regional Office for Europe, 2002a). During the period 1987-1997, about 12% of Ireland's population was living below 50% of the median income level, ranking fourth among Eur-A.

Ireland measures poverty in terms of *consistent poverty* and *at risk of poverty*. *Consistent poverty* is measured using a combination of relative income (in this case mean income) and deprivation, the indicators of which are based on surveys of what Irish people consider necessary to ensure an adequate standard of living. *At risk of poverty* is based on relative income and identifies those with an equivalised individual income that is below a certain threshold. For the European Union, the threshold is 60% of the median income level.

Between 1994 and 2001, the percentage of the population in Ireland in consistent poverty fell (ESRI, 2003). Among children, consistent poverty fell between 1997 and 2001 (from 15.3% to 6.5%). However, during the same period, the percentage of households deemed to be at risk of poverty increased.

## Consistent poverty and at risk of poverty, 1994 to 2001



Source: ESRI (2003).

Those most at risk of poverty are: middle-aged, unemployed persons; the disabled; those responsible for supporting families solely by means of weekly social welfare payments; elderly persons, especially women, living alone; families where the parents are unemployed or, if employed, have low incomes (Office for Social Exclusion, 2004).

To reduce consistent poverty is the key target in the National Anti-poverty Strategy (NAPS). By 2007, the NAPS aims to reduce the percentage of consistently poor people to under 2% and, if possible, to eliminate consistent poverty.

In mid 2004, overall unemployment in Ireland (unadjusted for seasonality) was 4.4%, among the lower rates in Eur-A. However, the unemployment rate among Irish people aged 15 to 24 was higher than the national rate: for example, in 2004, 8.7% of young men and 7.3% of young women were unemployed compared to 4.4% of the total labour force that year. Just over 83% of those unemployed had secondary educational level or less (69.8% - secondary level; 13.3% - primary level). Just over 31% of the unemployed had been without work for 12 months or more (Central Statistics Office, 2004c)

### Social exclusion

Social exclusion has a broad impact on health. It refers to the relative position of an individual or a group in society as a whole. The processes that accompany and result in social exclusion – such as discrimination, stigmatization and hostility – prevent people from getting education or training and from gaining access to services and citizenship activities, making them more vulnerable to health risks and disease.

Examples of people outside the mainstream include members of ethnic or religious minorities; people who live in geographically disadvantaged areas, are unemployed or are elderly and, in some countries, indigenous peoples. People new to a country – such as refugees, immigrants or migrant workers – may also be socially excluded. In Ireland, travellers are an indigenous ethnic minority traditionally marginalized in Irish society with a life expectancy considerably below that of the general population.

Incarceration can also expose people to direct health hazards, particularly if prison populations outpace capacity. The resulting overcrowding causes and contributes to many health problems, most notably mental health conditions and communicable diseases. In fact, drugs and drug-related infectious diseases in prisons are causing major problems in all countries in the European Region, with the risk of transmission affecting not only inmates but also prison employees and contacts outside the institutions (EMCDDA, 2002).

As of June 2004, Ireland had a 95.7% occupancy level in its prisons, based on official capacity. The incarceration rate is estimated to have increased by 43% between 1992 and 2004 (International Centre for Prison Studies, 2004).

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## Burden of disease

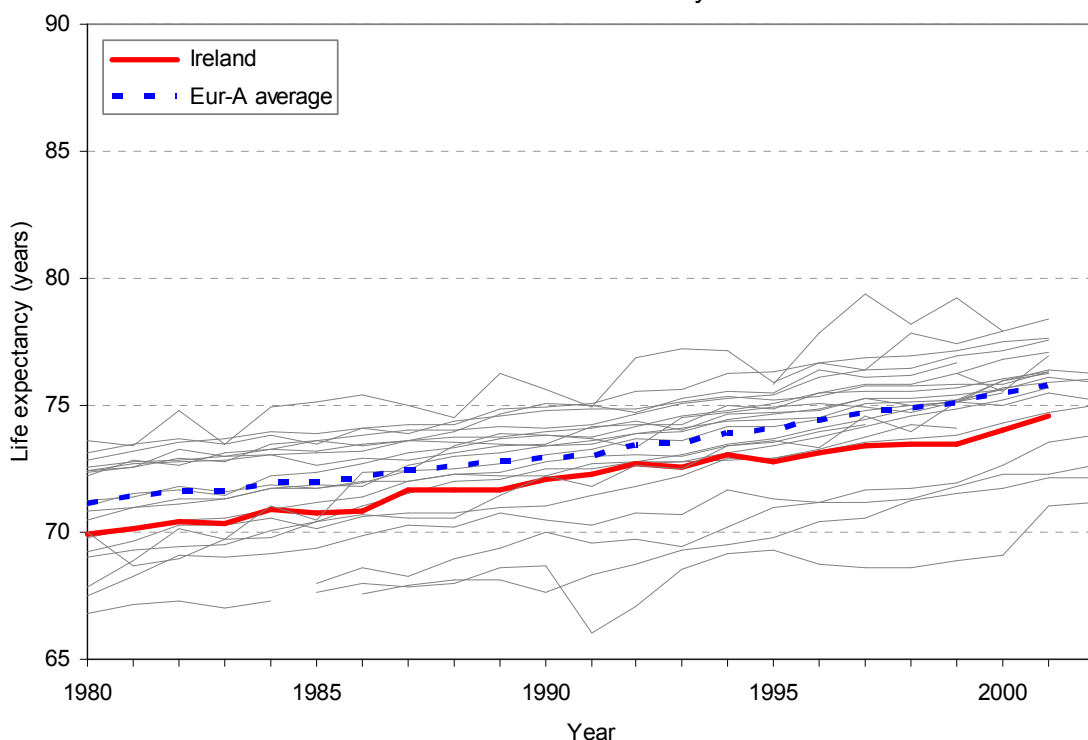
The burden of disease can be viewed as the gap between current health status and an ideal situation in which everyone lives into old age free of disease and disability. Causing the gap are premature mortality, disability and certain risk factors that contribute to illness. The analysis that follows elaborates on the burden of disease in the population.

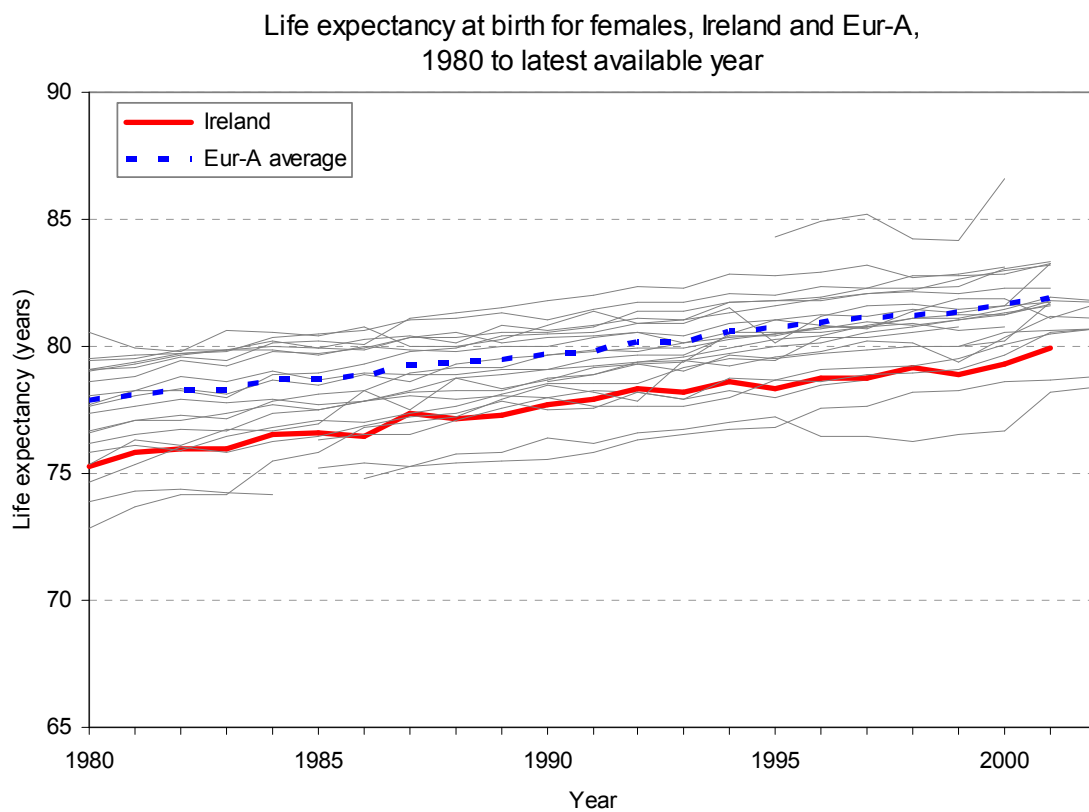
### Life expectancy and healthy life expectancy

A person born in Ireland in 2002 could expect to live 77.1 years on average: 79.8 years if female and 74.4 years if male, according to WHO (2003) estimates, which place life expectancy (LE) in Ireland on the lower end of the scale for Eur-A countries. Ireland's own estimates for 2002 are 80.3 for females and 75.1 for males (Central Statistics Office, 2004a).

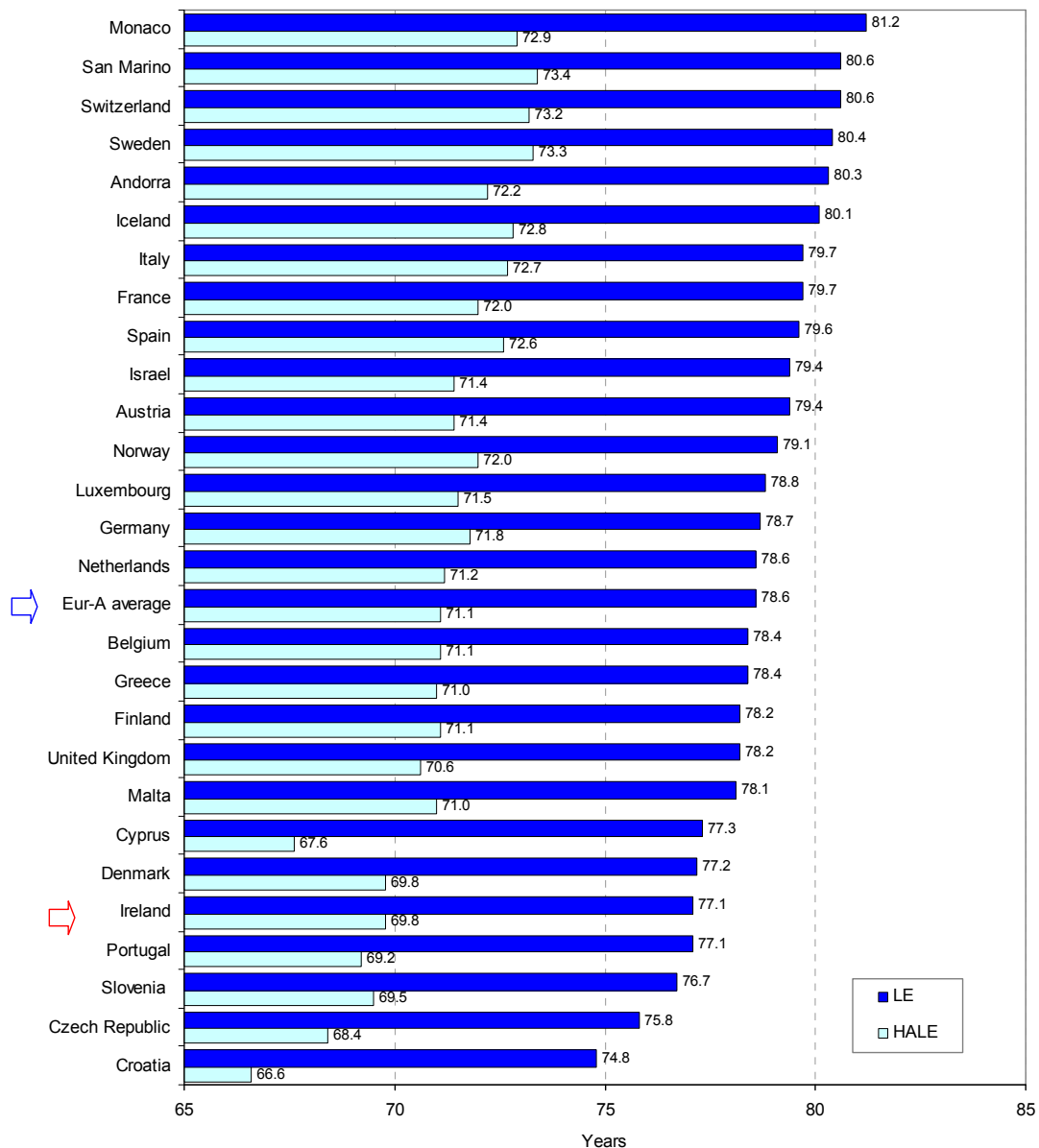
Between 1980 and 2001 (2001 being the last year for which trend data are available in the Health for all database at the WHO Regional Office for Europe), Irish people gained about 4.7 years in LE, about the same increment for both men and women. Although this gain was similar to the average gain among their Eur-A counterparts over the same period, LE for Irish men is about one year less and for women almost two years less than in other Eur-A countries.

Life expectancy at birth for males, Ireland and Eur-A,  
1980 to latest available year





On average, Irish people can expect to be healthy for about 90% of their total years of life. They lose on average 7.3 years to illness – the difference between LE and healthy life expectancy (HALE). Since women live longer than men, and since the possibility of deteriorating health increases with age, women lose more healthy years of life (8.3 years) than men (6.3 years). Nevertheless, a longer LE for Irish women compared to Irish men gives them about three more years of healthy life than men.

