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OF **ECONOMICS** AND
POLITICAL SCIENCE

HEALTH TRENDS IN THE EU

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Countries' Codes

AT Austria	BE Belgium	BG Bulgaria	HR Croatia	CY Cyprus	CZ Czech Republic	DK Denmark
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PT Portugal	RO Romania	SK Slovakia	SI Slovenia	ES Spain	SE Sweden	MK TFYR Macedonia
TK Turkey	UK United Kingdom					

Acronyms

AIDS	Acquired immune deficiency syndrome
BMI	Body mass index
CEE	Central and eastern Europe
CHD	Coronary heart disease
CI	Concentration index, confidence interval
CIS	Commonwealth of Independent States
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
DALE	Disability-adjusted life expectancy
DFLE	Disability-free life expectancy
DSM	Diagnostic and Statistical Manual of Mental Disorders
ECHP	European Community Household Panel (survey)
EMCDDA	European Monitoring Centre on Drug and Drug Addiction
ESPAD	European Schools Project on Alcohol and Other Drugs
ESS	European Social Survey
EU	European Union
EU12	Member States joining the EU in May 2004

EU15 Member States belonging to the EU before May 2004
EU27 Member States belonging to the EU up to and including the January 2007 accession
EU25 Member States belonging to the EU before January 2007
EUROCHIP European Cancer Health Indicator Project
GDP Gross domestic product
GNP Gross national product
GP General practitioner
HIV Human immunodeficiency virus
ICD International Classification of Diseases (WHO)
IDU Intravenous drug user
IHD Ischemic heart disease
MSM Men who have sex with men
NCD Non-communicable disease
OECD Organisation for Economic Co-operation and Development
PDU Problem drug use
SILC Survey on Income and Living Conditions
SHARE Survey of Health, Ageing and Retirement in Europe
STI Sexually transmitted infection
TB Tuberculosis
TFYR (Macedonia) The former Yugoslav Republic (of Macedonia)
UNODC United Nations Office on Drugs and Crime
WHO World Health Organization

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EXECUTIVE SUMMARY

Europe has experienced fast improvements in health in the past few decades. Increasing longevity has been the main feature of the health status indicators with repercussions on the health systems and on the burden of diseases. Despite improvements, the level of heterogeneity in living conditions characteristics has and will continue to widen tremendously in the EU as it goes through enlargement. The aim of this report is to give updated key health data comparable across Europe using the WHO Health for All database, Eurostat and OECD data and other key comparable information available. The report highlights the diversity in health status across Europe, attempting to identify current differences between countries. The attention is in most sections concentrated on the trends over the last 15 years. For clarity purposes most trends are divided up into EU15 and EU12 according to whether they joined the Union before or after 2004. There are several limitations with the data considered in this report: despite increasing availability of cross-countries surveys, definitions, cultural and socio-economic differences of reporting and availability of data make the comparisons more cumbersome and caution must be used when interpreting the data.

Health status: The general level of health in the European Union has improved in the last 15 years. Life expectancy and infant mortality show significant improvements in the last three decades with governments paying increasing attention to health issues. Despite aggregate measures of health showing that the health of EU populations continue to improve, there are still some marked differences in life expectancy, infant mortality, and avoidable mortality across countries. Economic growth does not always explain increasing improvements in the life expectancy indicators. However, inequalities in the access to care and increasing longevity are key challenges for the future.

Considerable gender differences remain in health status indicators with women generally reporting better health status if using objective measures such as life expectancy at birth and at 65. On the other hand if we use subjective self-reported information women come out worse off. Disability indicators such as DALY and HALE confirm most of the gaps across countries that have been identified in the life expectancies.

The greatest burden of disease remain non-communicable or chronic diseases. Cardiovascular ones account for 42% of all deaths despite the steep decline over the last 20 years in both North and South of the EU. The gender gap persists in all CVD related diseases and in particular for IHD. Lung cancer mortality is by far the most common cancer related death. Men's death rates due to lung cancer are higher with women's ones increasing almost everywhere. Despite growing numbers of diabetes cases the related death rates remain constant across all countries. Mental health issues have been estimated to account for around 20% of the total burden of ill health.

STIs incidence is increasing in most western Europe and declining in most Eastern countries. This might be due to a general change in sexual relationships but also to increasing screening, hence more reporting, in some countries. The slow increase in the levels of HIV/AIDS incidence is widening the gap among countries. Levels in the EU-15 remain higher if we exclude Estonia.

Injuries and accidents remain a major cause of death with road accident mortality being the main cause.

Risk Factors: Tobacco use, unhealthy diet, including excessive alcohol consumption and excessive energy intake and physical inactivity are the main preventable risk factors in the European Union. The major factors considered in this chapter are associated to cardiovascular diseases and cirrhosis (e.g.: drinking and unhealthy diet), cancer (e.g.: smoking), mental health problems (e.g.: drug use). Nearly one third of EU citizens smoke regularly with men smoking more than women. Despite the recent decline in drinking, Europe remains the world region with the highest proportion of drinkers in the world. Obesity and nutrition related non-communicable diseases still account for a considerable part of the overall burden of disease with projections showing an increase. Trends in illicit drug use are also reported with cannabis being the most commonly used.

Health care resources and utilisation: The interaction of supply and demand-side factors determines the level and quality of care. The volume and distribution of human resources are among the main supply-side factors affecting access to and receipt of care.

Supply of physicians is a key indicator of access to care. European data show a large heterogeneity in the supply of physicians, GPs, nurses and dentist. Nurses' presence in the Union is three times as big as that of physicians. Given their crucial role in long-term care they will be key in the future needs of ageing societies.

The level of heterogeneity across Europe has been declining from 1995 to 2007 due to the long-term trend to cut acute care beds in all countries. Technological improvements and shifting of hospital resources have also played a role. As a result ALOS values have declined in the last 15 years.

Shifting towards ambulatory care has resulted in an increase of day-cases with cataract surgery being the most common one. However the level of variation across Europe is high with figures that range from 95% in Denmark and the UK to below 10% in Hungary and Poland. Trends in hospital discharges have remained the same in almost all countries.

Health expenditure and financing: There is a considerable diversity in total expenditure on health across Europe. In most countries the percentage of GDP spent on health has increased between 1995 and 2007. This is mainly due to ageing, advancements in technology and higher expectations. However, the current recession might prove a setback in public spending. In most EU15 countries, the balance of public and private expenditure has remained relatively stable over the last 15 years. In most countries pharmaceutical expenditure as total of total health expenditure grew in the period from 1995 to 2007. The picture is clearer when we consider pharmaceutical expenditure per capita where

all countries show an increase. This is mainly due to increasing demand for medicines due to ageing and increasing prices.

CHAPTER 1: HEALTH STATUS

Introduction

Population health indicators play a major role in the monitoring and evaluation of health systems performance. The general level of health in the European Union has improved in the last 15 years. Life expectancy at birth and at 65 (section 1.1 and 1.2) and infant mortality (section 1.4) show significant improvements in the last three decades with governments paying increasing attention to health issues. Public health campaigns to reduce avoidable causes of death such as infant and maternal mortality have had a major impact on mortality rates over the last three decades. Continuous reduction of cardiovascular diseases and decreasing level of smoking in most countries have also been major contributing factors to the increasing longevity. However for some indicators the level of heterogeneity is still high and has increased significantly with the enlargement of the EU.

Healthy life expectancy and Disability adjusted life expectancy described in section 1.3 combine estimates of self-assessed health with estimates of life expectancy. Avoidable mortality (section 1.5) represents one of the major population health indicators of health systems performance. Other measures of health status included in this chapter are self-reported health (section 1.6) which provides a useful summary measure of overall health and wellbeing beyond mortality or morbidity rates.

The chapter then moves to the description of specific diseases patterns which will be discussed in sections 1.7 to 1.10 with particular focus to cardiovascular diseases, cancers, STI/HIV aids. Finally trends of injuries and accidents will be described in section 1.11

Section 1.1 Trends In Life Expectancy

Notes on the data

Definition life expectancy: Life expectancy at birth and ages 40, 60, 65 and 80 is the average number of years that a person at that age can be expected to live, assuming that age-specific mortality levels remain constant.

Data issues: Countries calculate their own life expectancy and methodologies can vary which could lead to fractions of years' changes. The main tool utilised to calculate life expectancy is the life table.

Life expectancy at birth is commonly used as the major summary measure of population health.

Life expectancy has increased in all countries of the European Union in the last three decades (Figure 1.1) with all countries but Turkey having reached a life

expectancy at birth higher than 70. The country with the highest life expectancy at birth is Italy (81.58) followed by France (81.11). Eastern and Baltic countries lag behind with Lithuania (71) and Turkey (68.9) having the lowest. The countries that have experienced the largest increase are Malta (9.5 years) and Turkey (14.75 years). An analysis of the trends (Figures 1.2 and 1.3) shows how since 1970 the EU15 countries have slowly converged to similar values whereas the EU12 have increased the gap with the Czech Republic being the highest (77.1) and Lithuania the lowest (71).

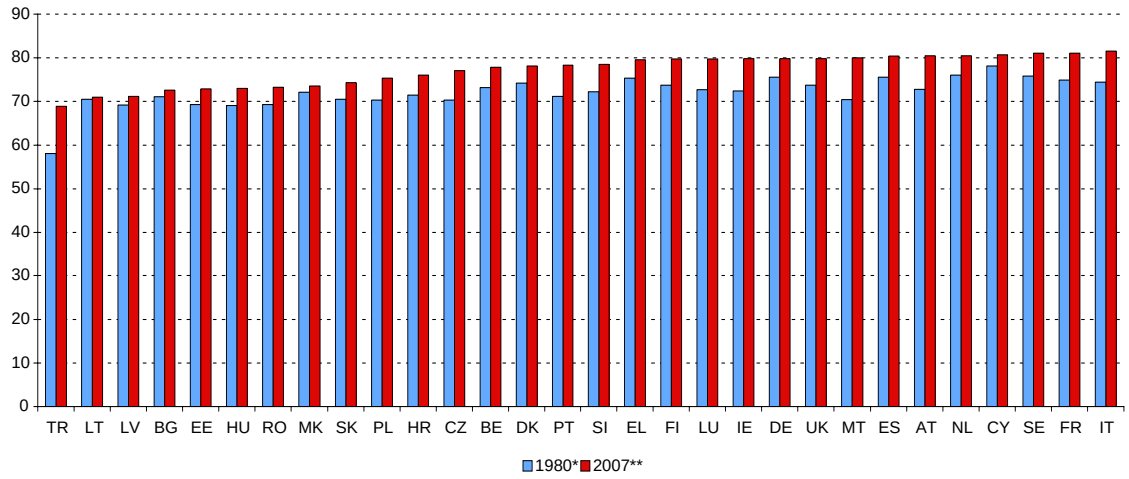
During the last decade increases in life expectancy have been reported for both men and women. However, the gender gap persists in all countries where female life expectancy is constantly higher for women than men (Figure 1.4). Improvements are converging to closer levels for women for all EU members whereas the gap is increasing for men in particular in the CEE countries. The gap has declined in most EU15 countries (from 6.24 to 5.63 in the last three decades) whereas it increased in most of the EU12 countries (from 7.31 to 8.15 years difference in the last three decades). Those countries have also experienced a decline in the increase during the early 1990s. Some of the former Soviet Union countries have experienced a decline in the level of life expectancy and then an increase in the last two decades.

There is a vast literature on the determinants of gender differences in mortality (Wingard 1984; Vallin 1995). They include biological factors such as hormonal influences on physiology and behaviour, and environmental factors, such as cultural influences on gender differences in health behaviours. Higher male hospitalizations and mortality is often linked to higher rates of smoking. Changing health behaviours and increasing numbers of female smokers at a time when men's numbers are declining, have slowly narrowed the gap. An increasing number of public health campaigns aimed at changing health behaviours has also made a big contribution to narrowing the gap.

Figures 1.5 and 1.6 show the relationship between life expectancy at birth, GDP per capita and health expenditure per capita. There is a clear logarithmic relationship between life expectancy and the two measures. The logarithmic relationship is due to the dual relationship between the variables and the interrelationship between GDP per capita and other determinants which could confound the impact. In this case the relationship between health expenditure and life expectancy is stronger than the relationship between the life expectancy and GDP per capita.

The relationship is not straightforward and it is often difficult to estimate the determinants of the increase of life expectancy in different countries and in particular the role that health expenditure and GDP have on it. Despite the clear positive relationship between health expenditure and life expectancy, several studies point out that money alone does not extend lives. Preventative care and higher quality of care can be improved with low spending and can achieve higher results (Evans, Tandon et al. 2001).

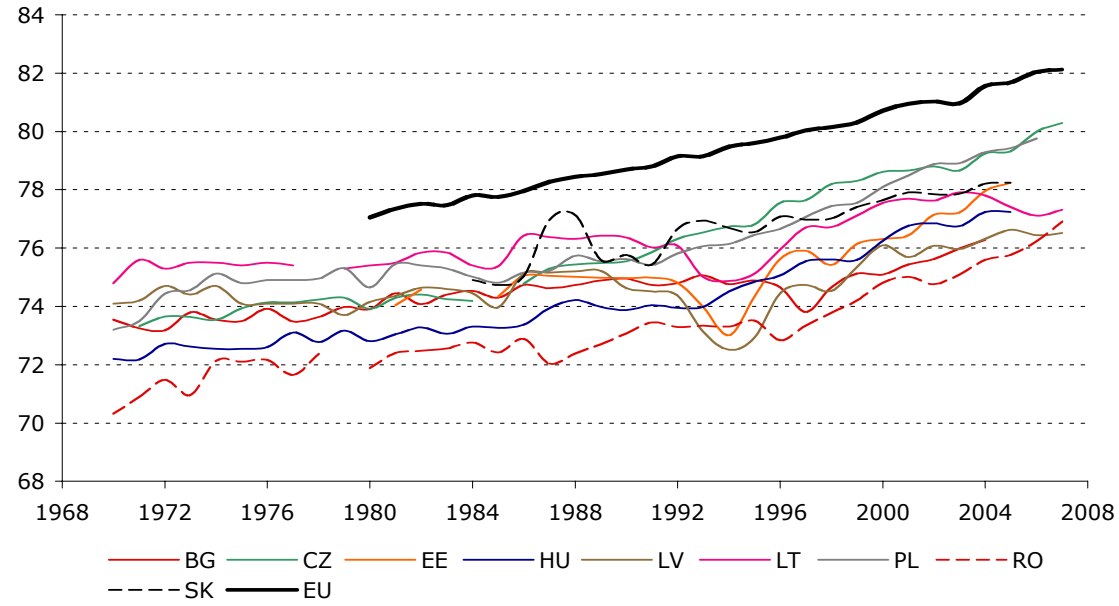
Figure 1.1 Life Expectancy at birth 1980 and 2007



Notes: 1, Data unavailable for 1980 for the following countries: Croatia 1985, Cypress 1999, Estonia 1981, Germany 1990, Slovenia 1985, TYFR Macedonia 1991 Data from closest date provided instead. 2, Data unavailable for 2007 for the following countries. Belgium 1999, Bulgaria 2004, Croatia 2006, Cyprus 2006, Denmark 2006, Estonia 2006, France 2006, Germany 2006, Hungary 2005, Ireland 2006, Italy 2006, Luxembourg 2005, Poland 2006, Portugal 2004, Spain 2005, Sweden 2005, TYFR Macedonia 2003,Turkey 2004. Most recent data provided instead

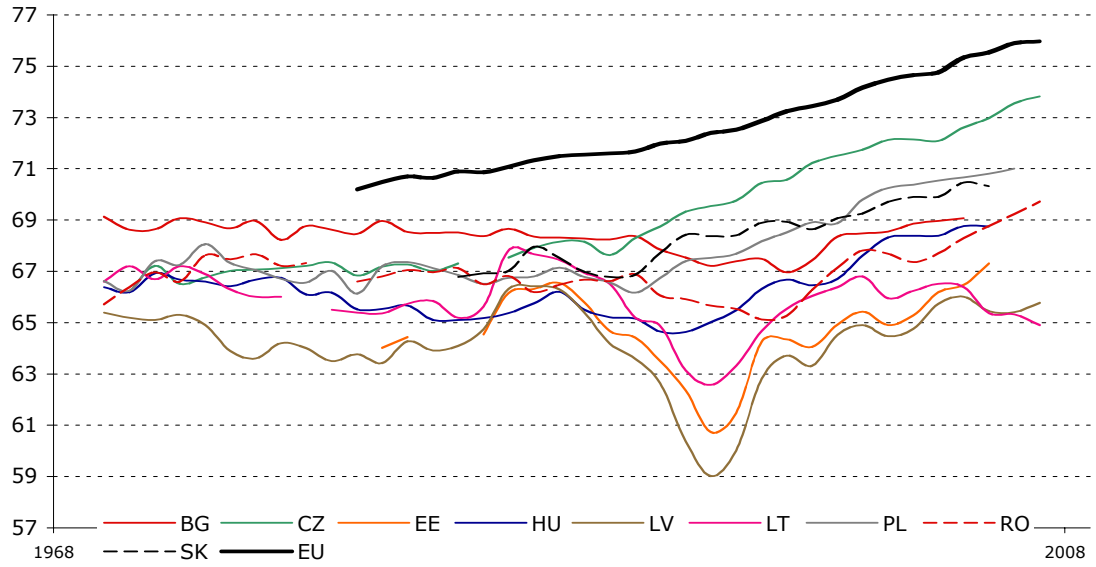
Source: WHO Health for All 2009

Figure 1.2 Trends in life expectancy at birth, CEE Females 1970-2007



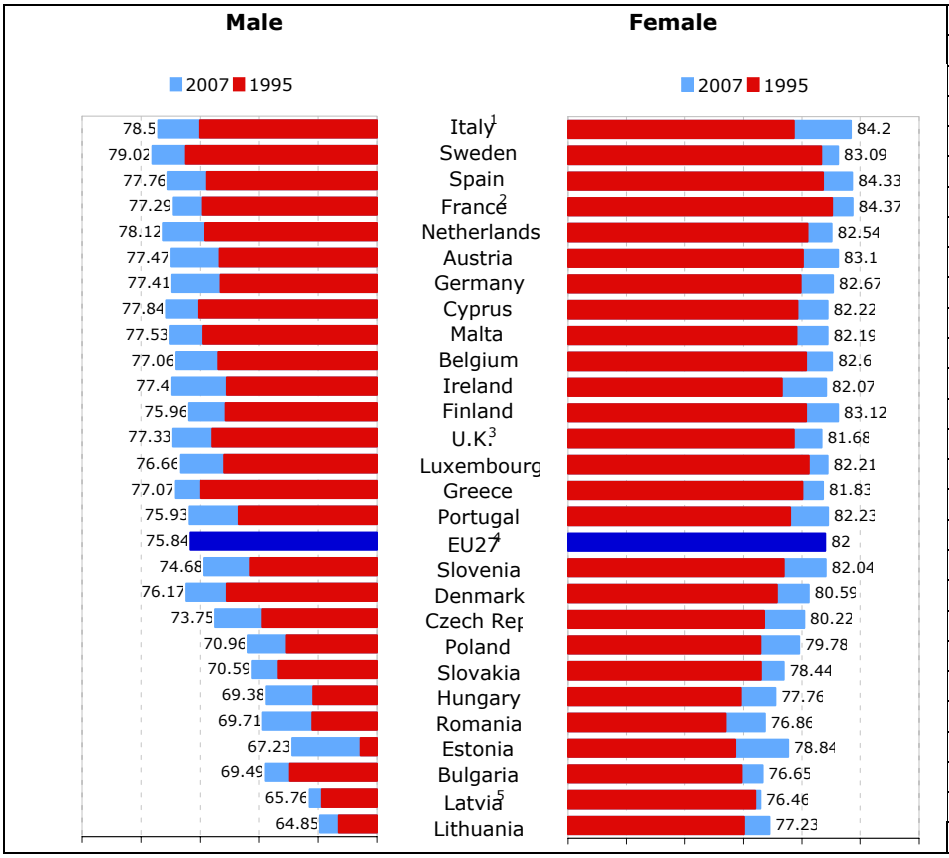
Source: WHO Health for All, 2009

Figure 1.3 Trends in life expectancy at birth, CEE Males 1970-2007



Note: Gaps in data for several countries
Source: WHO Health for All, 2009

Figure 1.4 Life Expectancy at Birth by Gender, EU-27 1995 and 2007

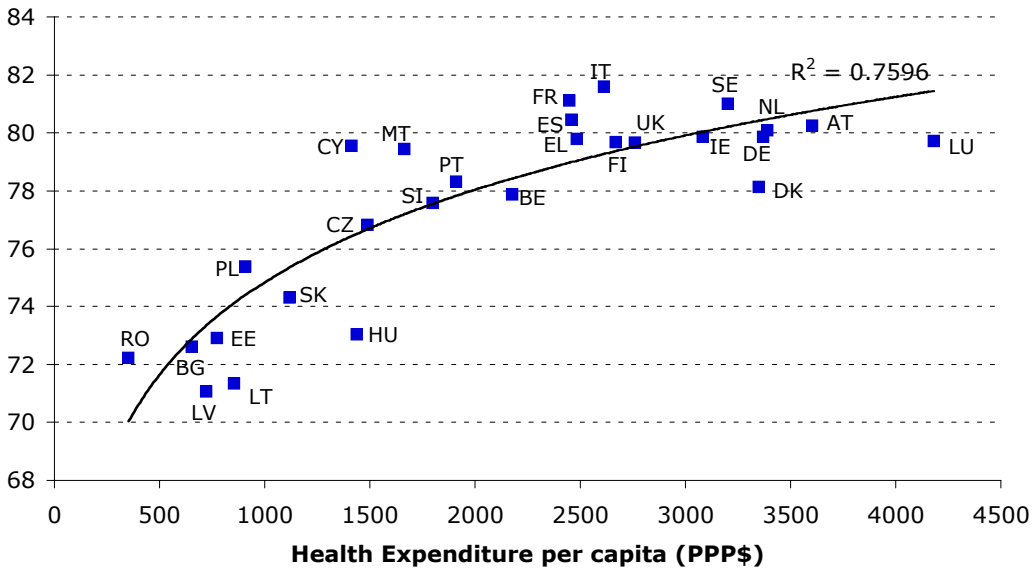


Gender differential		
Country	**1995**	**2007**
Italy[1]	6.51	5.7
Sweden	5.43	4.07
Spain	7.4	6.57
France[2]	7.8	7.08
Netherla	5.88	4.42
Austria	6.76	5.63
German	6.61	5.26
Cyprus	4.55	4.38
Malta	4.78	4.66
Belgium	6.91	5.54
Ireland	5.54	4.67
Finland	7.51	7.16
U.K.[3]	5.31	4.35
Luxembo	7.63	5.55
Greece	5.1	4.76
Portugal	7.25	6.3
EU27[4]	6.36	6.16
Slovenia	7.69	7.36
Denmar	5.15	4.42
Czech	7.02	6.47
Poland	8.77	8.82
Slovakia	8.1	7.85
Hungary	9.34	8.38
Romania	7.95	7.15
Estonia	12.92	11.61
Bulgaria	7.45	7.16

	Latvia5	11.32	10.7
	Lithuani	11.78	12.38

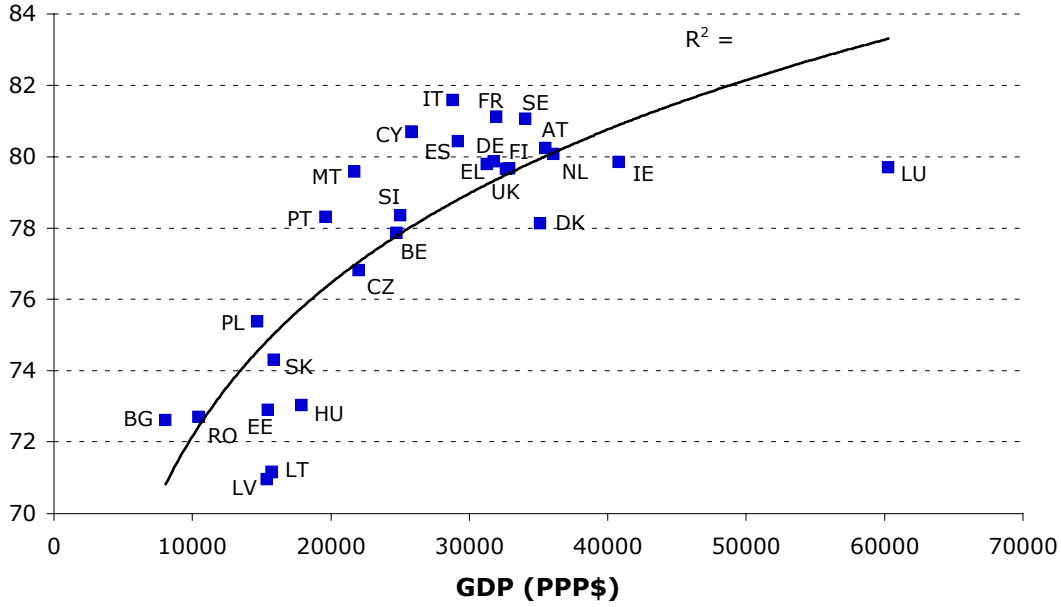
Notes: 1, Data from 1995 & 2006
2, Data from 1998 & 2006
3, Data from 1995 & 2006
4, No data available for 1995
5, Data from 2002 & 2007
Source: Eurostat

Figure 1.5 Health Expenditure v Life Expectancy at Birth 2006*



Notes: Data from 2005: Estonia, Hungary, Luxembourg, Slovakia
Data from 2004: Bulgaria, Portugal
Data from 1999: Belgium
Source: WHO Health for All, 2009

Figure 1.6 Life Expectancy v GDP 2006*



Source: WHO Health for All, 2009
Data from 2004: Bulgaria (WHO estimate), Portugal
Data from 1999: Belgium
Notes: Data from 2005: Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Romania, Slovakia

Section 1.2 Life expectancy at age 65

The life expectancy at 65 is an indicator of the gains in longevity at older ages. It is an important indicator used to understand how increased longevity might have an impact on health care systems. The indicator has increased constantly over the last three decades for both men and women. Figure 1.7 shows the trends for only those countries where data were available throughout the period.

On average the life expectancy at 65 stood at an average of 16.84 years in 2006. France leads with an expectancy of life at 65 equal to 20.77 followed by Italy with 20.16. The lowest is reported in Latvia (12.8 years)

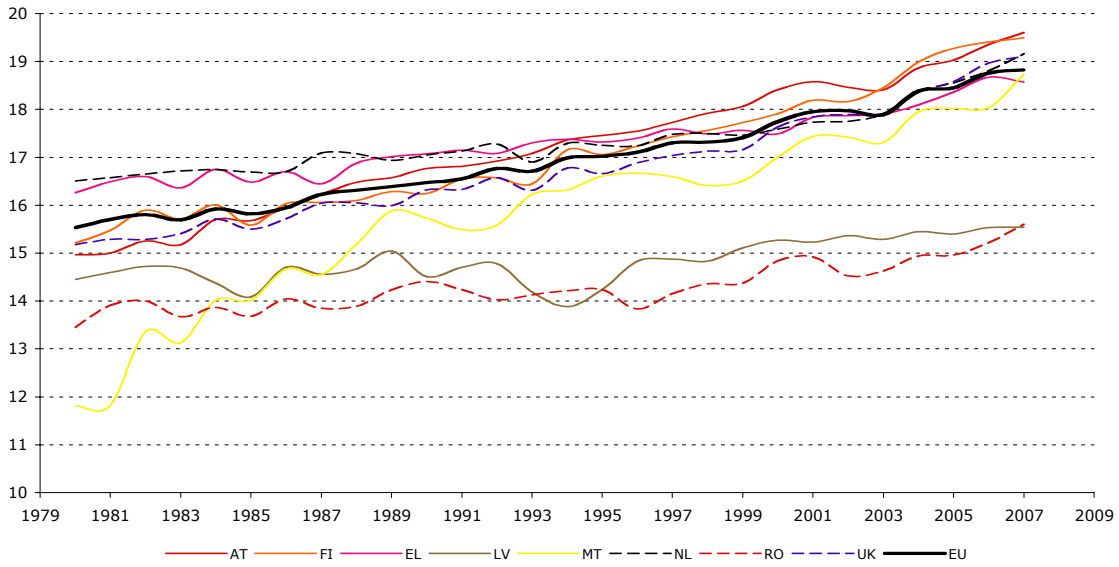
The pace of the increase differs from country to country with Romania and Latvia showing a stalling of the measure and a steady increase at European level with Finland and Austria leading.

The gender gap (Figure 1.8) is quite prominent with women having a higher expectancy of life than men. The lowest gap is in Macedonia (1.87 years) and the largest in Estonia (5.34).

The constant increase in the life expectancy at 65 shows the gradual gains in longevity at older ages in the EU. Along with the declining fertility rates they are contributing at a progressing ageing of the population.

Increasing life expectancy at 65 is not always linked to worse healthy life later on. Despite the lack of trend data there is evidence from survey based data that the prevalence of disability among elderly might be declining (OECD 2006).

Figure 1.7 Trends in life expectancy at 65. Selected EU states



Note: Only states with data for all years 1980-2007 selected
Source: WHO Health for All, 2009

Figure 1.8 Life Expectancy at 65 by Gender, EU-27 1995 and 2007

Country	1995	1997
Country differential		
Hungary	3.78	4.15
Lithuania		5.03
Slovakia	3.58	3.94
Romania	2.53	2.92
France[1]	4.57	4.42
Italy[2]	4.04	3.93
Latvia[5]	4.45	4.39
Spain	4.03	4.14
Bulgaria	2.83	3.17
Austria	3.75	3.45
Sweden	3.89	2.83
Finland	4.19	4.21
Belgium	4.47	3.67
Germany	3.93	3.29
Netherla	4.46	3.61
U.K.[3]	3.61	2.76
EU-27[4]	0	3.55
Ireland	3.69	3.05
Portugal	3.36	3.41
Malta	2.09	3.6
Cyprus	2.62	2.26
Luxembo	4.92	3.92
Greece	2.24	1.94
Slovenia	4	4.36
Denmark	3.47	2.68
Poland	3.67	4.38
Czech Rep	3.49	3.41
Estonia	4.2	5.34

Notes: 1, Data from 1998 & 2006
2, Data from 1995 & 2006
3, Data from 1995 & 2006
4, No data available for 1995
5, Data for 2002 & 2007
Source: Eurostat

Section 1.3: Disability Adjusted Life Expectancy And Health Life Expectancy

Definition DALY: Disability Adjusted Life Years. The sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability.

Data issues: Measurement of health status might not be comparable across countries. Most measures taken into consideration might be subject to cultural inclinations within the countries. It relies on the independence of the patient's characteristics (e.g. health statues or quality of care) which is in reality is not feasible (Ananda and Hansonb 1997).

Definition Hale: Average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury. It gives a measure of the population's level of health

Data issues Hale: particularly sensitive indicator to adjustments in time changes. In addition some of large reported variations in life expectancy between countries are due to issues related with standardization of definitions and methodologies.

Disability adjusted life expectancy is a measure used to compare the level of healthy living across countries. It has also been used to measure the burden of disease. The general trends across Europe have declined from 1999 to 2001 with a slight increase in 2002. Given the lack of data on trends it is not possible to infer whether the trend will continue. In general there is a gap between men and women (Figure 1.9). The gap is highest in Estonia (9.8), Latvia (9.5) and Lithuania (8.8) mirroring the gender differences reported in life expectancy. However given the weighting used to adjust for biological gap in gender survival, the DALY might underestimate the burden of disease for women relative to men.

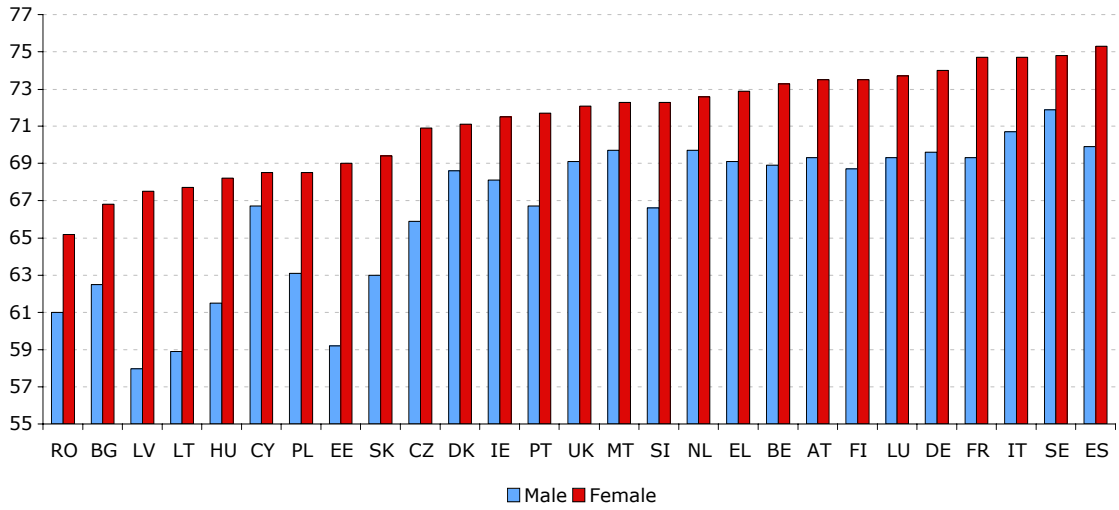
Spain (75.3) Sweden (74.8), France (74.7) and Italy (74.7) report the highest female dalys in Europe (Figure 1.9). While Sweden (71.9), Italy (70.7) and Spain (69.9) report the highest for male DALYs.

The Baltic countries show the lowest DALYs for men which are usually linked to high levels of cardiovascular diseases, mortality due to external causes (e.g. suicide and injuries) and cancers (Lai, Habicht et al. 2009).

The figures of the HALEs (Figure 1.10) reflect closely those of the DALYs. Sweden, Spain, Italy and France report the highest levels and Romania and Bulgaria the lowest with the Baltic countries showing the lowest male values. Cyprus has the smallest gender gap for both the DALY and the HALE.

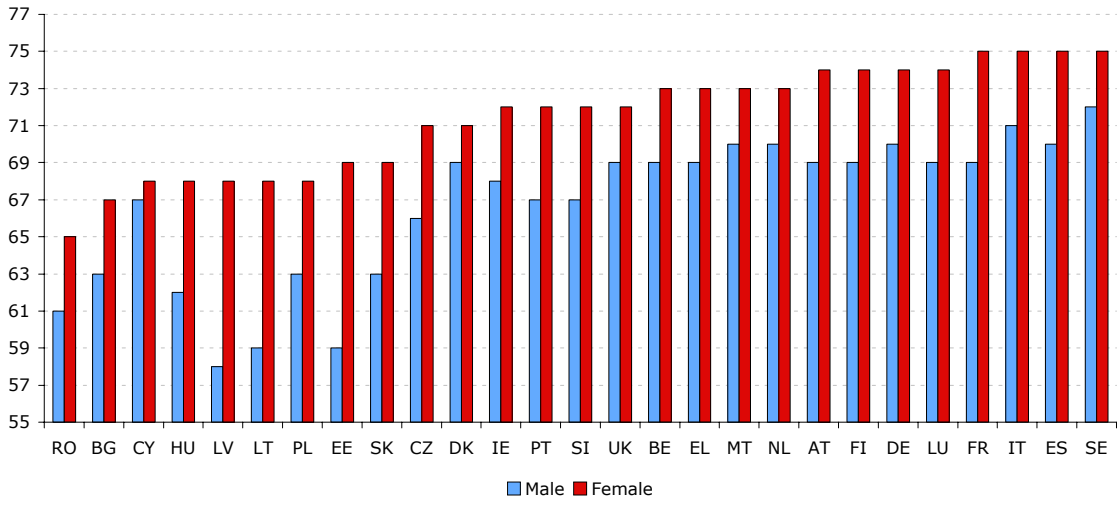
When comparing the DALE values versus the HALE the ranking of countries is relatively similar with the HALE values being slightly higher.

Figure 1.9 Disability Adjusted Life Expectancy in Europe, 2002



Source: WHO Health for All, 2009

Figure 1.10 HALE Europe 2003



Source: WHOSIS

Section 1.4 Trends In Infant Mortality Rates

Notes on the data

Definition infant mortality rates: Probability of dying between birth and exactly one year of age expressed per 1000 live births. Neonatal mortality data refers to deaths during the first 28 days of life.

Data issues: the main confusion derives from the classification of live births with some countries registering as such for babies with low odds of survival and others not including them in. In general underreporting or misclassifications are common especially at the very early stages of life.

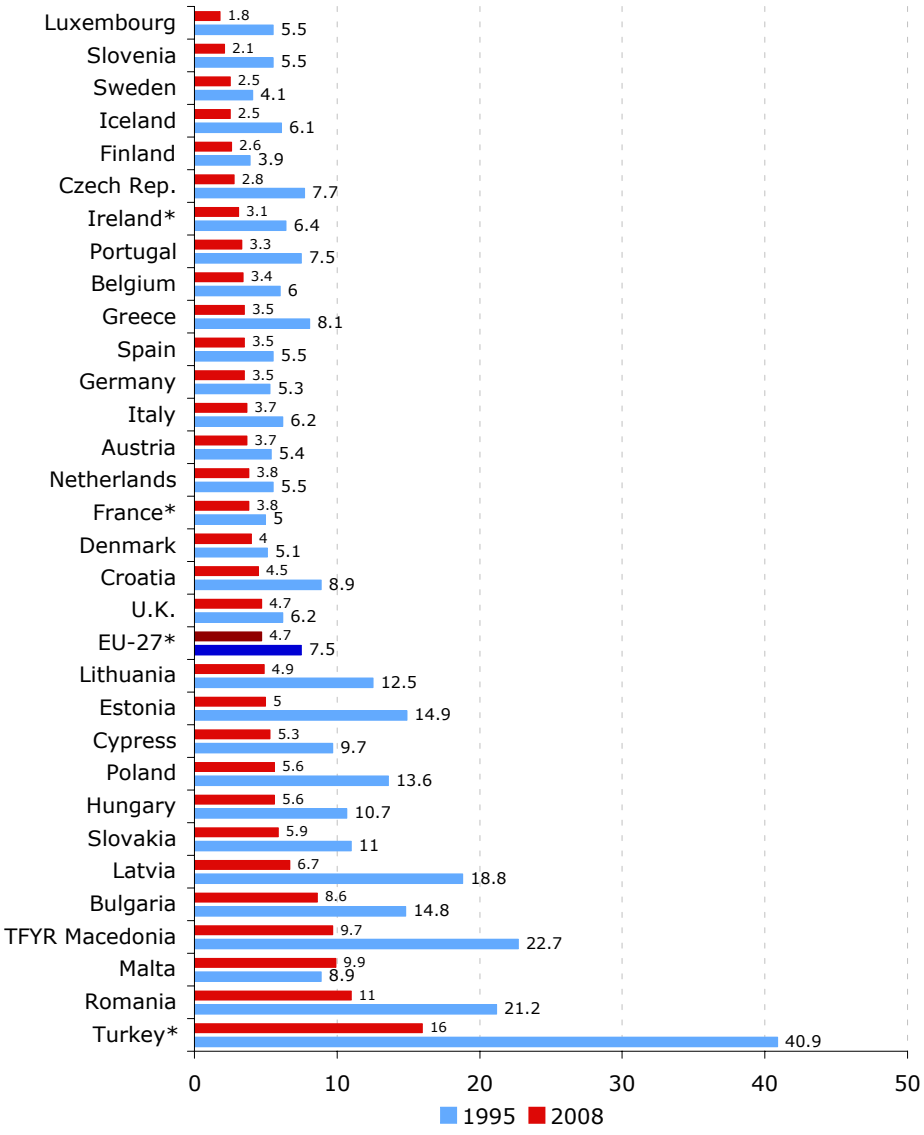
The infant mortality rate is historically one of the major population health indicators used to measure health systems performance. The increasing decline in infant mortality of the last decades has contributed to the decline of premature mortality and of all the derived indicators (E.G. DALE and PYLL). Currently as the levels of infant mortality are low, the rate of infant mortality has lost importance in measuring performances in developed countries. Levels of infant mortality in the EU are in most cases below 4 per thousand.

