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Highlights on health in Bosnia and Herzegovina

2005

Highlights on health

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

Each report also compares a country, when possible, to a reference group. This report uses the 25 countries with low child mortality and low or high adult mortality, designated Eur-B+C by WHO, as the reference group. Eur-B+C comprises Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine and Uzbekistan.

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

Keywords

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Contents

	Page
Summary: findings and policy considerations	1
Selected demographic and socioeconomic information	2
Population profile	2
Socioeconomic indicators	2
Life expectancy (LE) and healthy life expectancy (HALE)	4
Burden of disease	5
Main conditions	5
Main risk factors	5
Mortality	6
Infant, neonatal and child mortality	6
Maternal mortality	6
References	7
Technical notes	8
Glossary	10

Summary: findings and policy considerations

Life expectancy

According to WHO estimates, a person born in Bosnia and Herzegovina in 2003 can expect to live 73.0 years on average: 76.0 years if female and 69.0 years if male. Similar to other Eur-B+C countries there was no notable increase from 1990.

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

Ageing and employment policies (OECD, 2004)

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

Infant mortality

In 2003, WHO estimated that for every 1000 live births in Bosnia and Herzegovina, there was a probability that 18 children would die before age five. The Millennium Development Goal (MDG) for the under-5 mortality rate for Europe and central Asia is 15 deaths per 1000 live births by 2015. The lowest WHO estimates for the Eur-B+C countries are for Estonia and Slovakia, each at 8 deaths per 1000 live births.

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

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

The WHO reproductive health library, version 6 (WHO, 2003b)

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

What is the effectiveness of antenatal care? (Supplement) (Health Evidence Network, 2005)

Selected demographic and socioeconomic information

Population profile

In mid-2003, the population of Bosnia and Herzegovina was approximately 4.1 million, 44% in urban areas – low for Eur-B+C countries (WHO, 2005).

In 2003, the percentage of the population 60 and older was about at the Eur A average at 15.4, but above the Eur-B+C average.

The birth rate in Bosnia and Herzegovina was 1.3 in 2003 at the low end of the scale for the Eur-B+C countries in 2003. The population increase between 1993 and 2003 was 1.1% (WHO, 2005) (Table. Selected demographic indicators).

Selected demographic indicators in Bosnia and Herzegovina and Eur-B+C, 2002 or latest available year

Indicators	Bosnia and Herzegovina	Eur-B+C		
	Value	Average	Minimum	Maximum
Population (in 1000s)	3812.1	–	–	–
0–14 years (%)	24.3	–	–	–
15–64 years (%)	69.5	–	–	–
65+ years (%)	6.3	–	–	–
Urban population (%)	43.9	63.7	25.0	73.3
Live births (per 1000)	9.1	12.8	8.6	27.1
Natural population growth (per 1000)[a]	0.5	0.8	–7.49	23.0
Net migration (per 1000)[a]	0.2	1.8	–6.6	2.1

[a] 2002; [b] 2000.