LE and HALE, Ireland and Eur-A<sup>a</sup>, 2002

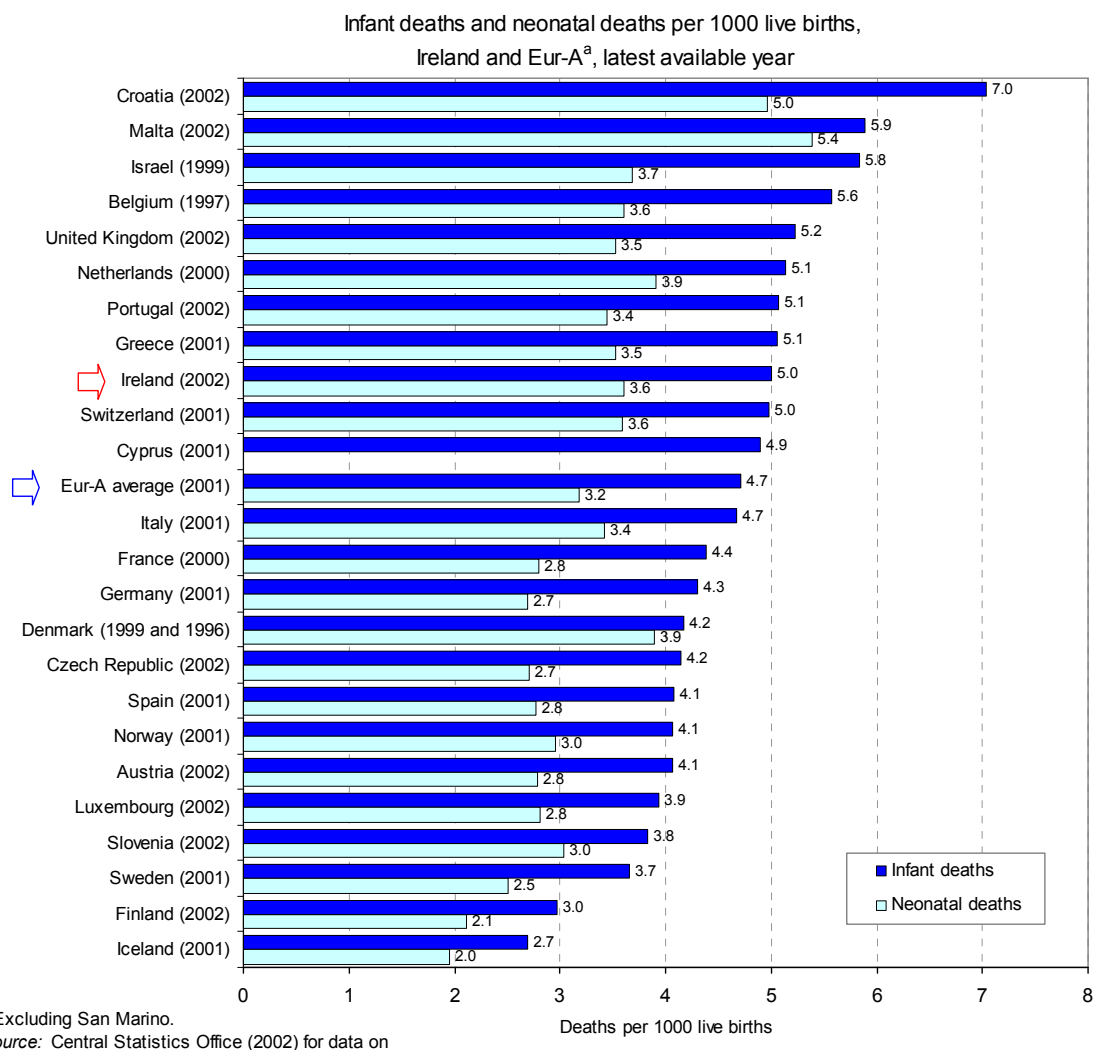
<sup>a</sup> Including Andorra and Monaco.  
Source: WHO (2003e).

## Mortality

### *Infant mortality and neonatal death*

Since 1980, the neonatal mortality rate in Ireland has followed the Eur-A trend downward. By 2002, it was 3.6 per 1000 live births (Central Statistics Office, 2002).

From 1980 to the mid 1990s, the infant mortality rate in Ireland was equivalent to or less than the Eur-A average, each rate following a downward trend. Between 1995 and 2001, Ireland's rate continued to decrease but at a slightly slower rate than the Eur-A average. In 2002, Ireland's rate was down to 5.0 per 1000 births (Central Statistics Office, 2002).



### Maternal mortality

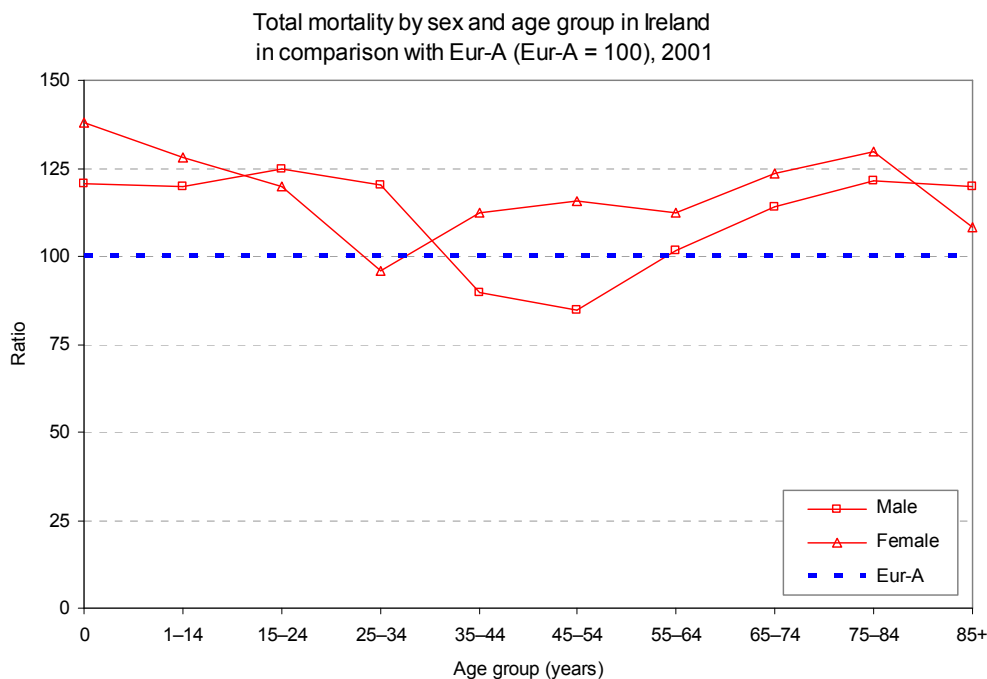
The annual number of maternal deaths in Ireland between 1990 and 2002 was in the range of 0 to 5 (Central Statistics Office, 2002).

### Excess mortality

Excess mortality is presented below as the ratio of a country's mortality rate over the Eur-A average mortality rate.

In 2001, females in Ireland experienced an excess mortality rate relative to the average Eur-A rate across all age groups except one – those between 25 and 34 had a slightly lower rate than the average Eur-A mortality rate. Overall in 2001, the average excess mortality across all age groups for Irish females was 18%. Males had excess mortality concentrated in the younger and older age groups while those between 35 and 64 years of age experienced mortality rates that were equivalent to or lower than Eur-A averages. Males overall had 12% excess mortality.

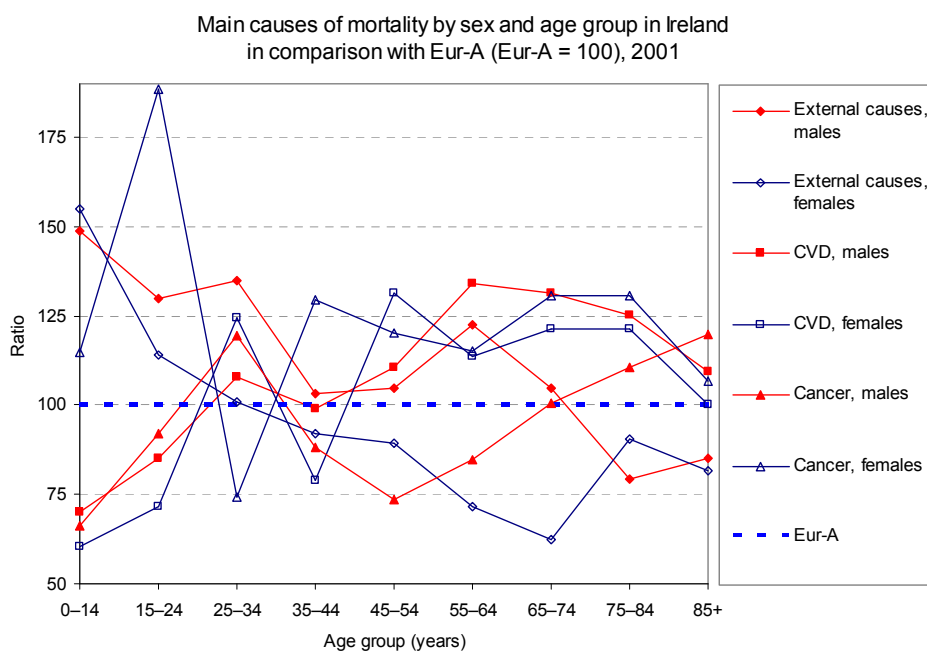




**Main causes of death**

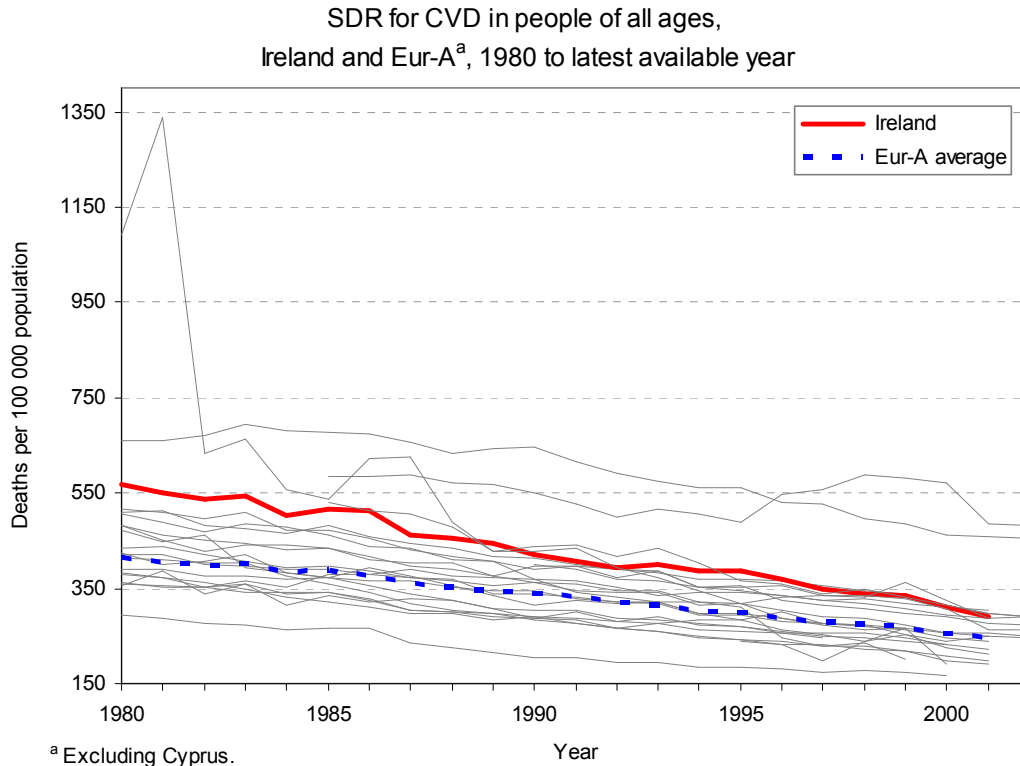
As in the case of other Eur-A countries, noncommunicable diseases are responsible for most deaths in Ireland – 84% in 2001. Selected external causes accounted for almost 6% of all deaths that year and communicable diseases for less than 1%.

Relative to Eur-A averages for main causes of death, excess mortality among males in Ireland is largely due to external causes (intentional and unintentional injuries) at 13% over the Eur-A average; among females, the largest excess is due to cancer (23%).

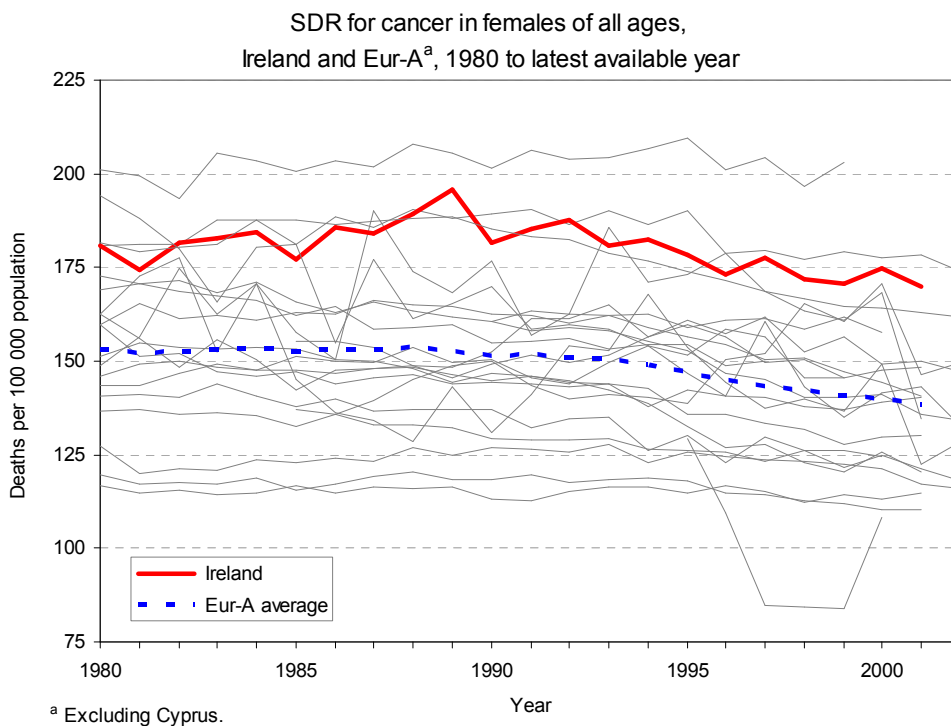


Cardiovascular diseases (CVD) accounted for almost 39% of all deaths in Ireland in 2001. Ischemic heart disease alone accounted for about 20% of all deaths. Ireland’s mortality rates for these