Despite low levels there are great variations among different wealth groups. The UK reports one of the worst levels of infant mortality in wealthy countries mainly due to deep inequalities (Collison, Dey et al. 2007). In general the burden on avoidable deaths remains with deprived communities and ethic minorities. The countries with some of the highest levels of IMR (Figure 1.11) are also the countries with the strongest improvements. Turkey dropped from 40.9 to 16 in just 13 years from 1995 to 2008 and both Macedonia and Romania‘s levels halved in the same period.

The Baltic countries show the largest fluctuations of the last three decades (Figure 1.12). Rumania and Hungary have experienced the steepest decline of the region, while Bulgaria’s decline seems to have stalled in the last decade.

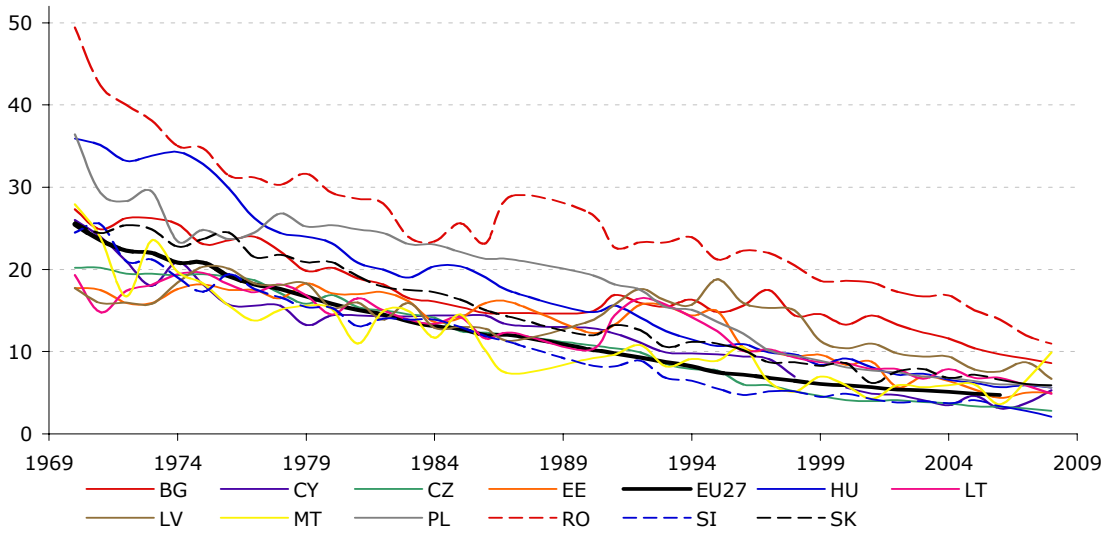
Better health care, in particular in the Czech Republic, has contributed to the steep decline in infant mortality (McKee 2004). Changes in pregnant women’s behaviour and a wider availability of modern medical technology are also likely to have contributed to the substantial declines in infant mortality observed across various CEE countries (Zatonski 2006).

Figure 1.11 Infant Mortality Rate (per 1000 live Births). EU-27 and Candidate States 1995 and 2008



Source: Eurostat
*Notes: France 1996 & 2006, Turkey 1996 & 2008, Ireland 1995 & 2007, EU-27 1995 & 2007

Figure 1.12 Infant Mortality Rate (per 1000 live Births) 1970-2008. EU-12



Source: EUROSTAT

Section 1.5 Premature and avoidable mortality

Notes on the data

Definition: Premature mortality is defined as deaths occurring before the age of 75. The premature mortality rate is the number of deaths/100,000 persons usually standardized by age.

Avoidable mortality is defined as deaths that should not occur in presence of effective and timely health care

Potential years of life lost (PYLL) is a summary measure of premature mortality which provides an explicit way of weighting deaths occurring at younger ages, which are, a priori, preventable. The calculation of PYLL involves summing up deaths occurring at each age and multiplying this with the number of remaining years to live up to a selected age limit.

Data issues: classification and registration of deaths remains the most cumbersome task. Avoidable mortality remains one of the most difficult concepts to establish.

Premature mortality is measured in terms of potential years of life lost (PYLL) which focuses on the mortality of younger age groups. PYLL has been cut by half in the last three decades mainly due to improvements in infant mortality. In recent years the decline was mainly due to the decline of deaths due to cardiovascular diseases. Among the countries reported in Figure 1.13 and 1.14 Hungary, Poland and the Slovak Republic report the highest values of the PYLL with the slowest declines in the period considered. This is most likely due to the persistent high levels in cardiovascular diseases.

The main causes of potential years of life lost before age 70, according to OECD data, among men are external causes including accidents and violence (29%), followed by cancer (21%) and circulatory diseases (18%). For women, the principal causes are cancer (31%), external causes (17%), and circulatory diseases (13%) (OECD 2007).

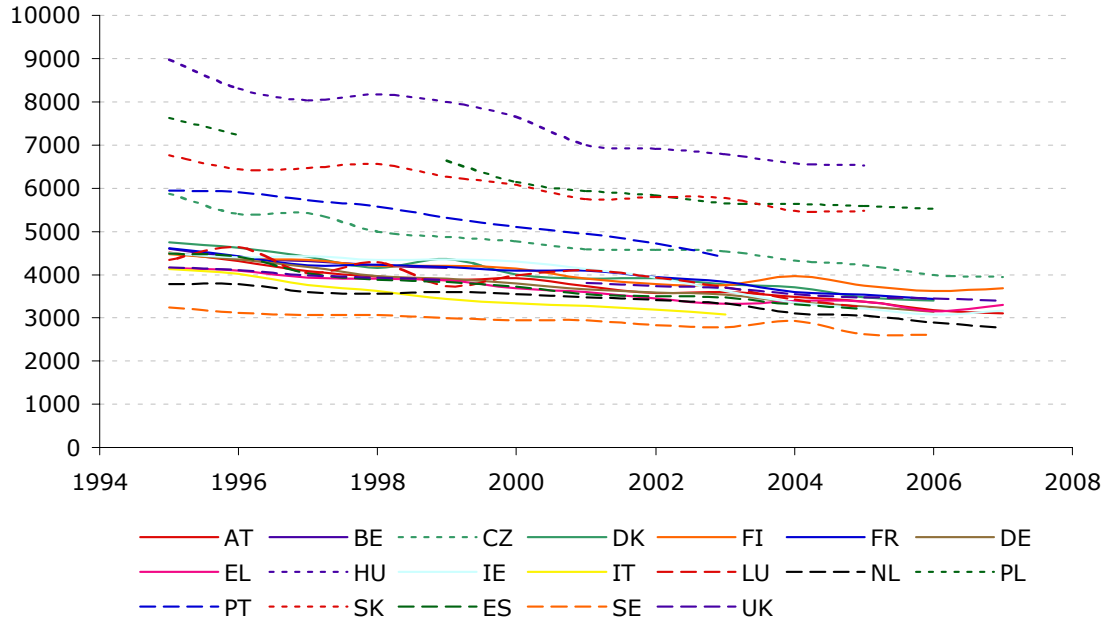
Avoidable mortality is often used as a population health indicator of health systems performance and as a measure of quality of health care service delivery. The indicator can be further divided into treatable and preventable deaths.

Despite EUROSTAT collecting detailed information on causes of death for European countries since 1994, the data are not detailed enough to calculate avoidable mortality. We rely in this report on the work done by Nolte and McKee in 2008 (Figure 1.14) which includes deaths up to the age of 75 only. The "AMIEHS" project - Avoidable mortality in the European Union: towards better indicators for the effectiveness of health systems- is currently working on this and will be able to standardise and compile comparative data across Europe. Findings from this project will allow us to get a more information on the trends.

SDRs due to amenable mortality are the highest in Ireland, Portugal, Finland and the UK. In 2002-03 amenable mortality had fallen in all countries by more than 10% although at differences paces. Only Sweden and Denmark showed a decline of less than 10% possibly due to the fact that they started from a lower level. However, the introduction of ICD-10 was done during the period of observation which could have potentially led to an overestimation of the declines (Nolte and McKee 2008). All countries show a higher amenable mortality for men than for women with Portugal and Ireland having the widest gap. The gaps seem to close in the 2002-03 period.

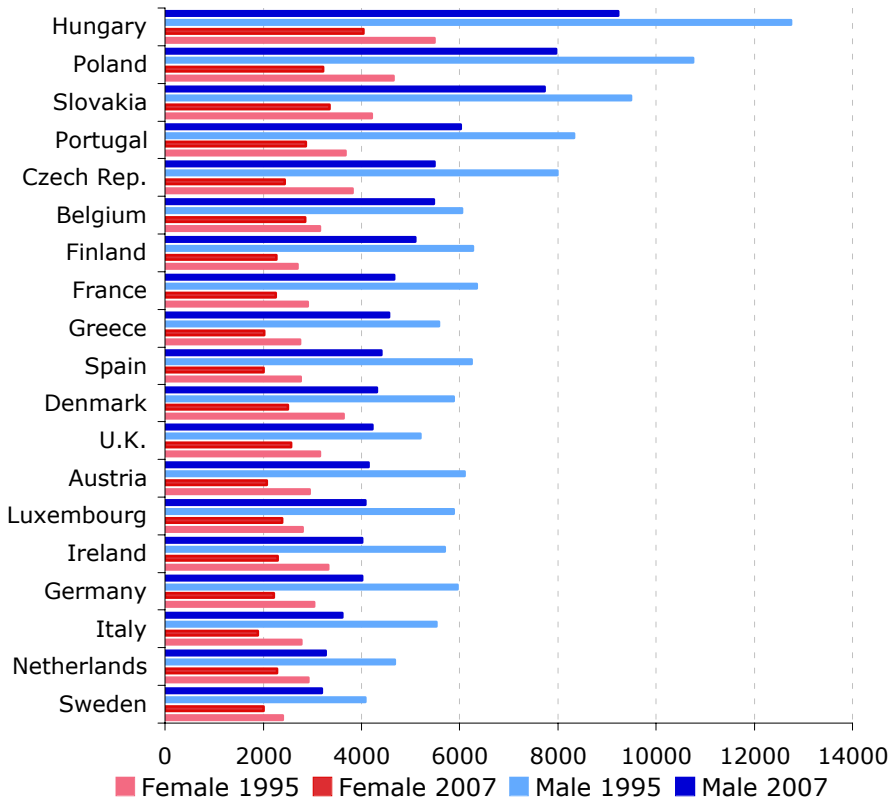
All data on premature and avoidable deaths must be interpreted with care as they are based on judgment when classified. The classification of a death as amenable is based on the judgment of whether it is reasonable to expect a condition to develop given a certain standard of care. It is therefore recommended to make careful considerations about the relationship between this indicator and health systems performance.

Figure 1.13 Potential Years Life Lost (All Causes per 100000 pop.). OECD EU States 1995-2007



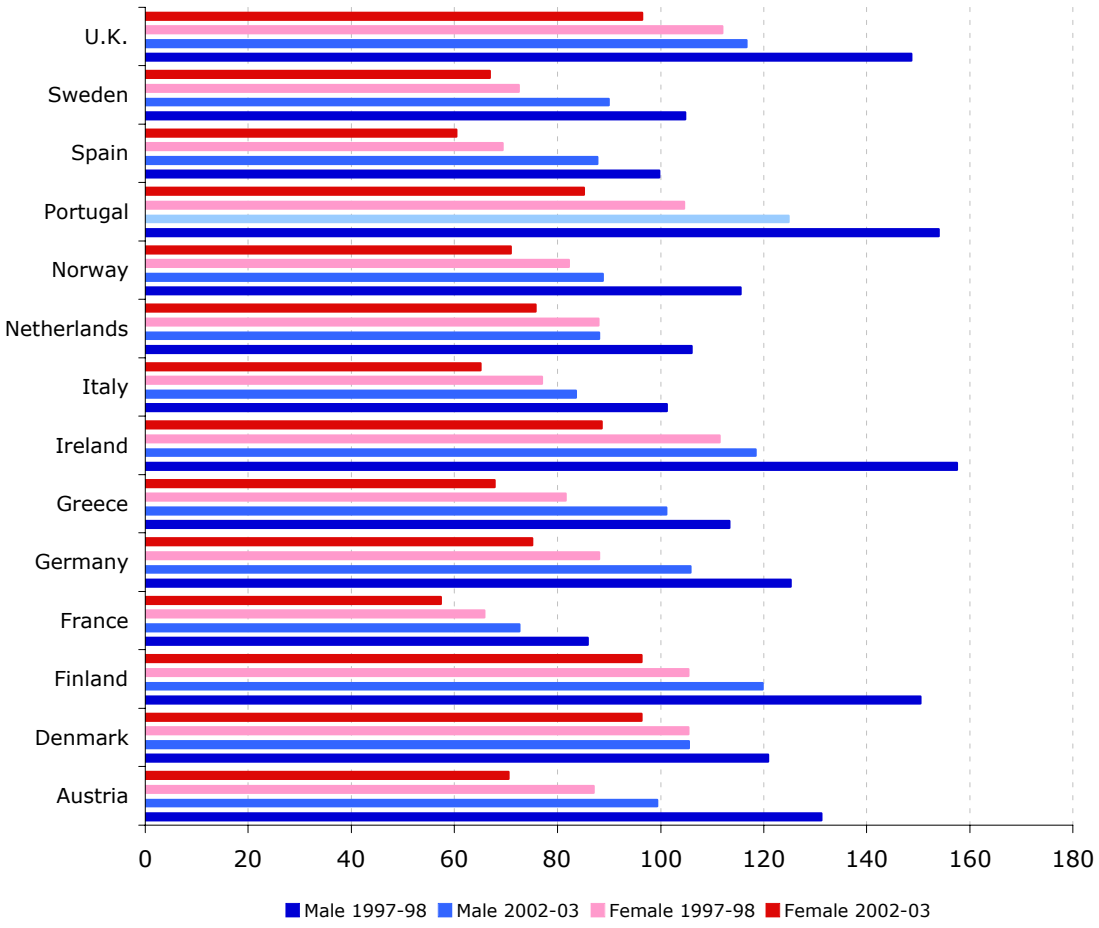
Source: OECD health data 2009

Figure 1.14 PYLL (per100000) by Gender. OECD EU States 1995 & 2007



Source: OECD health data 2009

Figure 1.15 Age Standardised Death rates (per 100000) from amenable mortality in selected EU countries 1997-8, 2002-03



Note: Data for Sweden 2001-01, Denmark 2000-02, Italy 2002
Source: Data taken from Nolte and McKee, 2008

Section 1.6 Self-Reported Health

Notes on the data

*Definition Self reported health: WHO data m*easured by means of health interview survey using representative population sample. Percent of interviewed persons aged 15+ who assessed own health as "good" or "very good". Eurostat health collected though Health Interview Surveys refers to the auto-evaluation of the general health status by respondents using a scale from "very good" to "very bad".

Data issues self reported health: there is generally a lack of reliability for comparable data on self-reported health. Within countries there are large variations in the quality of reporting both by social class and ethnic groups.

Self reported health is one of the most commonly used measures of health recommended both by the WHO and the European Commission as it is cheaper and could be a better predictor of mortality than medical data. However self-reported health is not only a function of actual health status, but also of individuals' or population groups' perceptions of health.

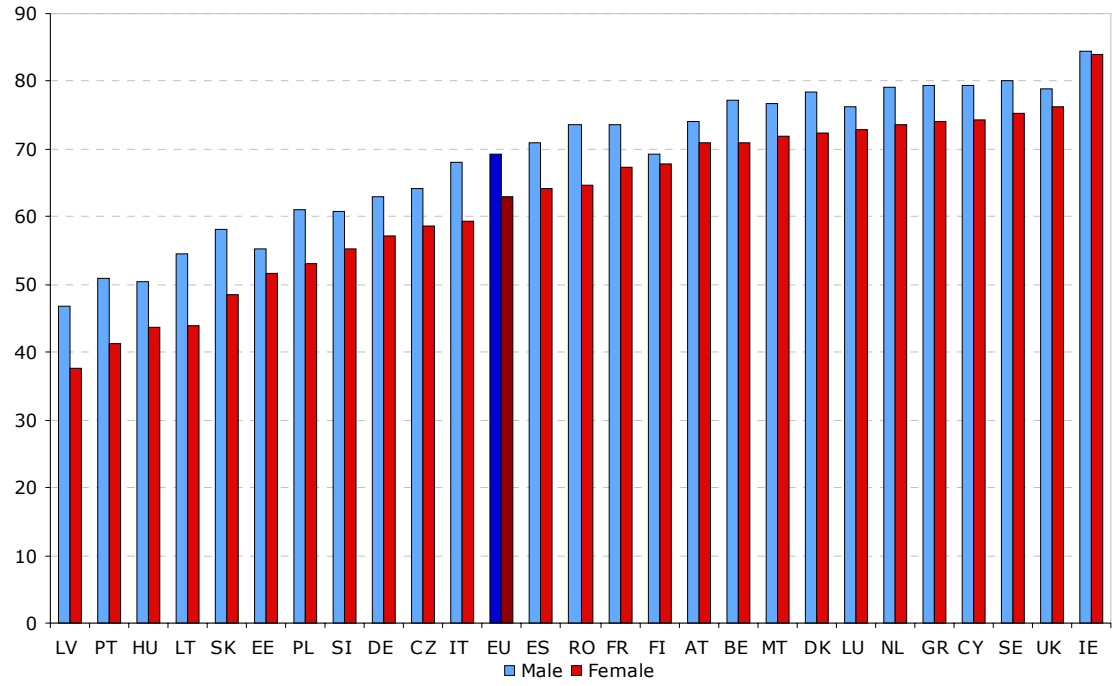
Self-reported data (Figures 1.16 and 1.17) show considerable variations across countries with Ireland leading with the highest percentage of people reporting themselves in good health (84.4% men and 83.9% women), versus Latvia at the other end of the scale with half less than half of the population (44.2%) defining themselves in good health.

With the exception of Ireland all countries report a high gap in the percentage of men reporting good health compared to women. The widest gaps are in Slovakia and Portugal and Latvia. The gaps between the highest and the lowest values seem to be greatest in the good health.

A similar picture is reflected in the percentage of people reporting bad health (Figure 1.17): Ireland has the lowest (2.5%) and Hungary (21.7%) has the highest number of those reporting bad health.

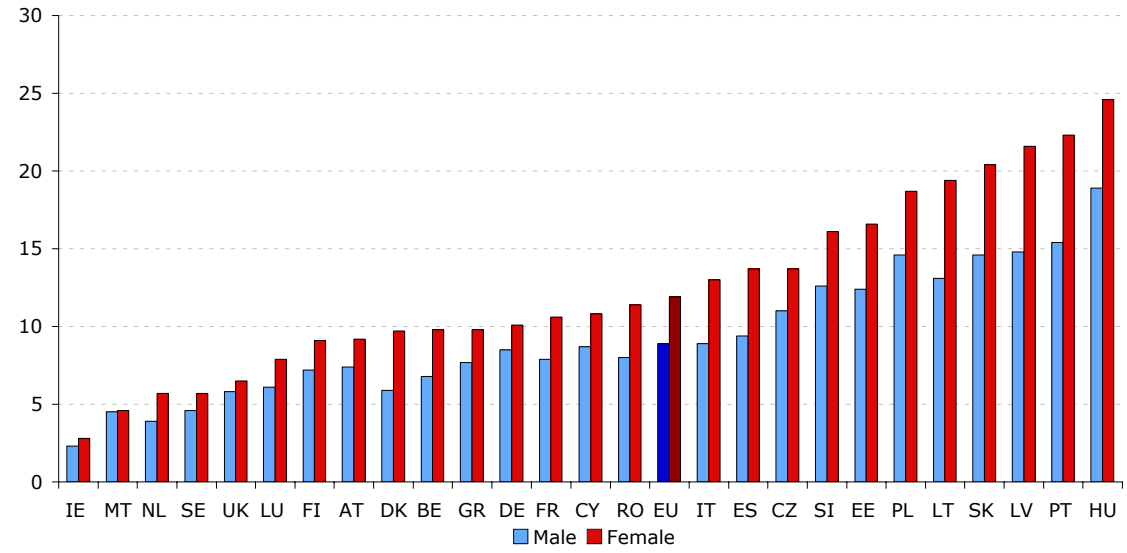
These statistics might be spurious and may reflect only in part the differences in true health, with a considerable proportion of the differences due to cultural and socio-economics factors. Therefore they might not correlate strongly to objective measures of health such as life expectancy and only part of the variation might be due to health factors. Despite the use of comparative data it is important to account for within and across countries variations (Jurges 2007).

Figure 1.16 Percentage self reporting health as "good" or "very good", 2007



Source: Eurostat

Figure 1.17 Percentage self reporting health as "bad" or "very bad". 2007



Source: Eurostat

Section 1.7 Trends in heart disease and stroke

Notes on the data

Definition Age-standardised death rate (SDR) or age-standardised mortality rate (SMR) is calculated using the direct method, i.e. represents what the crude rate would have been if the population had the same age distribution as the standard European population.

Data issues on mortality: WHO has identified possible weaknesses of mortality statistics in three main areas: "completeness", or the proportion of deaths that is registered for the population covered by the vital registration system; coverage of the population by death registration data; and quality of the information on causes of death. A study has found that in the WHO European region, the main weakness of mortality data relates to its quality (Mathers 2005). Among EU Member States, Greece and Portugal were found to have low quality data, and Austria, Belgium, Denmark, France and Germany were found to have only medium quality data. Problems with the data relate mainly to the use misuse of ICD (International statistical classification of diseases and related health problems) codes, specifically to the use of "garbage codes", or codes which do not properly define the underlying cause of death. Reliable coding needs high autopsy rates and good medical record keeping. International differences may be based on different methodologies

Data issues on heart disease and stroke data: The use of "garbage codes" negatively affects data on cardiovascular diseases (Mathers et al 2005). Sudden cardiac death, heart failure or unknown deaths are often caused by underlying ischaemic processes, but may not be coded as such. For example, comparisons

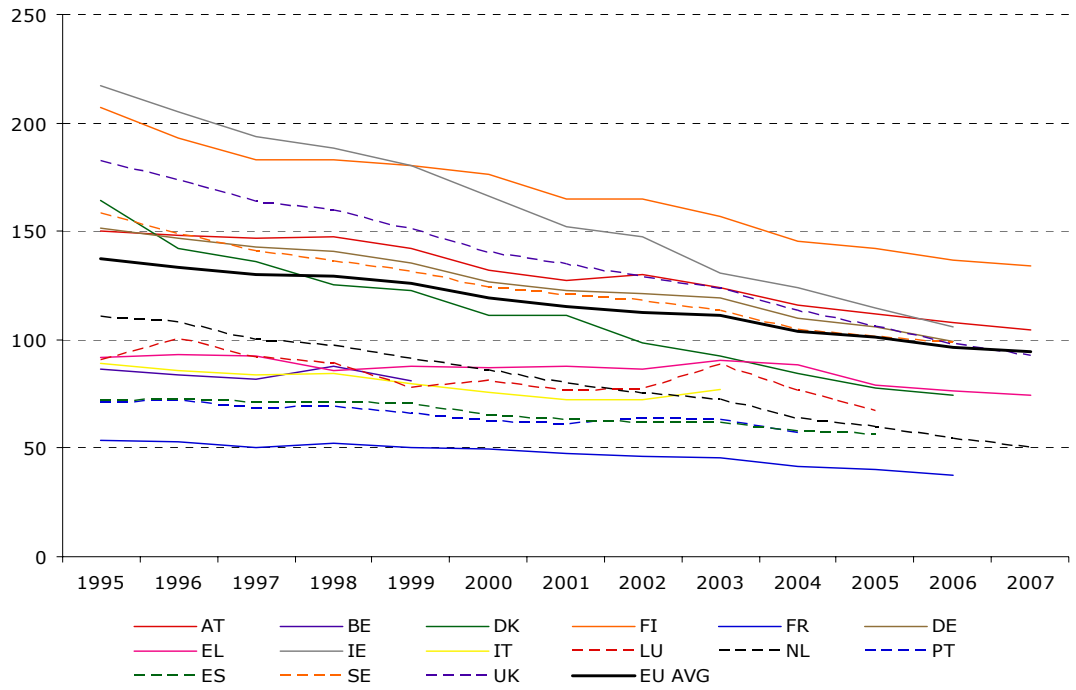
with circulatory diseases suggest that the lower IHD mortality in Poland might be spurious, caused by such methodological coding differences (Eurostat 2009).

The greatest burden of disease in the EU is from noncommunicable, or chronic, diseases. The most important of these are diseases of the circulatory system or cardiovascular diseases (CVD). They account for 42 percent of all deaths in the total. Deaths from ischaemic heart diseases (IHD) make up 37 percent of all deaths from CVD and deaths from cerebrovascular diseases another 26 percent (Eurostat 2009).

Standardized death rates for heart disease have fallen, in some cases steeply, in the last 20 years in western Europe (Figure 1.18), both in the north and south, for men and for women. The EU average fell from 137.21 per 100,000 inhabitants in 1995 to 94.73 in 2007. These favourable trends have been caused by falling rates in the population of high blood pressure, cholesterol and smoking, which countries achieved by implementing public health programmes and improving diagnosis, prevention and treatment of risk factors at the health service level.

Southern European countries such as Italy and France have reported relatively low age standardized death rates from ischaemic heart disease for the last 20 years when compared to the rest of Europe. The North-South gradient in myocardial infarction and coronary death rates in western European regions was described by the WHO MONICA Project in the 1990s and has been attributed in part to the Mediterranean diet.

Figure 1.18 Standardized death rates from ischaemic heart disease, all age, per 100 000, EU-15



NOTE: Italy was missing data from 2004 and 2005. For all countries were 2007 data was not available the most recent year is displayed.

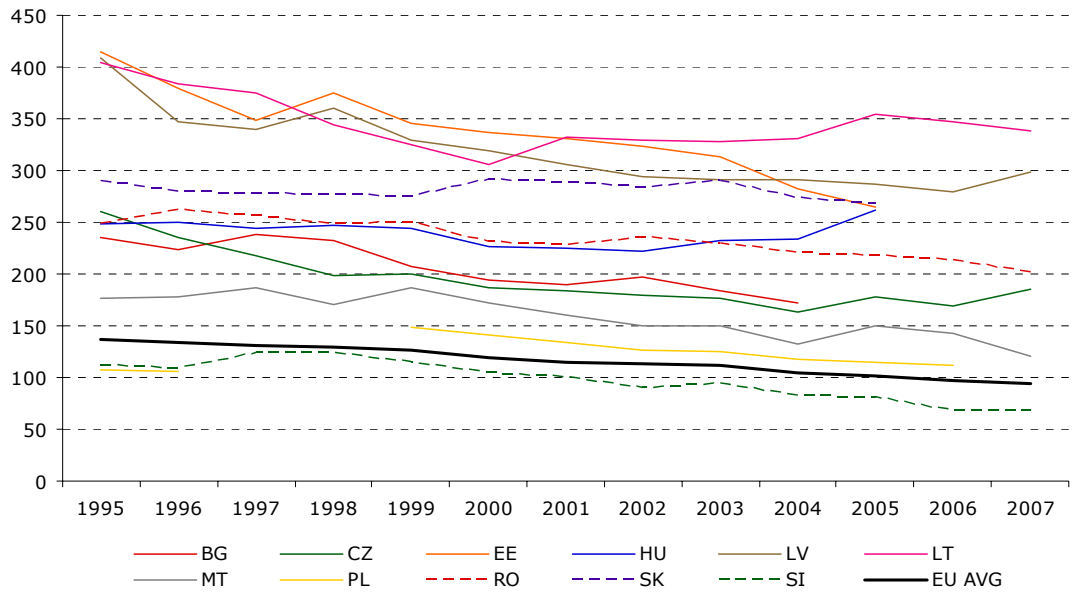
SOURCE: WHO Health for All, 2009

CVD has been frequently highlighted as playing an important role in the rise and subsequent decline of adult mortality in the countries of CEE (McKee & Shkolnikov, 2001; Meslé, 2002). Indeed, the main contributors to differences in health indicators between east and west Europe are CVD and injuries for people below age 60 (Powles, Zatonski, Hoorn, & Ezzati, 2005). Mortality rates from IHD are higher than the EU average in all EU12 Member States for which data is available other than Slovenia (Figure 1.19). While IHD mortality has modestly decreased in most CEE Members States due to improvements in nutrition and health services, Hungary is notable for the increasing rate, from 248.74 per 100,000 inhabitants in 1995 to 261.33 in 2005.

In the countries of the Former Soviet Union such as the Baltic countries, the risk of death for IHD and diseases of the circulatory system increased sharply for men and women at the beginning of the 1990s, immediately after the fall of the Communist system, and started increasing again in the middle late 1990s; but large differences are still present between the East and the West. Indeed, the country with the highest rate of IHD mortality in the EU is Lithuania with 338.16 deaths per 100,000 inhabitants in 2007, almost ten times higher than in France (37.31 per 100,000 inhabitants in 2006). Traditional risk factors such as smoking, diets rich in saturated fats and low in antioxidants, in addition to alcohol (specifically binge drinking) and psychosocial factors, are thought to largely account for the elevated levels in CVD in the East compared to the West (Bobak, Skodova, Pisa et al., 1997; Britton & McKee, 2000; Pomerleau, McKee, Kadziauskiene, Abaravicius, & Vaask, 2001).

There is an enormous gender gap in age standardized death rates from IHD, with the rate being around twice as high among men as it is among women in most EU Member States (Figure 1.20).

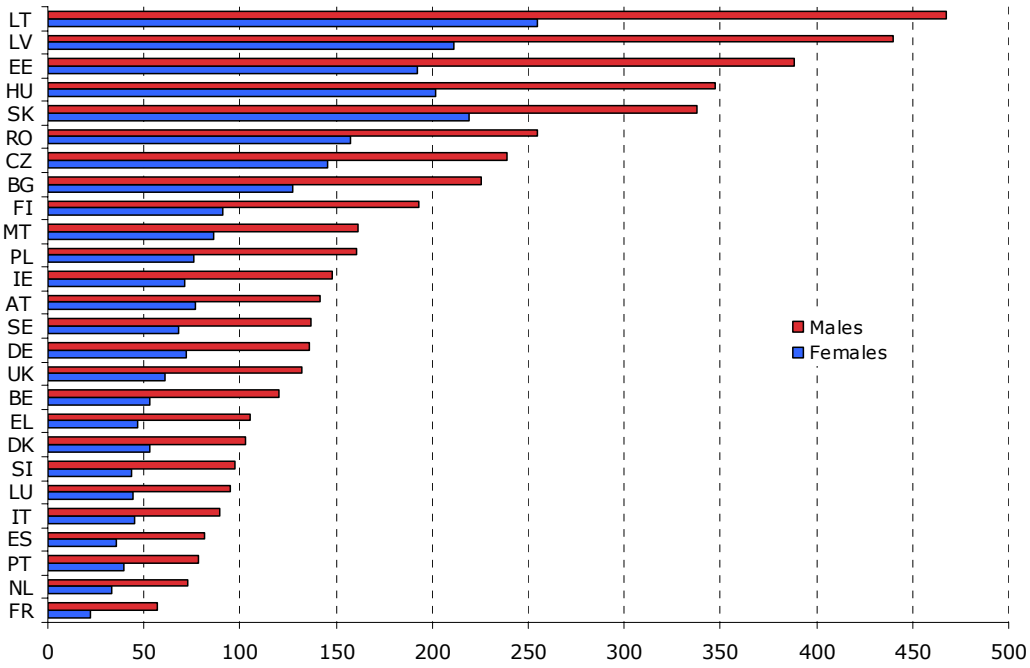
Figure 1.19 Standardized death rates from ischaemic heart disease, all ages, per 100 000 population, EU-12



NOTE: Cyprus was excluded because of lacking data. Poland missing data from 1997 and 1998. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

Figure 1.20 Standardized death rates due to ischaemic heart disease in 2007 or the mostly recently available year in the EU-27, per 100 000 population

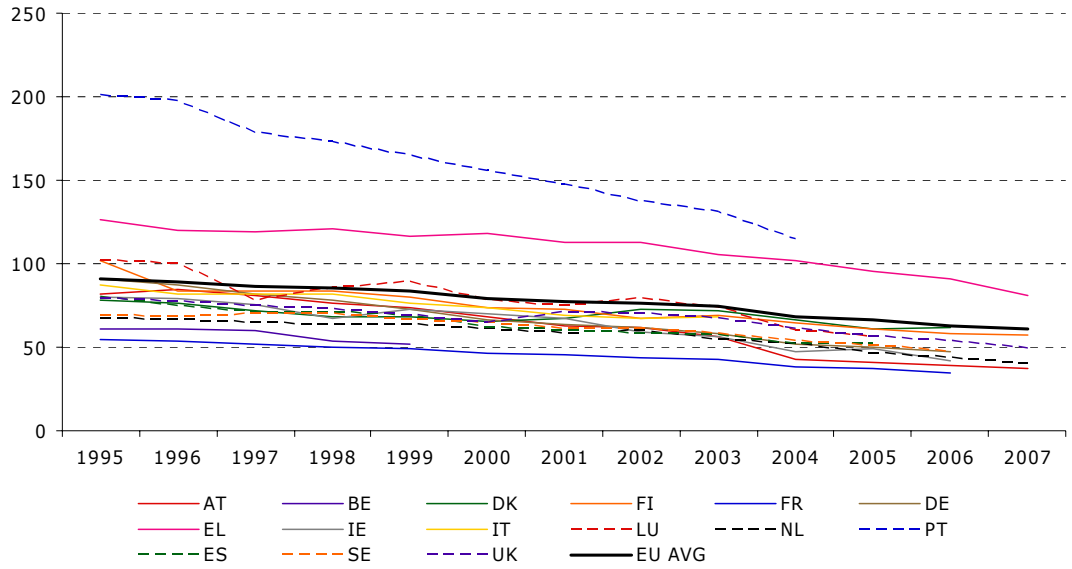


NOTE: Cyprus was excluded because of lacking data. For the following countries the most recent data was available from the listed year: Belgium 1999, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2005, Portugal 2004, Spain 2005, Sweden 2006, Bulgaria 2004, Estonia 2005, Hungary 2005, Poland 2006, Slovakia 2005.

SOURCE: WHO, Health for All, 2009

Death from stroke is the third large cause of death in the EU (after IHD and cancer) (Eurostat 2009). In the EU15 the distribution of the burden of stroke differs from that of IHD since some southern European countries such as Portugal and Greece have relatively high (but rapidly declining) mortality rates (Figure 1.21). A study of regional variation in cardiovascular mortality in Europe observed the importance of within-country variation. There appears to be an area of reduced stroke mortality in the centre of Western Europe including countries such as France, the Netherlands or the northern regions of Italy and Spain. Countries with higher mortality rates, such as the Central and East European countries as well as some Mediterranean countries including Greece, Portugal, and certain regions in Southern Spain and Italy, surround this circle (Müller-Nordhorn 2008). Among EU12 countries, Romania and Latvia had the highest mortality from cerebrovascular disease in 2007 (209.07 and 179.32 per 100,000 inhabitants respectively). This is more than three times the EU average which was 60.6.

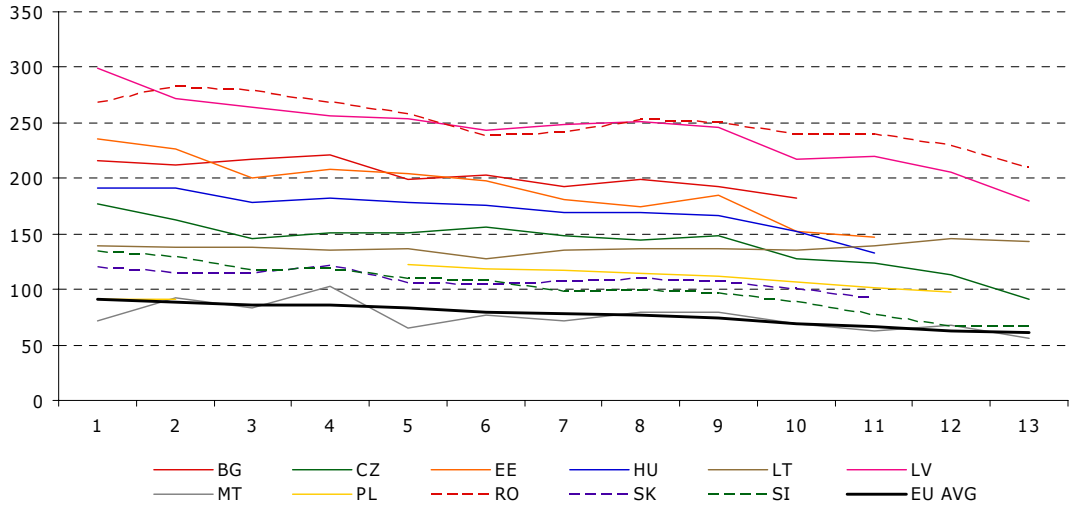
Figure 1.21 Standardized death rates due to cerebrovascular diseases, all ages, per 100 000 population, EU-15



NOTE: There was no data for Belgium after 1999. The following countries had data missing and the listed year was the most recent available data: Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2005, Portugal 2004, Spain 2005, Sweden 2006. Italy was missing data from 2004 and 2005.

SOURCE: WHO Health for All, 2009

Figure 1.22 Standardized death rates due to cerebrovascular diseases, all ages, per 100 000 population, EU-12



NOTE: Cyprus was excluded because of lacking data. The following countries had data missing and the listed year was the most recent available data: Bulgaria 2004, Hungary 2005, Poland 2006, Slovakia 2005. Poland was missing data from 1997 and 1998.

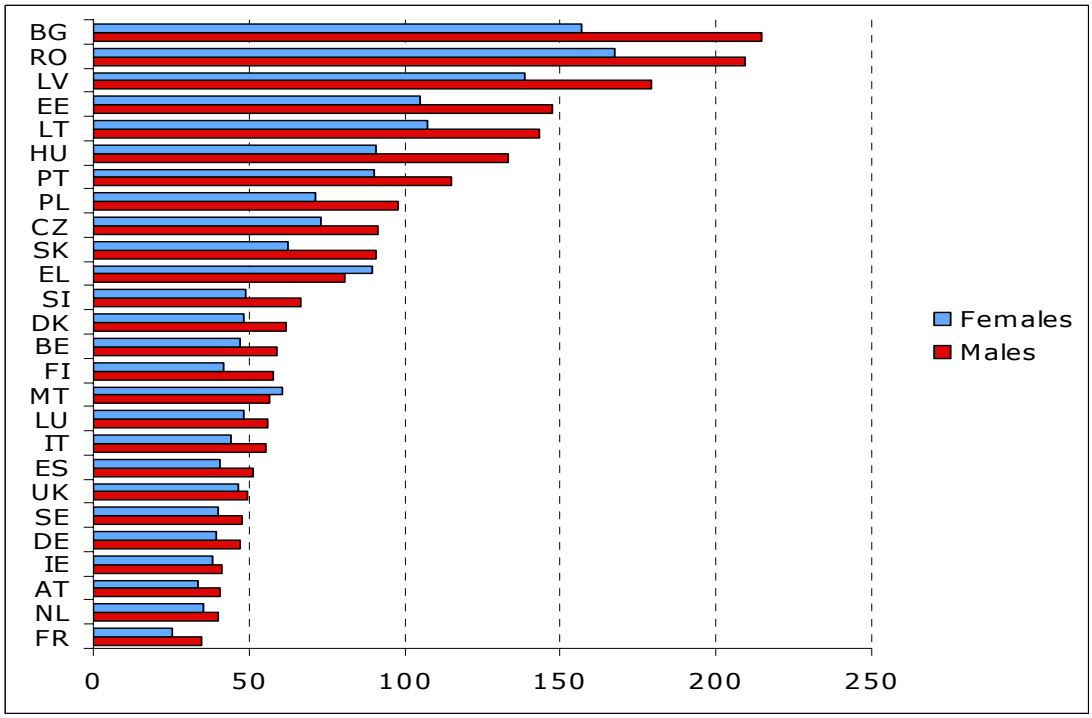
SOURCE: WHO Health for All, 2009

As with IHD men generally have higher death rates than women for stroke

(Figure 1.23). However, the differences are smaller than in IHD and in some countries (Greece and Malta) the trend is reversed, with women displaying higher rates than men.

Risk factors for stroke are similar to those for IHD. Modifiable risk factors include hypertension, smoking, diabetes, atrial fibrillation and certain other cardiac conditions, dyslipidemia, carotid artery stenosis, poor diet, physical inactivity and obesity and alcohol abuse (Eurostat 2009).

Figure 1.23 Standardized death rates due to cerebrovascular diseases in the EU, all ages, per 100 000 population, for 2007 or the most recently available year



NOTE: Cyprus was excluded because of lacking data. There was no data for Belgium after 1999. The following countries had data missing and the listed year was the most recent available data: Bulgaria 2004, Denmark 2006, France 2006, Germany 2006, Hungary 2005, Ireland 2006, Italy 2006, Luxembourg 2005, Poland 2006, Portugal 2004, Slovakia 2005, Spain 2005, Sweden 2006.

SOURCE: WHO Health for All, 2009

Section 1.8 Trends in cancer

Notes on the data

Definition Incidence rate: is the number of newly diagnosed cases of a disease during a given calendar year. Age-standardised incidence rate represents what the crude rate would have been if the population had the same age distribution as the standard European population. For a definition of mortality rates see above.

Data issues: For cancer incidence, usually data sources are national cancer registers or the existing routine reporting system of health establishments. In the latter case, data are expected to be less accurate than register data. For some countries such as Italy, no national data exists and incidence is estimated from

local registry data. Details of data sources for all countries can be found in the WHO HFA database.

Cancer mortality data may be compromised by the use of "garbage codes", with deaths being coded to categories for secondary or unspecified sites (Mathers et al 2005).

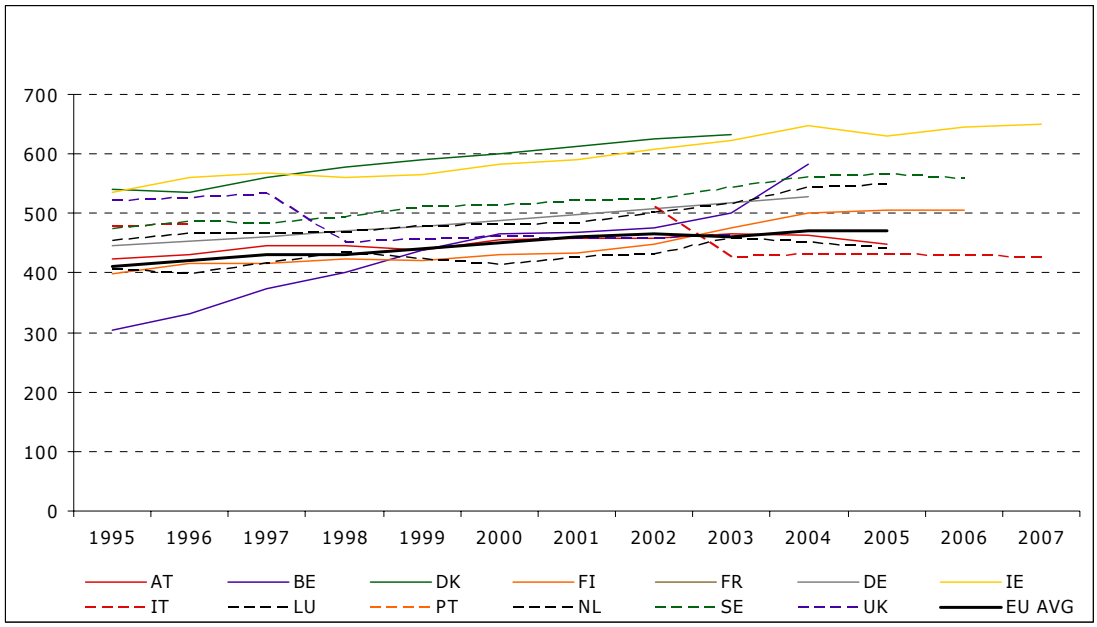
For notes on mortality data please see section 1.7

There were over 2 million (2,288,100) incident cases of cancer and over one million cancer deaths (1,165,500) in 2006 recorded in the 25 Member States of the EU (Ferlay, Autier et al. 2007). The causes of cancer are varied and include smoking, obesity, having fewer children (in women), and genetic factors.

There are large variations in rates of cancer across Europe (Figures 1.24 and 1.25). In general, incidence is lower in the EU12 Member States than in the EU15, although there are exceptions, notably Hungary where cancer incidence was 778.75 per 100,000 inhabitants in 2007, the highest in the EU. The lowest rates of cancer incidence are found in Romania, with 258.94 per 100,000 inhabitants in 2006.

The most common forms of cancer (in terms of incidence) in the EU25 in 2006 were breast cancer (319,900 cases, 14% of all cases), prostate (301,500, 13.2%), colorectal (297,200, 13%) and lung cancer (265,600, 11.6%) (Ferlay, Autier et al. 2007). In general cancer incidence is higher among men than women, although in certain countries the trend is reversed (Denmark and Ireland) (Figure 1.26).

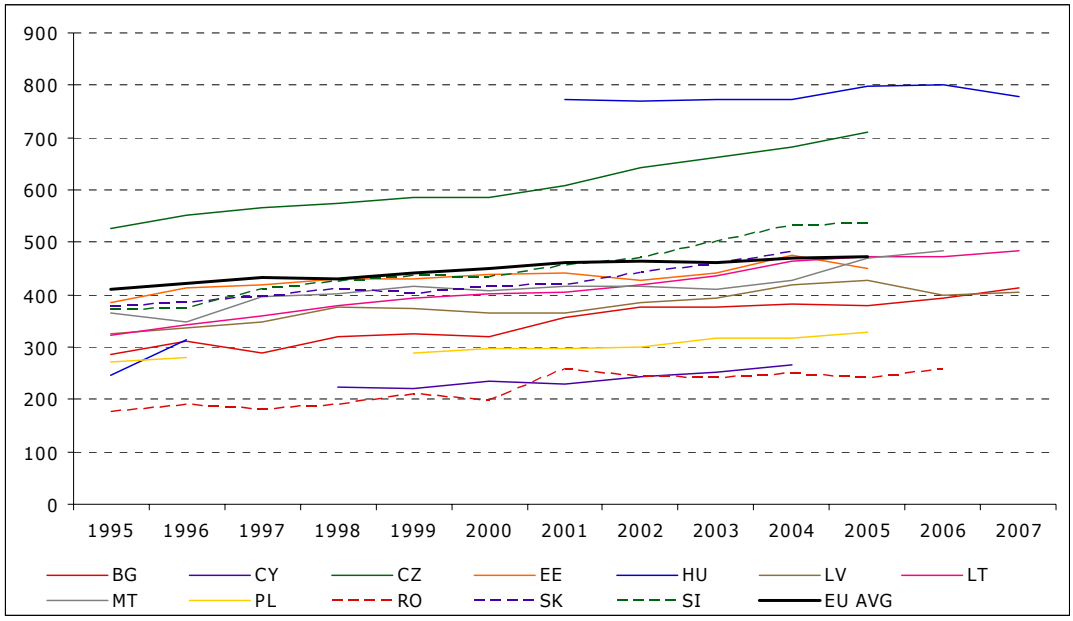
Figure 1.24 Cancer incidence per 100 000 population, EU-15



NOTE: The following countries were excluded because of lacking data: Greece and Spain. France only had data for 1995 and 2000. Portugal only had data for 2000. Italy is missing data from 1997 to 2001;

SOURCE: WHO Health for All, 2009

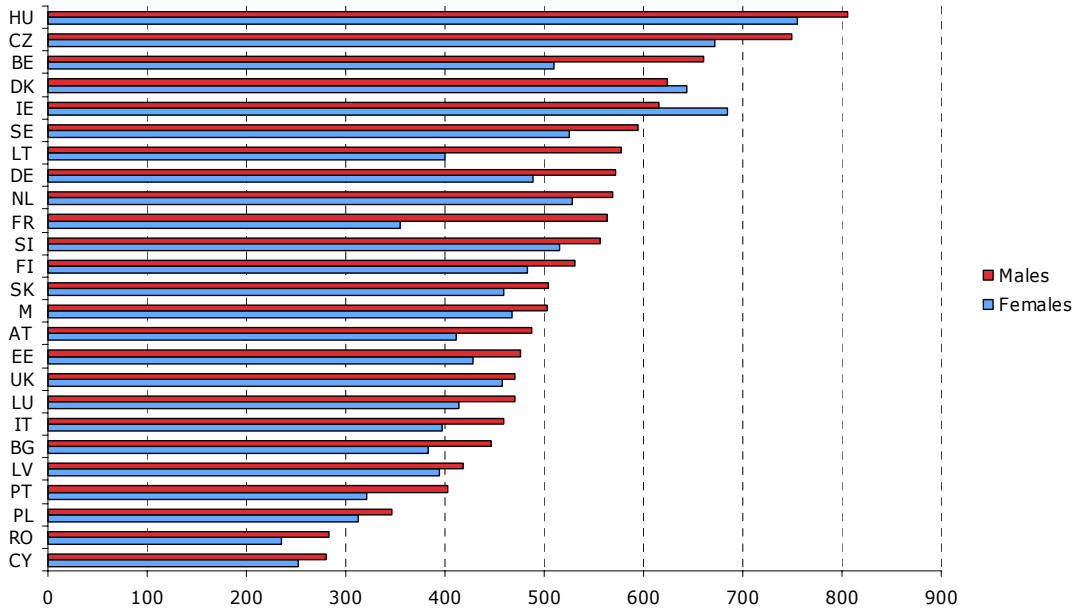
Figure 1.25 Cancer incidence per 100 000 population, EU-12



NOTE: Hungary is missing data from 1997 to 2000

SOURCE: WHO Health for All, 2009

Figure 1.26 Cancer incidence in 2007 or the most recently available year in the EU-27, per 100 000 population

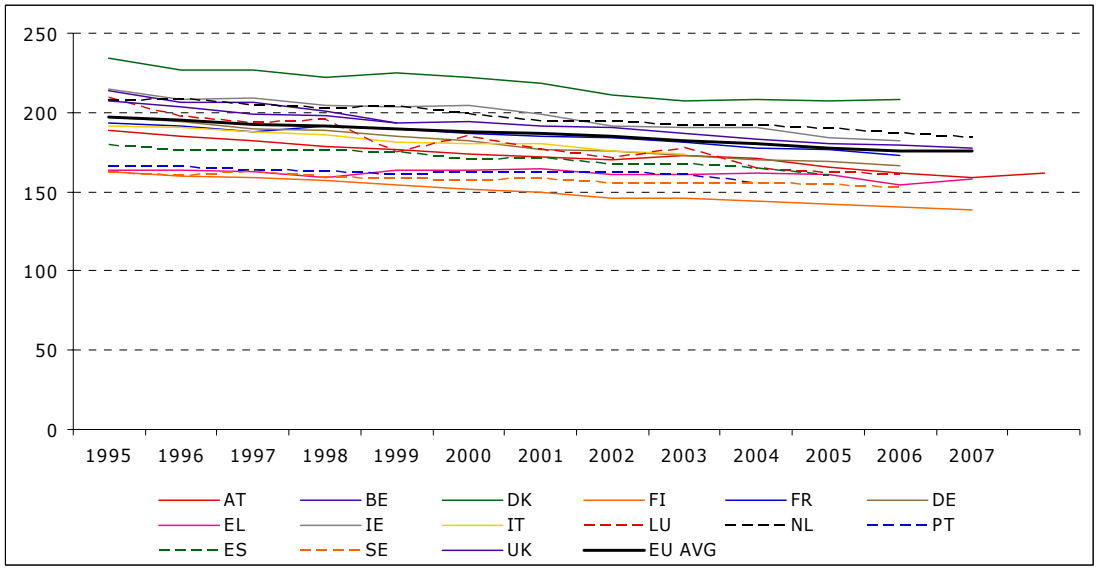


NOTE: The following countries were excluded because of lacking data: Greece and Spain. For the following countries the most recent data was available from the listed year: Austria 2006, Belgium 2005, Denmark 2003, Finland 2006, France 2000, Germany 2004, Luxembourg 2005, Netherlands 2005, Sweden 2006, UK 2003, Cyprus 2004, Czech Republic 2005, Estonia 2005, Malta 2006, Poland 2005, Portugal 2000, Romania 2006, Slovakia 2004, Slovenia 2005. Cyprus has no data for 1995

SOURCE: WHO Heath for All, 2009

Cancer is the second most important cause of death in the EU, after cardiovascular diseases. However, age standardised cancer mortality decreased in the EU27 between 1995 and 2007 (Figure 1.27). Hungary has the highest rate of age-standardised cancer mortality in the EU, at 237.44 deaths per 100,000 inhabitants (Figure 1.27). Scandinavian countries appear to have relatively low rates of cancer mortality (Finland 138.27 per 100,000 inhabitants and Sweden 152.33) (Figure 1.28). There are significantly higher rates of cancer among men than women in almost all countries (Figure 1.29), although the increase in deaths due to lung cancer among women is leading to a narrowing of the gender gap.

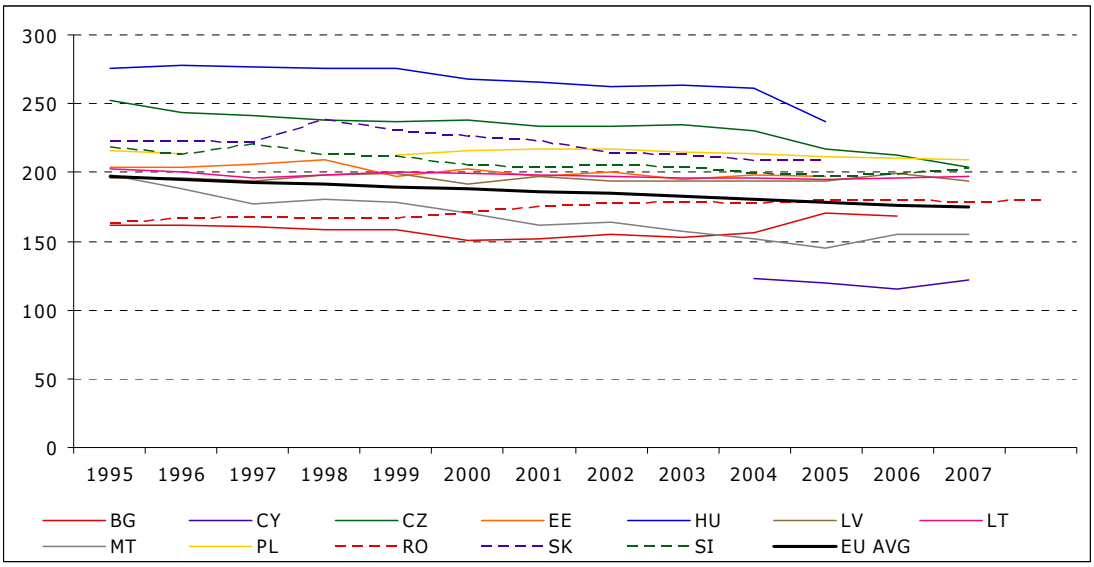
Figure 1.27 Standardized death rates due to malginant neoplasms, all ages, EU-15, per 100 000 population



NOTE: Italy was missing data from 2004 and 2005; Belgium missing data from 2000 to 2003. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

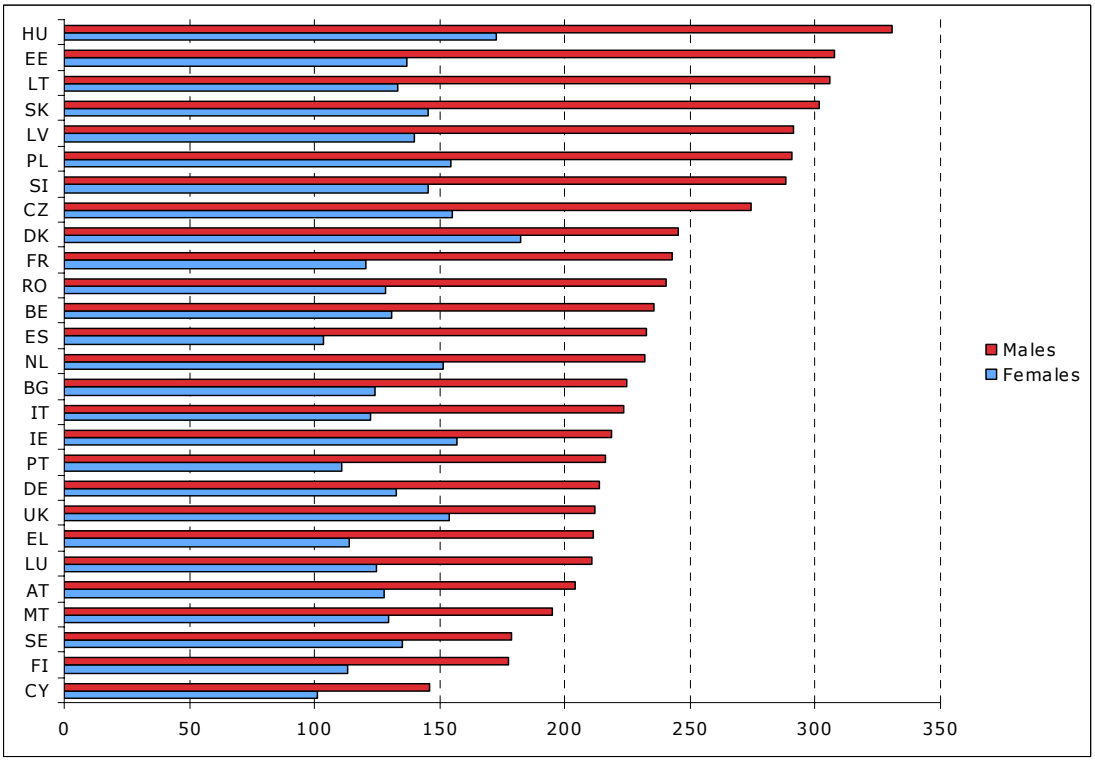
Figure 1.28 Standardized death rates due to malignant neoplasms, all ages, EU-15, per 100 000 population



NOTE: Poland is missing data from 1997 and 1998. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

Figure 1.29 Standardized death rates due to malignant neoplasms in 2007 or the most recently available year in the EU-27, per 100 000 population



NOTE: No data for Cyprus for 1995. For the following countries the most recent data was available from the listed year: Belgium 2004, Bulgaria 2006, Denmark 2006, Estonia 2005, France 2006, Germany 2006, Hungary 2005, Ireland 2006, Italy 2006, Luxembourg 2006, Portugal 2004, Slovakia 2005, Spain 2005, Sweden 2006.

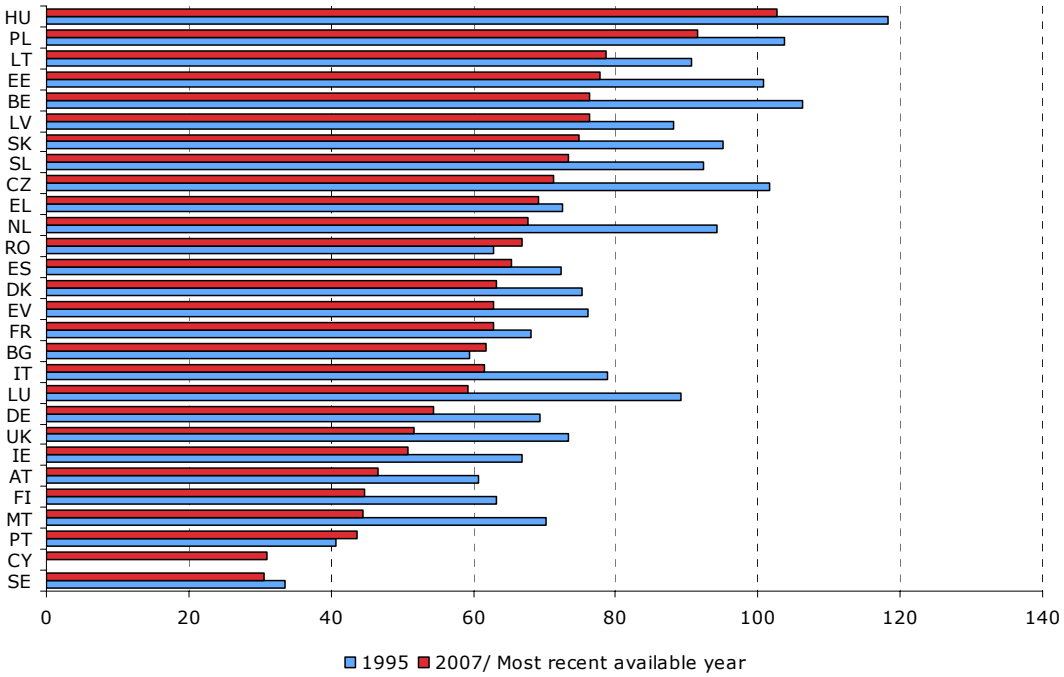
SOURCE: WHO Health for All, 2009

Lung cancer is by far the most important cause of cancer mortality, accounting for 20.2% (236,000) of cancer deaths in 2006. Lung cancer was also the most common form of cancer death (171,900, 26.3%) among men. Among women breast cancer was the leading cause of cancer mortality in the EU in 2006 (85 300, 16.7% of total) (Ferlay, Autier et al. 2007).

Age standardized death rates for lung cancer among men have been steadily decreasing in most western European countries over the last 20 years, except in Portugal where they rose slightly during this period (Figure 1.30). New Member States except for Romania have also experienced overall decreases in male lung cancer deaths.

Unfortunately, mortality for lung cancer among women is increasing almost everywhere, except for Ireland where the rate decreased very slightly (Figure 1.31). The leading contributors of lung cancer are the number of cigarettes smoked per day, the degree of inhalation and the initial age of smoking (Didkowska, Manczuk, McNeil et al., 2005; Tyczynski, Bray, & Parkin, 2002). The relative risk of developing lung cancer is 20-30 times higher for smokers than for non-smokers.

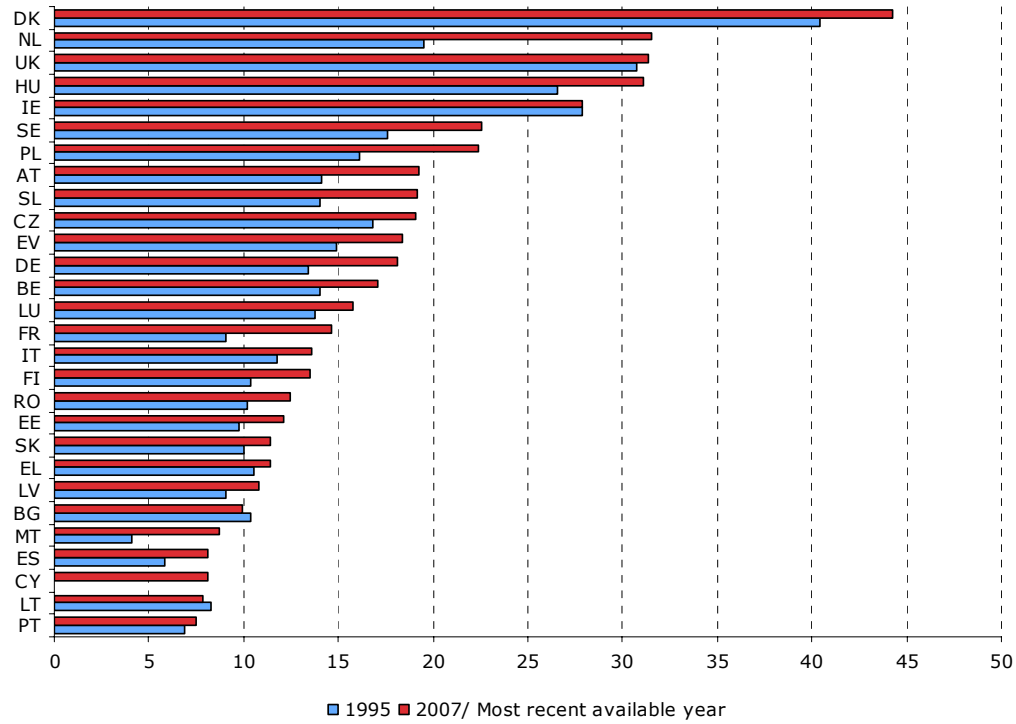
Figure 1.30 Standardized death rates due to trachea, bronchus and lung cancer among males per 100 000 population, EU-27, 1995 and 2007 or the most recent available year



NOTE: for the following countries no data was available for 2007 and the most recent available year was used: Belgium 2004, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2006, Spain 2005, Sweden 2006, Bulgaria 2006, Estonia 2005, Hungary 2005, Slovakia 2005. Cyprus has no data prior to 2004.

SOURCE: WHO Health for All, 2009

Figure 1.31 Standardized death rates due to trachea, bronchus and lung cancer among females per 100 000 population, EU-27, 1995 and 2007 or the most recent available year

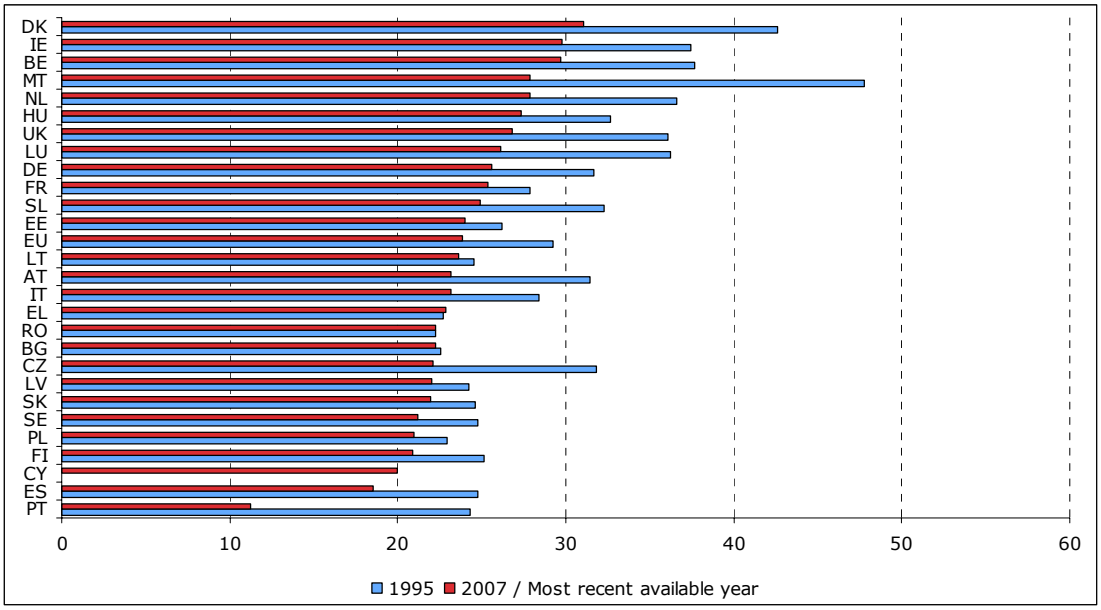


NOTE: for the following countries no data was available for 2007 and the most recent available year was used: Belgium 2004, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2006, Spain 2005, Sweden 2006, Bulgaria 2006, Estonia 2005, Hungary 2005, Slovakia 2005. Cyprus has no data prior to 2004.

SOURCE: WHO Health for All, 2009

Breast cancer was the leading cause of cancer mortality in women in the EU in 2006 (85,300, 16.7% of total) (Ferlay, Autier, Boniol et al., 2007). Until the mid-1980s, breast cancer mortality rates were increasing or stable in Europe, except for Sweden, where they have been decreasing since the 1960s. Since then, rates have plateaued or decreased across the EU27 (Figure 1.32). Some countries such as the UK, which reported particularly high rates of breast cancer mortality, have achieved dramatic decreases. This favourable trend has been associated with increased breast awareness, earlier detection, for example through the introduction of screening and the delivery of the most appropriate therapy to women with the disease (Boyle, 2005; Sant, Francisci, Capocaccia, Verdecchia, Allemani, & Berrino, 2006). Other countries such as Slovakia and Spain also experienced declines but did not introduce screening, highlighting the importance of improvements in treatment (Boyle, d'Onofrio, Maisonneuve et al., 2003; Sant, Francisci, Capocaccia et al., 2006).

Figure 1.32 Standardized death rates due to female breast cancer, per 100 000 population, EU-27, 1995 and 2007 or most recent available year



NOTE: for the following countries no data was available for 2007 and the most recent available year was used: Belgium 2004, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2006, Portugal 2004, Spain 2005, Sweden 2006, Bulgaria 2006, Estonia 2005, Hungary 2005, Slovakia 2005, Slovenia 2007. Cyprus had no data prior to 2004.

Source: WHO Health for All, 2009

Section 1.9 Trends in diabetes

Notes on the data

For a definition of mortality rates see above.

Data issues: The contribution of diabetes to mortality rates is probably underestimated because although people may live for years with diabetes, their deaths are usually recorded as being caused by heart disease or kidney failure (WHO, 2005b).

For notes on mortality data please see section 1.7

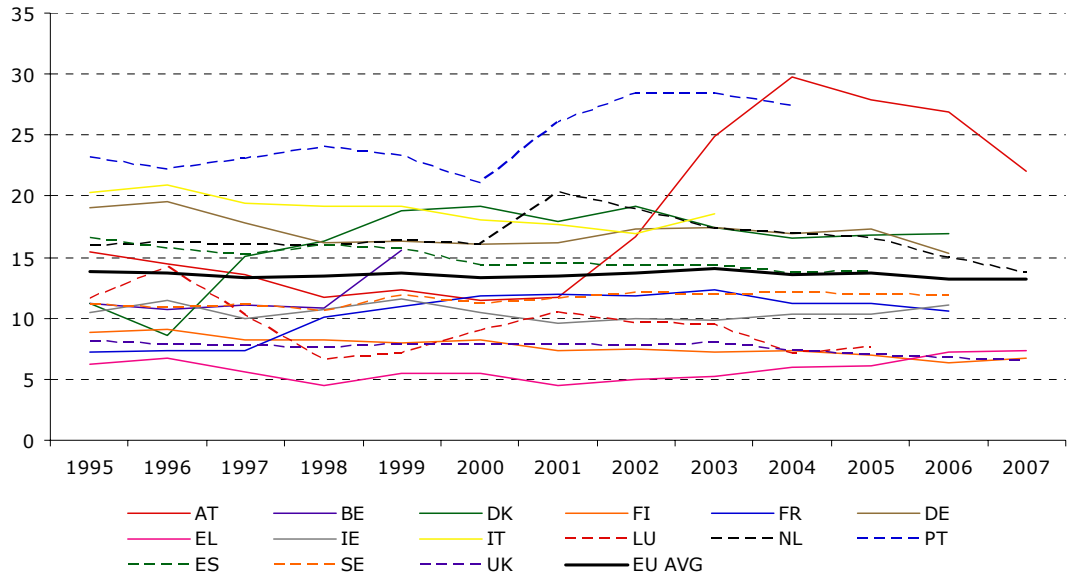
Diabetes is estimated to be the fourth leading cause of death in Europe (International Diabetes Federation, 2004), as well as being a risk factor for other diseases, notably CVD (Franco, Steyerberg, Hu, Mackenbach, & Nusselder, 2007).

Type 2 diabetes constitutes about 85 to 95% of all diabetes in developed countries. Type 2 diabetes is now a common and serious global health problem, which, for most countries, has evolved in association with rapid cultural and social changes, ageing populations, increasing urbanization, dietary changes, reduced physical activity and other unhealthy lifestyle and behavioural patterns (International Diabetes Federation, 2004).

The average death rate from diabetes has remained fairly stable in the EU27 for the last 15 years, at around 13 per 100,000 inhabitants. However, there is great variation between EU countries, with Finland, Lithuania and the UK reporting less

than 7 deaths per 100,000 inhabitants, and Austria, Hungary and Malta reporting rates of over 20 per 100,000 (Figures 1.34 and 1.35). Also, some countries appear to have experienced great fluctuations in diabetes mortality, especially in the EU12, although this may be an artefact of the data. In all EU countries the mortality rate from diabetes is higher among men than among women, the difference being particularly marked in Scandinavian countries such as Denmark and Sweden (Figure 1.36).

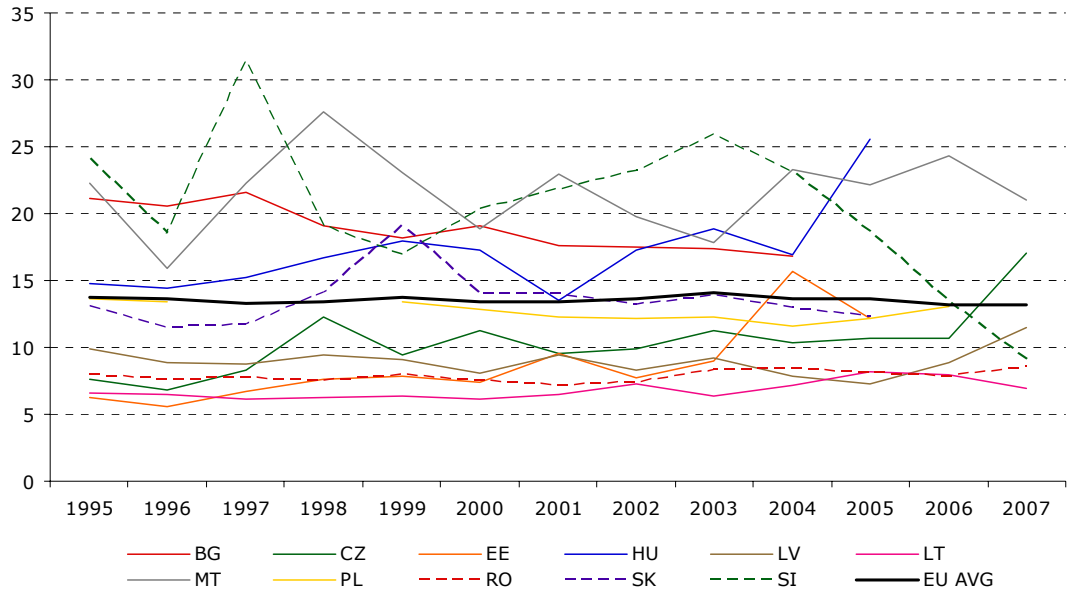
Figure 1.33 Standardized death rate from diabetes, all ages, per 100 000 population, EU-15



NOTE: For the following countries the most recent data was available from the listed year: Belgium 1999, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2005, Portugal 2005; Spain 2005, Sweden 2006, EU-15 AVG 2006. Italy data was missing for 2004 and 2005

SOURCE: WHO Health for All, 2009

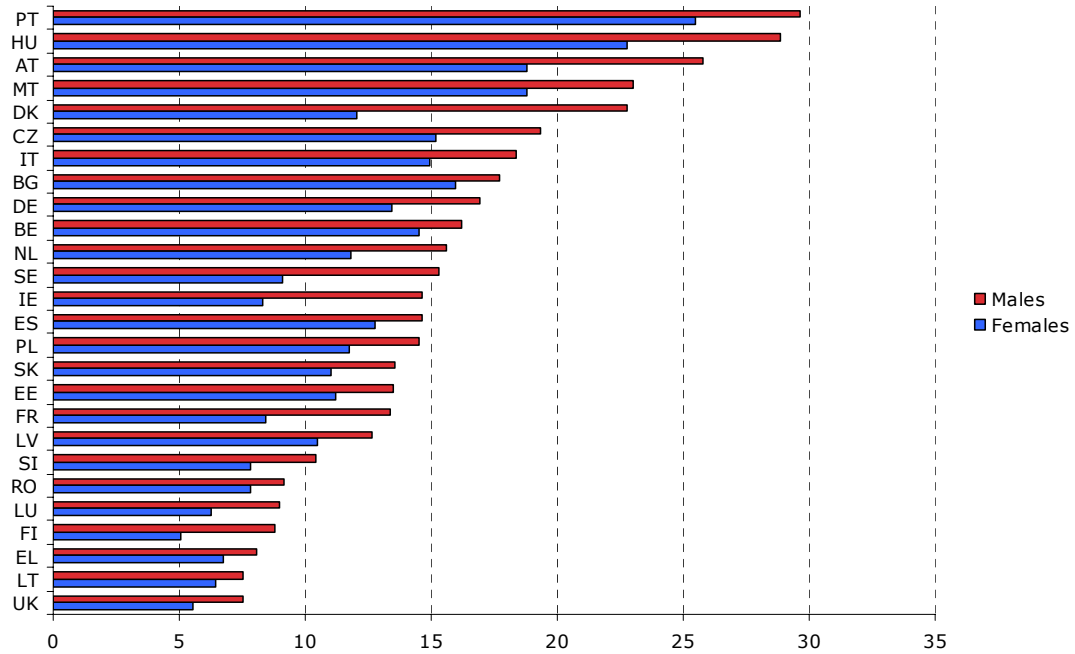
Figure 1.34 Standardized death rate from diabetes, all ages, per 100 000 population, EU-12



NOTE: Cyprus was excluded because of lacking data. For the following countries the most recent data was available from the listed year: EU-15 AVG 2006, Bulgaria 2004, Estonia 2005, Hungary 2005, Poland 2006, Slovakia 2005. Poland data was missing for 1997 and 1998.