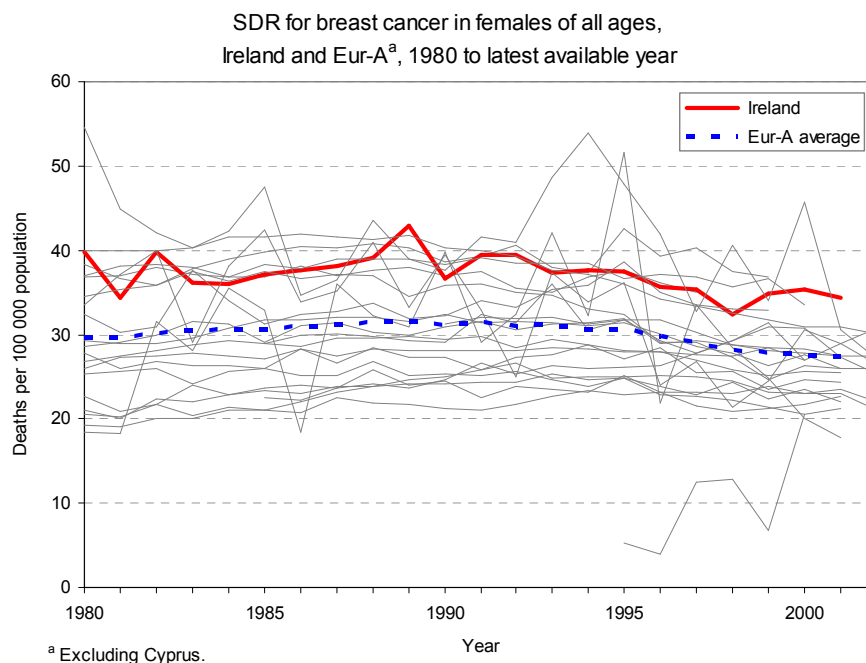
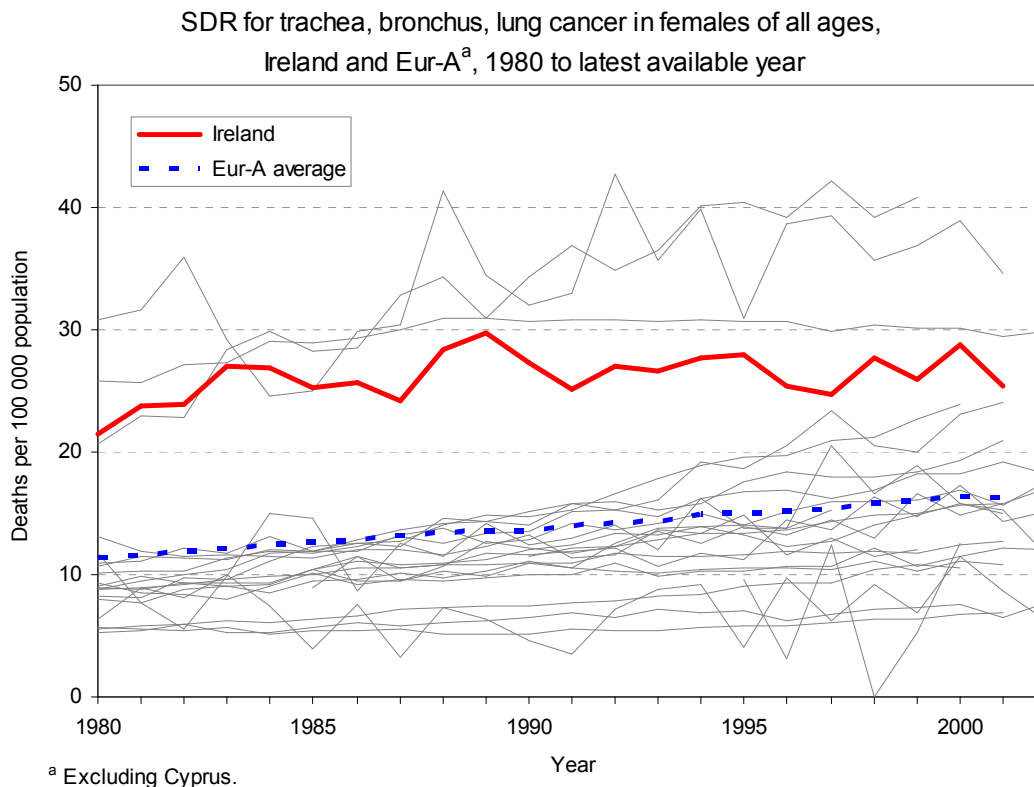
diseases remain higher than Eur-A average rates despite a dramatic drop in the country's rates since 1990: by almost two thirds for all CVD and almost one third for ischemic heart disease.



Cancer accounted for almost 27% of all deaths in Ireland in 2001, which is a rate similar to the Eur-A average. However, the overall mortality rates for males and females differ in relation to the Eur-A averages: the rate for males of all ages has been similar to the Eur-A average since the mid 1990s while that for females has been consistently higher than Eur-A average rates since 1980.



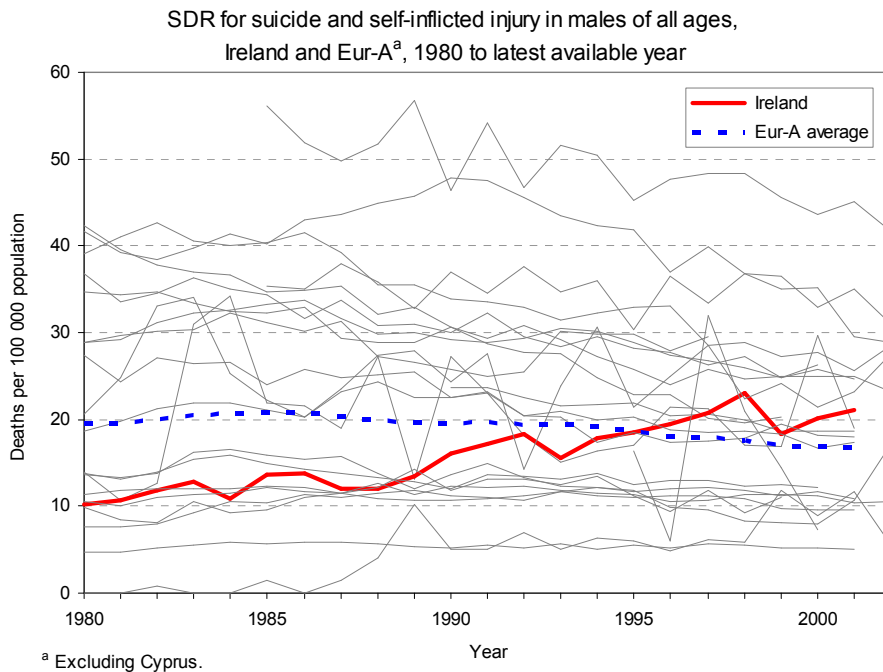
The rates of mortality from trachea/bronchus/lung cancer among females, an indicator of the impact of smoking, and those from breast cancer have been consistently higher in Ireland compared to Eur-A averages.



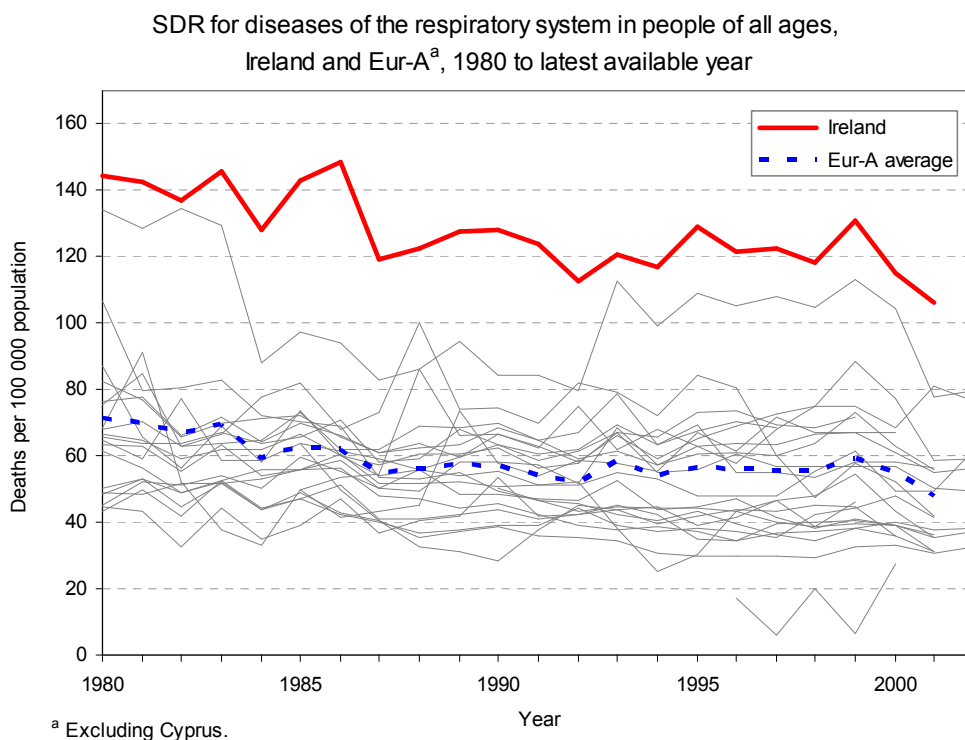
Regarding mortality from external causes, the annual rates for the whole Irish population were below Eur-A averages from 1980 until the late 1990s. At that point, the rates for Ireland, which had been increasing very slightly each year since the early 1990s, reached the level of the Eur-A rates, which had been falling. Among males in Ireland, the annual rates of mortality from external causes

caught up with the Eur-A rates in the late 1990s. The annual rates for females have been below the Eur-A average rates for the past two decades.

Within the external causes category, the rates of mortality from suicide and self-inflicted injury among Irish males have been increasing at a faster rate than mortality rates for all external causes among males. Since the late 1990s, the rates for Irish males have been above the Eur-A averages.



For the whole population in Ireland, rates of mortality from respiratory diseases have shown a steady decline over the past 20 years but have been consistently above Eur-A averages for both males and females.



## Disability-adjusted life-years

The disability-adjusted life-year (DALY) is a summary measure that combines the impact of illness, disability and mortality on population health. The DALY combines the amount of time lived with disability and the amount of time lost due to premature mortality, using actual data and estimates of illness and death in a population. One DALY can be thought of as one lost year of healthy life.

The top 10 conditions affecting males and females in Ireland in terms of DALYs are listed in the table.

Ten leading disability groups as percentages of total DALYs for both sexes in Ireland

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Neuropsychiatric conditions	27.2	Neuropsychiatric conditions	30.5
2	Cardiovascular diseases	17.7	Malignant neoplasms	15.0
3	Malignant neoplasms	12.9	Cardiovascular diseases	13.5
4	Respiratory diseases	8.3	Respiratory diseases	8.7
5	Unintentional injuries	7.9	Musculoskeletal diseases	4.6
6	Intentional injuries	4.2	Sense organ diseases	4.3
7	Sense organ diseases	3.5	Unintentional injuries	4.0
8	Digestive diseases	3.3	Digestive diseases	3.2
9	Musculoskeletal diseases	2.7	Respiratory infections	2.4
10	Congenital anomalies	2.4	Congenital anomalies	2.4

Source: Background data from WHO (2003e).

Neuropsychiatric conditions account for the largest share of the burden of disease in Ireland and in most other Eur-A countries. Because mortality from these conditions is minor in comparison to that from other diseases, disability in daily living comprises the bulk of their burden on the health of the population. CVD are responsible for the second largest share of the burden of disease on the male population; among females, the second largest share is attributable to cancer.

## Main risk factors

The burden risk factors place on populations can also be estimated in DALYs. The table presents the DALYs for the top ten risk factors in developed countries. Developed countries are typically described in terms of economic indicators, as being industrialized with advanced economic and financial markets and, generally, as being wealthy.

The degree to which the Irish population is exposed to ten of the main risks listed in the table is described below, based on the best available data and estimates.

Ten leading selected risk factors as causes of disease burden measured in DALYs in developed countries

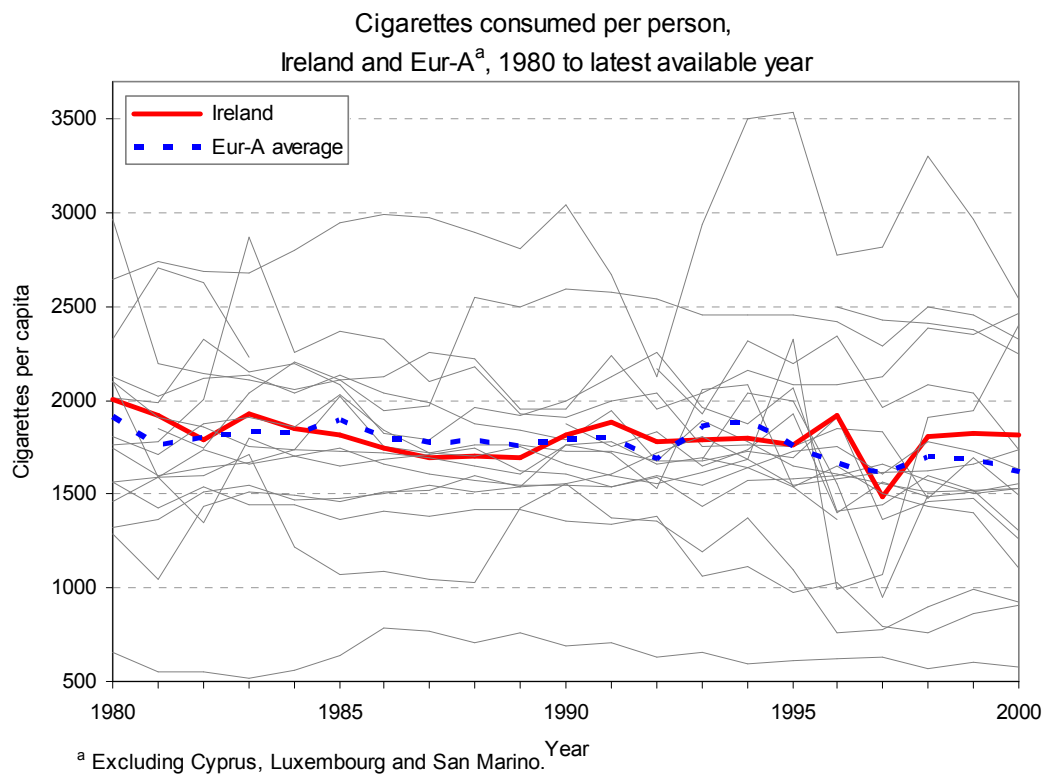
Risk factors	Total DALYs (%)
Tobacco	12.2
Blood pressure	10.9
Alcohol	9.2
Cholesterol	7.6
Overweight	7.4
Low fruit and vegetable intake	3.9
Physical inactivity	3.3
Illicit drugs	1.8
Unsafe sex	0.8
Iron deficiency	0.7

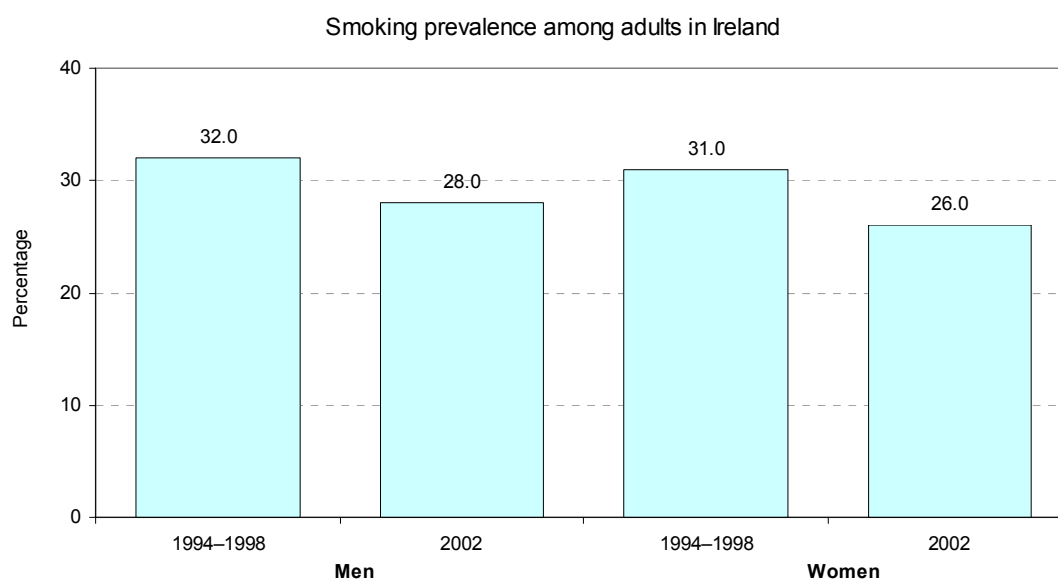
Source: WHO (2002).

## Tobacco

The European Region has only 15% of the world's population but nearly 33% of the worldwide burden of tobacco-related diseases (WHO Regional Office for Europe, 2004g). The annual number of deaths in the Region attributable to the consumption of tobacco products was estimated recently to be 1.2 million, and about 40% occur in Eur-A countries (WHO Regional Office for Europe, 2002b). About half the deaths affect people in middle age. Typically, the more affluent are the first both to begin smoking and to stop. Increasingly, those who continue to smoke are people with less education and lower incomes (Bostock, 2003).

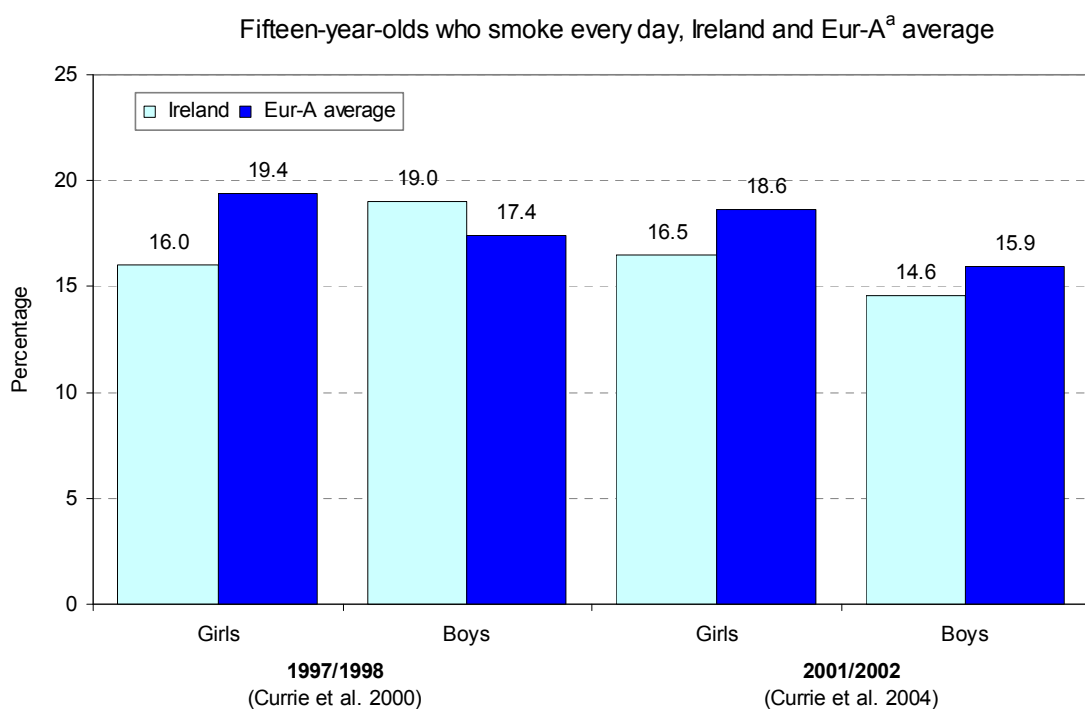
Based on official statistics for production, import and export, the following figure indicates that, from 1990 onwards, per capita cigarette consumption in Ireland appears to have been fairly constant. (Not included is consumption of cigarettes available unofficially through, for example, smuggling across borders and bootlegging.) By 2000, Irish people were consuming 12% more cigarettes per person than the Eur-A average. Nevertheless, surveys conducted in Ireland between 1994 and 2002 found that smoking prevalence was decreasing among both men and women.





Source: WHO Regional Office for Europe (2004f).

Surveys among 15-year-old children in schools found that, between 1997 and 2002, smoking prevalence was more or less constant among girls while it had decreased considerably among boys.



<sup>a</sup> Excluding Cyprus, Iceland, Luxembourg and San Marino.

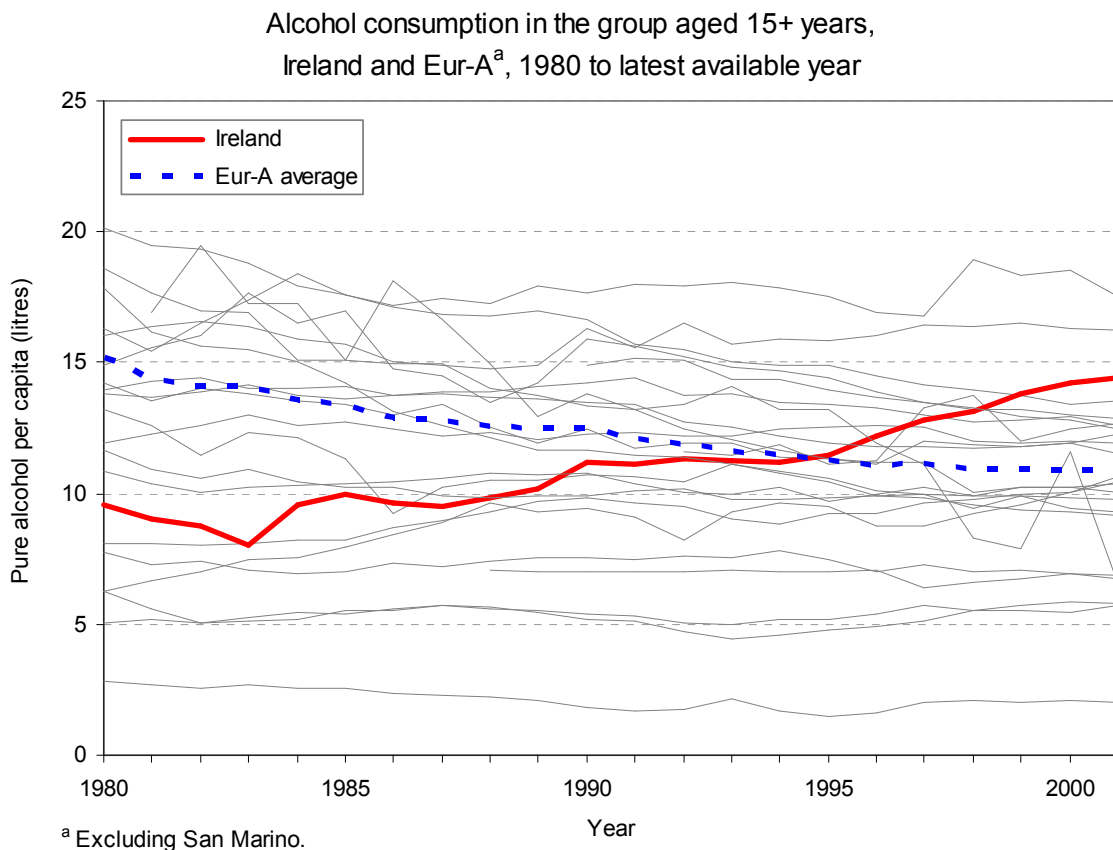
On 29 March 2004, Ireland passed legislation to prohibit smoking in the majority of workplaces, including bars and restaurants, protecting employees and the public from exposure to tobacco smoke.

### **Alcohol**

Two major public health issues are related to alcohol consumption: regular drinking of more than small amounts and harmful patterns such as binge drinking (when a person consumes a bottle of wine or the

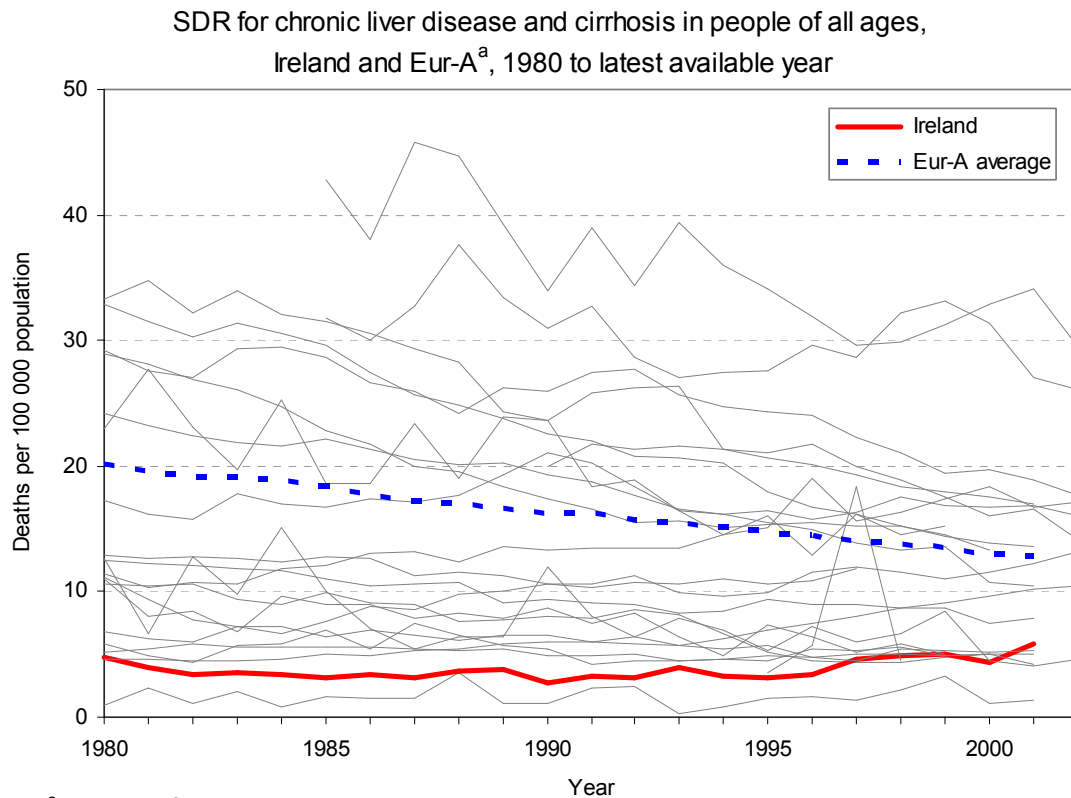
equivalent on one occasion; or has five or more “standard” drinks in a row). Both practices cause or aggravate health problems and increase the risks of injury to the drinker and others (European Commission, 2003).

Official statistics on local production, sales, imports and exports indicate that, since 1980, per capita consumption of pure alcohol in Ireland has increased by 50%, while the trend in Eur-A has decreased by 50%. (These statistics do not take into account the consumption of pure alcohol obtained through smuggling across borders and bootlegging.) By 2001, Ireland’s consumption per capita was the third highest in Eur-A, 33% higher than the Eur-A average.

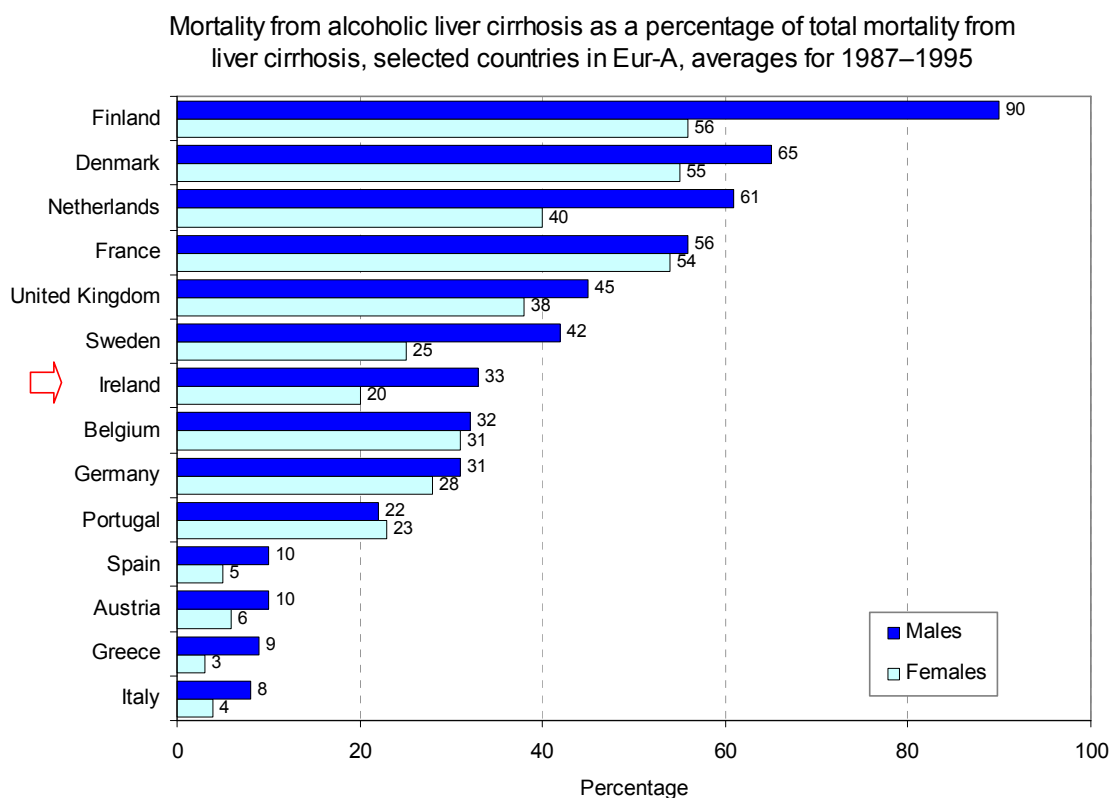


Mortality from liver cirrhosis is the classic indicator of harm from chronic excessive drinking (Babor et al, 2003) but in Ireland, despite alcohol consumption levels that appear to be consistently above the Eur-A average (Figure. Alcohol consumption levels, age group 15+ years), the mortality rate from chronic liver disease and cirrhosis has been consistently and considerably well below the Eur-A average for these conditions. From 1981 to 1996, the rate in Ireland was fairly constant: 3 to 4 deaths per 100 000. Between 1997 and 2002, the annual death rate ranged from 4.61 to 5.78 per 100 000. For Eur-A, from 1981 to 2001, the average rate fell from 19.55 to 12.76 per 100 000.