SOURCE: WHO Health for All, 2009

Figure 1.35 Standardized death rates due to diabetes in 2007 or the most recently available year in the EU-27, per 100 000 population



NOTE: Cyprus excluded because of lacking data. For the following countries the most recent data was available from the listed year: Belgium 1999, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2005, Portugal 2004; Spain 2005, Sweden 2006, EU-15 AVG 2006, Bulgaria 2004, Estonia 2005, Hungary 2005, Poland 2006, Slovakia 2005.

SOURCE: WHO Health for All, 2009

Section 1.10 Trends in mental health problems, including suicide

Notes on the data

For a definition of mortality rates see above.

Data issues: International comparisons of suicide mortality should be interpreted with caution since legal, diagnostic and certification practices vary considerably from country to country. Suicide may carry a cultural or religious stigma, or it may lead to financial consequences, for example with respect to life insurance, which may lead to inaccurate records. However, the range of countries in terms of high and low mortality rates from suicide is probably correct (Eurostat 2009).

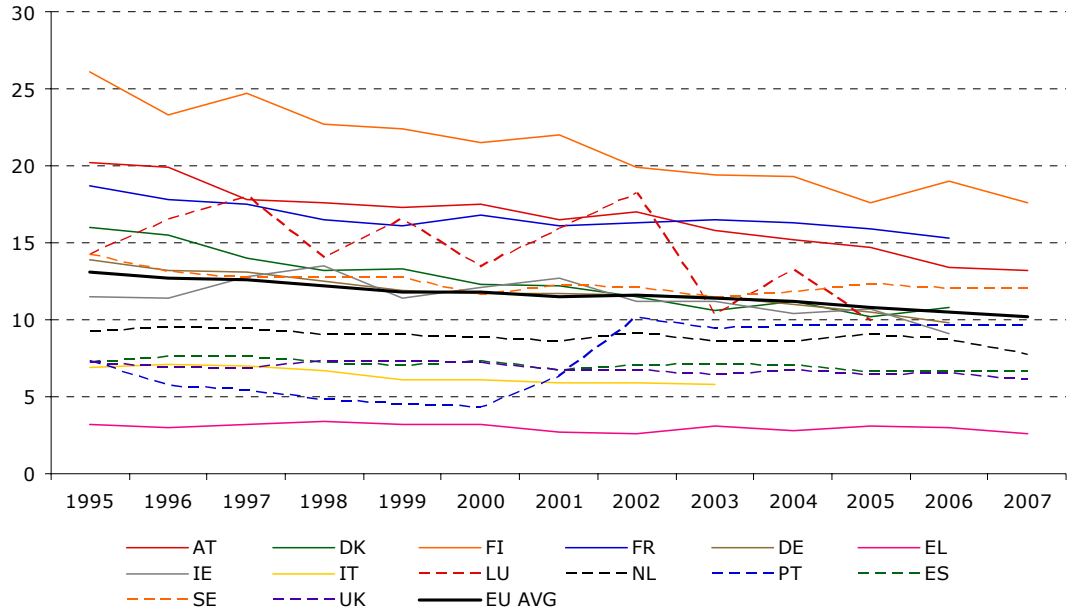
For notes on mortality data please see section 1.7

Mental health problems have been estimated to account for approximately 20% of the total burden of ill health across Europe (WHO, 2004c). Suicide is the one of the top ten leading causes of premature death in Europe, contributing an additional 2% to overall burden of illness (WHO, 2004c). In itself it is not a mental disorder but as much as 90% of all suicides are linked to mental health problems, with key risk factors including social isolation and a lack of self worth. The rate of suicide is much higher in men than in women and after traffic accidents it is the principle cause of mortality among 15-35 year old males in the WHO European region (WHO, 2004c).

Suicide rates have generally been falling in the last 15 years (Figures 1.36 and 1.37), but there remains a marked variability between countries. The five highest suicide rates per 100,000 population are still found in the new Member States of Estonia (18.74 in 2005), Hungary (23.2 in 2005), Latvia (17.84 in 2007), Lithuania (28.41 in 2007) and Slovenia (18.4 in 2007). Among the EU-15 high rates can be found in Finland (17.59 in 2007) France (15.35 in 2006) and Austria (13.22 in 2007). Some of the lowest deaths rates are reported in Mediterranean countries such as Greece (2.6 in 2007) and Malta (6.03 in 2007) but it is possible that cultural factors and a reluctance to record deaths as suicides may mean that underreporting occurs in some countries.

Figure 1.38 provides suicide rates by gender. While the rates of suicide are far lower for women than for men, similar patterns can be seen, with the majority of high rates found in new Member States.

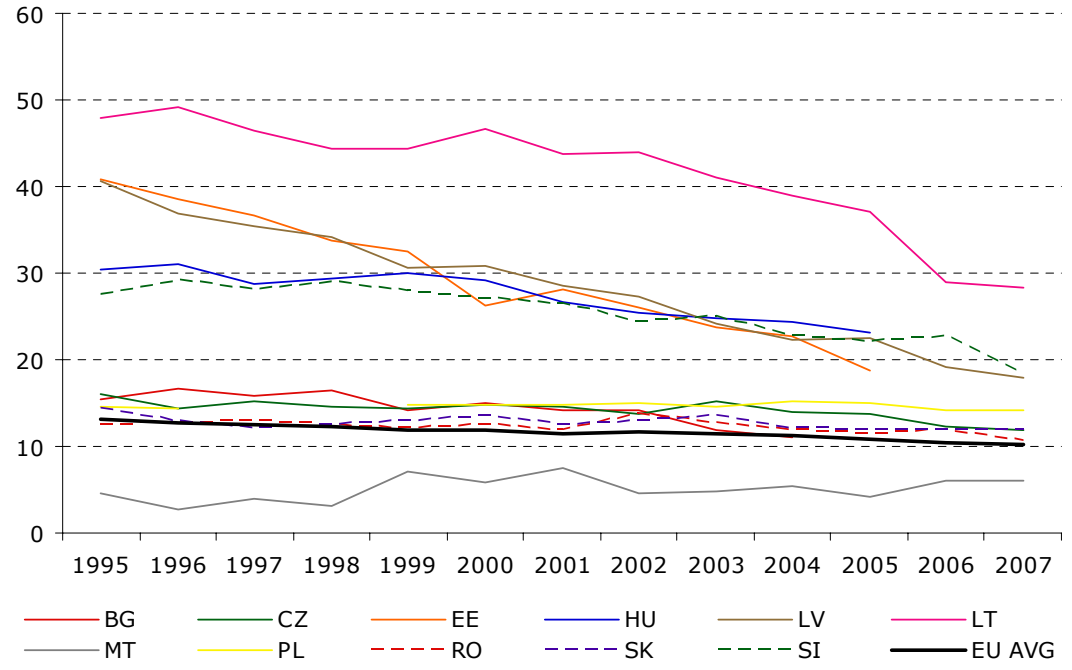
Figure 1.36 Standardized death rates for suicide and self-inflicted injury, all ages, per 100 000 population, EU-15



NOTE: Belgium excluded because of lack of data. For the following countries 2007 data was not available: Denmark 2006; France 2006; Germany 2006; Ireland 2006; Italy 2006; Portugal 2004; Spain 2005; Sweden 2006; EU-15 AVG 2006. Italy 2004 and 2005 data was unavailable

SOURCE: WHO Health for All, 2009

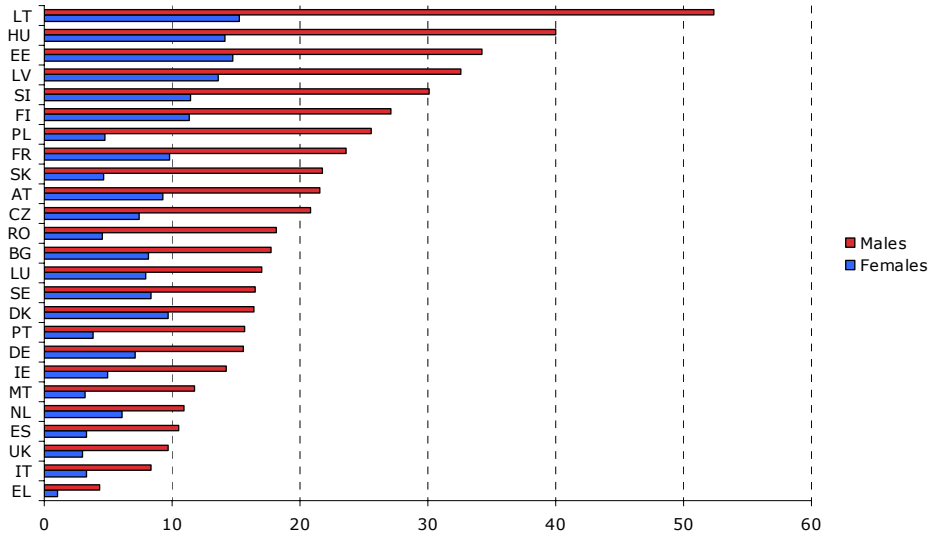
Figure 1.37 Standardized death rates for suicide and self-inflicted injury, all ages, per 100 000 population, EU-12



NOTE: Cyprus was excluded because of lacking data. For the following countries 2007 data was not available: Bulgaria 2004, Estonia 2005; France 2006; Hungary 2005; Lithuania 2006; Poland 2006; Slovakia 2005; EU-15 AVG 2006. Poland 1997 and 1998 data was unavailable

SOURCE: WHO Health for All, 2009

Figure 1.38 Standardised death rates from suicide and self-infected injury in 2007 or the most recently available year in the EU-27, per 100 000 population



NOTE: Cyprus and Belgium were excluded because of lack of data. For the following countries no 2007 data was available and the most recent year was used: Bulgaria 2004, Denmark 2006; Estonia 2005; France 2006; Germany 2006; Hungary 2005; Ireland 2006; Italy 2006; Poland 2006; Portugal 2004; Slovakia 2005; Spain 2005; Sweden 2006

SOURCE: WHO Health for All, 2009

Section 1.11 Sexually Transmitted Infections and HIV/AIDS

Notes on the data

Definition Incidence STI and HIV/AIDS: infection that can be transferred from one person to another through sexual contact. Sexual contact is considered to be more than just sexual intercourse (vaginal and anal) and also includes kissing, oral-genital contact, and the use of sexual "toys," such as vibrators. STIs include: AIDS/HIV, chlamydia, genital herpes, genital warts, gonorrhea, hepatitis B, and syphilis. The incidence rate of AIDS is the number of new cases per million population at year of diagnosis.

Data issues: Data are often not comparable as different systems of collection are in place. Spain and Italy report regional data with only one third of the national population represented.

Data are patchy and with serious gaps. Surveillance systems were initiated in 1999 in 6 countries (Andorra, France, Greece, Malta, Netherlands and Portugal)

Cause of transmission data is even patchier with Estonia and Austria not reporting it and some of the IUD data being underestimated such as in Portugal.

For notes on mortality data please see section 1.7

In this section we focus on the major STIs and HIV/AIDS trends and consider Chlamydia, gonorrhoea and syphilis. The availability of services and surveillance/notification systems also varies between European countries and this also affect our understanding of the epidemiology. Given the lack of comparable data these figures should be used for general trends only.

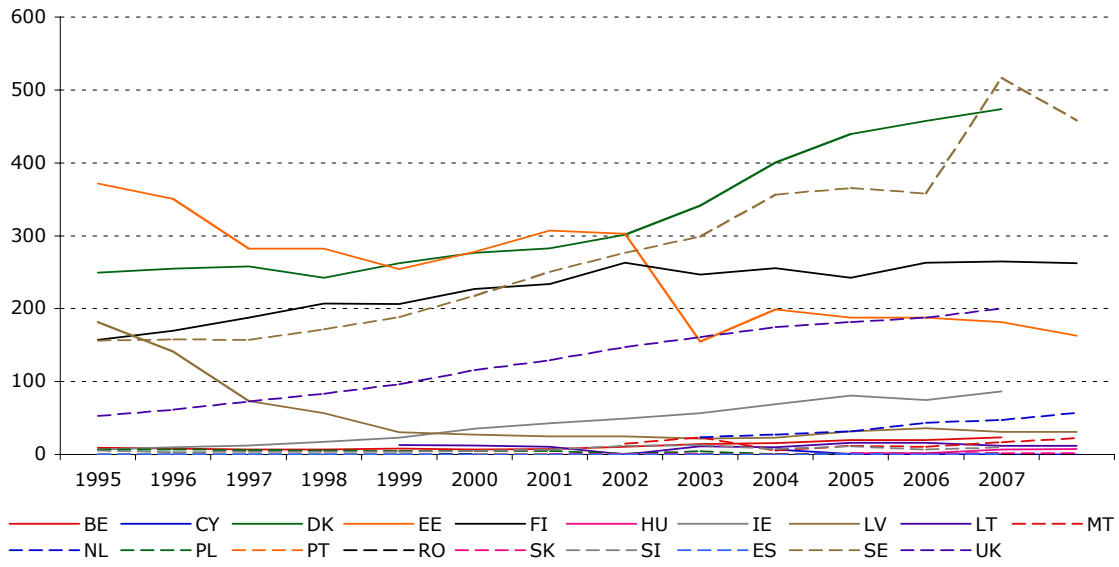
In most countries Chlamydia (Figure 1.40) is the most reported sexually transmitted disease (Figures 1.41 to 1.44). Sweden (458 per 100,000) and Denmark (474 per 100,000) have the highest incidence of the EU. Most trends show a worrying increase in the last five years. However both results might be due to the increase of screening programmes that are being implemented at country level which use non-invasive, more acceptable urinary based assays. This could give rise to an increased prevalence but not necessarily incidence, even though most experts feel that both are occurring.

The incidence of gonorrhoea (Figure 1.41) is stable in all EU15 countries with the exception of Portugal where there has been an increase in the last 5 years. In the EU12 (Figure 1.42) there has been a steep decline in the last 15 years.

Data on Syphilis (Figure 1.43) is much patchier with the EU15 countries showing an increase in the last few years. The EU12 countries(Figure 1.44) have much higher percentages but show a progressive decline. Romania is the country with the highest incidence (18.81 per 100,000).

There is a general concern that the decline of the incidence of STIs in the CEE and Baltic states might be due to underreporting rather than decline of new cases (Platt and McKee 2000).

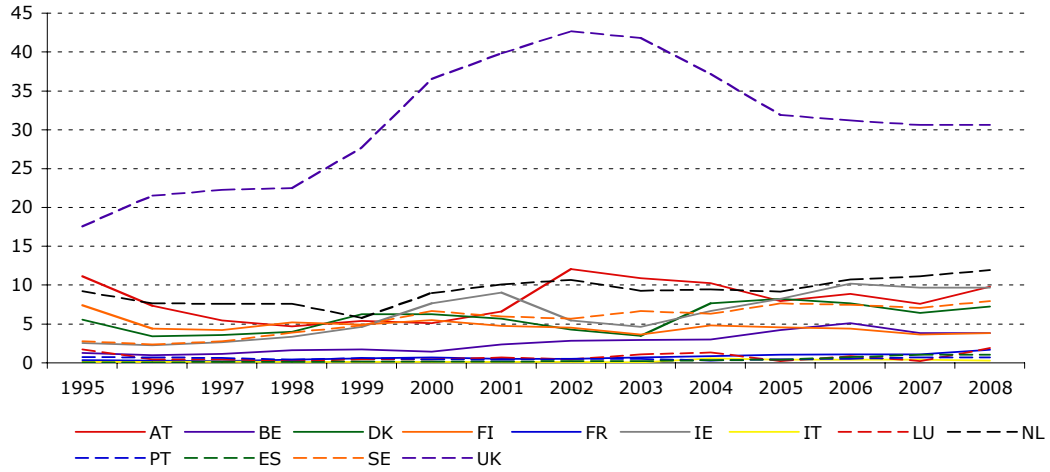
Figure 1.39 Incidence of Chlamydia per 100 000 population in selected EU countries



NOTE: No data or inadequate data available for Austria, Bulgaria, Czech Republic, France, Germany, Greece, Italy (only regional data), Luxembourg. Gaps in data in the series were substituted with the previous year.

SOURCE: Centralized information system for infectious diseases (CISID), WHO Regional Office for Europe, 2009

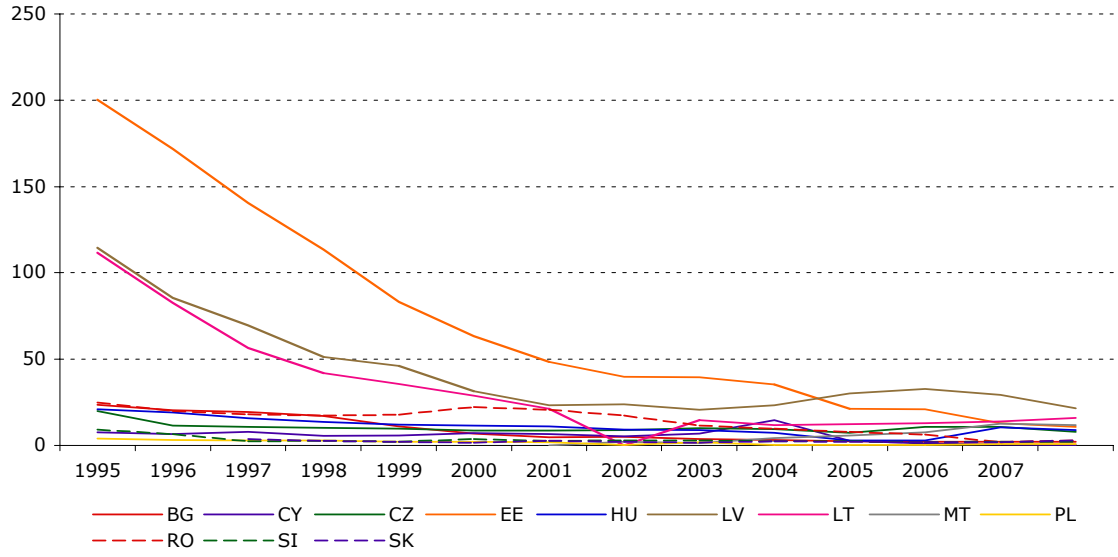
Figure 1.40 Incidence of gonorrhoea, per 100 000 population, EU-15



NOTE: Greece was excluded because of lack of data.

SOURCE: Centralized information system for infectious diseases (CISID), WHO Regional Office for Europe, 2009

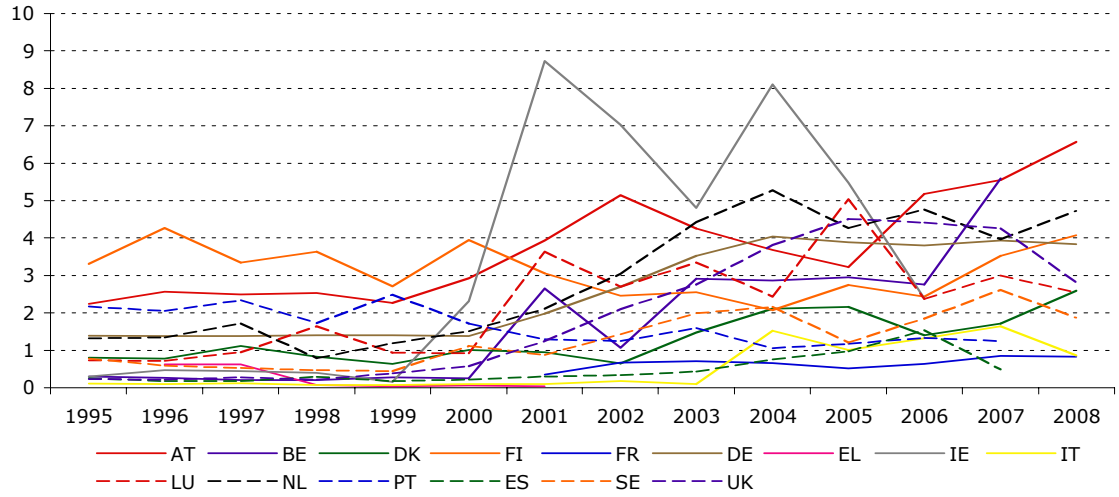
Figure 1.41 Incidence of gonorrhoea, per 100 000 population, EU-12



NOTE: Greece was excluded because of lacking data.

SOURCE: Centralized information system for infectious diseases (CISID), WHO Regional Office for Europe, 2009

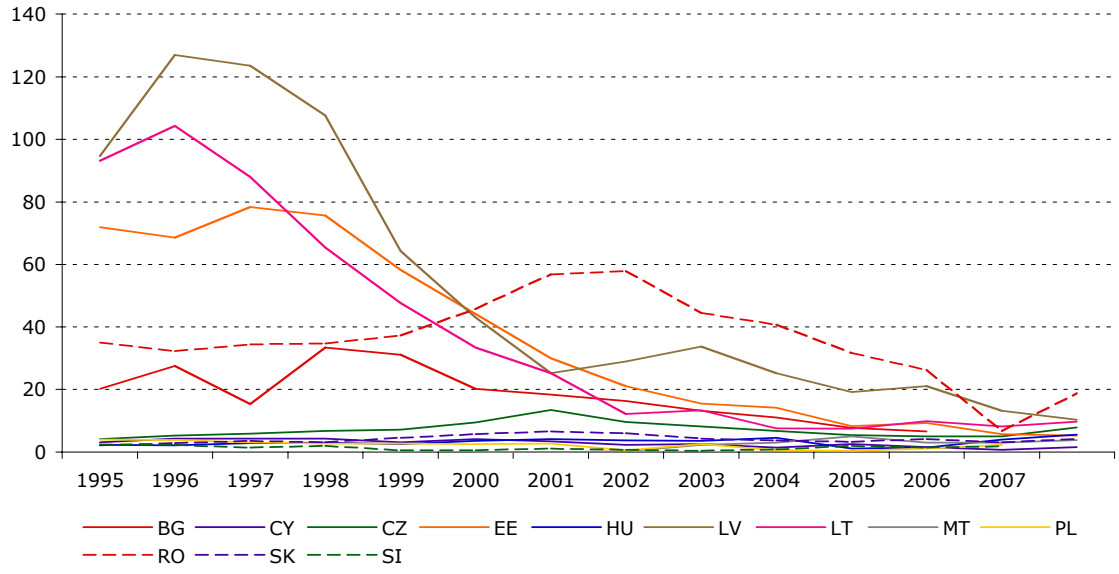
Figure 1.42 Incidence of all types of syphilis, per 100 000 population, EU-15



NOTE: Gaps in data in the series were substituted with year previous.

SOURCE: Centralized information system for infectious diseases (CISID), WHO Regional Office for Europe, 2009

Figure 1.43 Incidence of all types of syphilis, per 100 000, population, EU-12



NOTE: Gaps in data in the series were substituted with year previous.

SOURCE: Centralized information system for infectious diseases (CISID), WHO Regional Office for Europe, 2009

HIV/AIDS remains a major public health issue in the EU. In particular Northern Europe reports one of the highest incidences and prevalence of HIV/AIDS. This is mainly due to gay and bisexual transmission. However, in some regions it is also due to the high level of migration from Africa where the prevalence is particularly high.

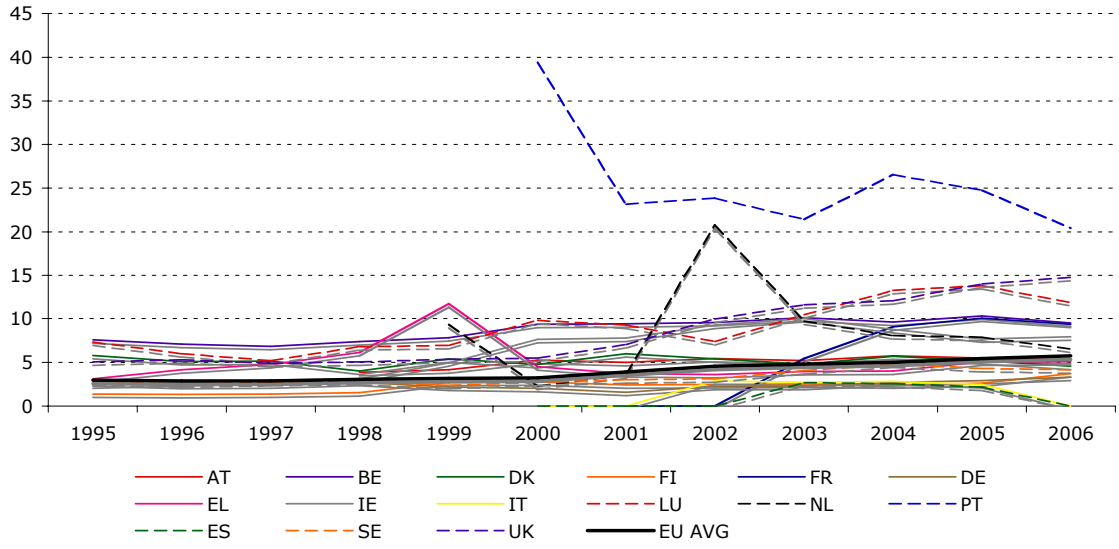
In the EU, 26 ,220 newly diagnosed cases of HIV infection were reported in 2006, a rate of 67.2 per million. The two countries with among the largest rates of HIV in the whole of the WHO European Region reported in 2006 are to be found in the EU: Estonia (668, 504 per million) and Portugal (2,162, 205 per million) (EuroHIV 2007).

The gap between countries has been slowly increasing in the last 15 years (Figure 1.45). Estonia shows the highest number of new HIV cases despite the dramatic decline in 2002 (Figure 1.46). This was mainly due to the decline of the prevalence among IUD which form the majority of HIV positive people. The government implemented a programme of education and provision of safe needles in 2001. It is followed by Portugal which currently reports 37,000 people living with HIV (UNAIDS, 2007).

Portugal has consistently been the country with the highest number of new AIDS cases since the late 1990s. Estonia, Italy and France have experienced a sharp decline of new cases since the mid-nineties.

The gender gap is quite wide with men showing (Figure 1.48) a clear lead in most countries with Portugal and Spain having the widest.

Figure 1.44 HIV incidence per 1000 population, EU-15

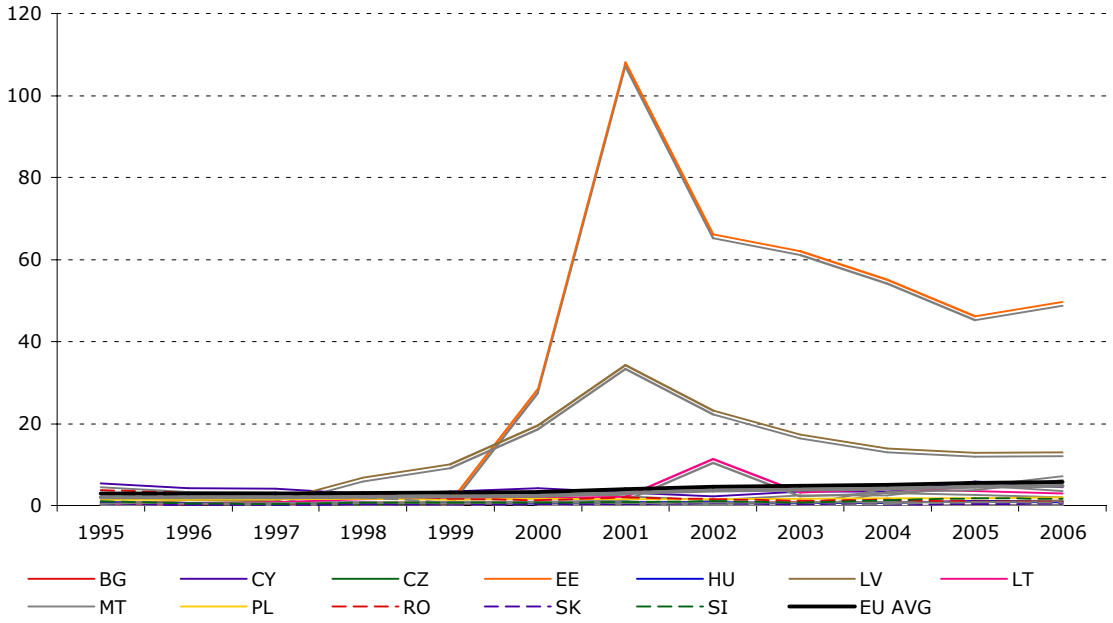


NOTE: No data available for any countries for 2007.

SOURCE: WHO Health for All, 2009

NO GENDER SPECIFIC DATA in WHO Health for All, OECD or CISID

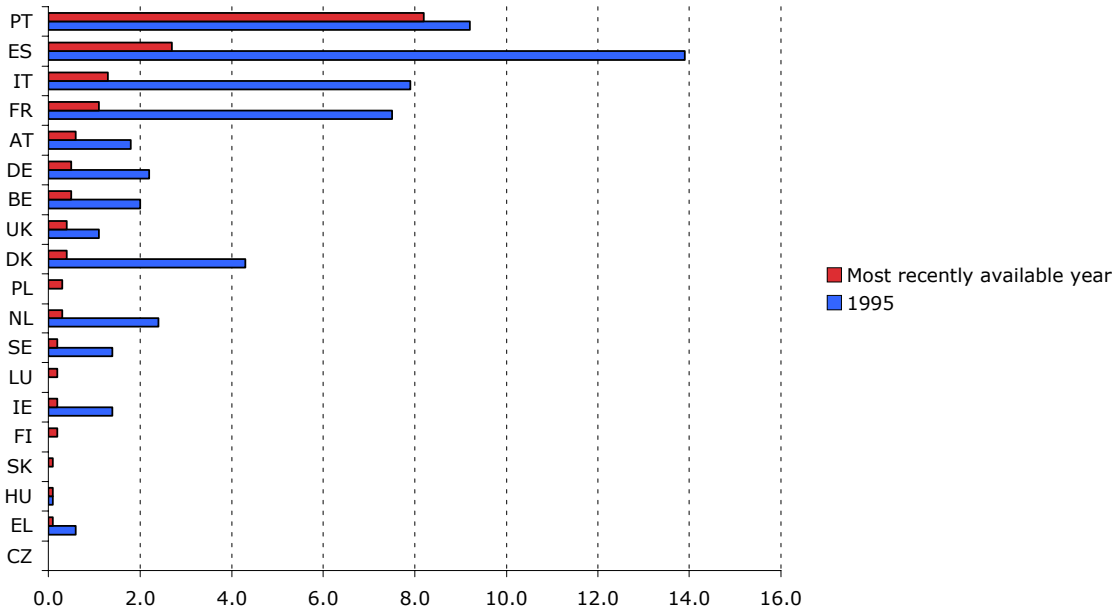
Figure 1.45 HIV incidence per 1000 population, EU-12



NOTE: No data available for any countries for 2007.

SOURCE: WHO Health for All, 2009

Figure 1.46 Standardized death rates due to HIV/AIDS in selected European countries, per 100 000 population

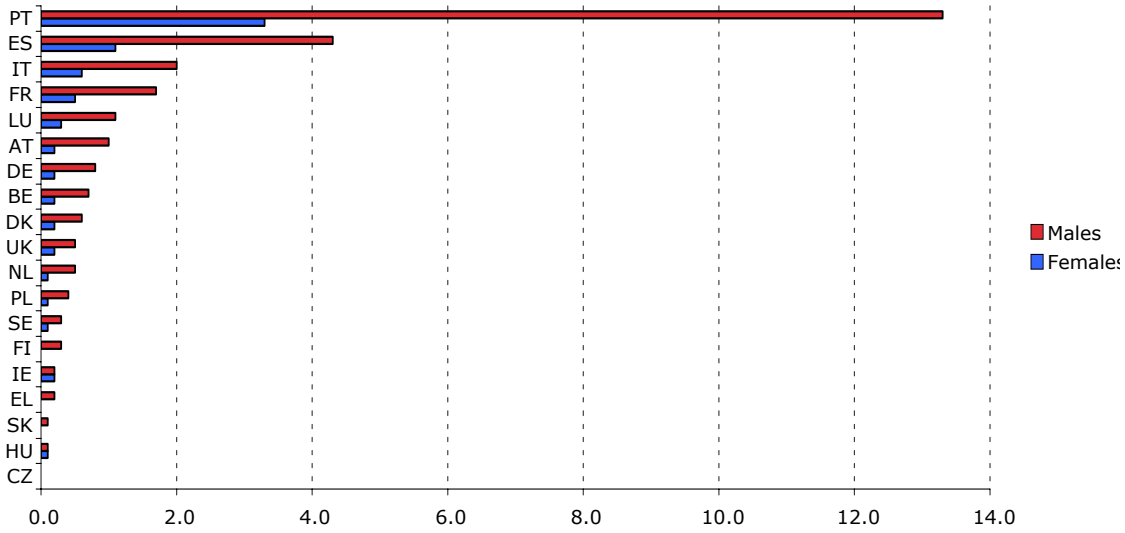


NOTE: Belgium had no data past 1999 and Portugal past 2003. Poland only had data starting in 1999. Where data was missing the mostly available year was used, this was done for the following countries: Czech Republic, Denmark, France, Germany, Hungary, Italy, Luthuania, Poland,Slovakia, Sweden and

Spain. The following countries were excluded because of lacking data: the Cezch Republic and Slovakia. Belgium had no data past 1999 and Portugal past 2003. Poland only had data starting in 1999. Where data was missing the mostly available year was used, this was done for the following countries: Czech Republic, Denmark, France, Germany, Hungary, Italy, Lithuania, Poland, Slovakia, Sweden and Spain. Because OECD selection of countries and exclusion of most EU-12 countries only one graph was made.

SOURCE: OECD Health Data, 2009

Figure 1.47 Standardized death rates due to HIV/AIDS by gender in selected EU countries, per 100 000 population



NOTE: Belgium had no data past 1999 and Portugal past 2003. Poland only had data starting in 1999. Where data was missing the mostly available year was used, this was done for the following countries: Czech Republic, Denmark, France, Germany, Hungary, Italy, Luthuania, Poland,Slovakia, Sweden and Spain. The following countries were excluded because of lacking data: the Cezch Republic and Slovakia. Belgium had no data past 1999 and Portugal past 2003. Poland only had data starting in 1999. Where data was missing the mostly available year was used, this was done for the following countries: Czech Republic, Denmark, France, Germany, Hungary, Italy, Lithuania, Poland, Slovakia, Sweden and Spain Because OECD selection of countries and exclusion of most EU-12 countries only one graph was made.

SOURCE: OECD Health Data, 2009

Section 1.12 Trends in accidents and injuries

Notes on the data

For a definition of mortality rates see above.

Data issues: Injury mortality data is limited by the use of "garbage codes" which are used for injuries when intent is not determined (Mathers et al 2005). It is further limited by problems with suicide data, as described above. Regarding road traffic accident mortality, there are differences in estimates between WHO and other organizations such as the United Nations Economic Commission for Europe and the EU. These result from the original sources of data. WHO uses mortality

and health statistics records while other organizations use transport and road police authorities' records (WHO Regional Office for Europe, 2004). Police reports provide little information on health effects because their purpose is legal, not medical. The information gathered on mortality suffers from conflicting definitions, in particular, the lack of distinction between road users. Mortality records may also be hampered by differences in the classification of the cause of death depending on the number of days after which death occurs following the accident (Farchi, Molino, Giorgi Rossi, Borgia, Krzyzanowski, Dalbokova et al., 2006).

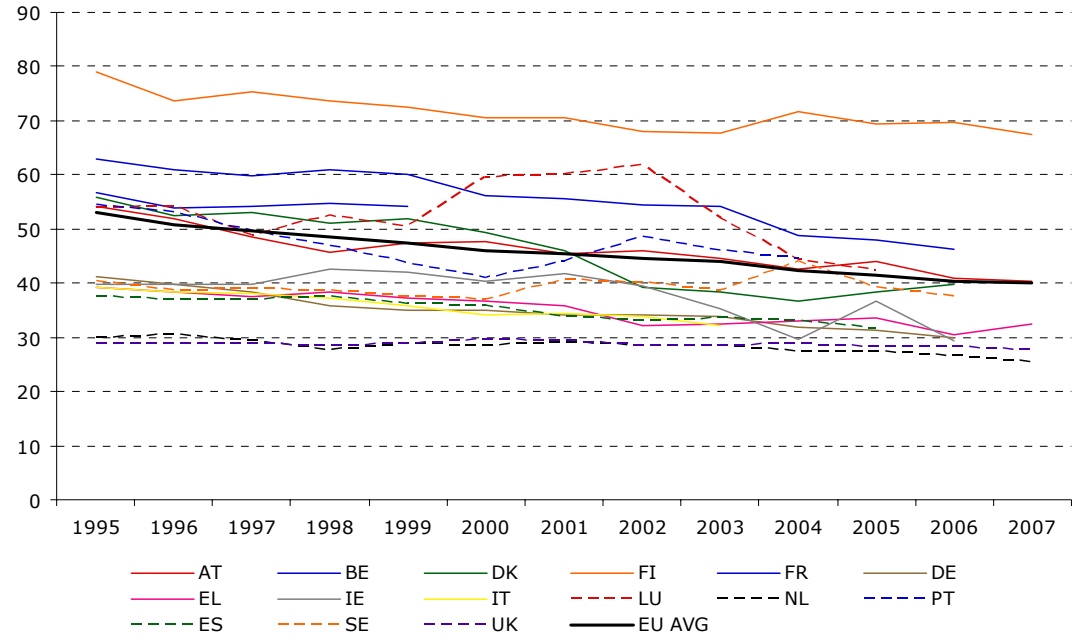
For notes on mortality data please see Section 1.7

In the EU injuries have been ranked as the fourth most common cause of death, after cardiovascular diseases, cancer and respiratory ailments. About 251,000 injury-related deaths occur annually, with huge disparities between Member States (Angermann, Bauer, Nossek et al., 2007). In the EU27 region, 6.9%and 3.5% of all deaths among men and women respectively were caused by injuries (Eurostat 2009). Injuries disproportionately affect males (Figure 1.51), younger people and the elderly.

Injuries can be intentional or non-intentional. Two thirds of injury deaths were caused by unintentional injuries and one third by intentional injuries (Eurostat 2009). 21.8 percent of all fatal injuries were caused by transport accidents, the majority of which were road traffic accidents. 76.0% of the victims were male (see below). 19.4% of all injury deaths were caused by accidental falls. 53% of the victims were women. Other unintentional causes of fatal injuries include poisoning, drowning, and burns. The main cause of death from intentional injuries is suicide (see above). 2.5% of all injury mortality was due to homicide. Men dominate injury mortality: two thirds of all deaths are men (Figure 1.51) (Eurostat 2009).