Mortality due to cirrhosis explicitly caused by alcohol is another indicator of harm from alcohol, but variations in the coding of deaths classified as alcoholic cirrhosis make cross-country comparisons unreliable. The figure is therefore descriptive, showing where alcohol was the major risk factor in deaths due to cirrhosis in a particular country. In Ireland, during the period 1987–1995, 33% of all deaths from liver cirrhosis among men and 20% among women were attributed to alcohol (Hemström et al., 2002).



*Note:* Data for Germany refer to the territory of the Federal Republic of Germany as up to 3 October 1990.

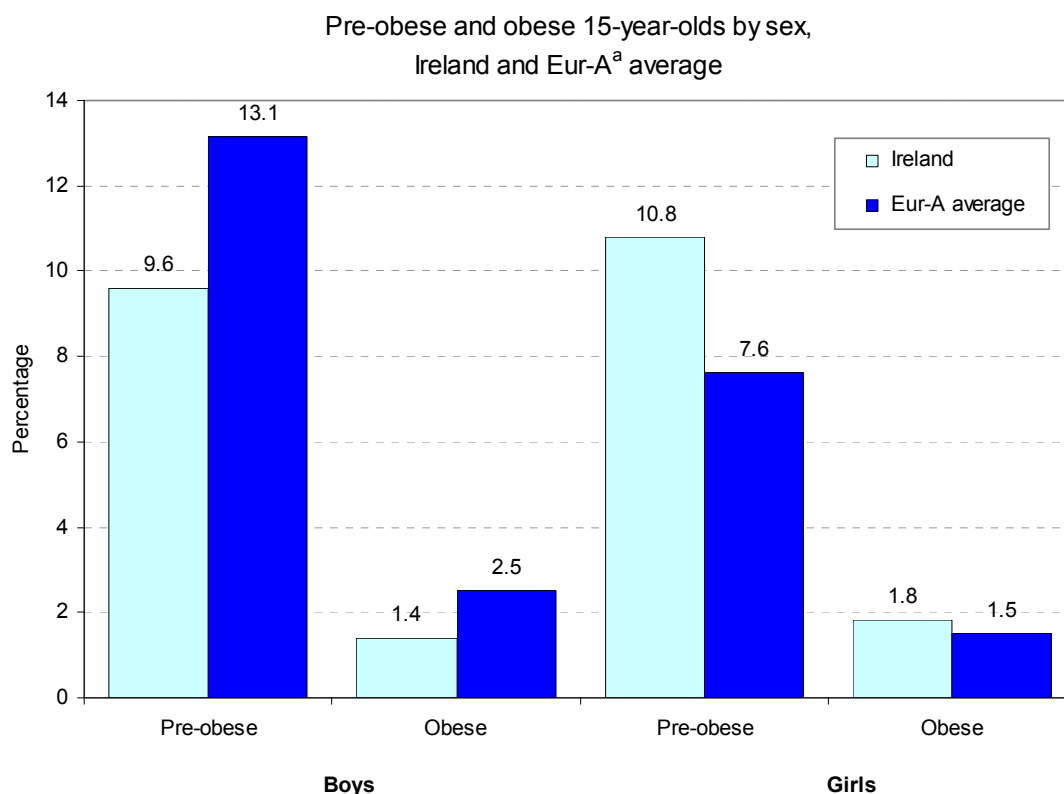
*Source:* Hemström et al. (2002).

### **Excess weight**

Having excess weight (being overweight or obese) is expressed in terms of body mass index (BMI), a measurement of body fat content. BMI is calculated by dividing a person's weight in kilograms by their height in meters squared (weight in kg/height<sup>2</sup> in meters). People are classified as overweight if their BMI is 25.0 to 29.9. They are obese if their BMI is 30+.

Studies have shown that excess weight contributes to CVD and cancer. In the 15 countries that comprised the European Union before May 2004, research suggests that the condition is responsible for 5% of all cancer cases (3% among men and 6% among women) and, overall, almost 300 000 deaths annually (Banegas, 2002; Bergstrom et al., 2001). For children and adolescents, the main problem associated with excess weight, particularly obesity, is its persistence into adult life and its association with the risk of diabetes and CVD (Stark et al., 1981).

In Ireland, about 10% of boys and 11% of girls aged 15 are considered to be pre-obese (overweight) and a further 1% of boys and 2% of girls, obese, according to self-reported data on height and weight collected in schools and adjusted to correspond to adult BMI. The rates of excess weight among girls are among the highest in Eur-A.



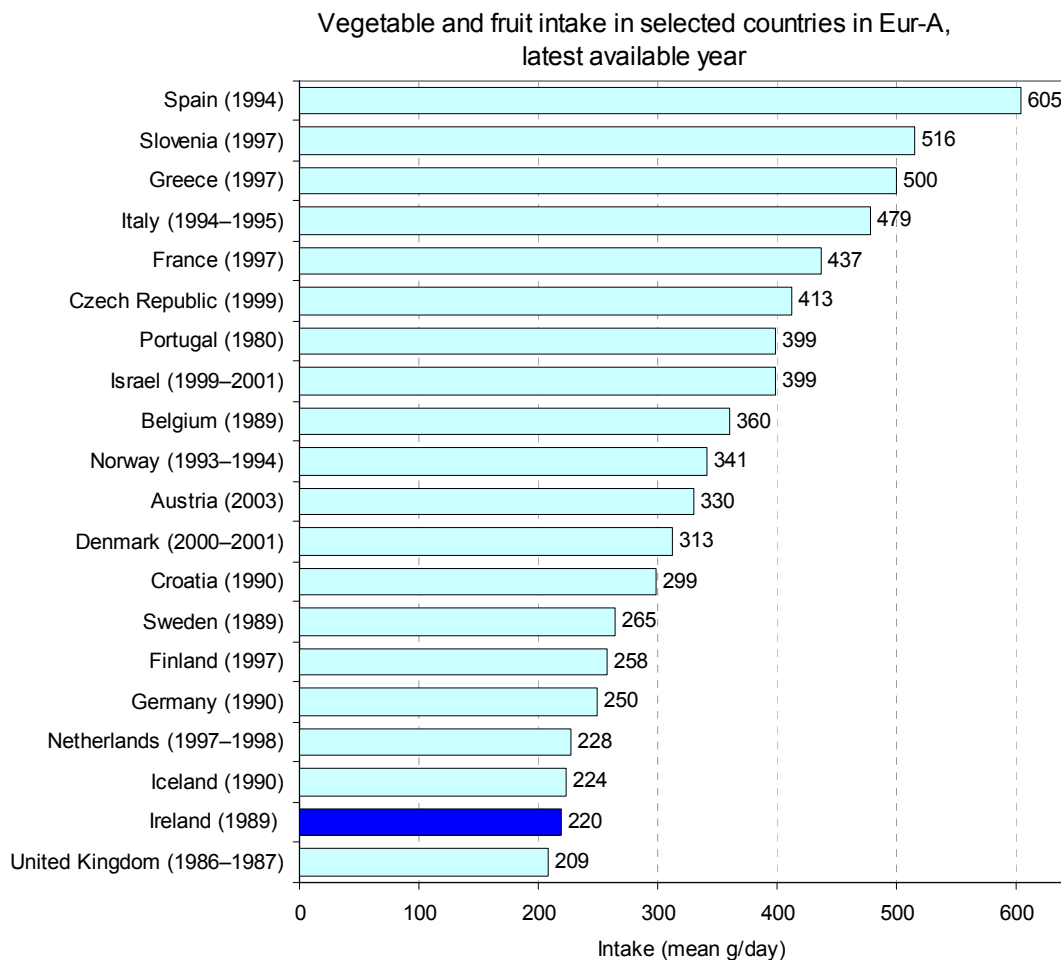
<sup>a</sup> Excluding Cyprus, Iceland, Luxembourg and San Marino.

Sources: Mulvihill et al. (2004) and the Danish Nutrition Council (2003) for data on Denmark.

### ***Intake of fruits and vegetables***

Both CVD and cancer have substantial dietary bases. Conservative estimates suggest that better eating habits could prevent about a third of CVD cases and a third of all cancer deaths worldwide (Robertson et al., 2004). Contributing risk factors are high blood pressure and serum cholesterol, overweight and obesity, and low intake of fruits and vegetables. For the large proportion of the population that does not smoke, diet is one of the most important modifiable determinants of cancer risk.

Low fruit and vegetable intake is estimated to cause around 18% of gastrointestinal cancer, about 28% of ischaemic heart disease and 18% of stroke in the European Region (Robertson et al., 2004). WHO recommends an intake of more than 400 g fruits and vegetables per person per day. Unfortunately, dietary intake surveys based on 24 hour recall are not routine practice in WHO Member States and, therefore, there is a lack of recent dietary intake data for Ireland. Data from 1989 indicate that the average per capita intake was 220 grams (Robertson et al., 2004). However, average consumption for a whole population, when available, is a poor measure of the individual intake distribution within the population. Joffe and Robertson (2001) found that in the countries comprising the European Union before May 2004, people with higher incomes typically eat more fruit and vegetables than those with lower incomes.



Sources: WHO Regional Office for Europe (2004c), Robertson et al. (2004) for data on Germany, Greece, Ireland and Spain, IFEW (2003) for data on Austria, Danish Institute of Food and Veterinary Research (2004) for data on Denmark and Israeli Center for Disease Control (2003) for data on Israel.

### **Physical inactivity**

WHO and other international and national agencies encourage at least 30 minutes of physical activity each day, defined as any body movement that results in energy expenditure. Promoting physical activity is probably one of public health's most cost-effective interventions, reducing the risk of several diseases and conditions, including CVD, non-insulin-dependent diabetes and obesity, and contributing to physical coordination, strength and mental well-being. Physical activity comprises more than sports – it is one of the cornerstones of a healthy lifestyle, integrated into the routines of everyday life. In Europe, more than 30% of adults do not meet the WHO recommendation for physical activity of 30 minutes daily (Racioppi et al., 2002).

In 1998, a national survey found varied prevalence of “no exercise at all in a week” by type of worker.

Table. Physical inactivity in Ireland

		Prevalence (%) of "no exercise at all in a week" by occupational grade, sex and age		
Age groups		Professional workers / managerial and technical workers	Non-manual / skilled manual workers	Semi-skilled / unskilled workers
Males	18–34	14	15	12
	35–54	15	16	23
	≥ 55	29	17	31
Females	18–34	8	12	13
	35–54	9	20	21
	≥ 55	23	23	34

Source : WHO (2004b).

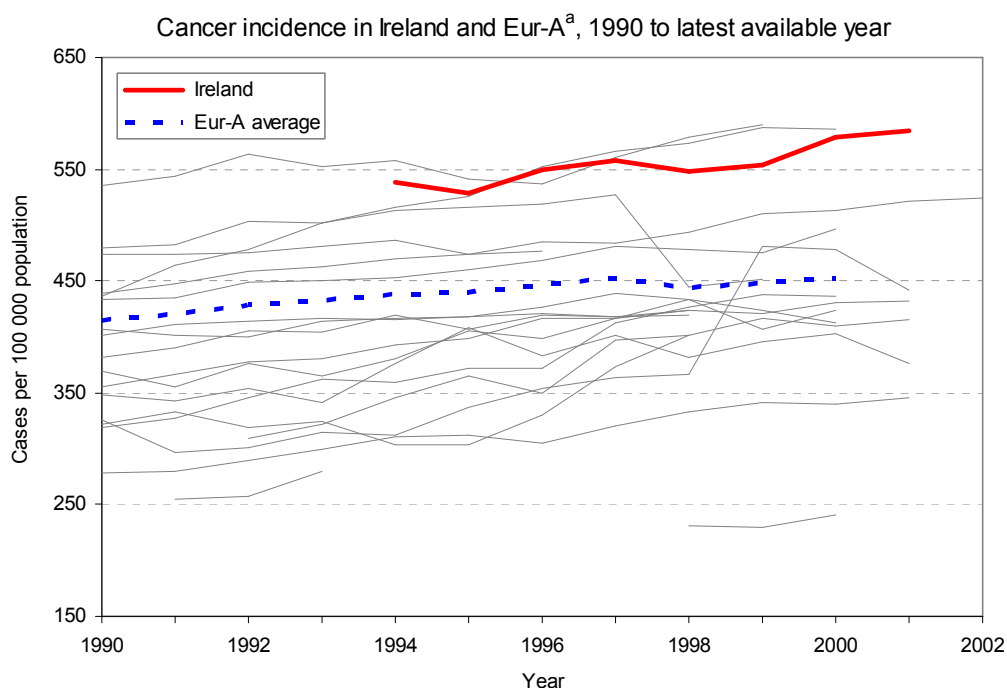
## Selected causes of illness

### Cancer

Lung cancer is the most common cancer in the Region and the world. The most important risk factor is tobacco (Tyczynski et al., 2002).

The cancer incidence data (cases diagnosed in the calendar year) presented here are derived largely from the WHO/EUROPE Health for all database (WHO, Regional Office for Europe, 2004d). When supplying data, some countries included non-malignant cancers while others, including Ireland, did not. Therefore, comparison of cancer incidence data across countries should be carried out with caution and in reference to the definitions for cancer incidence in the WHO/EUROPE Health for all database.