Mortality from external causes, injury and poisoning are generally higher in the EU12 than in the EU15 (Figures 1.49 and 1.50). The Baltic states have the highest prevalence of fatal injuries in Europe, with the mortality rate being 146.69 per 100,000 population in Lithuania (2007), 116.13 in Estonia (2005), and 115.19 in Latvia (2007). This could be due to the lower levels of living standards in those countries, resulting from socioeconomic and gender inequality. The Netherlands and United Kingdom, however seem to have the least injury mortality (25.44 and 27.62 per 100,000 inhabitants, respectively, in 2007).

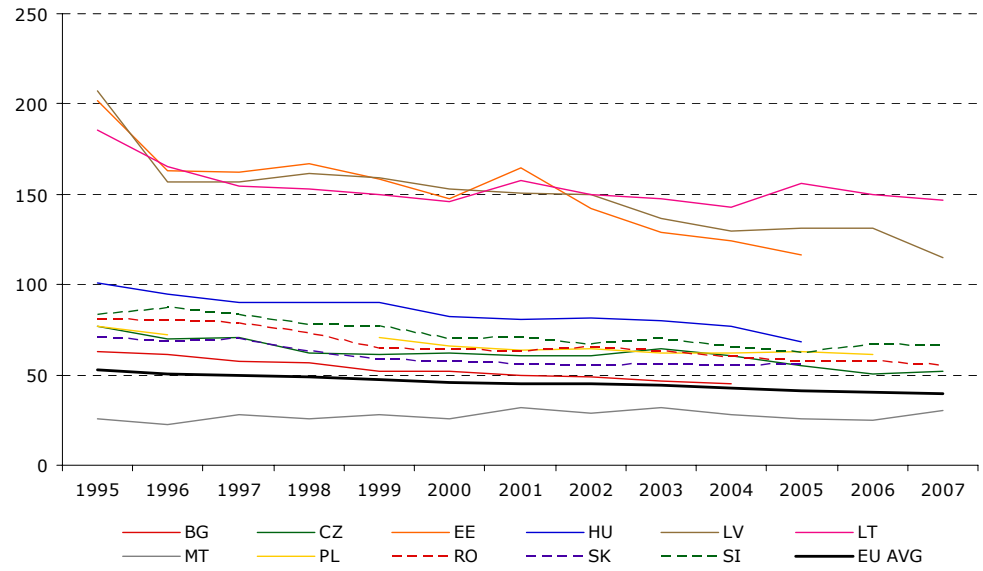
Figure 1.48 Standardized death rates from external cause injury and poison, all ages, per 100 000, EU-15



NOTE: Italy was missing data from 2004 and 2005. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

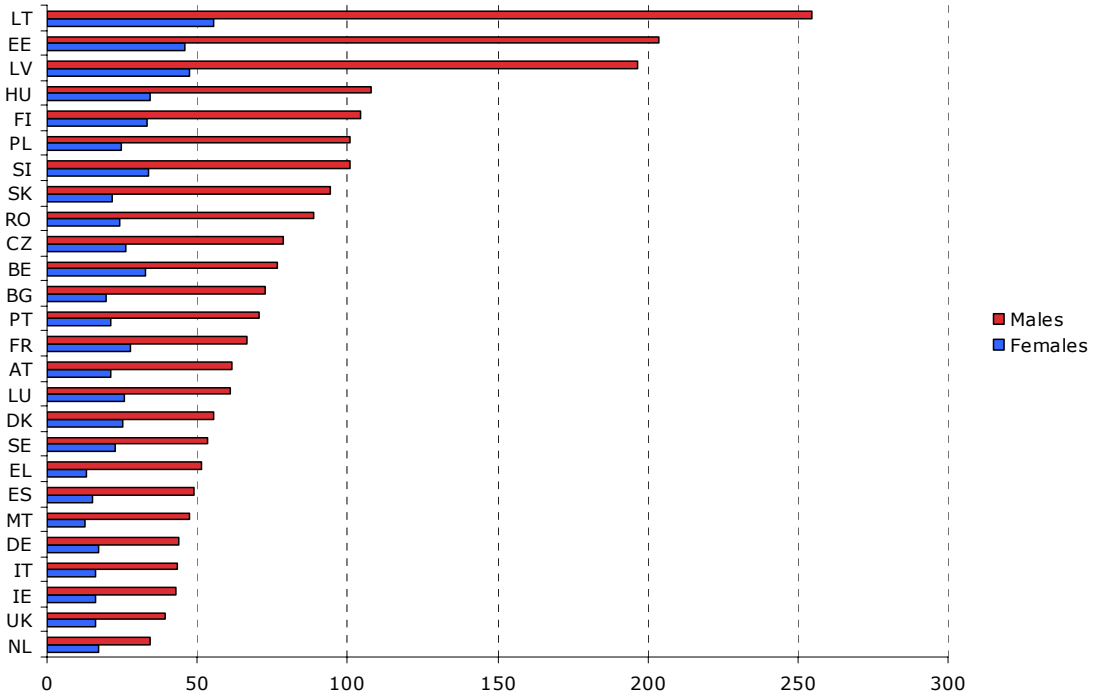
Figure 1.49 Standardized death rates from external cause injury and poison, all ages, per 100 000, EU-12



NOTE: Cyprus was excluded because of lacking data. Poland missing data from 1997 and 1998. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

Figure 1.50 Standardized death rates due to external cause injury and poison in 2007 or the most recently available year in the EU-27, per 100 000 population



NOTE: For the following countries the most recent data was available from the listed year: Belgium 1999, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Portugal 2004, Spain 2005, Sweden 2006, Bulgaria 2004, Estonia 2005, Hungary 2005, Poland 2006, Slovakia 2005,

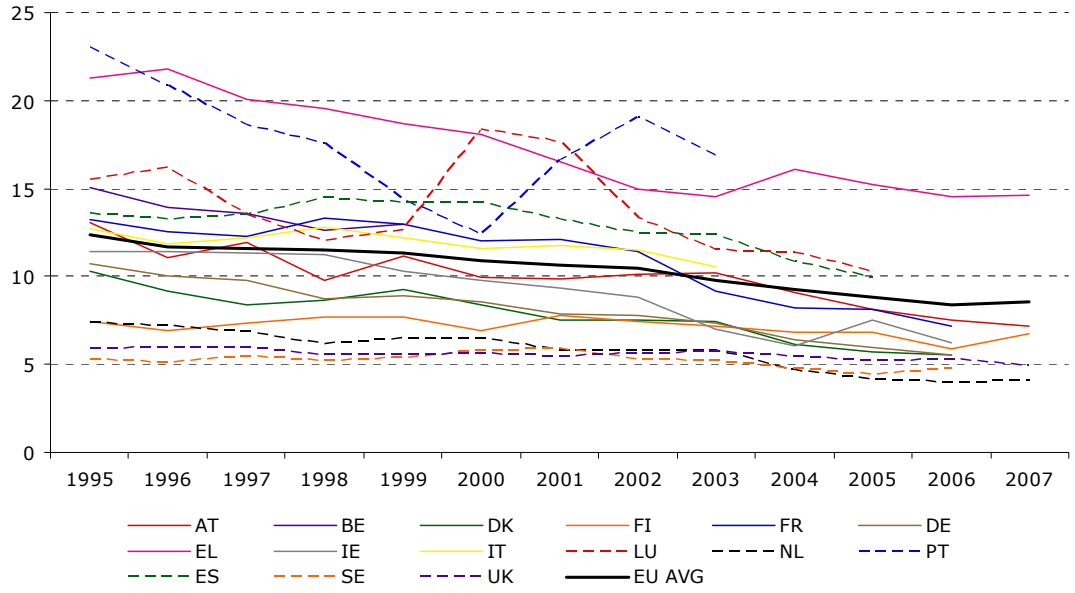
SOURCE: WHO Health for All, 2009

Road traffic accidents constitute a large part of the total mortality due to accidents. In the EU passenger and freight transport by road increased by 18% and 40% respectively between 1990 and 2000 (WHO Regional Office for Europe 2004). However, there has been a decrease in the numbers and rates of road traffic fatalities in the EU, average mortality falling from 12.41 per 100,000 inhabitants in 1995 to 8.56 in 2007. Many EU15 countries, including Austria, Denmark, France, and Germany experienced a steady decline during this period (Figure 1.52). The reductions in road traffic fatalities in high-income countries are attributed largely to the implementation of a wide range of road safety measures, including seat-belt use, vehicle crash protection, traffic-calming interventions and traffic law enforcement. However, mortality rates from road traffic accidents remain much higher than the EU average in Portugal and Greece (16.83 and 14.61 per 100,000 inhabitants in 2003 and 2007, respectively).

The picture is quite different for the EU12 where mortality from road traffic accidents is higher than average (except in Malta), with the Baltic states, the Czech Republic and Slovakia experiencing increases in road traffic accident mortality in the late 1990s (Figure 1.53). Poor quality roads, lax enforcement of speed limits and alcohol all contribute to the high level of road traffic incidents in CEE, with alcohol also playing a significant role in the other 'external' causes of death (McKee, Adany et al. 2004). Transport volume in the countries of central and eastern Europe and Commonwealth of Independent States countries declined sharply after 1989 following economic recession and therefore probably does not account for the sudden increase in deaths. However, in the countries of CEE freight volume and passenger transport have been rising again since the mid-1990s, following economic recovery (WHO Regional Office for Europe 2004).

Road traffic accident mortality disproportionately affects men (Figure 1.53). This has been related to a combination of differences in exposure and in risk-taking attitudes. Men have greater average access to motor vehicles, including those with the highest fatality rates, such as motorbikes, than do women. Further, they are more likely to engage in risky behaviour, such as speeding and driving under the influence of alcohol, which increase both the likelihood of crashes and their severity (WHO Regional Office for Europe 2004; Twisk and Stacey 2007).

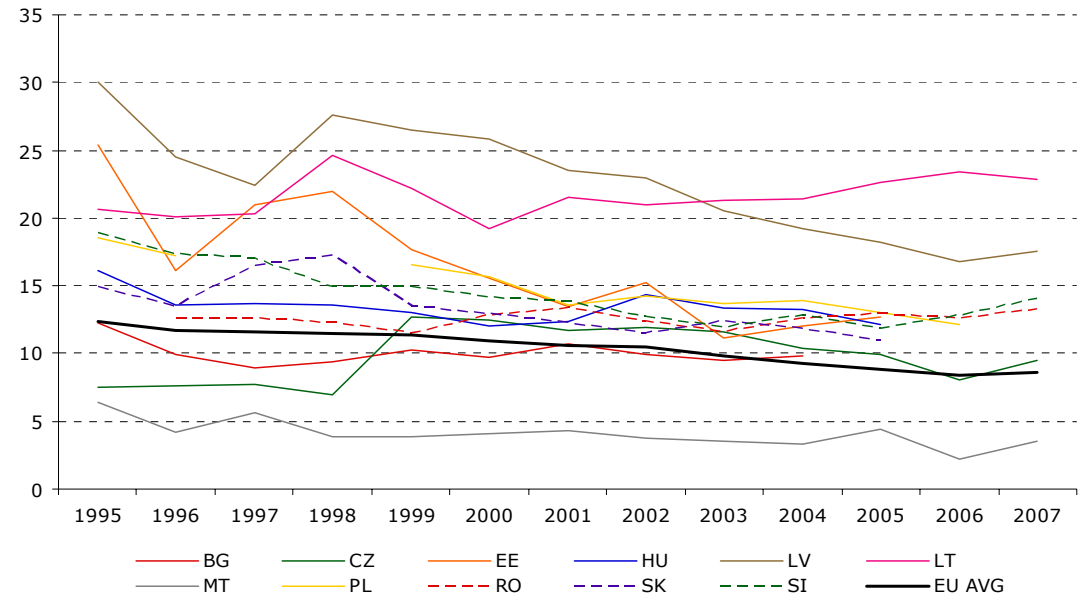
Figure 1.51 Standardized death rates from vehicle traffic accidents, all ages, per 100 000 population, EU-15



NOTE: Italy was missing data from 2004 and 2005. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

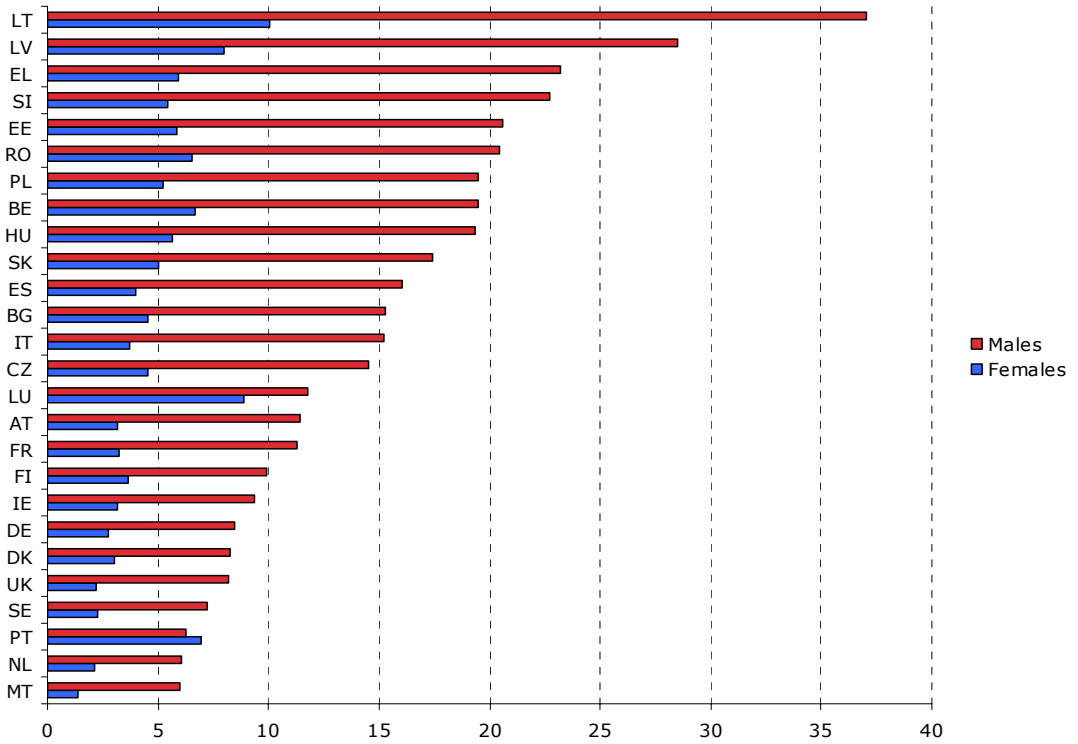
Figure 1.52 Standardized death rates from vehicle traffic accidents, all ages, per 100 000 population, EU-12



NOTE: Cyprus was excluded because of lacking data. Poland missing data from 1997 and 1998. For all countries were 2007 data was not available the most recent year is displayed.

SOURCE: WHO Health for All, 2009

Figure 1.53 Standardized death rates due to motor vehicle traffic accidents in 2007 or the most recently available year in the EU-27, per 100 000 population



NOTE: Cyprus excluded because of lacking data. For the following countries the most recent data was available from the listed year: Belgium 1999, Denmark 2006, France 2006, Germany 2006, Ireland 2006, Italy 2006, Luxembourg 2005, Netherlands 2006, Spain 2005, Sweden 2006, UK 2006, Bulgaria 2004, Estonia 2005, Hungary 2005, Poland 2006, Slovakia 2005.

SOURCE: WHO Health for All, 2009

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CHAPTER 2: RISK FACTORS

Introduction

Tobacco, alcohol and illicit drugs consumption and obesity and physical activity are the main preventable risk factors in the European Union. Tobacco use, obesity and insufficient exercise and a poor diet contribute to a variety of chronic diseases including cardiovascular disease, diabetes and some types of cancers. Specifically, cardiovascular diseases are the leading cause of death globally, representing 30% of all deaths. Of these, at least 80% could be prevented through maintaining a healthy diet, partaking in regular exercise and avoiding tobacco. (WHO 2007). Section 2.1 discusses trends in tobacco consumption and Section 2.2 discusses trends in obesity and physical activity.

Specific policy options to tackle tobacco use include the agreement of member states on a common EU interpretation and implementation of the Framework Convention on Tobacco Control, a review of tax schemes, the adoption of legislation addressing the smuggling of tobacco products and encouraging member states to include 'stop smoking programmes' in their national and social health insurance schemes.

Section 2.3 discusses trends in alcohol consumption. Alcohol misuse contributes to road traffic and other types of accidents, social issues such as crime, hooliganism and family problems and contributes to low productivity at work (EU 2009b). Europe has the highest proportion of drinkers in the world and the highest levels of alcohol consumption per capita. Nearly 7.4% of ill-health and early death within the EU is associated or caused by excessive alcohol use (EU 2009b).

Illicit drugs use, discussed in Section 2.4, is a risk factor for mental illness, HIV/AIDS, hepatitis and tuberculosis and excess alcohol consumption is a risk of cancers, cirrhosis, road-traffic accidents, other accidents, suicide and cardiovascular disease.

Section 2.1 Trends in tobacco consumption

Notes of data

Definition Daily regular smokers: includes daily users of cigarettes, cigars, pipes or any other smoked tobacco products among adults aged 15 years or older.

For further details on definitions and specific country data issues please refer to: http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions

Data issues: Data on smoking is from the World Health Organization's Health for All database. This is based off a standard questionnaire, but is collected from

multiple sources. For example, age groups for smoking prevalence vary from country to country, with some measuring 15+, others 16+ and some 18-65

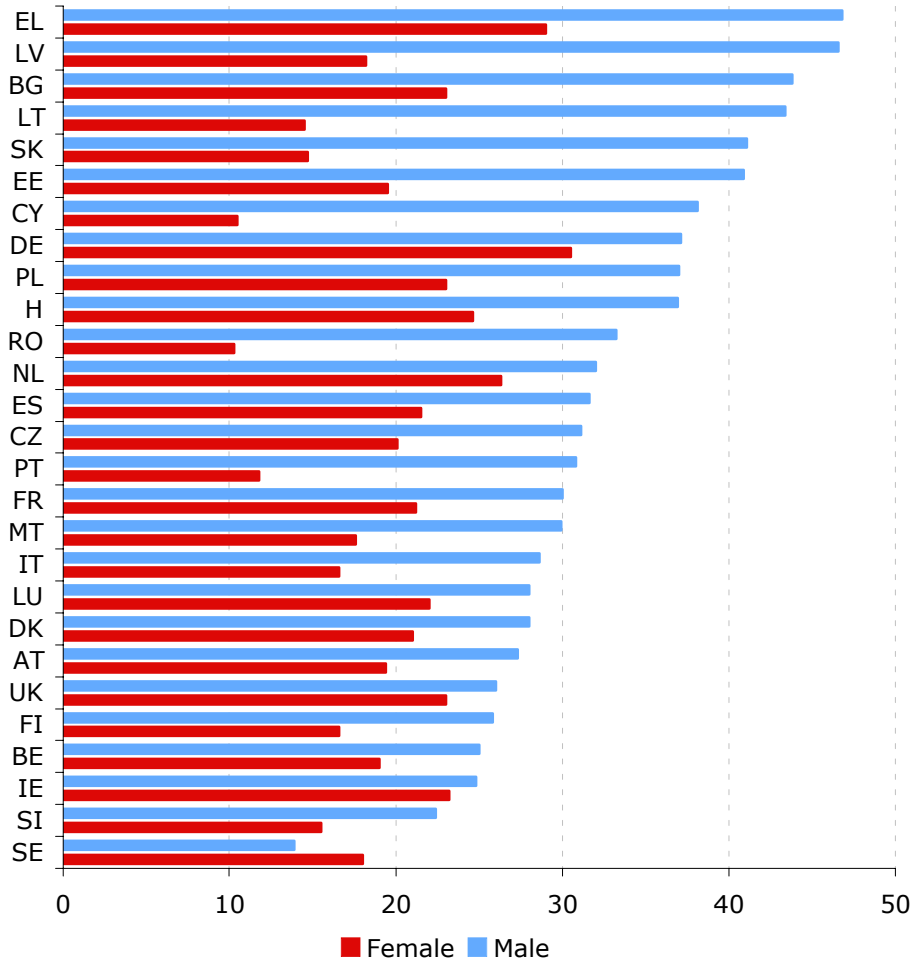
Tobacco is the second largest cause of death worldwide, responsible for 5 million deaths each year (1 in 10 adults) (WHO figures, cited in Collin and Lee 2005) and is the largest avoidable risk to health in OECD countries (OECD 2009). It is a risk factor for cardiovascular diseases, lung and other cancers and respiratory diseases.

Nearly one third of EU citizens smoke regularly (Figure 2.1) and prevalence of regular daily smokers in amongst those 15 and older ranges from 13.9% of men in Sweden (15.9% Sweden total) to 46.8% of men in Greece (37.6% Greece total). Smoking prevalence in men is higher than for women in all countries except Sweden (13.9% versus 18%). With some exceptions, such as Greece and Germany, EU15 countries tend to have a lower prevalence of daily regular smokers than do the EU12 countries.

Figures 2.2 and 2.3 show an overall downwards trend in smoking prevalence in the EU15 countries over the past 25 years, both among men and women. However, the picture is slightly more complicated. There are typically four stages of smoking habits (Mackenbach and Kunst 2004). In stage 1 smoking is relatively rare and concentrated in men of higher socioeconomic groups. Prevalence peaks at 50%-80% in stage 2 and differences among socioeconomic groups disappear. Women lag 10-20 years behind men in reaching this peak. In stage 3 prevalence among men and higher socioeconomic groups gradually declines while women reach their peak. In stage 4 men and women in lower socioeconomic groups are more likely to smoke (Huisman, Kunst and Mackenback 2005). From Figures 2.2 and 2.3[1] we can see that the Northern countries are in stage 4, while Italy, Portugal and Greece are still in stage 3. This has policy implications in targeting specific population groups.

[1] Dots are not linked when data for two consecutives years are not available

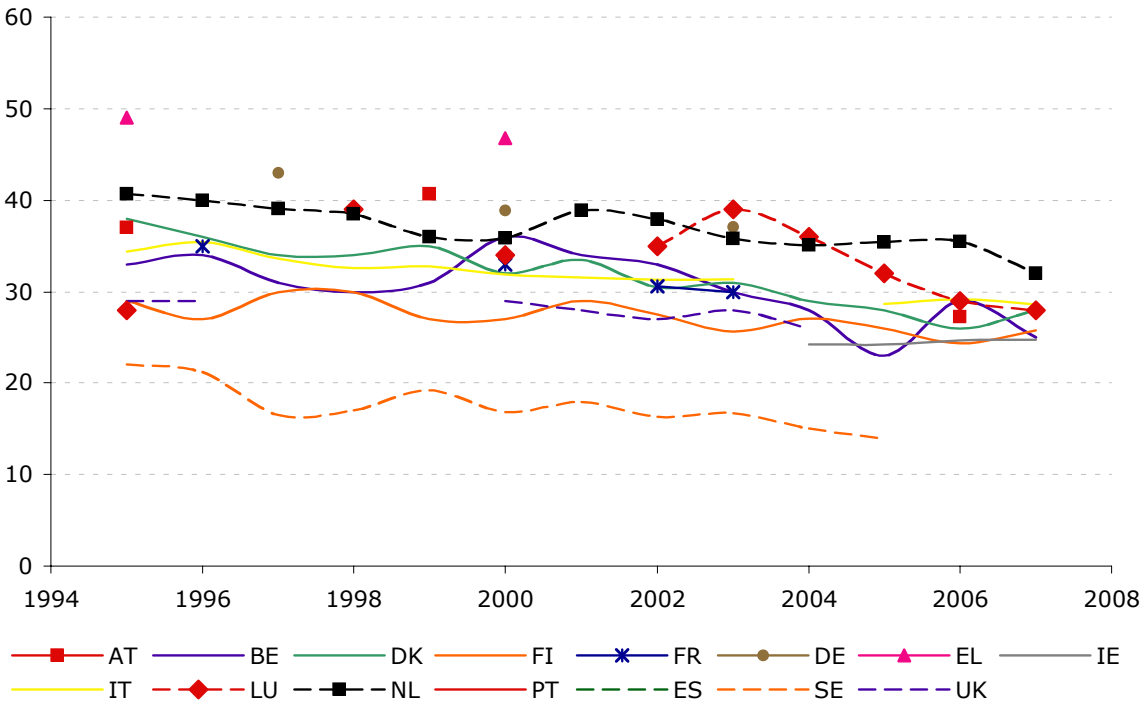
Figure 2.1 % population aged 15+ who are Regular Smokers. Most Recent Data



Note: Year of most recent data: 2007: Belgium, Denmark, Finland, Ireland, Italy, Luxembourg, Netherlands, Slovenia; 2006: Austria, Estonia, Latvia, Lithuania, Poland, Portugal, Spain; 2005: Sweden; 2004: Czech Republic, United Kingdom; 2003: Cyprus, France, Germany, Romania; 2002: Malta, Hungary; 2001: Bulgaria; 2000: Greece; 1998: Slovakia

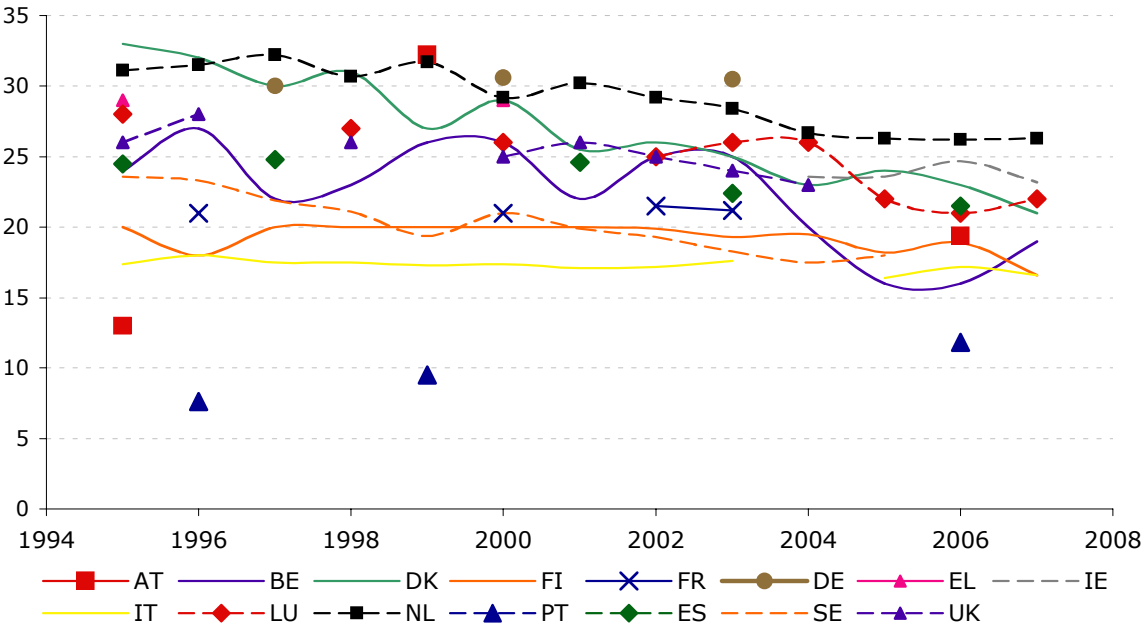
Source : WHO Health for All, 2009

Figure 2.2 Percentage of female population, age 15+ who are regular smokers, 1995-2007. EU-15



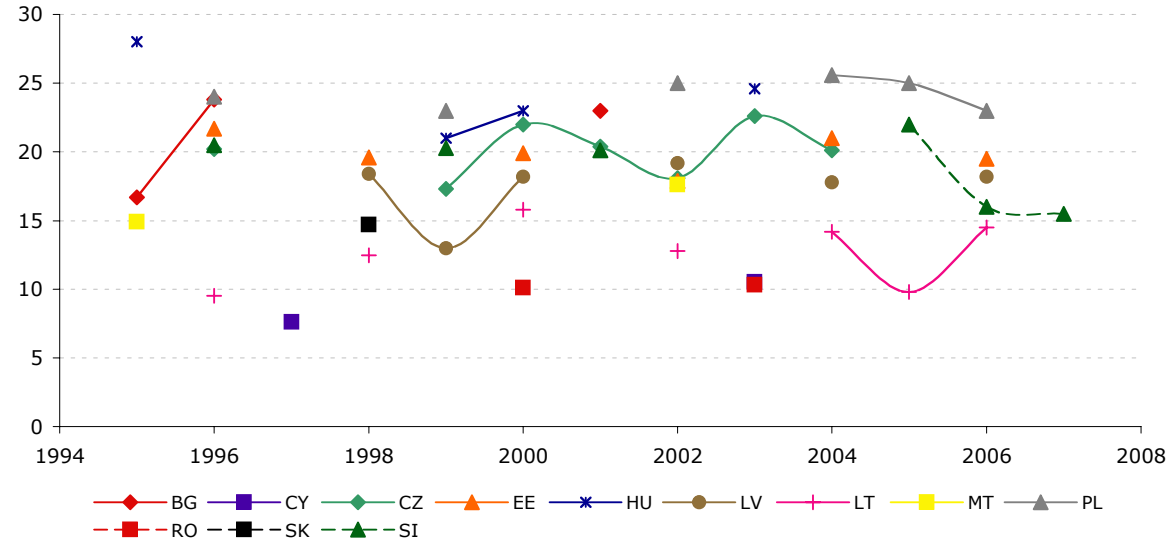
Source: WHO Health for All, 2009

Figure 2.3 % of male population, age 15+ who are regular smokers, 1995-2007. EU-15



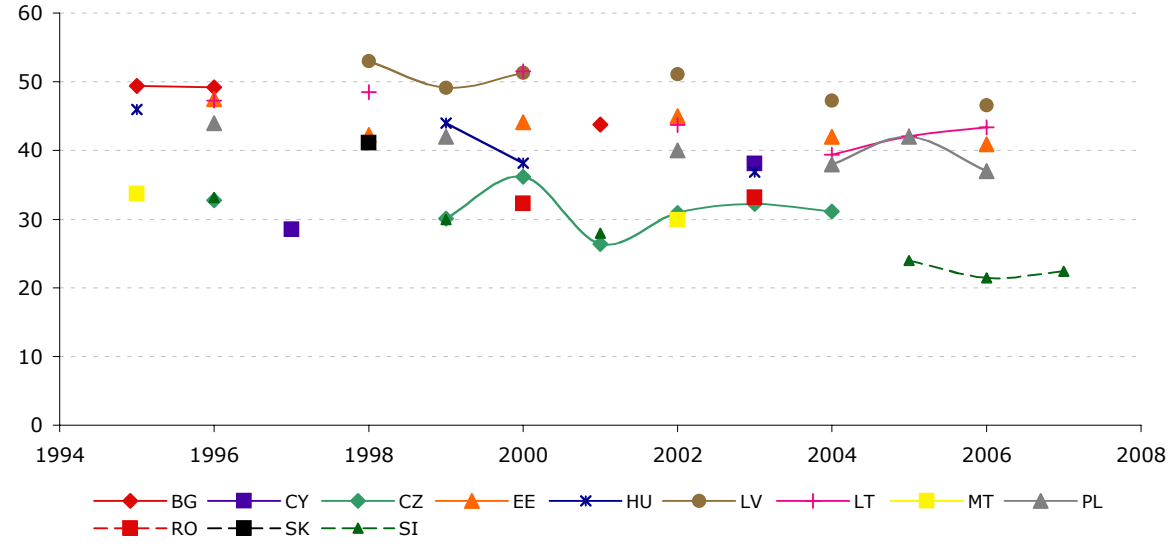
Source: WHO Health for All, 2009

Figure 2.4 percentage of female population, age 15+ who are regular smokers, 1995-2007. EU-12



Source: WHO Health for All, 2009

Figure 2.5 Percentage of male population, age 15+ who are regular smokers, 1995-2007. EU-12



Source: WHO Health for All, 2009

Section 2.2 Trends in alcohol consumption

Notes of data

Definitions Litres of pure alcohol consumed: estimated amount of pure ethanol in spirits, wine, beer and other alcoholic drinks consumed per capita in the country during the calendar year. Calculated as the sum of alcohol production and imports, less alcohol exports divided by the adult population (aged 15 years and older).

For further details on definitions and specific country data issues please refer to: http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions

Data issues: Data on alcohol is from the World Health Organization's Health for All database and has several limitations. It is complied primarily from the World Drink Trends regularly published by Produktschap woor Gedistilleerde Dranken, the Food and Agricultural Organization and the Alcohol and Drugs Unit of the WHO Headquarters. Due in part to the wide variety of sources and sub-sources of data and methodological differences, the comparability of alcohol consumption data is disputed. For example, the estimates for the percentage of pure alcohol in beer and wine varies and some countries provided their own estimates of pure alcohol consumed, rather than amount of beer and wine.

Excessive alcohol intake is associated with increased risk of cardiovascular diseases, liver cirrhosis and certain types of cancers. Alcohol is also a contributor to accidents and injuries, assault, violence, homicide and suicide (OECD 2009), as well as hooliganism, crime, family problems, social exclusion and problems at work (EU 2009a). Among men alcohol-related causes of death account for 6.6% of years of life lost and 3% among women (Eurostat 2009). Alcohol abuse itself accounts for 0.9% and 0.3% of years of life lost in men and women, respectively (Eurostat 2009).

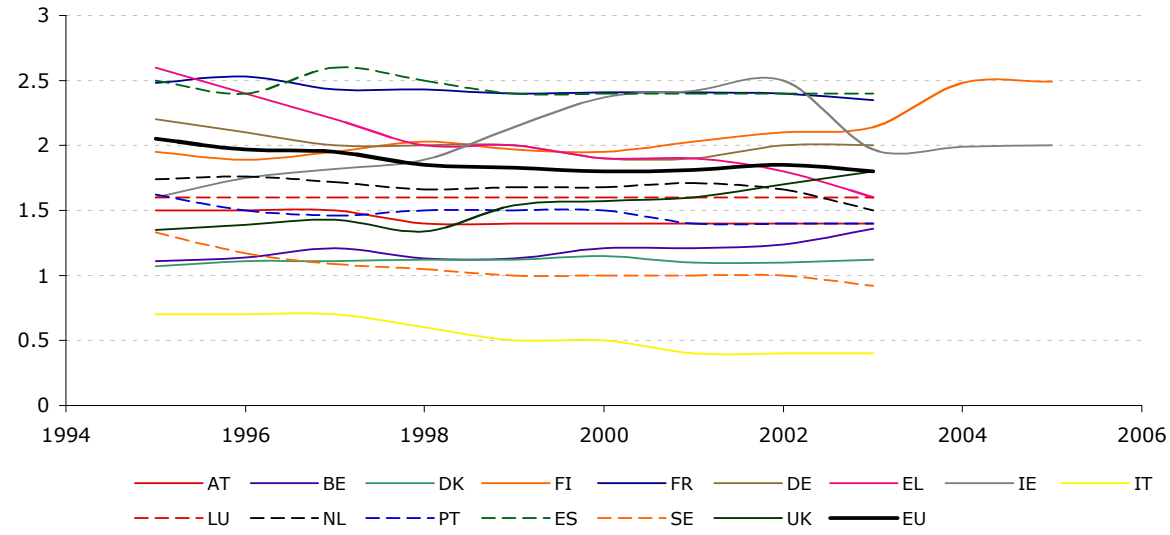
Trends in alcohol consumption are concerned with both total amount of alcohol consumed and drinking habits, which include types of beverages and patterns of drinking (i.e. drinking with meals, binge-drinking, etc), the latter of which is not addressed in our report.

The EU has the highest alcohol consumption in the world with an average of just over 9 litres per person per years. This is a considerable decline from 1980 when consumption was nearly 12 litres per person per year. There is significant variation amongst countries and within countries, however. 14% of Europeans do not drink at all and the vast majority who do drink (82%) do so at moderate levels (Anderson and Baumberg 2006).

Of the top four consumers of alcohol, three are EU12 countries: Estonia at 13.4 litres, Czech Republic at 13.67 litres and Hungary at 11.6 litres. However, overall EU15 countries consume 8.21 litres per year and EU15 countries 9.35 litres. Luxembourg has the highest per capita consumption of alcohol per year at 14.61 (WHO Health for All 2009). However this may be due to a high number of non-resident purchases in the country (OECD 2009).

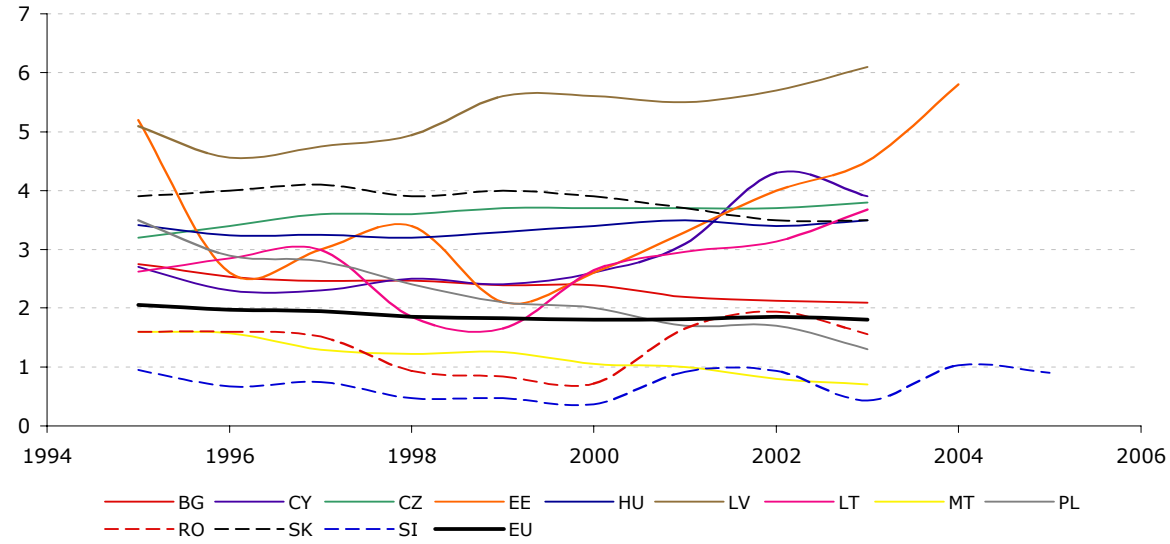
Figures 2.6-2.10 show differences in the amounts of alcohol, wine, beer and spirits consumed. Wine is more favoured in the EU15 countries (3.83 litres per person versus 2.25 litres) while EU12 countries favour spirits (2.13 litres per person versus 1.71). Beer consumption is similar throughout the EU at 3.81 litres per person per year. Since 1995 wine and spirit consumption in the EU has declined from 3.65 to 3.51 litres and from 2.01 to 1.8 litres, respectively. Beer consumption has remained similar (2.79 in 1995 versus 3.81 litres in 2003).

Figure 2.6 Spirits consumed in pure alcohol, litres per capita 1995-2005. EU-15



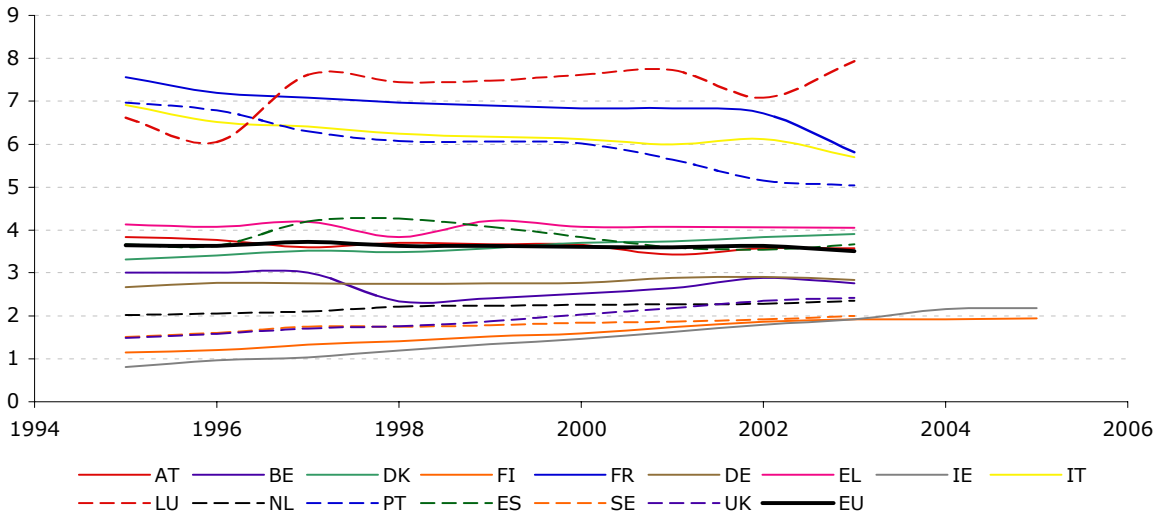
Source: WHO Health for All, 2009

Figure 2.7 Spirits consumed in pure alcohol, litres per capita 1995-2005. EU-12



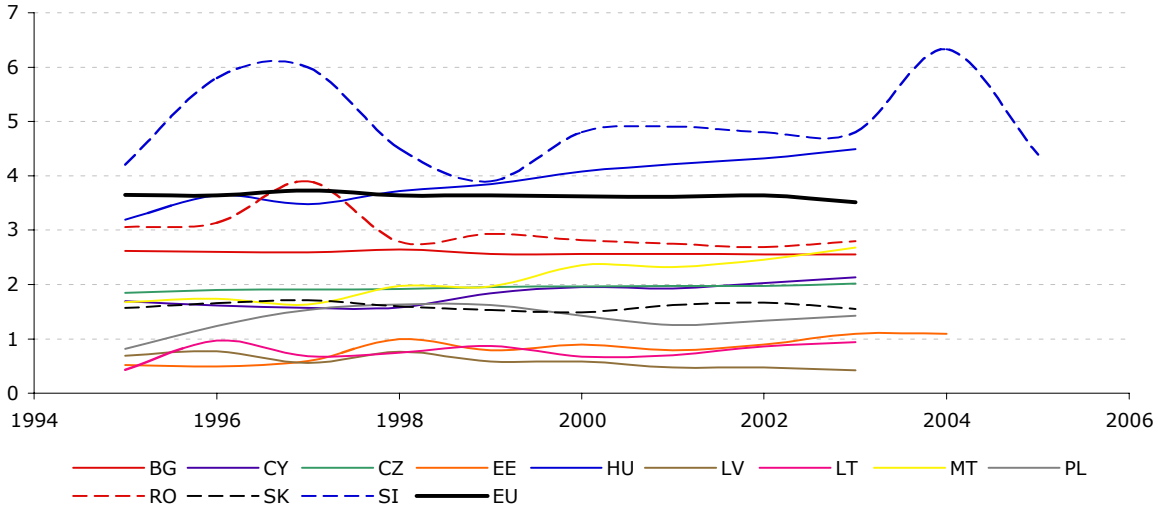
Source: WHO Health for All, 2009

Figure 2.8 Wine consumption in pure alcohol, litres per capita 1995-2005. EU-15



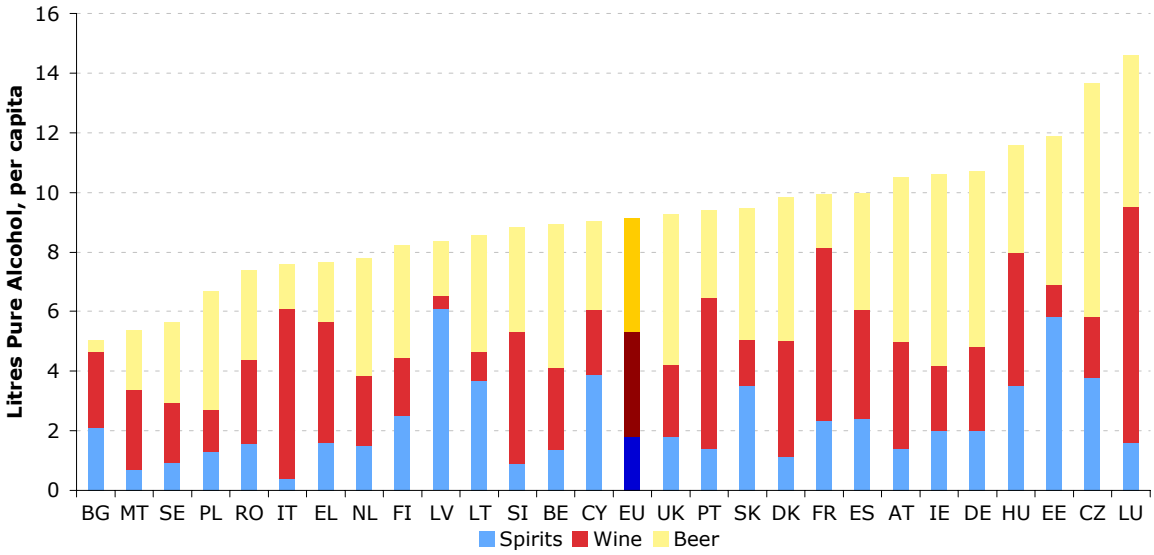
Source: WHO Health for All, 2009

Figure 2.9 Wine consumption in pure alcohol, litres per capita 1995-2005. EU-12



Source: WHO Health for All, 2009

Figure 2.10 Alcohol consumption per capita (litres)



Note: Year of most recent data: all data from 2003 except Estonia (2004) and Ireland, Finland & Slovenia (2005)

Source: WHO Health for All, 2009

Section 2.3 Trends in Obesity and physical activity

Notes of data

Definitions

Obesity: Measured by the body mass index (BMI) which estimates a health body weight by dividing one's weight by height squared. A person with a BMI above 30 is considered obese and a person with a BMI above 25 is considered overweight.

Physical activity: any bodily movement produced by skeletal muscles that results in energy expenditure above resting level

Sufficient total physical activity: Physical activity above basal levels; consistent with more than 10,000 steps per day

For further details on definitions and specific country data issues please refer to: http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions.

For further details on physical activity please see the EUPHIX project at http://www.euphix.org/object_class/euph_physical_activity.html

Data issues: Obesity data comes from the WHO Statistical Information System (WHOSIS), which has only a single data point for most countries since 2000. Also, some of the surveys on which it is based used self-reported data; some surveys were based on subnational or select portions of the population and the age groups surveyed also differed among countries.

Data on physical activity is from the Eurobarometer and is comparable across member states, but is self-reported. Also, what constitutes 'sufficient' total physical activity is ill defined (Sjöström et al 2006)

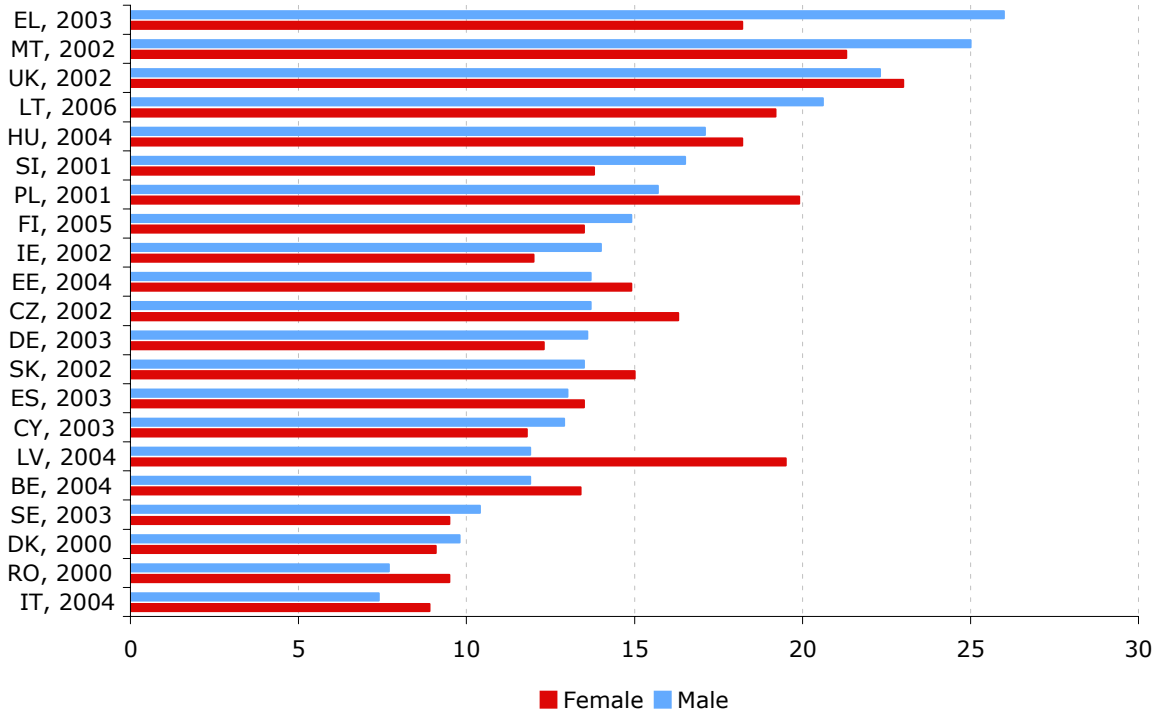
Obesity and nutrition –related non-communicable disease (NR-NCD) account for a significant burden of disease globally and include cardiovascular diseases, diabetes (Type II; non-insulin dependant), metabolic syndrome and some cancers. Similarly, it is suggested that over 30% of cancer cases could be prevented by avoiding risk factors including overweight and obesity, low intake of fruits and vegetables, and low levels of physical activity. Also, it is estimated that more than 180 million people worldwide have diabetes, a number which is likely to double by 2030. There is some discrepancy as to whether obesity in itself should be considered a risk factor or a disease in itself. Overweight and obese people are more likely to develop cardiovascular diseases, diabetes, cancer and other NR-NCDs. Projections suggest that obesity prevelance will rise to 20% of the population in the WHO European Region by 2010 (WHO Regional Office for Europe 2006).

Obesity prevalence has tripled in the last two decades (WHO Regional Office for Europe 2006). Current obesity prevalence in the EU ranges from 7.4 in Italian males to 26% of Greek males (Figure 2.11). In general, the prevalence of obesity is similar amongst men and women within countries. However there are significant gender differences in Latvia and Poland, where prevalence amongst women is approximately 5% higher and in Greece where the prevalence amongst women is 18.2% for women (versus 26% for men).

In addition to preventing obesity and overweight, physical activity also reduces the risk of cardiovascular diseases (Franco, de Laet, Peeters, Jonker, Mackenbahj & Nusselder 2005) and depression and is important for healthy aging (Nusselder, Looman, Franco, Peeters, Slingerland & Mackenbach 2008). In Figure 2.13, sufficient physical activity is considered to be 30 minutes of moderate activity five times a week or 20 minutes of vigorous activity three times a week on top of one hour of moderate activity per day (Sjöström et al 2006).

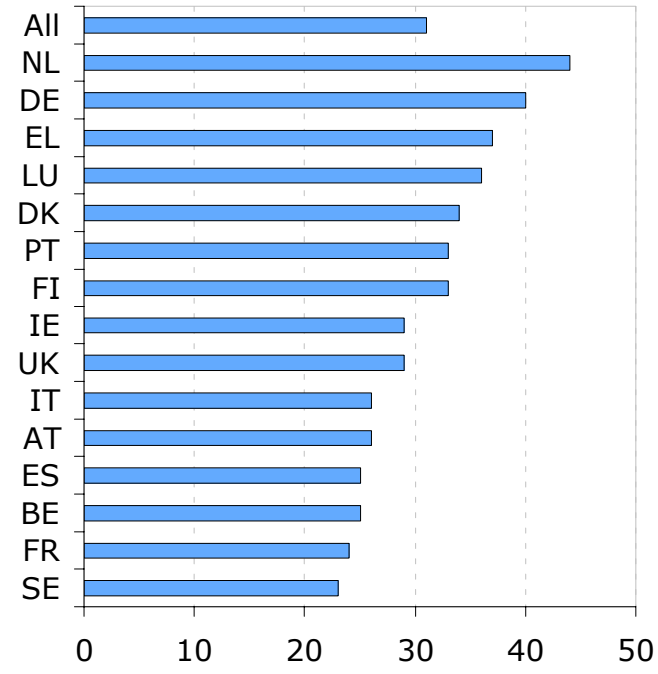
As seen in Figure 2.12, only 31% of people in EU-15 countries undertake sufficient total physical activity, ranging from 23% in Sweden to 44% in the Netherlands.

Figure 2.11 Percentage of adults (>=15) who are obese. Selected EU States



Source: WHOSIS

Figure 2.12 Percentage of People Taking Sufficient Total Physical Activity



Source: Eurobarometer 2002

Section 2.4 Trends in illicit drugs consumption

Notes of data

Definitions:

1-year prevalence: annual prevalence rate that is the percentage of the population that has used a given drug at least once in the past year.

Lifetime prevalence: percentage of a population that has used a given drug at least once in their lifetime

For further details on definitions and specific country data issues please refer to the UN World Drugs Report 2009, available at http://www.unodc/en/data-and-analysis/WDR.html

Data issues: The data on illicit drugs from the UN Drug Report is very poor. It is compiled from a variety of original sources, including school surveys, household surveys, drug registries, and indirect estimates; methodologies may differ from country to country. In many cases percentages do not add up to 100% and no details are provided to explain this.

Illicit drug use is associated with mental problems and social problems such as accidents and injuries, crime, unemployment and the breakdown of social relationships (EU 2009b).

HIV/AIDs and other blood-borne diseases can also be transmitted through the sharing of infected needles. The European Monitoring Centre on Drug and Drug Addiction (EMCDDA) defines 'problem drug use' as injecting drug use or regular use of opiates, cocaine or amphetamines during a 1-year period. The EU Drugs Action Plan (2005-08) focuses on supply and demand reduction, better international coordination, information, research and evaluation (EU 2009b).

In the European Union cannabis is the most commonly used illicit drug with lifetime prevalence ranging from 1% in Bulgaria to nearly 40% in Hungary (Table 2.1). 1-year prevalence ranges from nearly 0% to 11% Scotland. Cocaine is the second most commonly used illicit dug in the EU as a whole, with average prevalence at 1% and is closely followed by ecstasy at 0.96%. 1-year amphetamines use is 0.62%.

Although 1-year prevalence of opiates is only 0.42%, it is accounts for a disproportionate amount of morbidity and mortality relative to its prevalence. It is the main drug leading to physical, psychological and social harm (Rehm, Room, van den Brink et al 2005) and is the most common primary drug of abuse of those undergoing treatment (Figure 2.13).

Table 2.1: Drug Prevalence in the EU (lifetime)

	Cannabis	Opiates	Cocaine	Amphetamine	Ecstasy	Hallucinogens	Hypnotics and Sedatives	Inhalants / Solvents
Austria	20.7	65.8	6.3					
Belgium	20	44.2	13	11.8	1.7			
Bulgaria	0.8	98.5	0.1	0.5			0.1	
Cyprus	27.8	56.7	13.3		1.4		0.8	
Czech Republic	12.7	25.5	0.1	58.6	0.1	0.7	0.7	1.5
Denmark	30.4	53.4	5.8	7.9	1.1	0.1	1.4	
England & Wales	12.6	68.9	11.1	3	0.5	0.1	1.1	0.3
Estonia		82		5.8				
Finland	12.2	56.1		23.2				
France	36.5	49.4	7.5	0.3	1.1			
Germany	29.6	49.8	6.9	6.2		0.2		
Greece	7.6	87.7	2.6		0.1		1.2	
Hungary	39.9	18.6	1.9	5.8	2.1		31.7	
Ireland	20.4	63.9	10.7	0.6	1.8		1.8	0.4
Italy	9.6	72.3	14	0.2	0.5		0.6	
Latvia	7.3	70.7	0.4	16.7				4.9
Lithuania	0.5	80.8	0.2	2.6		0.1	1.1	2.6
Luxembourg	8	76	11					
Malta	12	76	8		3		0.2	
Netherlands	21.3	42.8	31.2	3.9	0.7			
Northern Ireland	35.4	12.1	10.1		4		31.3	
Poland	3	23.2	0.9	8.9		0.6	10.1	2.7

Portugal	5	63	25				1
Romania	6.3	93	0.5	0.2			
Scotland	13.5	68.6	7.2	2.1	0.9		5.4
Slovakia	19.9	51.1	1.3	26.8	1		
Slovenia	7	91.1	1.3	0.1	0.2		
Spain	10.9	39.3	46.9	0.8	0.5	0.1	1.2
Sweden	19.8	28	3.1	40.6	0.2		8.3

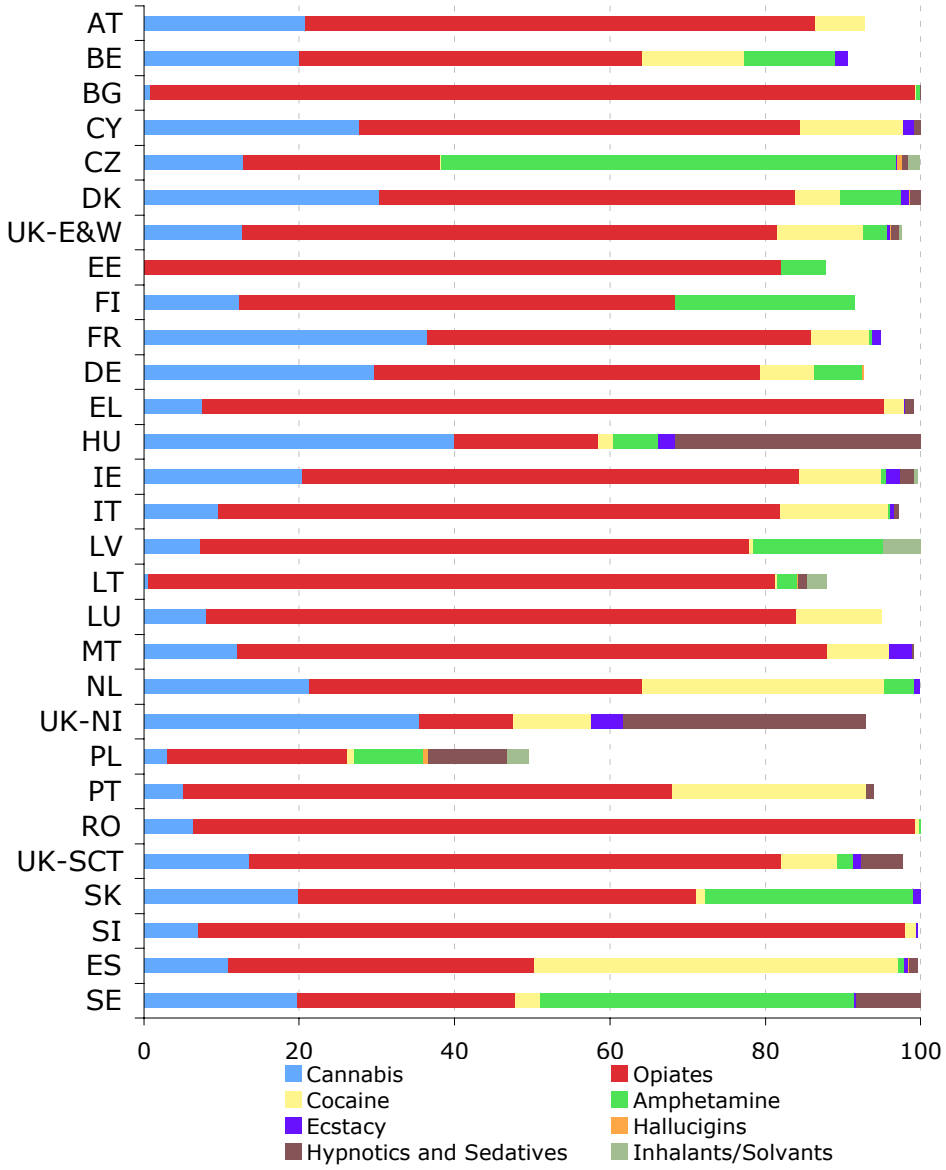
Source: UN Drug report 2009; N.B: Data from a variety of years 1999-2008.

Table 2.2: Drug Prevalence in the EU (1-year)

	Opiates	Cocaine	Cannabis	Amphetamine	Ecstasy
Austria	0.43	0.9	3.5	0.5	0.5
Belgium	-	1.2-1.3	5	0.6-1.1	1.1
Bulgaria	0.38-	0.6	2.2	0.5	0.7
Cyprus	0.09-	0.6	2.1	0.4	1
Czech	0.13	0.2	9.3	0.7	3.5
Denmark	0.6	1	5.2	0.7	0.3
Estonia	0.89-	-	4.6	1.3	1.7
Finland	0.23	0.5	3.6	0.6	0.5
France	0.42-	0.6	8.6	0.2	0.5
Germany	0.14-	0.7	4.7	0.5	0.4
Greece	0.28	0.1	1.7	0.2	0.2
Hungary	0.28-	0.2	2.3	0.6	0.5
Ireland	0.5	1.7	6.3	0.4	1.2
Italy	0.79	2.2	14.6	0.6-0.7	0.7
Latvia	0.8	0.5	4.9	0.9	1.5
Lithuania	0.1	0.3	2.2	0.3	0.4
Luxembourg	0.93	0.9	7.6	0.4	0.5
Malta	0.54-	1.1-1.2	4.4-4.6	0.6-1.2	0.9
Netherlands	0.31	0.6	5.4	0.3	1.2
Poland	0.09-	0.2	7.2	0.7	0.3
Portugal	0.43-	0.6	2.7	0.2	0.4
Romania	0.11-	0.1	0.9	0.1	0.1
Slovakia	0.33-	0.6	6.9	0.2	1.2
Slovenia	0.53	0.9	4.1	0.4-0.6	0.7
Spain	0.2-0.4	3	10.1	0.9	1.1
Sweden	0.17	0.5-0.6	2.1	0.2-0.6	0.2-0.3
England &	0.93-	2.3	7.4	1	1.5
Scotland	1.54-	3.8	11	2.2	3.2
Northern	0.1	1.9	7.2	1	1.8

Source: UN Drug Report 2009

Figure 2.13 Primary drug of abuse amongst those undergoing treatment



Source: UN Drug Report 2009

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CHAPTER 3. HEALTH RESOURCES AND UTILISATION

Introduction

Ensuring individuals in need of health care receive effective treatment that improves their health is a fundamental goal in all European health system. The European Union formally recognizes that 'everyone has the right of access to preventive health care and the right to benefit from medical treatment', in Article 33 of the European Union's Charter of Fundamental Right. Access to care is not only fundamental as a right, but also because of its significant impact on health, particularly through reductions in infant mortality and deaths among the middle aged and older people (Nolte and McKee, 2004). It can also be argued that access to care is a goal in and of itself: "beyond its tangible benefits, health care touches on countless important and in some ways mysterious aspects of personal life and invest it with significant value as a thing in itself" (cited in (Gulliford, Figueroa-Minoz et al. 2002).

The interaction of supply and demand-side factors determines the level and quality of care. The volume and distribution of human resources are among the main supply-side factors affecting access to and receipt of care. Availability of physicians and nurses (Section 3.1) and distribution are main indicators of health care resources availability together with the number of hospital beds, and length of stay (Section 3.2). Data on acute-care admissions (Section 3.3) will also be presented together with hospital discharges (Section 3.4). Since currently day care is becoming a prominent part of hospital care, data on specific day care procedures will also be discussed.

Section 3.1 Human resources

Notes of data

Definitions

Practicing physicians: A physician is a person who has completed studies in medicine at the university level. The number of physicians at the end of the year includes all active physicians working in health services (public or private), including health services (in any ministry). Interns and residents are also included. The number of physicians excludes: physicians working outside the country; retired, not practicing or unemployed physicians; physicians working outside health services; dentists (stomatologists).

Exceptions: in *Belgium* the number of physicians include: physicians working outside the country (until 2004), physicians on the retired list and not practising or unemployed, physicians working outside health services. In *Ireland*, it is not possible to exclude physicians working in administration, research or other posts that exclude direct contact with patients. Data for *Spain, Greece, Slovakia* is overestimated since it includes dentists and/ or stomatologists.

General practitioners: Include only physicians working in outpatient establishments in specialties such as general practice, family doctor, internal medicine, general medicine.

Exceptions: in *Estonia*, until 2001 general practitioners, internal medicine doctors and family doctors working in outpatient establishments are included. From 2002 doctors working in primary care are included. In *Italy and Spain*, paediatricians are also included.

Medical group of specialties: includes specialties such as Internal medicine, Cardiology, Endocrinology, Gastroenterology, Pulmonology, Oncology, Rheumatology, Neurology, Ophtalmology, Oto-rhino-laringology, Radiology, Urology, and Infectious diseases. This group includes most of specialties excluding Surgery, Gynaecology & obstetrics, paediatrics, Psychiatry and General Practitioners. Differences in the definition are possible.

Dentists: A dentist (or stomatologist) is a person who has completed university-level studies at a faculty or school of dentistry (stomatology) and who is actually working in dental care, or a physician with postgraduate training in stomatology, practicing dental care only.

Exceptions: In *Belgium and Luxemburg*, stomatologists are excluded. In *Estonia*, interns were not included before 1997. In *Spain*, data may include some non-active dentists.

Nurses: A nurse is a person who has completed a programme of basic nursing education and is qualified and authorized in his or her country to practice nursing in all settings for the promotion of health, prevention of illness, care of the sick and rehabilitation. The number of nurses at the end of the calendar year includes only active nurses, i.e. those working in hospitals, primary health care, nursing homes, etc. The number of nurses includes: qualified nurses; first- and second-level nurses; feldschers; midwives; and nurse specialists. It excludes: nursing auxiliaries; other personnel without formal education in nursing.

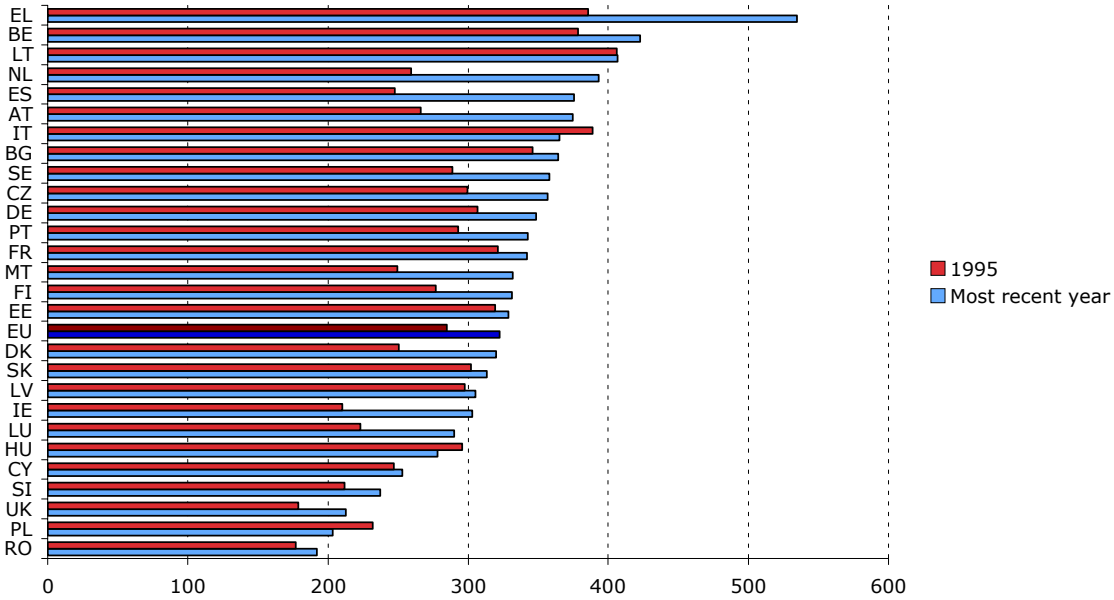
The definitions are based on WHO HFA database. For further details on definitions and specific country data issues please refer to: http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions.

Supply of physicians is a key indicator of access to care, since they are the patients' agents and are most likely to make decisions regarding patients' treatments and diagnosis.

There was large heterogeneity in the number of practicing doctors per 100,000 population (physician "density") across European countries in 2007, ranging from 400 or more per 100,000 population in Belgium and Greece, to below or around 200 in Poland and Romania (Figure 3.1). In comparison with 1995, physician density has increased everywhere but Italy and Hungary. In Cyprus, Latvia, and

Estonia the number of physicians per 100,000 population has remained nearly stable, with less than a 3% increase. A significant growth in physician density can be observed in Greece, Austria, Spain, Ireland, and the Netherlands (between 40% and 52% increase).

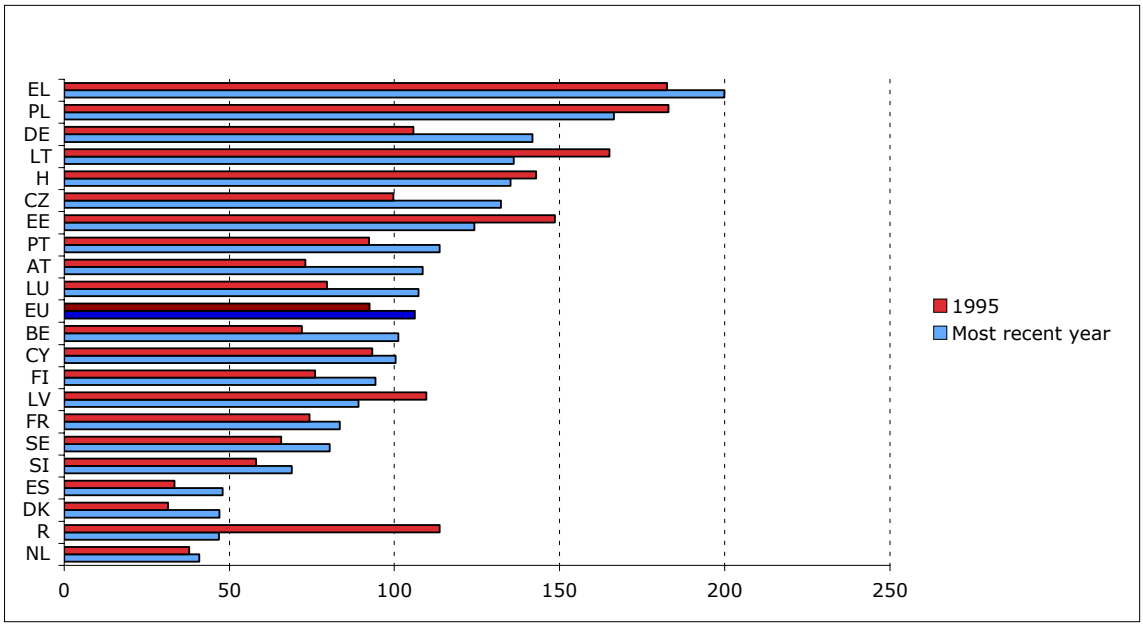
Figure 3.1 Physicians per 100 000 population EU-27



NOTE: No 2007 data available for these countries, the most recent year was used: Belgium 2006; Cyprus 2006; Denmark 2006; Estonia 2006; Greece 2006; Italy 2006; Luxembourg 2005; Poland 2006; Portugal 2005; Romania 2006; Slovakia 2004; Slovenia 2006; Sweden 2006; United Kingdom 2005. No data for 1995 was available for these countries; the most recent year was used: Malta 1993, Netherlands 1991. UK 235.6 per 100,000 in 2005 from Eurostat data
SOURCE: WHO Health for All, 2009

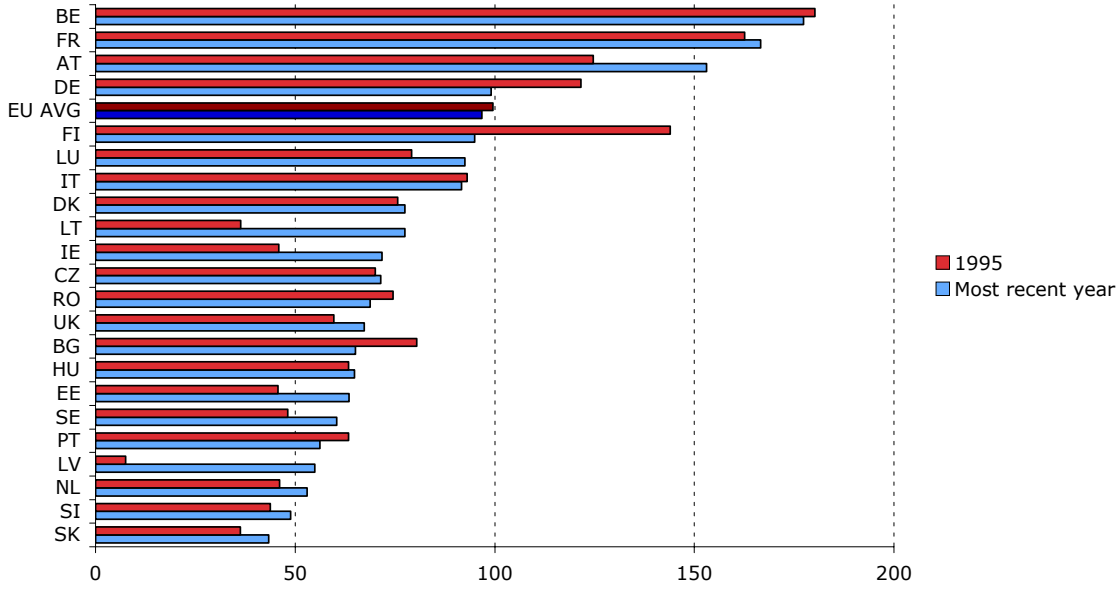
Wherever possible, physician density is further separated in specialist (Figure 3.2) and generalist density (Figure 3.3) to have a better picture of the distribution of doctors across Europe. In many countries separate data on specialists and or general practitioners are not available. Almost everywhere there is a larger number of specialists per 100,000 population than generalists. However, Austria, Belgium, Denmark, France, the Netherlands, and Romania report more GPs than specialists. Between 1995 and 2007, specialist and GP density increased almost everywhere. The country with the largest reduction in GP density is Finland (but the number of specialist increased), while for specialist density it is Romania. The growth in physician density observed in Austria is mainly due to an increase in the number of specialists per 100,000 compared with GPs, while the contrary is true in the Netherlands. Moreover, it emerges in Estonia and Lithuania, between 1995 and 2007, there was a decrease in specialist density but a growth in GP density.

Figure 3.2 Specialists per 100 000 population EU-27



NOTE: The following countries are excluded because of lacking data: Bulgaria, Cyprus, Ireland, Italy, Malta, Slovakia and the United Kingdom. For the following countries data was not available for 1995, he most recently available year was used: Greece 1999; Latvia 1998; Romania 1994. For following countries data was not available for 2007 and the most recently available was used: Belgium 2005; Denmark 2006; Estonia 2006; Greece 2004; Lithuania 2005; Netherlands 2005; Poland 2006; Portugal 2005; Romania 2004; Slovenia 2006; Spain 2006; Sweden 2006.
SOURCE: WHO Health for All, 2009

Figure 3.3 General Practitioners per 100 000

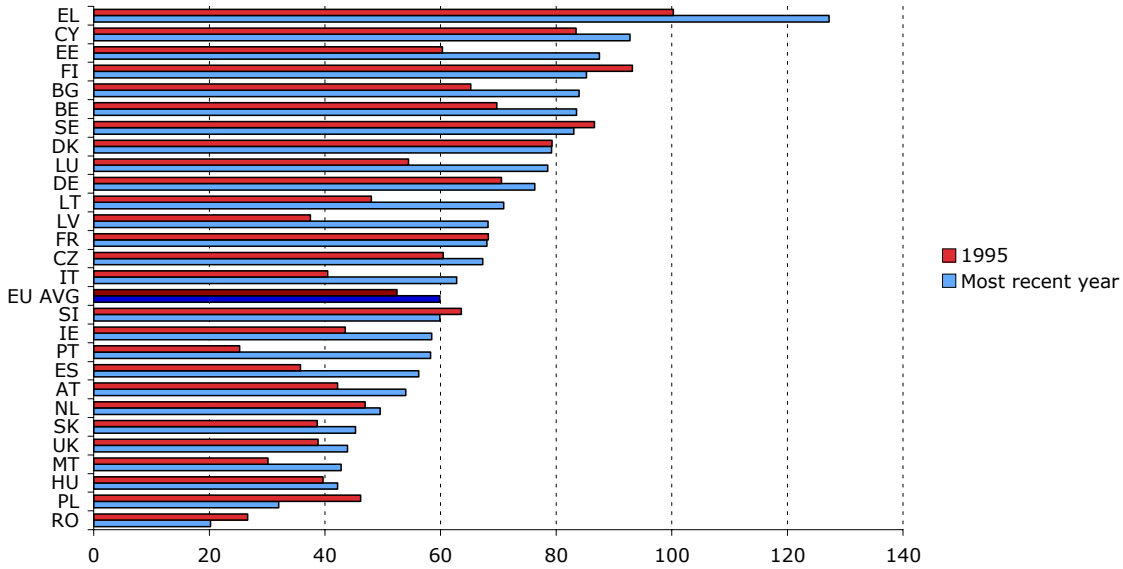


NOTE: The following countries were excluded because of lacking data: Cyprus, Greece, Malta, Poland, and Spain. For the following countries data for 2007 was unavailable, the most recently available data was used: Belgium 2005; Denmark 2006; Estonia 2006; Italy 2006; Luxembourg 2005; Portugal 2005; Romania 2006; Slovakia 2005; Slovenia 2006; Sweden 2006; United Kingdom 2004.

SOURCE: WHO Health for All, 2009

Differences across European countries were even larger for dentists' density than for physician density in 2007 (Figure 3.4). The number of dentists per 100,000 population ranged from approximately 20 per 100,000 population in Romania to more than 120 per 100,000 population in Greece. As for physician density, in the last 12 years there has been an increase in the number of dentists almost everywhere but Romania and Poland. In Finland, Sweden and Slovenia dentists' density increased by between 9% and 4%. Larger increases in dentist density were recorded in Portugal (more than doubled), Latvia, Spain, Italy, and Lithuania.