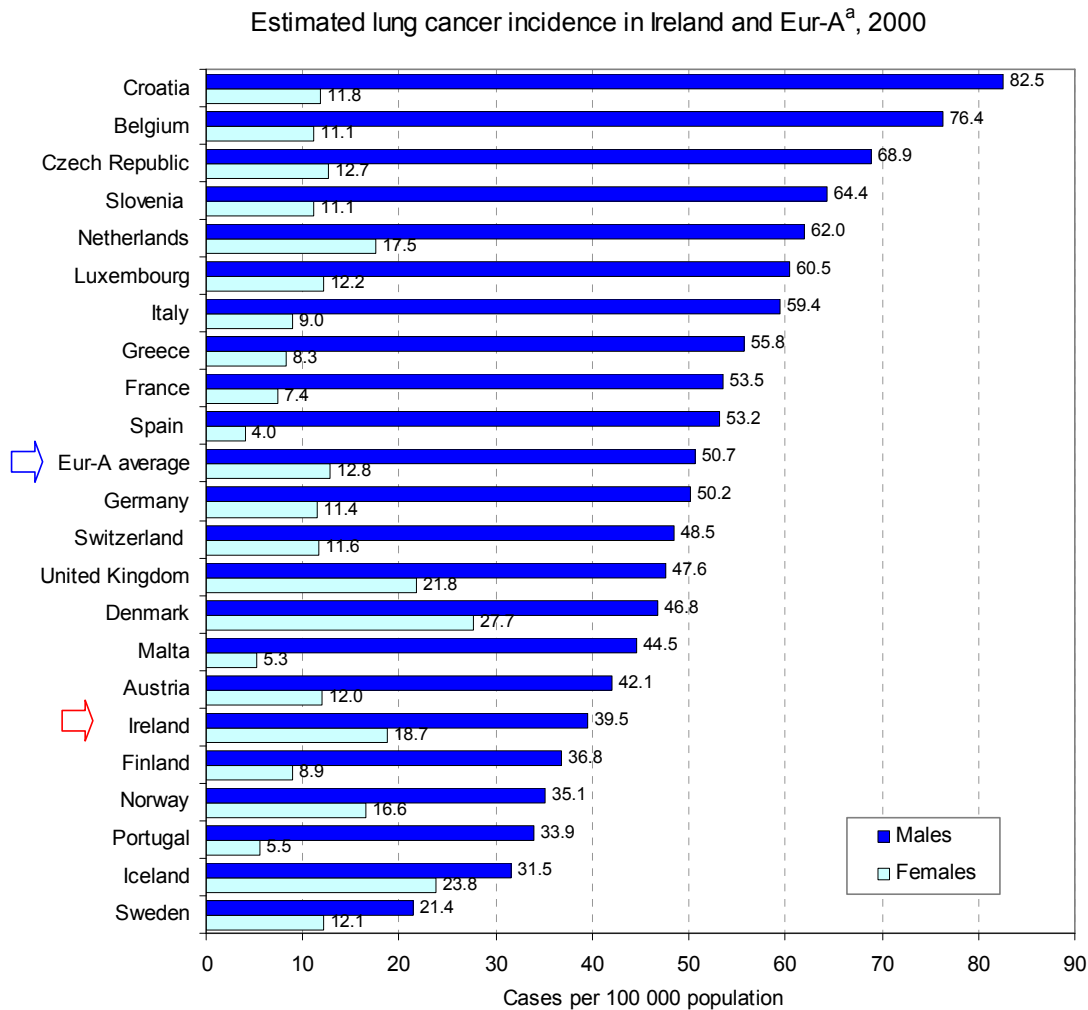
Between 1994 and 2001, cancer incidence rose by 1.22%.



<sup>a</sup> Excluding Greece, San Marino, Spain and Switzerland.

Source: Irish National Cancer Registry (2004) for data on Ireland.

In 2000, the estimated lung cancer incidence among Irish men was lower than the average estimate for men in Eur-A. For Irish women, however, the estimated incidence was the fourth highest in Eur-A, 47% higher than the average for Eur-A women.



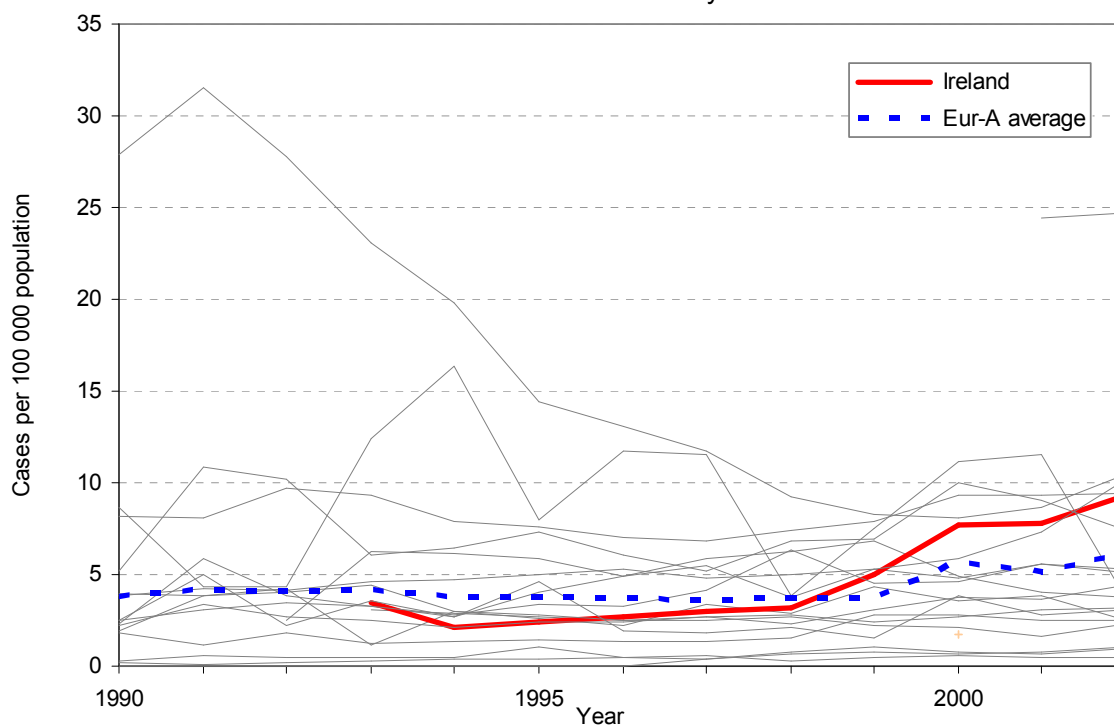
<sup>a</sup> Excluding Cyprus, Israel and San Marino.  
Source: Tyczynski et al. (2002).

## HIV

Increased trade and population movement within the European Region have facilitated the spread of infectious diseases. Surveillance of communicable diseases in western Europe remains incomplete, particularly testing for and reporting HIV. Data on newly diagnosed HIV infections and especially comparisons of rates in countries should be interpreted with caution (EuroHIV, 2003a,b).

From 1996 to 2002, the rate of newly diagnosed HIV infections in Ireland increased by a factor of 3.4. Between 1999 and 2002, the rate almost doubled.

New registered cases of HIV, Ireland and Eur-A<sup>a</sup>,  
1990 to latest available year



<sup>a</sup> Excluding Austria, Cyprus, France, Italy, the Netherlands and Spain.

By the end of 2003, Ireland had a total of 3408 diagnosed cases of HIV. Of these, 34% were injecting drug users, 32% were heterosexual and 22% had been infected through homosexual/bi-sexual contact.

The annual rate of new HIV infections reported in Ireland increased fourfold during the period 1996–2003 from 98 to 399 cases.

In recent years, the numbers of newly diagnosed HIV infections among both injecting drug users and homo/bisexual men have remained relatively stable. However, there has been a marked increase in the number of new HIV infections in heterosexuals since 1999. In 2003, of 399 newly diagnosed cases, at least 221 were heterosexually acquired. This compares to 59 heterosexually acquired cases in 1999 (HPSC, 2004a). A further analysis of heterosexual cases reported in 2003 revealed that over four fifths were immigrants (EMCDDA, 2004).

## Hepatitis C

Since the introduction of screening of blood and blood products for hepatitis C in the countries comprising the European Union before May 2004, transmission of the virus has fallen dramatically. Injecting drug users are now the group at greatest risk, accounting for 60%–90% of new infections. Young and new injectors are at high risk of contracting the virus shortly after they begin injecting.

Wherever injecting drug use is likely to increase, new epidemics of hepatitis C are likely to emerge. Social exclusion is a factor in and a characteristic of the spread of infection (EMCDDA, 2004). Hepatitis C is predicted to have considerable long-term effects in terms of both health care spending and personal suffering.

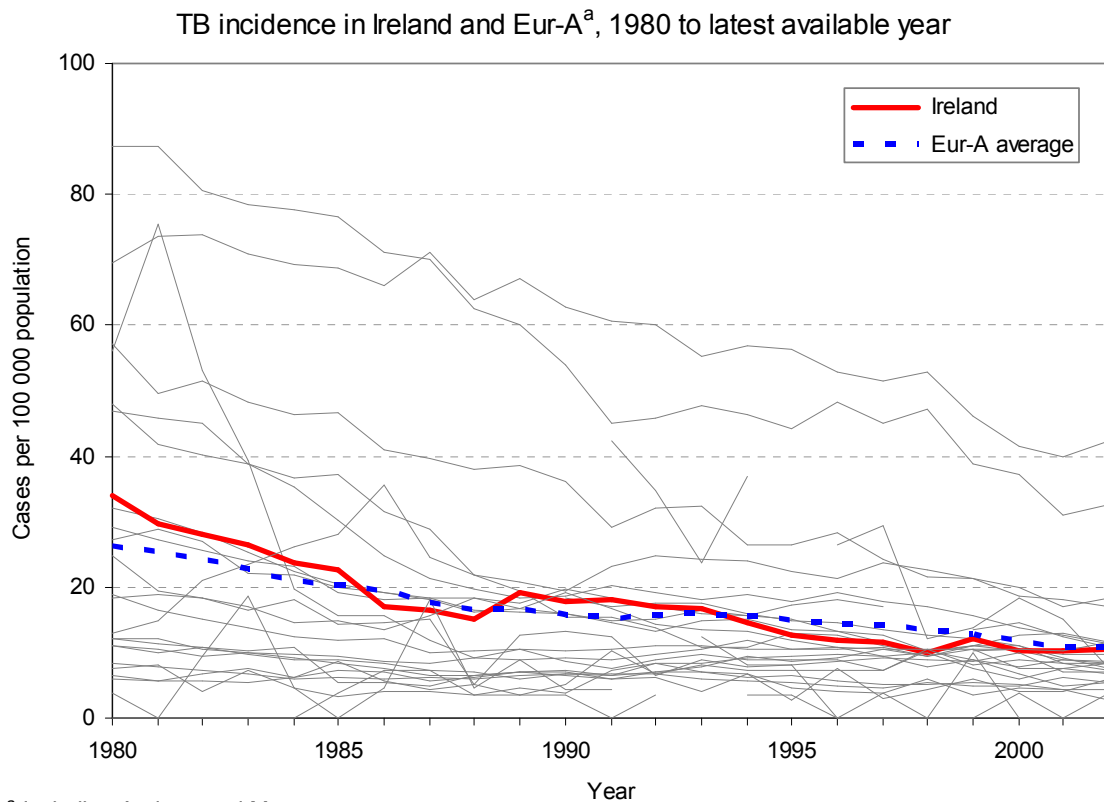
Blood screening for hepatitis C began in Ireland in 1991 but there is still a lack of information on the incidence of the disease (HPSC, 2004b). On 1 January 2004, an amendment to the Infectious disease regulations of 1981 came into effect as a result of which hepatitis C is now a notifiable disease. It is hoped that the new regulations will facilitate the collection of data on hepatitis C.

A cross-sectional survey of prison inmates in Ireland in 1998 found that among those who had injected drugs, the prevalence of antibodies to the hepatitis C virus was 81% (Allwright et al., 2000).

### TB

Between 1995 and 2001, TB notification rates decreased overall in western Europe. Drug resistance remains relatively low in reporting countries, indicating that TB control is generally effective (EuroTB, 2003). Higher rates are typically found in pockets of risk populations (such as immigrants and refugees from areas with high TB incidence) and among the indigenous poor, homeless people and prison inmates. Higher rates are also associated with HIV.

Between 1995 and 2002, the incidence of TB dropped by about 25% in Ireland. This rate of decline was similar to that for Eur-A. In 2002, the rate for Ireland was comparable to the average for Eur-A (10.4 per 100 000 compared to 10.9, respectively).



<sup>a</sup> Including Andorra and Monaco.

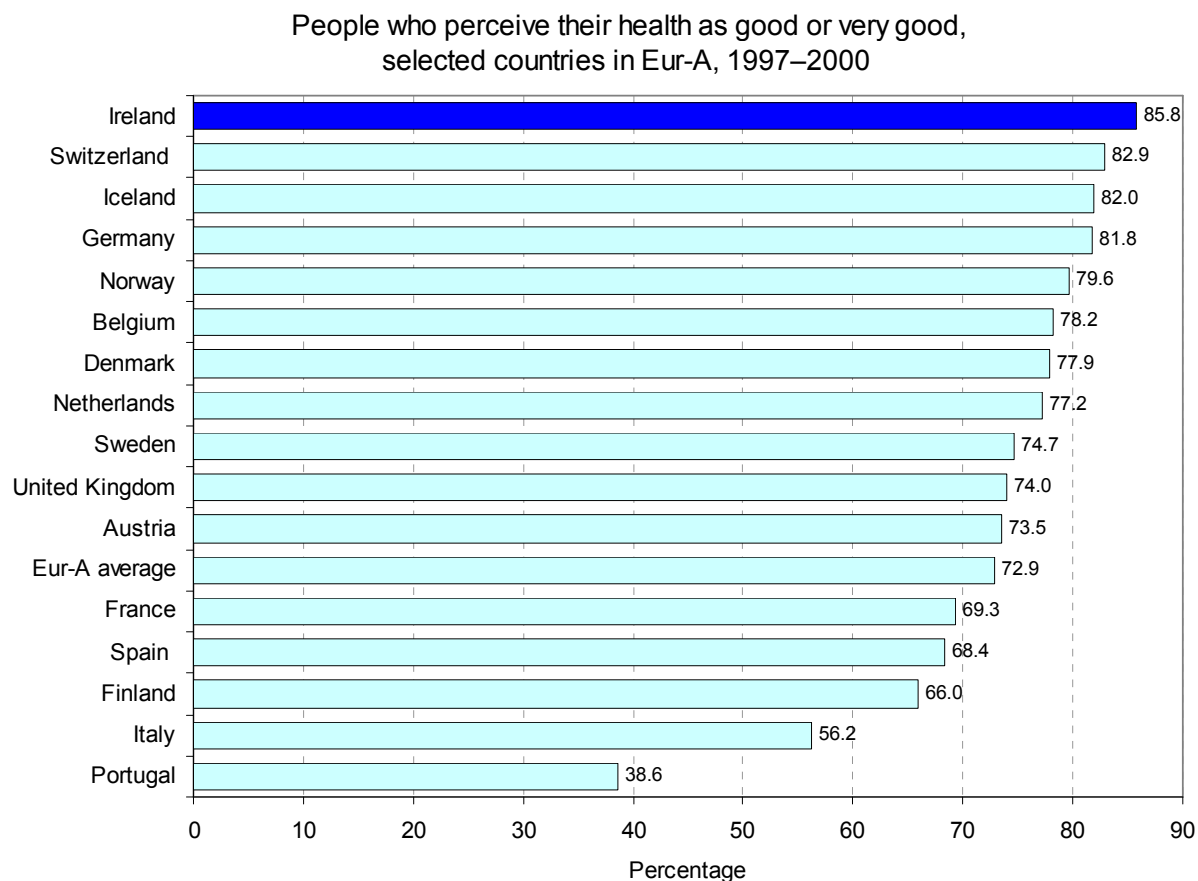
Source: HPSC (2002) for data on Ireland.