Figure 3.4 Dentists per 100 000 population EU-27



NOTE: The following countries have no available data for 1995 and the most recently available was used: Malta 1993; Slovakia 1994. The following countries had no data available for 2007, the most recently available was used: Belgium 2006; Cyprus 2006; Denmark 2006; Estonia 2006; Finland 2006; Greece 2006; Italy 2006; Luxembourg 2005; Poland 2006; Portugal 2005; Romania 2006; Slovakia 2004; Slovenia 2006; Sweden 2006; United Kingdom 2001.

SOURCE: WHO Health for All, 2009

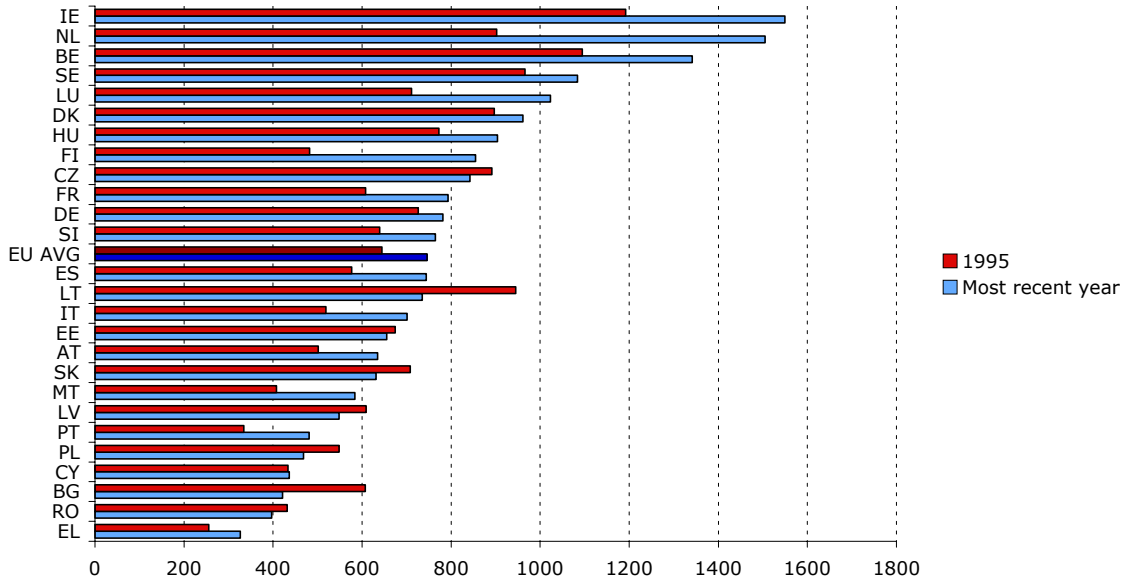
Many countries are moving toward a greater use of nurses working alongside doctors. Nurses' work may now include: attending patients for minor health problems, limited prescribing rights, and responsibility for health programs like immunizations for children and adolescents. Nurses also have a significant role in chronic disease management.

In 2007, there was notable heterogeneity in nurse density across EU countries, varying from over 1500 in Ireland and the Netherlands to under 400 in Greece and Romania (Figure 3.5). Looking at the trends, on average there was a 17% increase in nursing density between 1995 and 2007. However, in Bulgaria, Lithuania, Poland, Slovakia, Latvia, Malta, Romania, Czech Republic, and Estonia there was a decrease in the number of nurses. The countries with the largest increase in nurse density are Finland (78%) and the Netherlands (67%).

Many countries are moving toward a greater use of nurses working alongside doctors. Nurses' work may now include: attending patients for minor health

problems, limited prescribing rights, and responsibility for health programs like immunizations for children and adolescents.

Figure 3.5 Nurses per 100 000 population EU 27



NOTE: The United Kingdom was excluded because of lacking data through the source (UK 783.2 (nurses and midwives) per 100,000 population in 2005 (Source: European Health Interview Survey)). No data available for 2007 for these countries, the most recently available year was used: Belgium 2004; Cyprus 2006; Denmark 2006; Estonia 2006; Finland 2006; Germany 2006; Greece 2006; Italy 2006; Luxembourg 2005; Poland 2006; Portugal 2006; Romania 2006; Slovakia 2005; Slovenia 2006; Spain 2006; Sweden 2006. No data available for 1995 for these countries, the most recently available year was used: Germany 1997; Greece 1992: Malta 1989; Netherlands 1991.

SOURCE: WHO Health for All, 2009

Section 3.2 Hospital care

Notes of data

Definitions

Hospital: A hospital is a residential establishment equipped with inpatient facilities for 24-hour medical and nursing care, diagnosis, treatment and rehabilitation of the sick and injured, usually for both medical and surgical conditions, and staffed with professionally trained medical practitioners, including at least one physician. The hospital may also provide services on an outpatient basis. The number of hospitals includes: general, specialized, acute care and long-stay hospitals. The number of hospitals excludes: balneological institutes, health resorts, sanatoria, nursing homes for the physically and mentally disabled, homes for the elderly, day centres, day hospitals.

Exceptions: In *Germany*, general hospitals, mental health hospitals and prevention and rehabilitation homes are included, while long-term nursing care homes are excluded. In *France*, data from 1997 include only hospitals having

beds for inpatients; the 2003 data only include the establishments with capacities for complete or partial hospitalization. In *Ireland*, data refer to publicly funded acute hospitals, district/community hospitals, geriatric hospitals and psychiatric hospitals, while private short-stay hospitals are not included. In the *Netherlands*, private day hospitals are not included, but data cover general hospitals, university hospitals, specialized hospitals and mental hospitals. In *Slovakia*, acute care hospitals are not defined.

Hospital beds: A hospital bed is a regularly maintained and staffed bed for the accommodation and full-time care of a succession of inpatients and is situated in wards or areas of the hospital where continuous medical care for inpatients is provided. It is a measure of hospital capacity. Beds in all hospitals should be included. The number of hospital beds should be measured in available bed-years during the calendar year or, if this is not possible, in available beds at mid-year (preferably) or end-year count depending on the current national practice. Hospital beds excludes: cots for neonates; day beds; provisional and temporary beds, beds in storerooms; beds for special purposes or belonging to special health devices, e.g. dialysis, delivery (but not post-delivery beds in maternity hospitals), etc.

Exceptions: in *Austria*, beds used for same-day care are included, as well as beds in sanitoriums providing hospital care. In *Denmark and Ireland*, beds in private hospitals are not included. In *Latvia,* since 2000 the data corresponds to mid-year estimates (before it was end-of-year). In the *Netherlands*, beds in private day hospitals are excluded, while beds used for day care in general, university, specialized hospitals and in mental hospitals are included. In *Sweden*, beds in hospitals, nursing homes and psychiatric treatment homes are included.

Acute hospitals: All general and specialised hospitals with relatively short average length of stay. Hospitals with relatively long average length of stay, like some psychiatric, tuberculosis, geriatric or rehabilitation/nursing hospitals should be excluded. An alternative criteria used by OECD since the 1980s to define acute care is the average length of stay of 18 days or less..

Inpatient care admission: Admission is the hospitalization of a patient in an inpatient facility normally involving a stay of at least 24 hours. In the case of death or discharge to another health establishment, the actual stay may be shorter than 24 hours. These cases are registered as a one-day hospitalization.

Discharge: discharge is the conclusion of a period of inpatient care, whether the patient returned to his home, was transferred to another inpatient facility or died. The number of admissions/discharges excludes: a transfer from one department to another one at the same hospital; day- cases of day patients; weekend leave when the patient has been released temporarily and the hospital bed is still reserved; cases where treatment is provided by hospital personnel at the patient's home. Newborns are not included.

Average length of stay: Total number of occupied hospital bed-days divided by the total number of admissions or discharges. Length of stay (LOS) of one patient = date of discharge - date of admission. If these are the same dates, then LOS is

set to one day. ALOS should preferably be provided to the accuracy of hundreds, i.e. 0.01.

Exceptions: In *Germany*, general hospitals, mental health hospitals and prevention and rehabilitation homes are included, while long-term nursing care is excluded. ALOS is calculated by dividing the bed-days by the "number of cases". The "number of cases" is equal to the sum of admissions plus the discharges including deaths divided by 2. As of reporting year 2002 the number of admissions and discharges includes day cases. In *Estonia*, bed-days are divided by the total number of discharges. In *Hungary*, the data is the case number of department discharges. In Ireland, data refer to the number of in- patient bed days used divided by the number of discharges and deaths in publicly funded acute hospitals and district hospitals. In *Romania*, ALOS is calculated as: (Number occupied bed-days)/(Number admissions+patients at beginning of calculation period). In *Spain* it is Total number of occupied hospital bed-days/ total number of discharges.

Occupancy rate: Average number of days when hospital bed was occupied as a percentage of available 365 days. Calculation: utilized bed-days x 100/available bed- days during the calendar year.

The definitions are based on WHO HFA database. For further details on definitions and specific country data issues please refer to: http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions.

Exceptions: In Germany, general hospitals, mental health hospitals and prevention and rehabilitation homes are included, while long-term nursing care is excluded. ALOS is calculated by dividing the bed-days by the "number of cases". The "number of cases" is equal to the sum of admissions plus the discharges including deaths divided by 2. As of reporting year 2002 the number of admissions and discharges includes day cases. In Estonia, bed-days are divided by the total number of discharges. In Hungary, the data is the case number of department discharges. In Ireland, data refer to the number of in- patient bed days used divided by the number of discharges and deaths in publicly funded acute hospitals and district hospitals. In Romania, ALOS is calculated as: (Number occupied bed-days)/Number admissions+patients at beginning of calculation period). While in Spain is: Total number of occupied hospital bed-days / total number of discharges.

Occupancy rate: Average number of days when hospital bed was occupied as % of available 365 days. Calculation: utilized bed-days x 100/available bed- days during the calendar year.

Exceptions: Cyprus only public hospitals. In Denmark, bed occupancy in %, somatic hospitals with an average length of stay of 18 days or less. In Germany, the number of bed-days refers to the sum of all inpatients at midnight, and the day of admission counts as one bed-day so that one day case constitutes one bed-day. Data have been recalculated since 1991. In Ireland, figures refer to the number of in-patient bed days used in publicly funded acute hospitals where the average length of stay is less than 18 days. In Lithuania, there is no clear

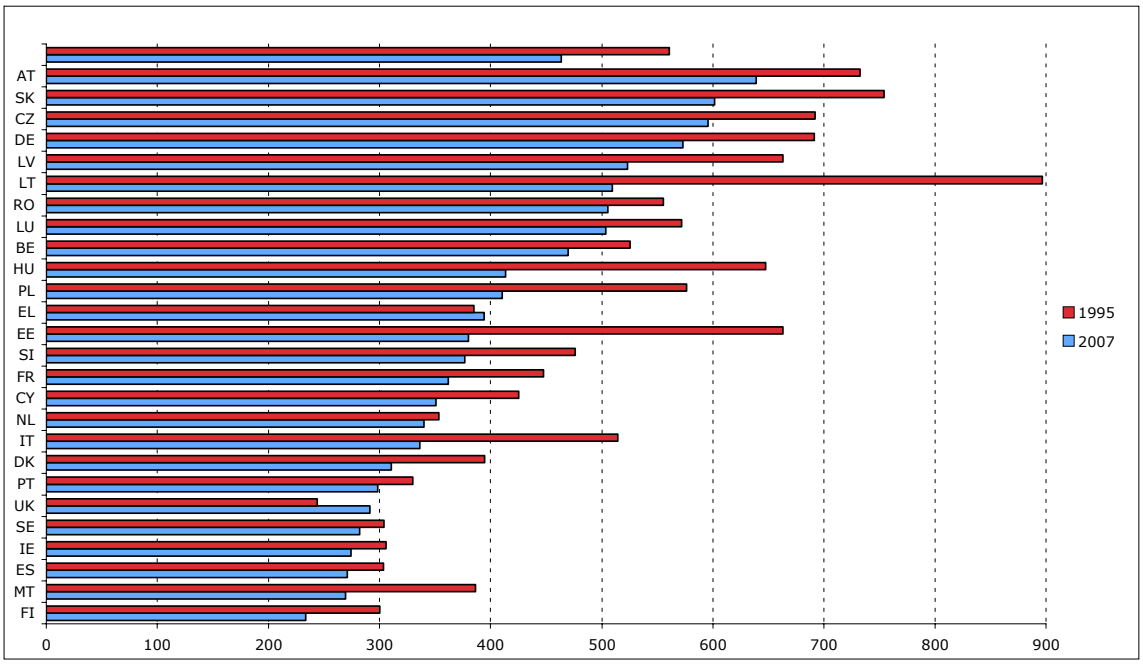
separation for short and long-stay hospitals or beds. For Spain, average number of days when hospital bed was occupied as % of available 365 days. In this statistics acute care hospitals means general hospitals+special hospitals with short-stay.

Section 3.3 Acute care hospital beds, length of stay, and admission rate

The number of acute care hospital beds is an indicator of the capability of delivering appropriate acute care services in hospitals. As shown in Figure 3.6 there is large heterogeneity in the number of acute care beds per 100,000 across European countries in 2007, ranging from as high as more than 600 per 100,000 population in Austria and Slovakia to as low as less than 275 per 100,000 in Finland, Malta, Ireland, and Spain.

However, heterogeneity in the number of acute care beds per 100,000 population was lower in 2007 than in 1995 because of a long-term trend towards declining the number of acute care beds in all countries. On average in the EU the number of beds per 100,000 population in 1995 was 485 while in 2006 it was 395.

Figure 3.6 Acute care hospital beds per 100000



NOTE: Bulgaria was excluded because of lacking data. No 2007 data available for these countries, the most recently available was used: Cyprus 2006; Denmark 2004; France 2006; Germany 2006; Greece 2006; Ireland 2006; Italy, 2006; Luxemburg 2004; Poland 2006; Portugal 2005; Romania 2006; Spain 2006; Sweden 2005; UK 1998. No 1995 data available for these countries, the most recently available was used: Latvia 1998; Malta 1997.

SOURCES: WHO Health for All, 2009

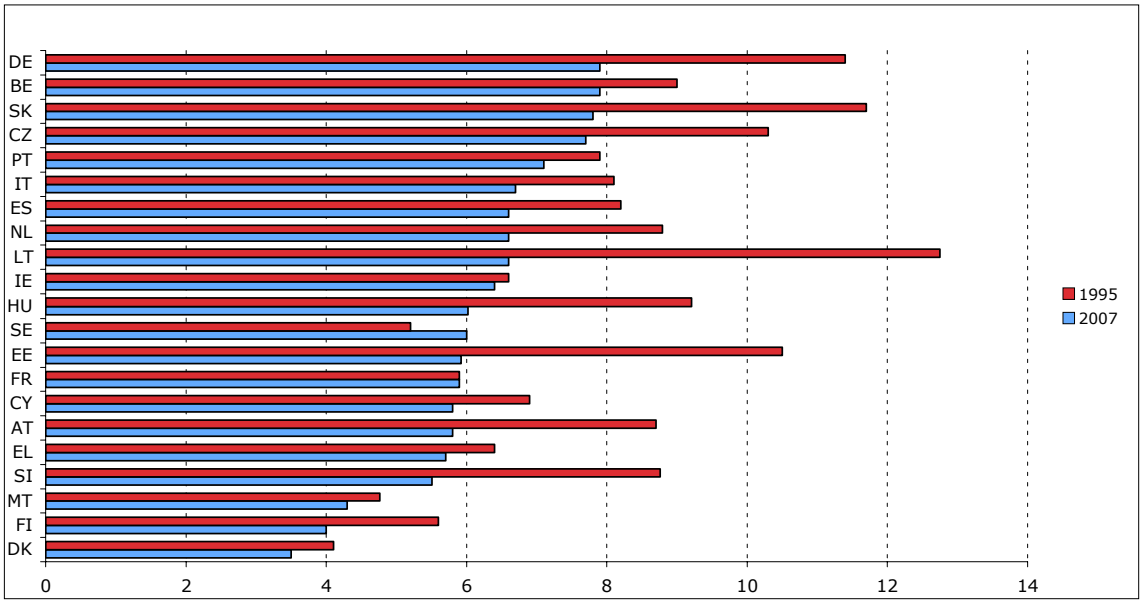
Improvements in medical technology was a main reason for the reduction in the number of beds per 100,000 population allowing a shift of hospital resources from inpatient care to day care procedures (OECD, 2004).

The reduction of hospital beds per capita was also associated with a reduction in the average length of stay for acute care patients (Figure 3.7). The average length of stay in hospitals (ALOS) is considered an efficiency indicator. A shorter hospital stay decreases the cost per discharge and allows a shift of resources towards cheaper post-acute care, everything else kept constant. However, it is essential to make sure that short stays do not have a negative effect on health outcomes and quality of care. Indeed, if this happens, readmission rate will increase and costs per episode of illness may possibly rise.

In 2007, European countries still showed large variation in ALOS for acute care, varying from less than 4 days in Denmark and Finland to more than 7 days in Portugal, Czech Republic, Slovakia, Belgium, and Germany. However, as for bed availability, variation in ALOS for acute care across European countries was significantly lower in 2007 than in 1995. This might again be explained by a trend towards reducing ALOS in acute care in all European countries. In 1995 the ALOS was on average 8 days while in 2006 it was 6.5. ALOS fell particularly sharply in countries which had high levels of ALOS in 1995. For example in Lithuania, Slovakia, Germany, Estonia, and Czech Republic the ALOS in 1995 was more than 10 days and in 2007 for these countries it was less than 8 days, with Estonia reaching nearly 6 days.

This ALOS decline was reached by shifting hospital resources towards day care procedures, by introducing DRGs for the reimbursement of hospital care, and by improving follow-up care (OECD, 2007).

Figure 3.7 ALOS, acute care hospitals 1995-2007

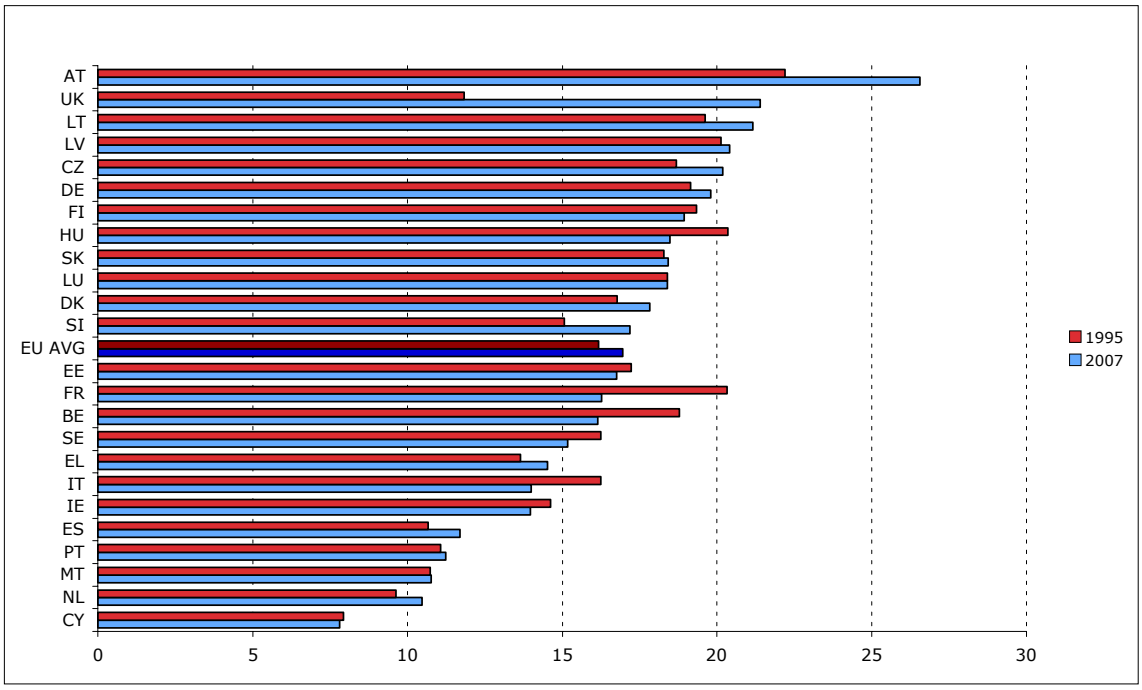


NOTE: the following countries were excluded because of lacking data: Bulgaria, Latvia, Poland, and Romania. No 2007 data available for these countries, the most recently available was used: Belgium 2006; Cyprus 2006; Denmark 2005; Estonia 2006; Finland 2006; France 2006; Germany 2006; Greece 2004; Ireland 2006; Italy 2005; Netherlands 2006; Portugal 2005; Spain 2006.

SOURCES: WHO Health for All, 2009

There is not only large variation in acute beds availability and ALOS across European countries but also in acute care admissions per 100 population (Figure 3.8). The latter varies from 7.8% in Cyprus (but only public hospitals are included) to 26.5% in Austria in 2007. When compared to 1995 data, on average acute hospital admission rate rose only slightly; it was 16.2% in 1995 and it was 17% in 2006. However, within each country large changes occurred. For example, in France there was a 20% reduction in acute admissions rate. In Italy and Belgium the reduction was approximately 14 %. However, in Austria and Slovenia it increased by 20% and 14%, respectively.

Figure 3.8 Acute care hospital admissions per 100 population



NOTE: The following countries were excluded because of lacking data: Bulgaria, Poland and Romania. No 2007 data available for these countries, the most recently available was used: Belgium 2006; Cyprus 2006; Czech Republic 2006; Denmark 2001; France 2006; Germany 2006; Greece 1998; Ireland 2006; Italy 2005; Luxembourg 1994, Netherlands 2006; Portugal 2005; Spain 2006; United Kingdom 1996; EU average 2006. No 1995 data available for these countries, the most recently available was used: Latvia 1998; Luxembourg 1994; Malta 1999.

SOURCES: WHO Health for All, 2009

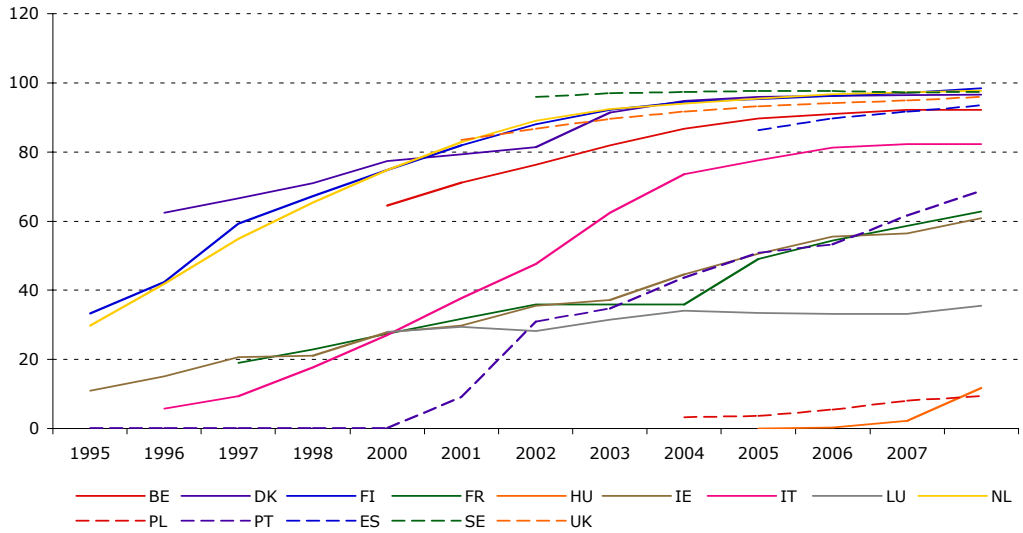
Section 3.4 Day cases, cataract surgery and tonsillitis

As mentioned previously, the last decade has witnessed a clear trend towards shifting hospital resources from inpatient to ambulatory or day-cases procedures. This was possible in part due to advances in medical technologies such as the diffusion of less invasive surgical interventions and better anesthetics.

Cataract surgery is the most frequent surgical procedure in most EU countries (OECD 2007), and it is mainly performed on an ambulatory basis in most of the

countries (Figure 3.9). Day surgery accounts for more than 95% of all cataract surgeries in Denmark, the UK, the Netherlands, Sweden, and Finland, and more than 90% in Belgium and Spain. However, cataract ambulatory surgery is still very low in Hungary and Poland; and in France and Ireland nearly 40% of cataracts surgeries still require an overnights hospital admission.

Figure 3.9 Percentage of cataract surgery procedures performed as day cases, in selected EU countries

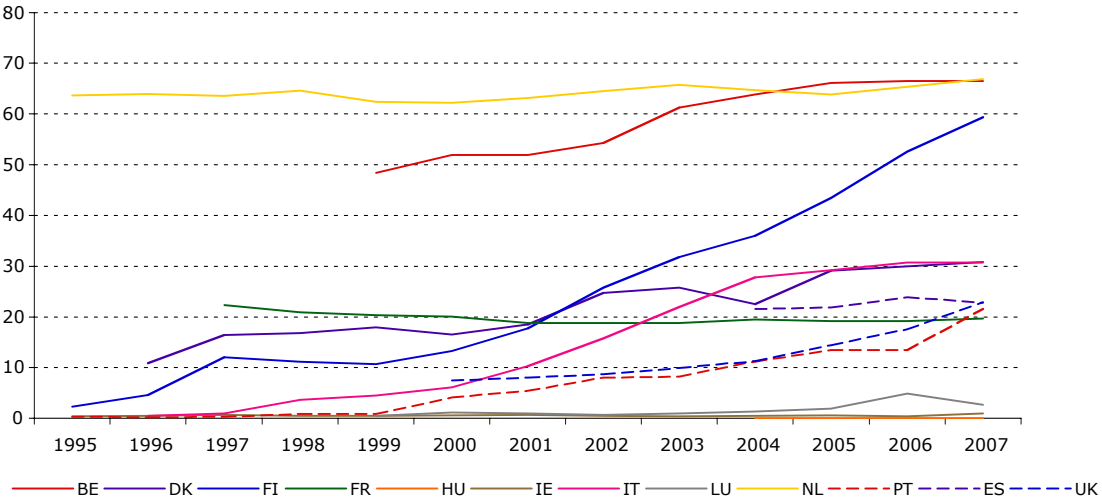


NOTE: The year 1995 was used as the baseline because there was no data available prior to this year. The following countries were excluded because of lacking data: Austria, Czech Republic, Germany, Greece, and Slovakia. For countries were 2007 data was unavailable 2006 data was used. This was done for the following countries: Belgium and Italy. For France missing data in 2002 and 2003 was replaced with data from 2001.

SOURCE: OECD Health Data 2009

Another procedure that is often carried out in ambulatory setting is the tonsillectomy with or without adenoidectomy procedures (Figure 3.10). In 1995 in the Netherlands only were more than half of the procedures were carried out as day cases surgeries, while in the remaining selected countries it was very unlikely to use the ambulatory setting for this procedure. However in 2007, day surgeries accounted for more than half of the tonsillectomies in the Netherlands, Belgium and Finland, and nearly a third in Denmark and Italy. Two exceptions were Hungary and Ireland. In Hungary there were no tonsillectomies carried out as day surgeries and in Ireland it accounted for just 1% of the total procedures.

Figure 3.10 Percentage of tonsillectomy with or without adenoidectomy procedures performed as day cases, in selected EU countries



NOTE: The year 1995 was used as the baseline because there was no data available prior to this year. The following countries were excluded because of lacking data: Austria, Czech Republic, Germany, Greece, Poland, Slovakia and Sweden. For countries were 2007 data was unavailable 2006 data was used. This was done for the following countries: Belgium and Italy. For France missing data in 2002 and 2003 was replaced with data from 2001.

SOURCE: OECD Health Data 2009

Section 3.5: HOSPITAL DISCHARGES

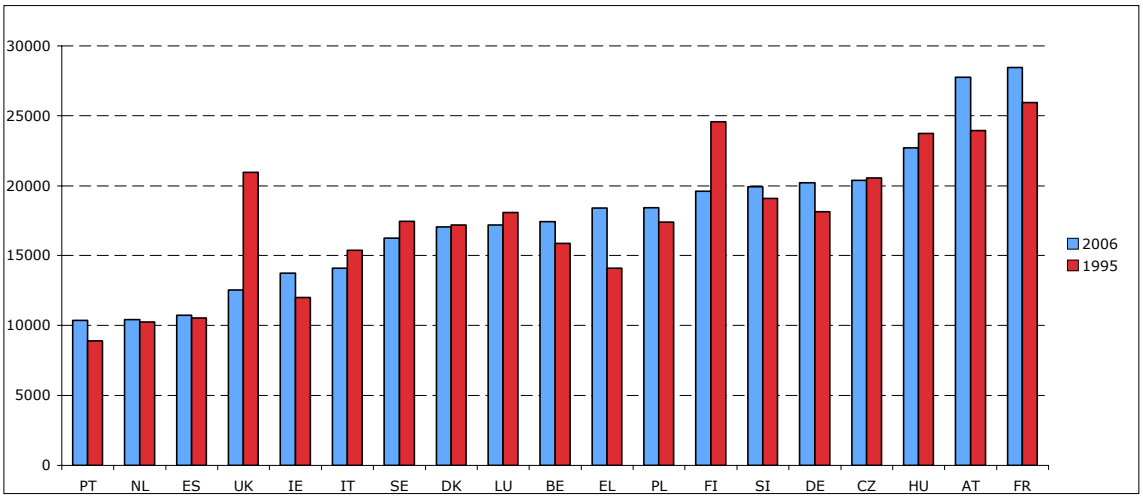
Notes on the data

OECD database: In *Austria* before 2003 data from all hospital discharges also include day cases (in 2003, 13.5% of all discharges were day cases). In the *Czech Republic* since 2005 transfers to other care units within the same institution are excluded. In *Denmark* only public hospitals are included. In *Finland and France* day cases are included. In *Germany*, number of discharges includes deaths in hospitals, but excludes same-day separations and transfers to other care units within the same institutions. From reporting year 2004 live-born infants are included according to place of birth and and codification changed in 2000. In *Hungary* from 2004 same day discharges are excluded. In *Ireland* data covers all in-patients and day cases receiving curative and rehabilitative care in publicly funded acute hospitals in the country and the coding system was changed in 2005. In Poland data include public hospitals only. For *Portugal* the data is based on all public hospitals in the mainland. It does not include psychiatric hospitals. In *Spain* there was a break in 2001 due to a change in codification. For *Sweden* there is break in time series between 1999 and 2000. For the *U*K data include same-day separations up to 1999 and exclude them since 2000.

Hospital discharge rates are an important indicator of hospital activity. However, cross-country or even within country comparisons over time might be difficult to perform because of variations in definitions. Some countries include day cases and/or transfers across hospital units, and differences in case-mix are not taken into consideration. Moreover, hospital discharge definitions often change over time.

In 2006 discharge rates were the highest in France followed by Austria (Figure 3.11). It is worth noticing that in France day cases are included in the discharge rate. Discharges have increased particularly in Spain, Austria and Portugal between 1995 and 2006. A dramatic decrease in discharge rate can be observed in the UK but this might be due to the exclusion of day hospitals in 1999 (see definition above).

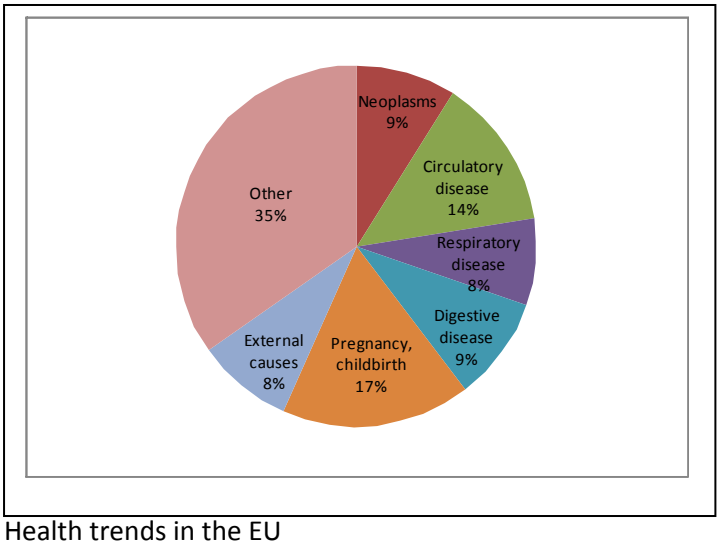
Figure 3.11 Hospital discharges per 100 000 population



NOTE: No 2006 data available for these countries, the most recently available was used: Austria 2005; Belgium 2005; Greece 2004; Italy 2005; Netherlands 2005. For 1995, no data available for these countries, the most recently available was used: Denmark 2000; Italy 1996, France 1997, Hungary 1999; Luxemburg 1999; Poland 2003

Source: OECD Health data 2009.

Figure 3.12 Hospital discharges by diagnostic categories, 2006



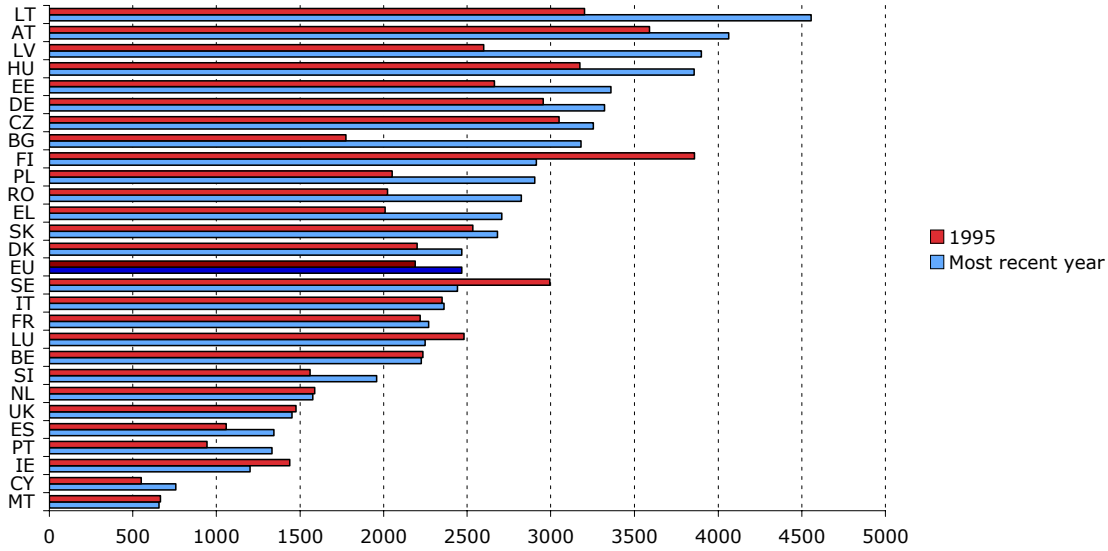
The main conditions leading to hospital discharges in the 19 European countries analysed using the OECD data were pregnancy and childbirth, circulatory (cardiovascular) diseases, diseases of the digestive system, cancers, external causes (*e.g.*, accidents, violence

and poisoning), and respiratory diseases (Figure 3.12).

A deeper analysis of two specific diagnostic conditions: circulatory diseases and neoplasms, was then conducted using the WHO Health for All database that includes information for all 27 European countries.

Between 1995 and 2007-2006 hospital discharges due to circulatory diseases have increased almost everywhere (Figure 3.13). This growth was particularly significant in Bulgaria (nearly 80%), Latvia (50%), Lithuania (42%), Poland (42%), Portugal (41%), and Romania (40%). Countries that experienced a relevant decrease in circulatory diseases discharges are Finland, Sweden, and Ireland.

Figure 3.13 Hospital discharges due to circulatory system diseases, per 100 000 population

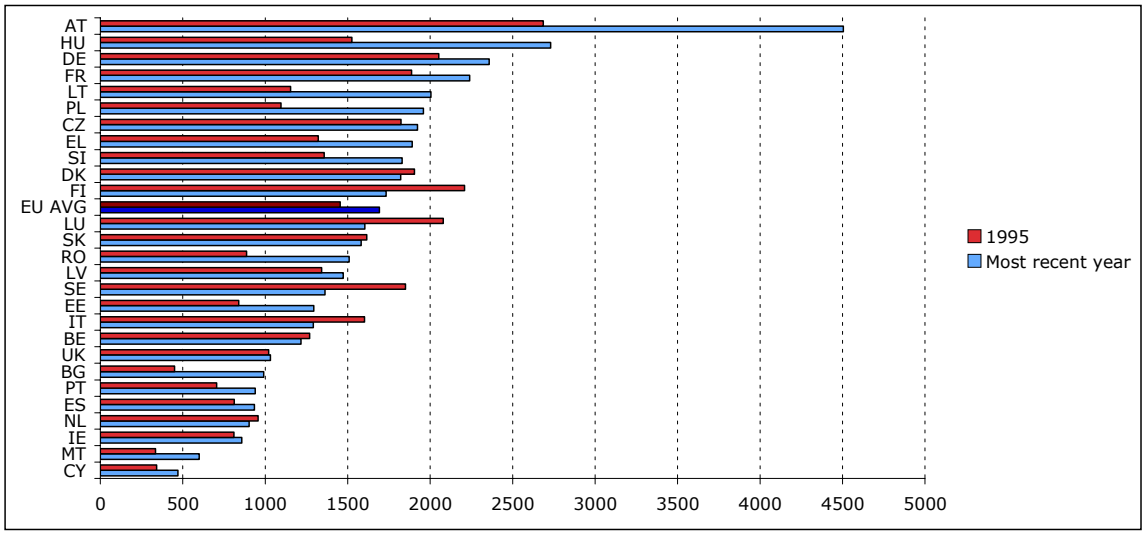


NOTE: For the following countries no data was available for 1995 and the most recently available data was used: France 1993, Luxembourg 1998, Malta 1999, United Kingdom 1996. For the following countries no data was available for 2007 and the most recently available was used: Austria 2006, Belgium 2006, Cyprus 2006, Estonia 2006, France 2006, Germany 2006, Greece 2005, Italy 2005, Luxembourg 2006, Netherlands 2006, Poland 2006, Slovakia 2006, Slovenia 2006, Spain 2006, United Kingdom 2003.; EU average 2006

SOURCE: WHO Health for All, 2009

A similar pattern can be seen for hospital discharges due to neoplasms (Figure 3.14). Time trends show a significant growth in this diagnostic discharge. In 1995 on average there were 1456 discharges per 100,000 population in the EU, in 2006 the number of discharges was 1693 per 100,000. The increase was particularly large (over 70%) in Bulgaria, Malta, Poland, Hungary, Lithuania and Romania. In Bulgaria the numbers of discharges more than doubled between 1995 and 2007. On the contrary, a decrease in the number of neoplasm discharges was reported in Finland, Luxemburg, Sweden, and Italy.

Figure 3.14 Hospital discharges due to neoplasms, per 100 000 population



NOTE: For the following countries no data was available for 1995 and the most recently available data was used: France 1993, Luxembourg 1998, Malta 1999, United Kingdom 1996. For the following countries no data was available for 2007 and the most recently available was used: Austria 2006, Belgium 2006, Cyprus 2006, Estonia 2006, France 2006, Germany 2006, Greece 2005, Italy 2005, Luxembourg 2006, Netherlands 2006, Poland 2006, Slovakia 2006, Slovenia 2006, Spain 2006, United Kingdom 2003.

SOURCE: WHO Health for All, 2009

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CHAPTER 4. HEALTH EXPENDITURE AND FINANCING

Introduction

Health care systems require financial resources to pay for investment in buildings and equipment, to compensate health service staff for their time and to pay for drugs and other consumables. There is great diversity across the EU in how these financial resources are generated and managed. One indicator which is commonly used to compare countries in this regard is expenditure on health care, illustrated in Section 4.1. Population ageing and innovation in health technologies are causing health expenditures to grow in absolute terms in all EU countries.

In light of the increasing costs of health care, one aspect of health policy that has received increased attention is how to generate revenue (Mossialos et al 2002; Thomson, Foubister and Mossialos 2009). Countries are interested in understanding the implications of choosing one funding mechanism over another or, more usually, a particular mix of funding sources. Expenditure data can be used to measure differences in how much revenue is channelled through certain contribution mechanisms. Public mechanisms include tax and social insurance contributions, while private mechanisms include private health insurance and out-of-pocket (OOP) payments. Section 4.2 illustrates the various arrangements across the EU. The particular mix of mechanisms employed in a country can affect the efficiency and equity of health financing and the efficiency, equity and quality of health care (Mossialos et al 2002; Thomson, Foubister and Mossialos 2009).

Another important issue is how health care funds are spent. Pharmaceuticals account for a significant proportion of expenditure in all EU countries, as illustrated in Section 4.3. Again, the particular mix of mechanisms employed to channel this expenditure is important for efficiency and equity concerns (Mossialos, Mrazek and Walley 2004).

Section 4.1 Total expenditure on health as a % of GDP and per capita

Notes on the data

Definitions

GDP (Gross domestic product): The value of all goods and services provided in a country by residents and non-residents without regard to their allocation among domestic and foreign claims.

PPP (Purchasing Power Parity): A common currency unit that takes into account differences in relative purchasing power annual average

Total expenditure on health (THE): funds mobilized by the system. The sum of General Government Expenditure on Health and Private Expenditure on Health.

For full detailed definitions see:
http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions

Data issues: For WHO World Health Statistics and WHOSIS data on health financing, OECD health data is used as the primary source for those countries that are OECD Member States. In order to improve the quality of international comparisons of data on health expenditure and its financing, most OECD countries follow the boundaries and definitions of the System of Health Accounts (OECD 2000). However, among these countries, there remain some issues that continue to limit the comparability, for example, the different practice of estimating expenditure on long-term nursing care.

Countries currently reporting health expenditure estimates to OECD Health Data based primarily on national accounts, rather than SHA, are Greece, Italy, and the United Kingdom, although these countries may have either started or intend to start implementation of the SHA.

For EU Member States which are not members of the OECD (Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Malta, Romania and Slovenia), estimates are produced by WHO. The estimates are, to the greatest extent possible, based on the National Health Accounts classification (WHO 2006). The sources include both nationally reported data and estimates from international organisations like IMF, WB, UN and OECD. Therefore they may somewhat differ from official national statistics reported by countries.

Data not produced following SHA may present the following problems for international comparisons:

- The level of detail on health expenditure provided by national accounts is often minimal.
- There may be "misallocation" which may lead to underestimation of health expenditure. For example, some social services which focus on health care and expenditure on occupational health care provided by businesses may not be reported as health expenditure.
- There may be breaks in time series due to changes in interpretation of the boundary of health care.
- The availability of data sources on the private sector is limited.
- Details about the sources of data and estimation methods are usually not published. Thus it is difficult to assess, in detail, the differences in the ways boundaries are drawn in health expenditure estimates.

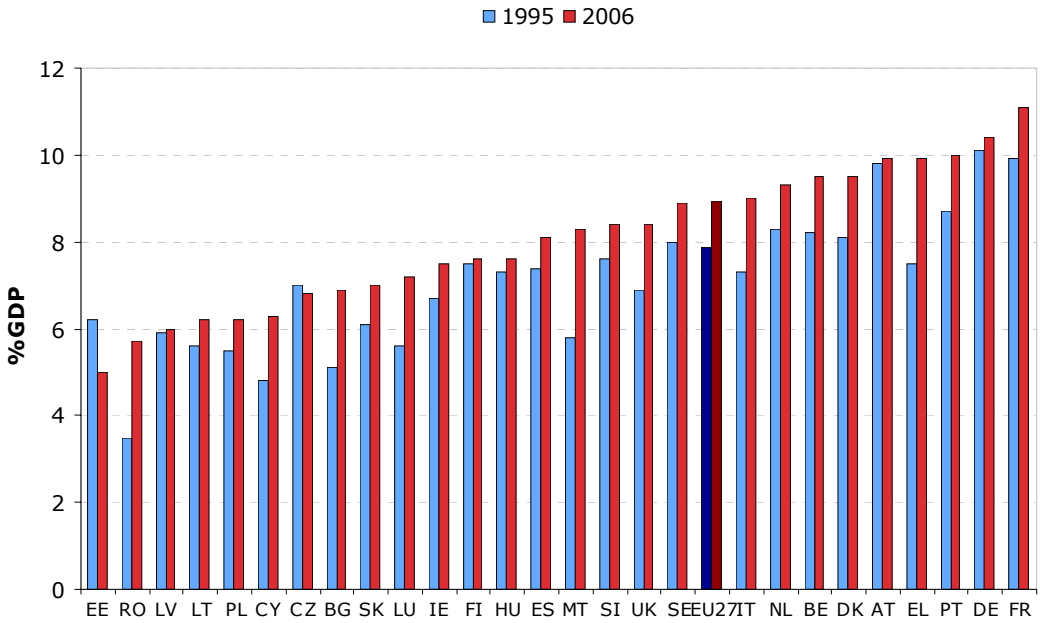
For more details see: Note on general comparability of Health Expenditure and Finance Data in OECD Health Data 2009
http://www.ecosante.org/OCDEENG/411.html

There is considerable diversity in Total Expenditure on Health (THE) as a percentage of GDP across the EU, ranging from 5% in Estonia to 11.1% in France (Figures 4.1, 4.2 and 4.3). In most countries the percentage of GDP spent on health increased between 1995 and 2006, with the EU27 average increasing from 7.88 to 8.92. The countries making the biggest increases during this period were Malta, Greece and Romania. The only countries where THE as a percentage of

GDP fell during this period were Estonia and the Czech Republic. Changes over time in THE as a percentage of GDP reflect the combined effect of trends in both GDP and health expenditure. In general, increases in THE as a percentage of GDP result from health expenditure growing at a faster rate than GDP between 1995 and 2006 across EU27 countries. There are many reasons for this: disproportionate growth in health expenditure, including an ageing population, advances in health technology and increased expectations among the population. The growth in health expenditure is not expected to create problems of sustainability in a context of sustained economic growth, but a prolonged recession could present a challenge to the current rate of growth (Thomson, Foubister and Mossialos 2009).

There is a marked difference in health expenditure between EU15 and EU12 Member States, with EU15 countries generally spending a greater proportion of GDP on health than the EU12 (Figures 4.1, 4.2 and 4.3). There are however some exceptions to this pattern. For example Slovenia spends more on health as a percentage of GDP than several EU15 countries (Figure 4.1). Many factors may account for these observed differences in health expenditure. In general, higher levels of national wealth, lower levels of unemployment, a smaller informal economy, a larger public sector and smaller budget deficits are all likely to have a positive effect on expenditure on health (Thomson, Foubister and Mossialos 2009).

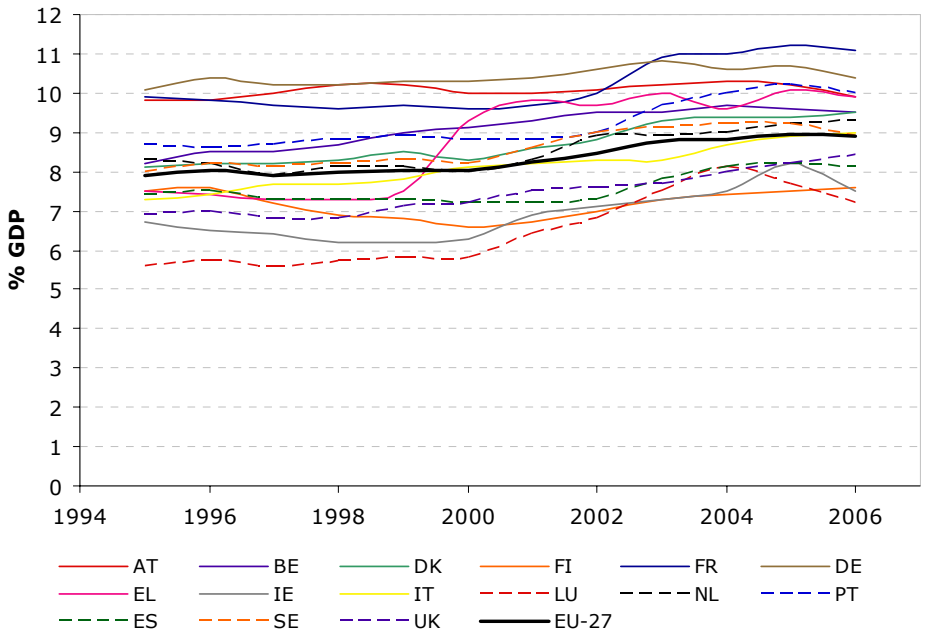
Figure 4.1 Total Expenditure on Health as % GDP, EU-27, 1995 and 2006



NOTE: Average for EU-27 taken from WHO-HFA 2009 since WHOSIS provides most complete set of data but provides no EU average.

Source: WHOSIS 2009.

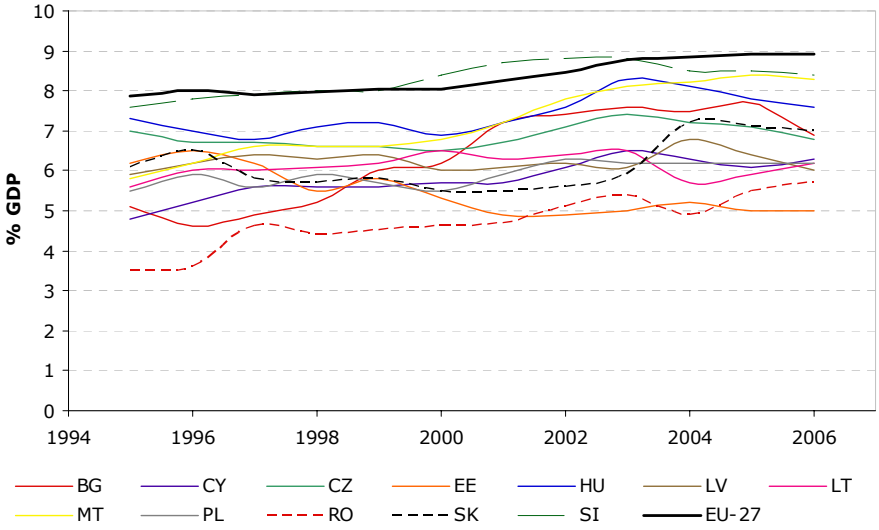
Figure 4.2 Total Expenditure on Health as % GDP. EU-15 1995-2006



NOTE: Average for EU-27 taken from WHO-HFA 2009 since WHOSIS provides most complete set of data but provides no EU average.

Source: WHOSIS 2009.

Figure 4.3 Total Expenditure on Health as % GDP. EU-12 1995-2006

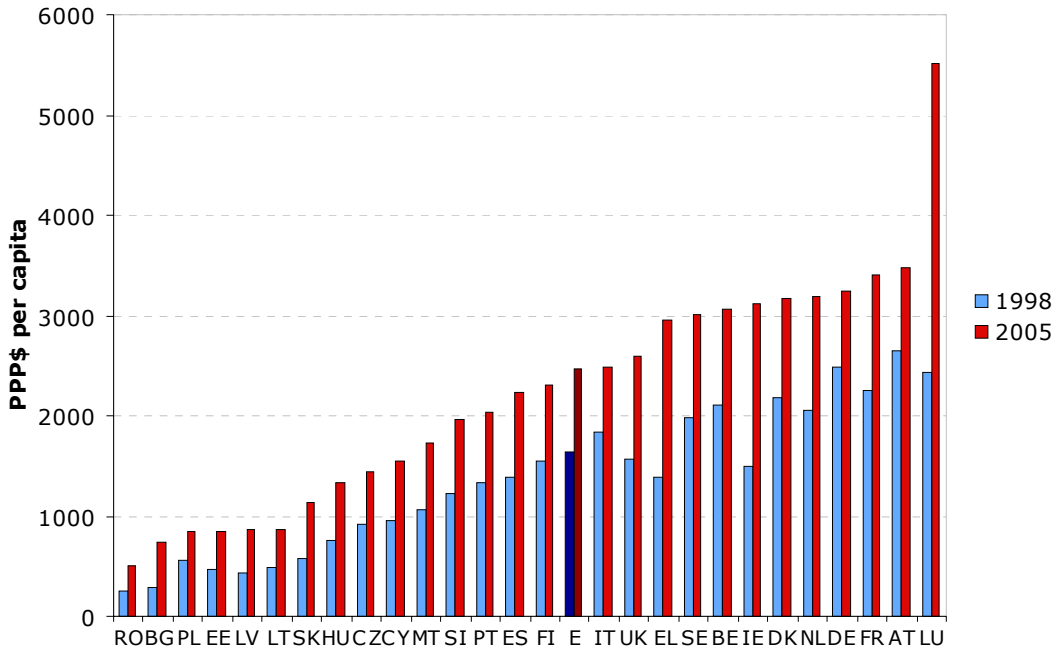


Note: since WHOSIS provides most complete set of data but provides no EU average.

Source: WHOSIS 2009. Average for EU-27 taken from WHO-HFA 2009

Taking total per capita spending into consideration as well as percentage of GDP gives a more comprehensive picture of health expenditure. There is enormous variation in total per capita spending on health across the EU (Figure 4.4). Luxemburg has a very high level of health expenditure per capita ($5,521 PPP) but spends a below average amount on health as a percentage of GDP (7.2%). On the other hand Portugal spends a low amount per capita ($2,034 PPP) but quite a high amount as a percentage of GDP (10%). This reflects differing market factors between the countries.

Figure 4.4 Total Health Expenditure in PPP$ per capita in 1998 and 2005, EU27



Note: Data previous to 1998 and post 2005 not available.

Source: WHO Health for All, 2009

Section 4.2 Public and private health expenditure

Notes on the data

The definitions and data issues described in Section 4.1 apply, in addition to the following:

Definitions

OOP (Out of pocket payments): comprises the direct outlays of households, including household payments to public services, non-profit institutions or non-governmental organisations, non-reimbursable cost sharing, deductibles, co-payments and fee-for service.

Other private: comprises expenditure that is not general government, OOP or private plans expenditure.

Private plans: comprises expenditure on health by private insurance institutions. Private insurance enrolment may be contractual or voluntary, and conditions and benefits or basket of benefits are agreed on a voluntary basis between the insurance agent and the beneficiaries. They are thus not controlled by government units for the purpose of providing social benefits to members.

Social security: comprises the expenditure on health by social security institutions. Social security or national health insurance schemes are imposed and controlled by government units for the purpose of providing social benefits to members of the community.

Taxes: comprises general government expenditure that is not social security expenditure.

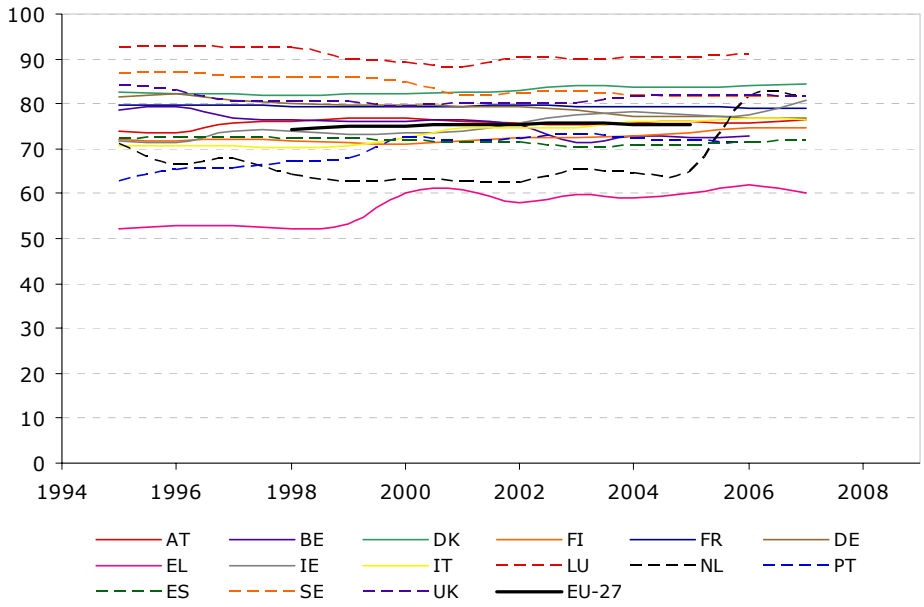
For full detailed definitions see: http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions

Data issues: All funds channelled through social health insurance funds are classified as social insurance contributions in the WHO and OECD data, even though a proportion may actually come from general tax revenue, either as an explicit strategy of mixed finance or via subsidies for those who do not contribute (Thomson, Foubister and Mossialos 2009).

Trends in health expenditure can be better understood when disaggregated by type of expenditure. Expenditure data can be broken down by public and private contribution mechanisms. Public mechanisms include tax and social insurance contributions, while private mechanisms include private health insurance and out-of-pocket (OOP) payments. Public expenditure predominates in all EU27 countries except Cyprus (Figures 4.5 and 4.6).

In most EU15 countries, the balance of public and private expenditure has remained relatively stable over the last 15 years. Ireland, Italy and the UK are exceptions where there have been increases in public health expenditure as a proportion of THE of over 5% points in this period (Figure 4.5). In the EU12 there have been greater fluctuations in public health expenditure, caused in part by the economic transition and health sector reforms in many central and eastern European countries since the fall of Communism. In the last 15 years, public spending as a proportion of THE decreased dramatically in Bulgaria, Estonia, Lithuania and Slovakia and dipped sharply in Latvia (Figure 4.6). The increase in total spending on health experienced in these countries (except Estonia), is therefore largely due to higher levels of private spending.

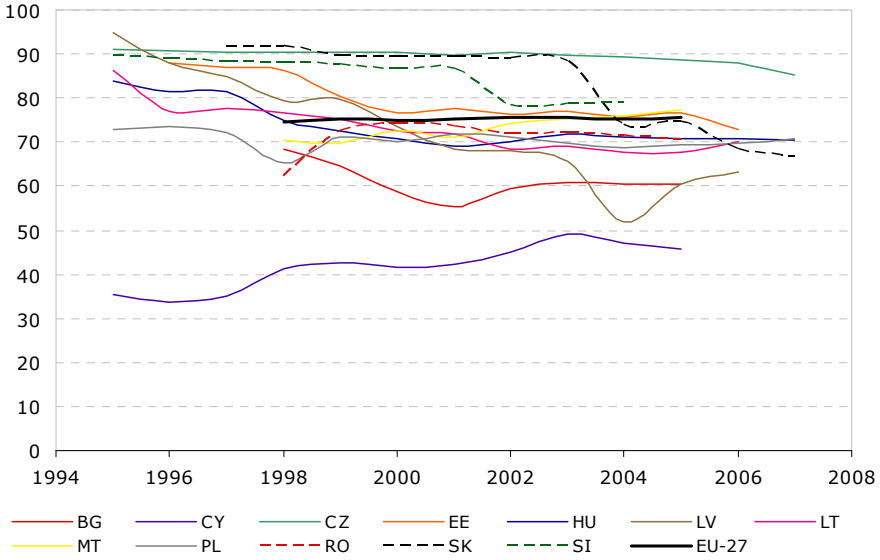
Figure 4.5 Public sector health expenditure as % of total health expenditure 1995-2007, EU-15



Note: For countries were 2007 data was not available the most recent year is displayed.

Source: All OECD 2009 except Belgium, Luxembourg, Netherlands and EU-27 (WHO-HFA)

Figure 4.6 Public sector health expenditure as % of total health expenditure 1995-2007, EU-12



Source: All WHO Health for All, 2009 except Bulgaria, Romania (WHOSIS 2009) and Czech Rep., Hungary, Poland, Slovakia (OECD 2009)

Note: For countries were 2007 data was not available the most recent year is displayed.

All Member States use a range of contribution mechanisms to finance health care (Figure 4.7). The Member States can be divided into three distinct groups: Countries that finance health care mainly through social insurance contributions predominate in the EU (Austria, Belgium, the Czech Republic, Estonia, France, Germany, Hungary, Lithuania, Luxembourg, the Netherlands, Poland, Romania, Slovakia and Slovenia). It is notable that tax also contributes to health financing in all health systems that are predominantly financed through social insurance contributions. The second group consists of those that finance health care mainly through taxation (Denmark, Finland, Ireland, Italy, Malta, Portugal, Spain, Sweden and the United Kingdom). A minority of countries rely mainly on OOP payments (Bulgaria, Cyprus, Greece and Latvia). High levels of OOP payments tend to reduce the level of financial protection of the health financing system and are considered inequitable since access to health care is linked to the ability to pay rather than need.

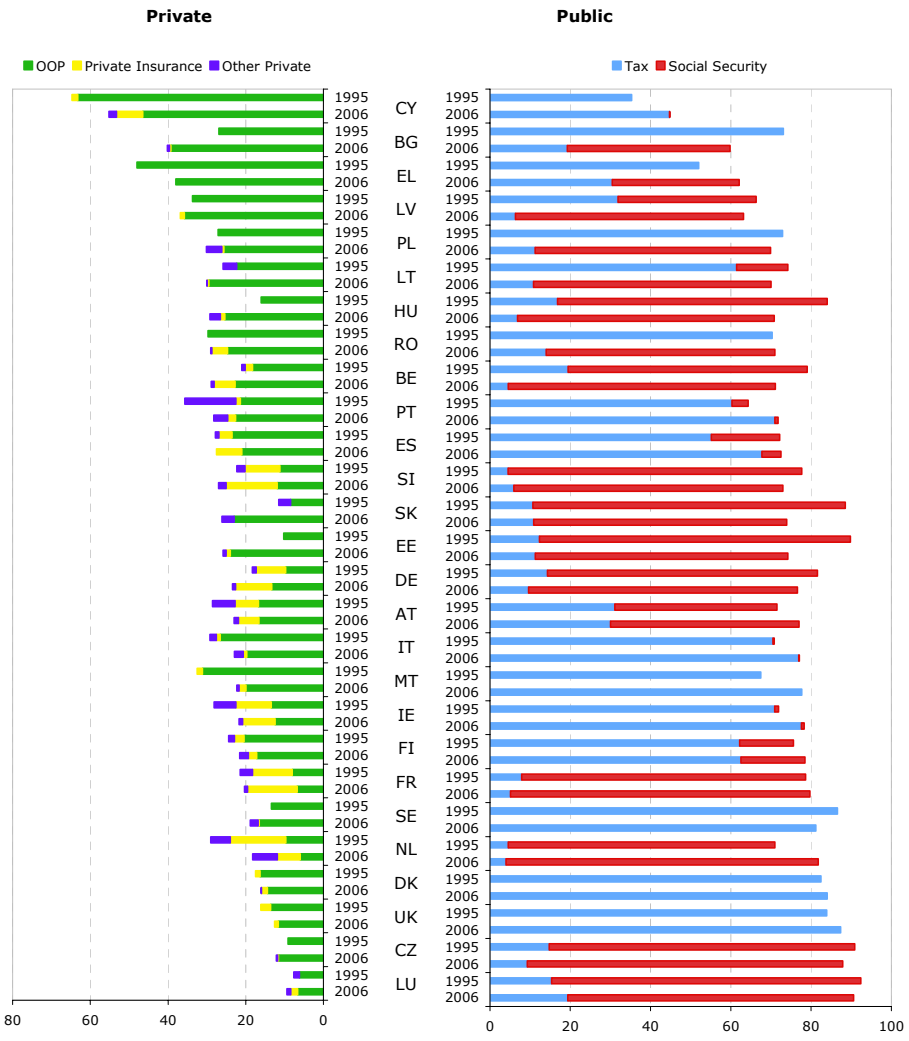
Figure 4.7 illustrates changes in the mix of contribution mechanisms in the EU27 over the last 15 years. In some countries with mainly social health insurance financing, the problem of large health sector deficits caused a broadening of the revenue base through the introduction of a supplementary tax financing mechanism. For example: the Contribution Sociale Généralisée (CSG), introduced in France in 1990 to finance social security (however, as it is channelled through the health insurance scheme, it is shown as a social insurance contribution in international databases), the German Government's introduction of tax transfers to the health insurance funds to cover the contributions of children in 2006, and the Dutch Government's system of tax credits introduced in 2006 (Thomson, Foubister and Mossialos 2009).

During the 1990s all of the newer central and eastern European Member States introduced earmarked social insurance contributions levied on earnings (Hungary in 1990, Estonia in 1992, the Czech Republic and Slovenia in 1993, Slovakia in 1994, Lithuania in 1997, Latvia in 1998 and Bulgaria, Poland and Romania in 1999) (Thomson, Foubister and Mossialos 2009). Encouraged by international institutions such as the World Bank and the IMF, these reforms intended to introduce incentives into the health system to improve efficiency, equity and quality of health financing and health care. In relation to health expenditure, the reforms aimed to mobilize additional revenue by broadening the revenue base (Ensor & Thompson 1998). The impact of these reforms has been mixed. Figure 4.7 suggests that social insurance contributions have supplanted rather than supplemented tax-based allocations for health care. Furthermore, introducing social health insurance has not prevented OOP payments from rising; in fact, in many countries the reforms were accompanied by increased cost sharing (OOP), mainly to generate further revenue (Thomson, Foubister and Mossialos 2009).

Fig. 4.7 shows that over the last 15 years private health insurance plans have played the biggest role as a proportion of health expenditure in Ireland, France, Germany, the Netherlands, and Slovenia. During the 1990s, the central and eastern European Member States all passed legislation allowing the introduction

of markets for private health insurance. However, with the notable exception of Slovenia, market development has been marginal. In the EU15, the public policy trend has been to move away from fiscal support of private health insurance in general (for example, through tax subsidies) and to abolish (the Netherlands) or restrict (Germany) substitutive cover (cover for population groups excluded from or allowed to opt out of the public system) (Thomson, Foubister and Mossialos 2009). In spite of this, some markets experienced growth between 1995 and 2006 (Belgium, Denmark, France, Germany, Greece, Luxembourg, the Netherlands, Portugal and Spain). Others have experienced decline (Austria, Ireland, Italy and the United Kingdom).

Figure 4.7 Breakdown of Health Expenditure for EU-27 1995 & 2006



Notes: No breakdown for Greece in 1995. No information for Private Prepaid Plans in Hungary, Luxembourg in 1995. Assumed to be 0

Source: WHO World Health Statistics Report 2009

Finally, turning to OOP financing, Fig 4.7 illustrates that this is a health financing mechanism found in all EU Member States. Within the EU it is universally applied to outpatient prescription pharmaceuticals and dental care and widely applied to outpatient and inpatient care (Thomson, Foubister and Mossialos 2009). Formal

cost sharing was non-existent or very limited in many of the newer Member States under Communism, but was subsequently introduced as a means of raising revenue for health care. Between 1995 and 2006 OOP spending rose, as a proportion of total expenditure on health, in 14 Member States. The rise was by more than five percentage points in Bulgaria, Estonia, Hungary, Latvia, Lithuania and Slovakia. In some Member States the rise may be attributed to greater reliance on cost sharing; in others it may have been driven by an increase in direct and/or informal payments. These changes may have a negative impact on financial protection and equity in financing and accessing health care (Thomson, Foubister and Mossialos 2009).

Section 4.3 Pharmaceutical expenditure

Notes on the data

The definitions and data issues described in Section 4.1 and 4.2 apply, in addition to the following:

Definition of Pharmaceutical expenditure: spending on prescription medicines, over-the-counter medicines, other medical non-durable goods and pharmacists' remuneration. Pharmaceuticals consumed in hospitals are excluded. Final expenditure on pharmaceuticals includes wholesale and retail margins and value-added tax.

For full details definitions see:

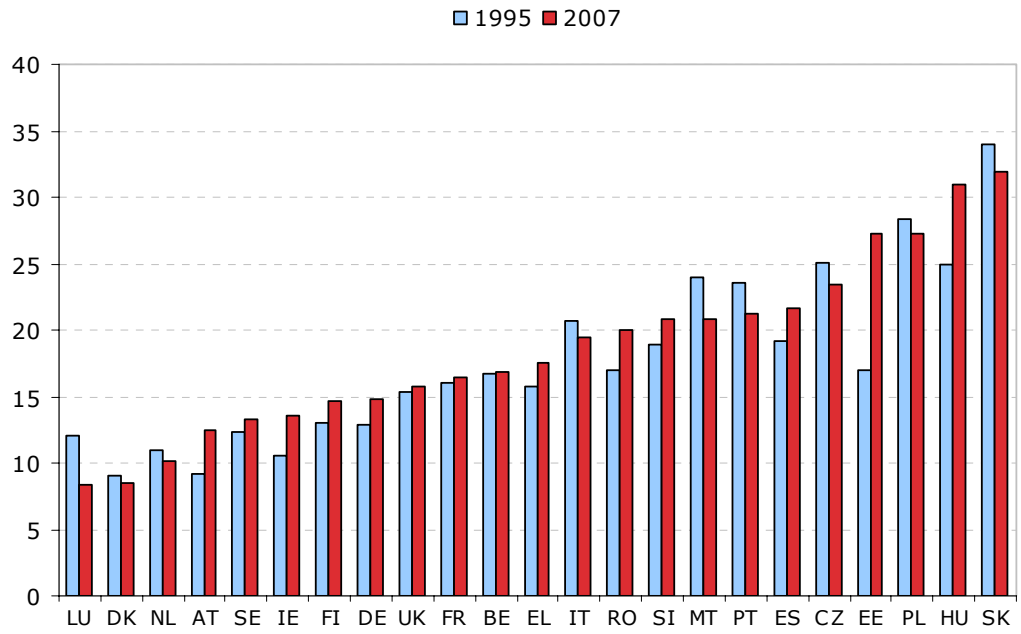
http://www.who.int/whosis/indicators/WHS09_IndicatorCompendium_20090701.pdf and WHO HFA database definitions

Data issues:

- Data on pharmaceutical spending do not distinguish between different types of private expenditure.
- Cross-country comparisons of pharmaceutical expenditure and prices are hampered by biases in exchange rate fluctuations, differences in pharmaceutical prices between countries, and variations in private (out-of-pocket) and public coverage.
- To eliminate price level differences in inter-country comparisons, conversions using purchasing power parities (PPPs) equalize currencies to allow the purchase of the same basket of goods and services in different countries. However, difficulties remain not only because pharmaceutical prices have weakly comparable volume indices, but also because figures for PPPs may be outdated.
- There are challenges in separating out factors that influence drug prices caused by the structure of the market in each country: different health system structures and financing, divergent regulatory and pricing policies, drug subsidies, production costs and product mix variations.
- Consideration must be given to where price information is taken from within the distribution chain, as wholesale and retail prices are marked-up from the manufacturer's price – ideally, it should always be taken from the same point in each country, but this is not always possible.

Source: (Mossialos, Mrazek and Walley 2004)

Figure 4.8 Pharmaceutical Expenditure as a percentage of Total Health Expenditure, 1995 and 2007 or nearest available year, EU27



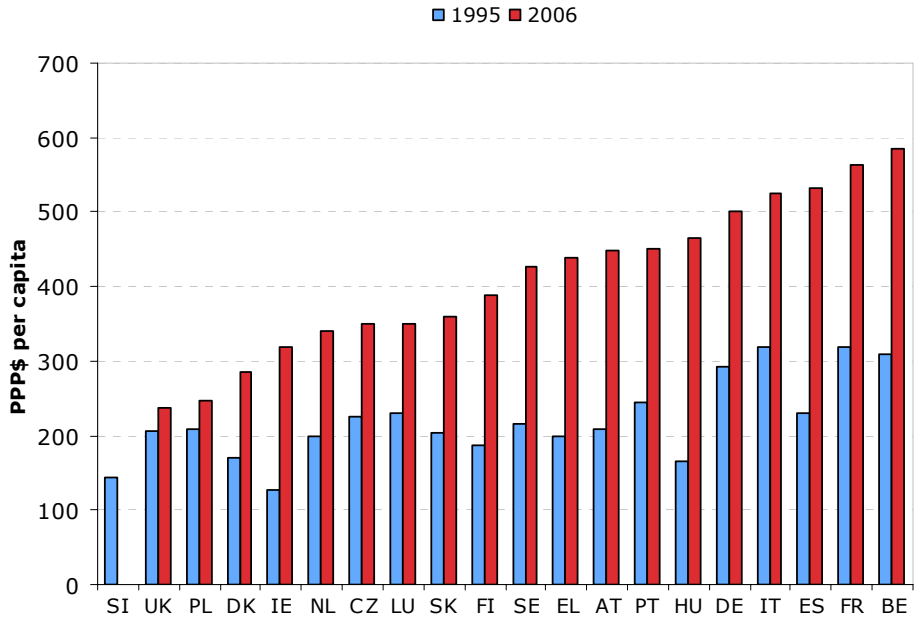
Note: For the following countries the most recent data was available from the listed year: Austria, Belgium, Czech Rep, Denmark, Estonia, Finland, France, Greece, Germany, Ireland, Italy, Malta, Poland, Portugal, Spain, Sweden 2006; Luxembourg, Slovakia 2005; Slovenia 2001; U.K 1997; Romania 1998. 1995 data was replaced with 1996 data for Estonia, 2001 for Malta and 2002 for Poland.

Source: WHO Health for All, 2009

Pharmaceuticals account for between 8.4% (Luxemburg) and 31.9% (Slovakia) of total health spending (Figure 4.8). While pharmaceutical expenditure as a proportion of total health expenditure grew between 1995 and 2007 in most of the countries for which data is available (Figure 4.8), there was a decrease in the Czech Republic, Denmark, Italy, Luxemburg, Malta, the Netherlands, Poland, Portugal and Slovakia. However, the data on pharmaceutical expenditure per capita (PPP$) presents a very different picture (Fig 4.9). This indicator reveals that pharmaceutical expenditure rose in all countries. Increases in total pharmaceutical expenditure are due to increased demand partly resulting from the ageing of the population, as well as the increase of the price of medicines and the change in the mix towards newer and more expensive products (Kanavos 2003). The increases in expenditure have prompted greater attention to pharmaceutical regulation at the EU level and the introduction of demand and

supply side measures to control pharmaceutical products by governments (Mossialos, Mrazek and Walley 2004).

Figure 4.9 Pharmaceutical Expenditure in PPP$ per capita, 1995 and 2006 or nearest available year, EU-27



Note: Bulgaria, Cypress, Estonia, Latvia, Lithuania, Malta and Romania were excluded because of lacking data. For the following countries the most recent data was available from the listed year: Ireland, Luxembourg, Slovakia 2005; the Netherlands 2003; Poland 2002; 1997 for the U.K. 1995 data was replaced with data from 1999 for Slovakia and data from 1994 for Slovenia.

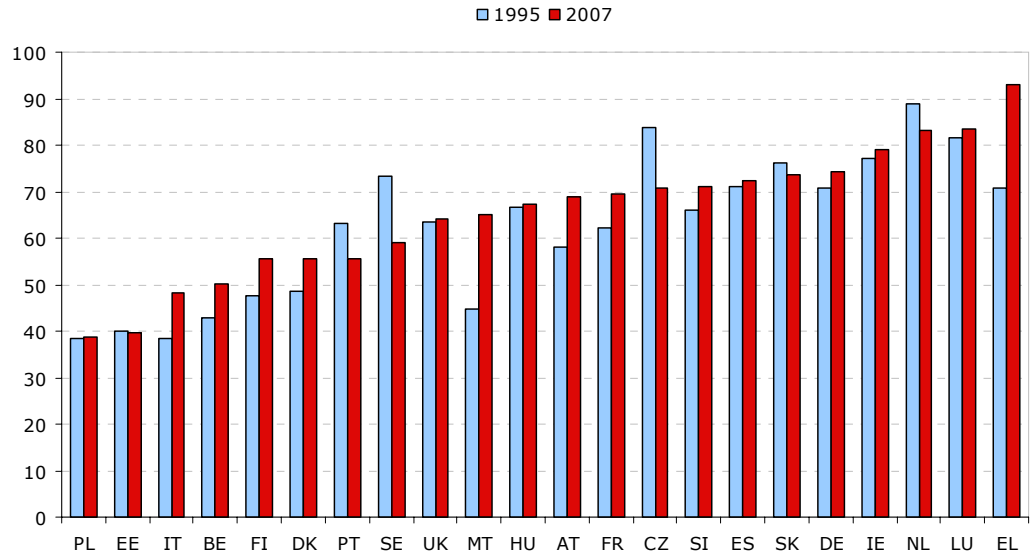
Source: WHO Health for All, 2009

Between 1995 and 2006 the public share of pharmaceutical expenditure as a percentage of total pharmaceutical expenditure increased in all countries for which data is available, except the Czech Republic, the Netherlands, Portugal, Slovakia and Sweden (Figure 4.10). The fall in public expenditure on pharmaceuticals can be interpreted as an attempt to control health care costs and is reflected in the reduction of pharmaceutical expenditure as a proportion of total health expenditure in the former four countries, as observed above (Figure 4.8).

Increases in the proportion of private expenditure on drugs can have a negative effect on equity of health financing, due to the implications of increasing out of pocket payments, described above. It is difficult to determine what proportion of the increase in each country arises from direct payments, such as spending on over-the-counter (OTC) products or prescribed products that are not reimbursed by the statutory health care system, and how much arises from user charges (i.e. co-payments for reimbursed products). This is because most data on

pharmaceutical spending do not distinguish between different types of private expenditure (Mossialos, Mrazek and Walley 2004).

Figure 4.10 Public Pharmaceutical Expenditure as a % of Total Pharmaceutical Expenditure, 1995 and 2007 or nearest available year, EU-27



Source: WHO Health for All, 2009

Note: Bulgaria, Cyprus, Latvia, Lithuania and Romania were excluded because of lacking data. For the following countries the most recent data was available from the listed year: Austria, Belgium, Czech Rep, Denmark, Estonia, Finland, France, Greece, Germany, Ireland, Malta, Poland, Portugal, Spain, Sweden 2006; Luxembourg, Slovakia 2005; Slovenia 2001; U.K 1997. 1995 data was replaced with 1999 data for Estonia and Slovakia, 2001 for Malta and 2002 for Poland.

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