## Self-reported health

People are usually well informed about their health status, the positive and negative effects of their behaviour on their health and their use of health care services. Yet their perceptions of their health can differ from what administrative and examination-based data show about levels of illness within populations. Thus, survey results based on self-reporting at the household level complement other data on health status and the use of services.

Between 1997–2000, 86% of adults in Ireland rated their own health as good or very good, the highest percentage in the group of Eur-A countries where surveys were conducted.



Sources : European Commission (2003) and Kasmel et al. (2004) for data on Finland.

## Health system<sup>1, 2</sup>

### Organizational structure of the health system

Ireland's health system is characterized by a mix of public and private health service funding and provision. Overall responsibility for the health care system lies with the Government, exercised through the Department of Health and Children (DOHC). Until January 2005, the provision of health care and personal social services remains with seven regional health boards and the Eastern Regional Health Authority, which serves the Dublin area.

All residents are eligible for all services either without charges (Category I, medical card holders, representing 29% of the population) or with charges (Category II). The latter have coverage for public hospital services subject to some capped charges but have to make a contribution towards the cost of most other services. Qualification for a medical card giving access to free services, particularly in primary care, is largely related to income and age.

Private health insurance has played an important role in the Irish health system for almost 50. In 2002, almost 50% of the population was covered by community-rated voluntary health insurance. The Voluntary Health Insurance (VHI) Board, with 80% of market, set up in 1957, operates as a non-profit, semi-state private insurance body, with board members appointed by the Minister of Health and Children. Approximately one quarter of the population has neither a medical card nor health insurance. Individuals contribute to VHI to be guaranteed more immediate access to some hospital interventions; care funded through VHI is provided both in state and voluntary sector hospitals and in private hospitals.

### Health care financing and expenditure

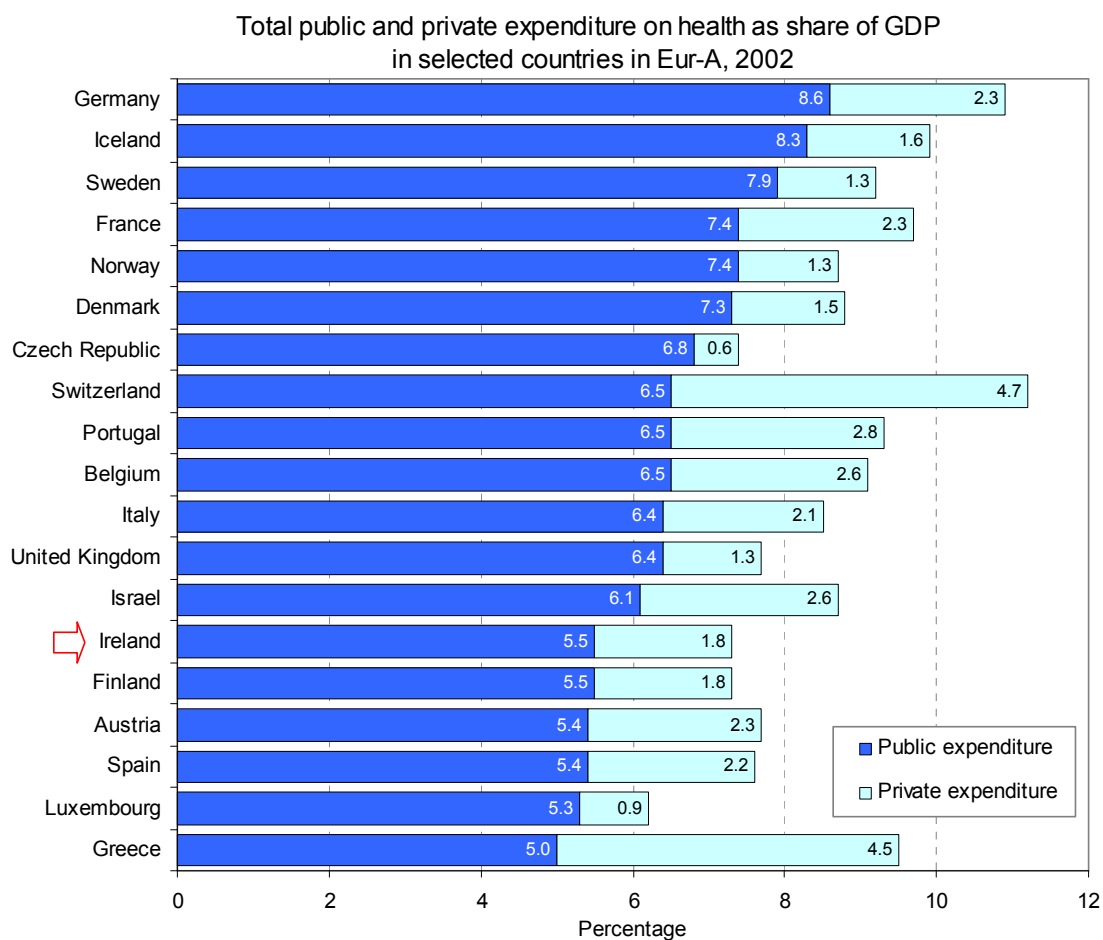
The health service remains predominantly tax-funded; approximately 75.2% of health expenditure came from public sources in 2002. Other expenditure can be attributed to out of pocket payments for primary care services, pharmaceuticals and private hospital treatment, as well as payments to voluntary health insurance providers. In 2002, according the Irish Central Statistical Office, total expenditure on health amounted to 8.2 % of the GDP, with 6.6% on public expenditure. The OECD estimates were 5.5% for public expenditure and 1.8% for private expenditure for a total of 7.3%. The latter seems low; expenditure has in fact increased substantially but is masked by strong economic growth. In 2002, expenditure on health care was \$2367 per capita in purchasing power parity (Annex. Total per capita expenditure on health) (OECD, 2004b).

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<sup>1</sup> This section is based on publications of the European Observatory on Health Care Systems and Policies (2000, 2002a–c).

<sup>2</sup> The WHO Regional Office for Europe is aware that the health system in Ireland is undergoing changes and this section will be updated to reflect the changes when information becomes available.

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Source: OECD (2004b); data for Israel are 2001 estimates from WHO (2004b).

Funding for health services is determined annually in negotiations between the Department of Finance and the DOHC. Government revenue, demographic factors, commitments to service provision, national pay policies and other social, economic and political considerations all influence budgets. Funding is also provided directly by the Department to voluntary hospitals and other service delivery agencies in the voluntary sector for the funding of some services. Regional health authorities enter into agreement with these agencies direct.

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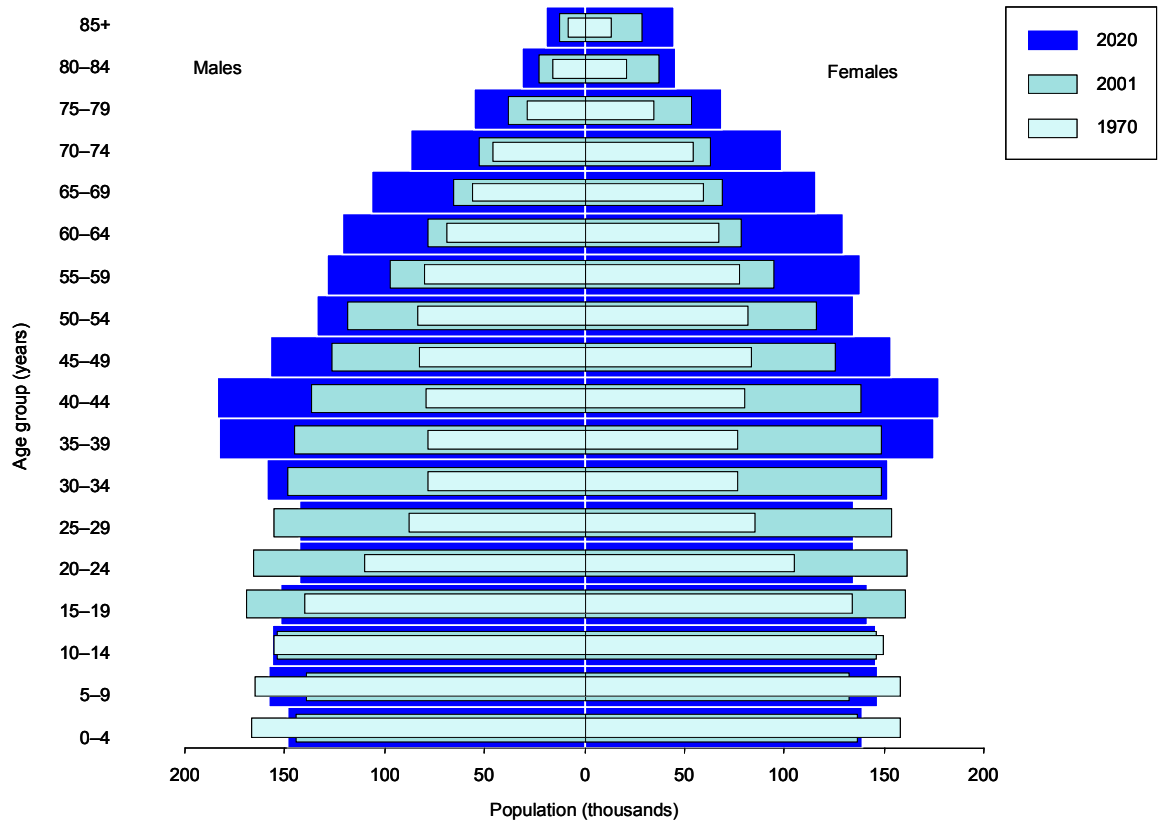
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# Annexes

## Annex. Age pyramid

### Age pyramid for Ireland



Sources: WHO Regional Office for Europe (2004d) and United Nations (2002).

## Annex. Selected mortality

## Selected mortality rates in Ireland compared with Eur-A averages

Condition	SDR per 100 000		Excess mortality in Ireland (%)	Total deaths in Ireland (%)	Total deaths in Eur-A (%)
	Ireland (2001)	Eur-A average (2001)			
<b>Selected noncommunicable conditions</b>	632.6	519.5	21.8	84.3	79.9
<i>Cardiovascular diseases</i>	289.7	246.3	17.7	38.6	37.9
Ischaemic heart disease	152.0	97.3	56.2	20.3	15.0
Cerebrovascular disease	61.4	62.0	- 1.0	8.2	9.5
Diseases of pulmonary circulation and other heart disease	47.2	57.0	- 17.1	6.3	8.8
<i>Malignant neoplasms</i>	198.6	181.8	9.2	26.5	28.0
Trachea/bronchus/lung	38.9	37.0	5.1	5.2	5.7
Female breast	34.3	27.1	26.6	4.6	4.2
Colon/rectal/anal	23.8	20.7	14.8	3.2	3.2
Prostate	32.9	25.0	31.5	4.4	3.8
<i>Respiratory diseases</i>	106.2	47.7	122.6	14.2	7.3
Chronic lower respiratory diseases	35.7	20.0	78.2	4.8	3.1
Pneumonia	52.8	16.5	220.9	7.0	2.5
<i>Digestive diseases</i>	26.5	30.7	- 13.7	3.5	4.7
Chronic liver disease and cirrhosis	5.8	12.8	- 54.7	0.8	2.0
<i>Neuropsychiatric disorders</i>	11.5	13.0	- 11.7	1.5	2.0
<b>Selected communicable conditions</b>	4.7	8.1	- 41.8	0.6	1.2
HIV/AIDS	0.0	0.9	- 100.0	- 0.0	0.1
<b>External causes</b>	41.8	39.5	5.8	5.6	6.1
<i>Selected unintentional causes</i>	18.4	16.1	14.7	2.5	2.5
Motor vehicle traffic injuries	9.4	10.0	- 6.2	1.2	1.5
Falls	9.1	6.1	49.1	1.2	0.9
<i>Selected intentional causes</i>	13.7	11.4	20.0	1.8	1.8
Self-inflicted (suicide)	12.7	10.5	21.1	1.7	1.6
Violence (homicide)	1.0	1.0	7.3	0.1	0.1
<b>Ill-defined conditions</b>	6.4	21.3	- 70.0	0.9	3.3
<b>All causes</b>	750.5	650.1	15.4	100.0	100.0

## Annex. Mortality data

Table 1. Selected mortality data for the group aged 1–14 years by sex in Ireland and Eur-A:  
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Ireland (2001)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
<b>All causes</b>	Both	21.0	-2.3	17.0	-20.4	12.9	28.2
	M	23.0	-5.8	19.2	-20.3	12.6	32.2
	F	18.9	2.5	14.8	-20.4	4.9	24.1
<i>Cardiovascular diseases</i>	M	0.3	-82.4	0.9	-26.0		1.8
	F	0.3	-79.6	1.0	-21.8		1.6
Ischaemic heart disease	M				-75.0		0.6
	F				-66.7		0.2
Cerebrovascular disease	M			0.2	-44.4		0.4
	F			0.2	-39.4		0.7
Malignant neoplasms	M	2.3	8.4	3.3	-15.4		5.1
	F	3.0	74.3	2.7	-10.4		4.9
Lung cancer	M				-80.0		0.2
	F						0.3
Breast cancer	F				-100.0		0.1
<i>Respiratory diseases</i>	M	1.4	-38.8	0.8	-13.7		3.0
	F	2.0	47.4	0.7	-11.9		2.4
<i>Digestive diseases</i>	M	0.7	39.6	0.3	-21.6		0.7
	F			0.2	-25.0		2.6
<i>External causes</i>	M	10.3	-1.4	6.4	-30.7	3.5	20.3
	F	6.8	53.4	4.0	-24.3		7.0
Motor vehicle traffic injuries	M	3.8	-28.9	2.7	-30.3		8.0
	F	2.6	45.9	1.8	-29.3		4.1
Suicide	M	0.5	-44.6	0.4	-11.9		0.7
	F			0.1	0.0		0.6

NA = not applicable. Blank = rate &lt; 0.1

Table 2. Selected mortality data for the group aged 15–24 years by sex in Ireland and Eur-A:  
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Ireland (2001)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
<b>All causes</b>	All	65.6	-0.5	53.1	-13.2	37.4	69.7
	M	96.9	-0.0	77.8	-13.0	59.4	110.2
	F	33.2	-1.0	27.7	-13.2	13.9	34.8
<i>Cardiovascular diseases</i>	M	2.8	-37.0	3.3	-12.1		5.7
	F	1.3	-37.9	1.8	-13.1		2.9
Ischaemic heart disease	M			0.3	-15.0		1.6
	F			0.1	-7.7		0.7
Cerebrovascular disease	M	0.3	-54.4	0.7	-13.6		1.4
	F			0.4	-24.1		1.4
Malignant neoplasms	M	4.9	-17.3	5.4	-7.9		15.5
	F	7.0	108.0	3.7	-7.9		7.0
Lung cancer	M			0.1	-50.0		0.3
	F			0.0	-33.3		0.3
Breast cancer	F			0.1	-16.7		0.3
<i>Respiratory diseases</i>	M	2.8	9.5	1.1	-25.7		4.5
	F	1.3	-65.2	0.8	-18.8		2.0
<i>Digestive diseases</i>	M	0.9	-41.9	0.5	-28.8		1.2
	F	0.3	-47.5	0.3	-30.4		1.1
<i>External causes</i>	M	71.3	-0.1	54.9	-12.0	33.0	96.5
	F	16.3	4.4	14.3	-14.8	6.9	23.5
Motor vehicle traffic injuries	M	28.7	-8.5	30.2	-9.3	14.9	71.1
	F	7.7	-8.4	8.1	-10.7	2.6	14.3
Suicide	M	27.5	12.8	11.2	-11.5		36.7
	F	4.5	23.1	2.5	-24.3		7.5

NA = not applicable. Blank = rate &lt; 0.1

Table 3. Selected mortality data for the group aged 25–64 years by sex in Ireland and Eur-A:  
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Ireland (2001)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
<b>All causes</b>	All	323.1	- 14.5	315.4	- 13.1	218.8	449.7
	M	411.1	- 14.5	425.4	- 14.3	276.0	661.7
	F	234.4	- 14.7	208.4	- 11.0	128.0	322.5
<i>Cardiovascular diseases</i>	M	137.1	- 28.2	110.6	- 20.8	72.2	225.0
	F	44.1	- 35.4	38.2	- 21.3	23.4	74.7
Ischaemic heart disease	M	88.8	- 36.2	59.8	- 24.6	35.2	108.6
	F	17.6	- 50.1	13.6	- 28.0	5.4	28.6
Cerebrovascular disease	M	16.3	- 21.0	17.4	- 22.0	7.5	56.6
	F	11.8	- 29.7	10.5	- 20.2	5.2	27.0
Malignant neoplasms	M	122.5	- 17.0	148.8	- 9.8	91.0	217.2
	F	120.1	- 9.0	102.4	- 7.7	76.1	155.2
Lung cancer	M	29.5	- 24.8	43.9	- 12.8	18.5	71.0
	F	12.1	- 28.6	13.3	11.7	6.9	32.8
Breast cancer	F	35.4	- 11.6	27.5	- 14.3	14.7	37.2
<i>Respiratory diseases</i>	M	22.3	- 20.4	15.8	- 19.2	8.5	29.7
	F	15.8	- 20.8	7.9	- 12.3	3.7	22.6
<i>Digestive diseases</i>	M	19.2	65.3	31.8	- 9.6	3.1	67.0
	F	11.9	31.3	13.4	- 7.5	4.2	26.2
<i>External causes</i>	M	69.4	11.6	59.9	- 10.5	28.2	120.7
	F	15.5	- 22.5	17.8	- 10.6		33.1
Motor vehicle traffic injuries	M	14.9	- 11.5	15.8	- 7.8	6.5	34.0
	F	3.7	- 30.4	4.3	- 14.4		7.4
Suicide	M	29.0	24.3	21.2	- 9.0	6.6	56.4
	F	6.7	- 12.6	6.8	- 11.1		15.8

NA = not applicable. Blank = rate < 0.1

Table 4. Selected mortality data for the group aged 65+ years by sex in Ireland and Eur-A:  
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Ireland (2001)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
<b>All causes</b>	All	5055.9	- 15.6	4199.5	- 11.5	3714.4	6010.0
	M	6362.1	- 16.4	5328.5	- 13.2	4658.1	7580.8
	F	4158.3	- 14.6	3460.2	- 11.5	2937.7	5088.6
<i>Cardiovascular diseases</i>	M	2728.8	- 23.5	2232.9	- 23.4	1614.4	4272.2
	F	1796.8	- 23.8	1613.4	- 21.7	1027.5	3314.3
Ischaemic heart disease	M	1506.4	- 29.0	948.2	- 20.3	517.5	1702.7
	F	841.7	- 26.5	539.5	- 17.4	244.7	1084.7
Cerebrovascular disease	M	529.1	- 16.1	536.2	- 35.9	324.8	1302.3
	F	456.8	- 19.6	457.0	- 32.6	170.4	1018.5
Malignant neoplasms	M	1601.7	- 6.2	1482.9	- 12.1	1175.1	1900.6
	F	948.9	- 2.7	749.8	- 9.4	589.1	1088.5
Lung cancer	M	368.5	- 12.1	371.8	- 22.0	196.0	615.4
	F	172.2	0.2	81.7	15.6	13.8	213.2
Breast cancer	F	141.2	- 3.9	113.9	- 10.1	83.3	164.1
<i>Respiratory diseases</i>	M	1115.6	- 20.5	545.9	- 13.6	371.8	1115.6
	F	716.3	- 13.7	266.5	- 13.9	157.9	716.3
<i>Digestive diseases</i>	M	197.5	0.2	205.0	- 10.5	117.8	342.9
	F	139.8	- 3.0	143.3	- 20.3	77.8	196.0
<i>External causes</i>	M	139.0	20.6	152.6	2.0	80.6	282.8
	F	72.6	- 2.5	91.0	0.7	41.3	157.3
Motor vehicle traffic injuries	M	16.4	- 33.0	20.4	- 15.3	8.7	46.0
	F	6.5	- 50.6	7.9	5.4	0.0	15.5
Suicide	M	16.5	- 27.0	34.3	- 13.5	8.8	86.1
	F	1.1	- 58.8	9.9	- 17.6	1.1	23.6

*Annex. Total expenditure on health per capita***Annex. Total public and private expenditure on health per capita, in selected countries in Eur-A, 2002**

<b>Country</b>	<b>Expenditure (US\$ purchasing power parity)</b>
Austria	2220
Belgium	2515
Czech Republic	1118
Denmark	2580
Finland	1943
France	2736
Germany	2817
Greece	1814
Iceland	2807
Ireland	2367
Israel	1622
Italy	2166
Luxembourg	3065
Netherlands	2643
Norway	3083
Portugal	1702
Spain	1646
Sweden	2517
Switzerland	3445
United Kingdom	2160
Eur-A average	2348

Sources : OECD (2004b) and WHO Regional Office for Europe (2004d) for 2001 data on Israel.

*Annex. Selected health care resources***Selected health care resources per 100 000 population in Eur-A, latest available year**

Eur-A	Nurses		Physicians		Acute hospital beds	
	Number	Year	Number	Year	Number	Year
Andorra	316.1	2002	304.2	2002	283.2	2002
Austria	587.4	2001	332.8	2002	609.5	2002
Belgium	1075.1	1996	447.8	2002	582.9	2001
Croatia	501.6	2002	238.3	2002	367.3	2002
Cyprus	422.5	2001	262.3	2001	406.6	2001
Czech Republic	971.1	2002	350.5	2002	631.3	2002
Denmark	967.1	2002	364.6	2002	340.2	2001
Finland	2166.3	2002	316.2	2002	229.9	2002
France	688.6	2002	333.0	2002	396.7	2001
Germany	973.1	2001	335.6	2002	627.0	2001
Greece	256.5	1992	453.3	2001	397.1	2000
Iceland	898.2	2002	363.6	2002	368.2	1996
Ireland	1676.2	2000	238.3	2001	299.5	2002
Israel	598.4	2002	371.3	2002	218.0	2002
Italy	296.2	1989	612.1	2001	397.9	2001
Luxembourg	779.3	2002	259.3	2002	558.7	2002
Malta	551.1	2002	267.2	2002	348.8	2002
Monaco	1621.4	1995	664.3	1995	1553.6	1995
Netherlands	1328.2	2001	314.9	2002	307.4	2001
Norway	2055.7	2001	364.5	2002	308.9	2001
Portugal	384.0	2001	322.9	2001	330.8	1998
San Marino	507.7	1990	251.7	1990	–	–
Slovenia	717.9	2002	224.2	2002	414.3	2002
Spain	367.2	2000	324.3	2000	296.4	1997
Sweden	975.1	2000	304.1	2000	228.3	2002
Switzerland	830.0	2000	361.6	2002	398.3	2002
United Kingdom	497.2	1989	210.0	2002	390.0	2002
Eur-A average	819.8	2001	354.1	2002	409.6	2001

Sources : WHO Regional Office for Europe (2004b) and OECD (2004) for data on physicians and acute hospital beds for the United Kingdom.

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## Technical notes

### Calculation of averages

In general, the average annual or ten-year percentage changes have been estimated using linear regression. This gives a clearer indication of the underlying changes than estimates based on the more straightforward percentage change between two fixed points over a period.

To smooth out fluctuations in annual rates caused by small numbers, three-year averages have been used, as appropriate. For example, maternal mortality, usually a small number, has three-year moving averages calculated for all countries.

### Data sources

To make the comparisons as valid as possible, data for each indicator have, as a rule, been taken from one common international source or from the Statistical Office of the European Communities (EUROSTAT) to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data for figures and tables is the January 2004 version of the WHO Regional Office for Europe's European health for all database.

### Disease coding

Case ascertainment, recording and classification practices (using the ninth and tenth revisions of the International Statistical Classification of Diseases and Related Health Problems: ICD9 and ICD10, respectively), along with culture and language, can influence data and therefore comparability across countries.

### Healthy life expectancy (HALE) and disability-adjusted-life-years (DALYs)

HALE and DALYs are summary measures of population health that combine information on mortality and non-fatal health outcomes to represent population health in a single number. They complement mortality indicators by estimating the relative contributions of different causes to overall loss of health in populations.

DALYs are based on cause-of-death information for each WHO region and on regional assessments of the epidemiology of major disabling conditions. The regional estimates were disaggregated to Member State level for the highlights reports.

National estimates of HALE are based on the life tables for each member state, population representative sample surveys assessing physical and cognitive disability and general health status, and on detailed information on the epidemiology of major disabling conditions in each country.

More explanation is provided in the statistical annex and explanatory notes of *The world health report 2003*.<sup>1</sup>

### Household surveys

Household surveys are currently the only source of evidence of health status at the individual level. The information generated is subjective and self reported. It complements the official aggregated statistics on death rates, life expectancy and morbidity. Tools are available for both designing the surveys and analytically estimating health, adjusted for differences in cultural norms and expectations of health, so that survey results become comparable across populations and groups.

### Limitations of national-level data

National-level averages, particularly when they indicate relatively good positions or trends in health status, as is the case in most developed countries, hide pockets of problems. Unless the health status of a small population is so dramatically different from the norm that it influences a national indicator, health risks and poorer health outcomes for small groups will only become evident through subnational data.

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<sup>1</sup> *The world health report 2003 – Shaping the future*. Geneva, World Health Organization, 2003 (<http://www.who.int/whr/2003/en/>, accessed 25 May 2004).

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**Ranking**

A special case of comparison gives each country a rank order. Although useful as a summary measure, ranking can be misleading and should be interpreted with caution, especially if used alone, as the rank is sensitive to small differences in the value of an indicator. Also, when used to assess trends (as in the table at the start of the section on health status), ranking can hide important absolute changes in the level of an individual country. Graphs have usually been used to show time trends from 1970 onwards. These graphs present the trends for all the reference countries and for the EU-15, as appropriate. Only the country in focus and the appropriate group average are highlighted, and identified in the legend. This enables the country's trends to be followed in relation to those of all the reference countries, and performance in relation to observable clusters and/or the main trend or average to be recognized more easily.

**Reference groups for comparison**

When possible, international comparisons are used as one means of assessing a country's comparative strengths and weaknesses and to provide a summary assessment of what has been achieved so far and what could be improved in the future. Differences between countries and average values allow the formulation of hypotheses of causation or imply links or remedies that encourage further investigation.

The country groups used for comparison are called reference groups and comprise:

- countries with similar health and socioeconomic trends or development; and/or
- geopolitical groups such as the European Union (EU), the newly independent states or the central Asian republics.

The fifteen-member EU (EU-15) is the reference group comprising Austria, Belgium, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Comparisons should preferably refer to the same point in time, but the countries' latest available data are not all for the same year. This should be kept in mind, as a country's position may change when more up-to-date data become available.

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## Glossary

### *Causes of death*

	<i>ICD-10 code</i>
Cerebrovascular diseases	I60–I69
Chronic liver disease and cirrhosis	K70, K73, K74, K76
Chronic obstructive pulmonary disease	J40–J47
Colon/rectal/anal cancer	C18–C21
Diseases of pulmonary circulation and other heart disease	I26–I51
Falls	W00–W19
Female breast cancer	C50
Ischaemic heart disease	I20–I25
Pneumonia	J12–J18
Prostate cancer	C61
Neuropsychiatric disorders	F00–99, G00–99, H00–95
Road traffic injuries	V02–V04, V09, V12–V14, V19–V79, V82–V87, V89
Self-inflicted (suicide)	X60–X84
Trachea/bronchus/lung cancer	C33–C34
Violence	X85–Y09

### *Technical terminology*

Disability-adjusted life-year (DALY)	The DALY combines in one measure the time lived with disability and the time lost owing to premature mortality. One DALY can be thought of as one lost year of healthy life.
GINI index	The GINI index measures inequality over the entire distribution of income or consumption. A value of 0 represents perfect equality; a value of 100, perfect inequality. Low levels in the WHO European Region range from 23 to 25; high levels range from 35 to 36 <sup>1</sup> .
Healthy life expectancy (HALE)	HALE summarizes total life expectancy into equivalent years of full health by taking account of years lived in less than full health due to diseases and injuries.
Income poverty line (50% of median income)	The percentage of the population living below a specified poverty line: in this case, with less than 50% of median income.
Life expectancy at birth	The average number of years a newborn infant would live if prevailing patterns of mortality at the time of birth were to continue throughout the child's life.
Natural population growth	The birth rate less the death rate.
Neuropsychiatric conditions	Mental, neurological and substance-use disorders.
Population growth	(The birth rate less the death rate) + (immigration less emigration).
Standardized death rate (SDR)	The age-standardized death rate calculated using the direct method: that is, it represents what the crude rate would have been if the population had the same age distribution as the standard European population.

<sup>1</sup> WHO Regional Office for Europe (2002). *The European health report 2002*. Copenhagen, WHO Regional Office for Europe:156 (<http://www.euro.who.int/europeanhealthreport>, accessed 28 May 2004).