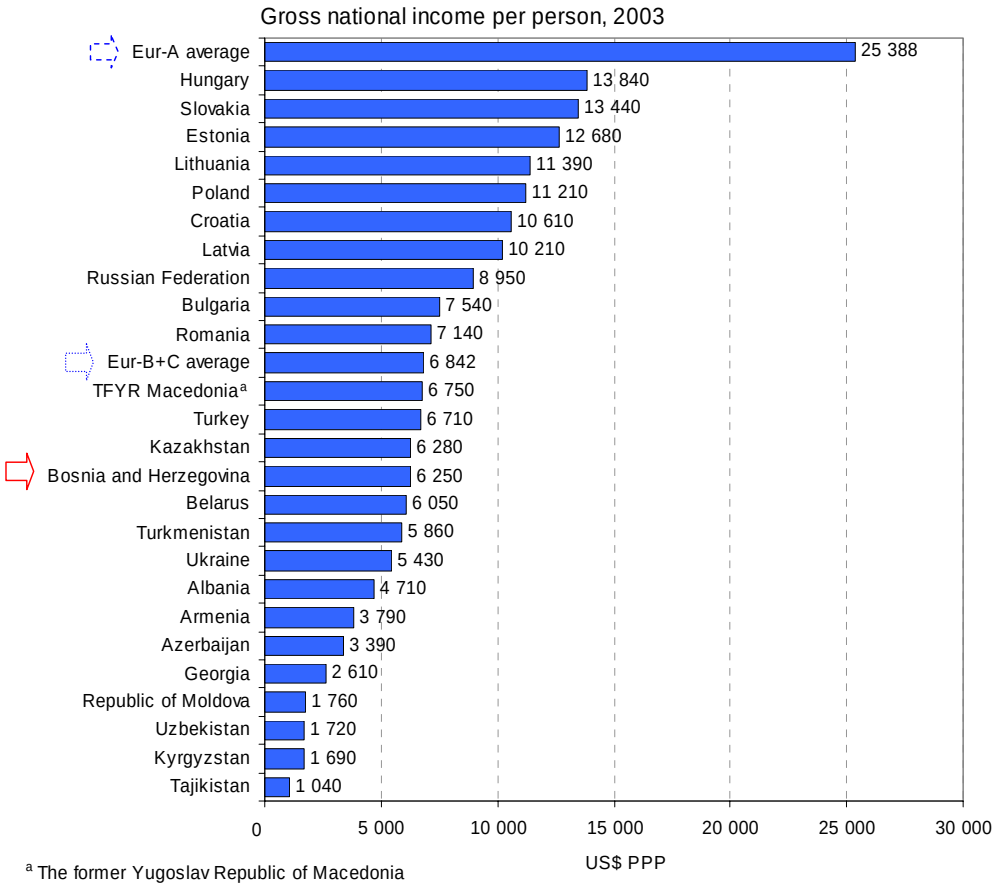
Sources: Council of Europe (2003), WHO Regional Office for Europe (2005).

Socioeconomic indicators

Health outcomes are influenced by various factors that operate at individual, household and community levels. Obvious factors are, for example, diet, health behaviour, access to clean water, sanitation and health services. However, underlying health determinants of a socioeconomic nature also play a role in causing vulnerability to health risks. Here, the key factors are income, education and employment. Though moderately correlated and interdependent, each of these three determinants captures distinctive aspects of the socioeconomic background of a population and they are not interchangeable. Various indicators represent the key socioeconomic determinants of health.

Income: absolute poverty, relative poverty and income distribution There is an income gradient affecting health: the poor generally suffer worse health and die younger than people with higher incomes. For instance, the latter are better able to afford the goods and services that contribute to health, for example, better food and living conditions.

In Bosnia and Herzegovina, per capita gross national income was US$ 6250 PPP in 2003, below the Eur B+C average of $6842 (WHO, 2005) (Figure. Gross national income per person).



[a] The former Yugoslav Republic of Macedonia

Source: World Bank (2005).

People are considered to be in absolute poverty if their incomes are not sufficient to purchase very minimal goods and services. The World Bank currently uses an absolute poverty line of US$ 2.15 and US$ 4.30 income per capita per day to measure poverty in low- and middle-income countries of the WHO European Region (using 1993 international prices adjusted for purchasing power parity). While there is no certainty that the poverty lines measure the same degree of need across countries, the World Bank uses them as a constant to permit comparison. Many countries in the Region calculate their national poverty lines on the basis of a minimum consumption basket selected and priced according to the specific circumstances of the country.

In 2002, 19.5% of people in Bosnia and Herzegovina were living in relative poverty. Those living in urban areas were better off: 13.8% lived in poverty compared to 19.9% of rural people (World Bank, 2005).

Relative poverty is an indicator of income level below a given proportion (typically 50%) of the average national income. In high-income countries, there are far more pockets of relative poverty than of absolute poverty.

Another measure of relative poverty in terms of income is the Gini index. This presents the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

In 2001, the GINI index for Bosnia and Herzegovina was 26.1, the lowest among the Eur B+C countries with data for 2000 to 2002. The highest GINI index for the period among the 15 Eur B+C countries with estimates was 45.6 in the Russian Federation (World Bank, 2005).

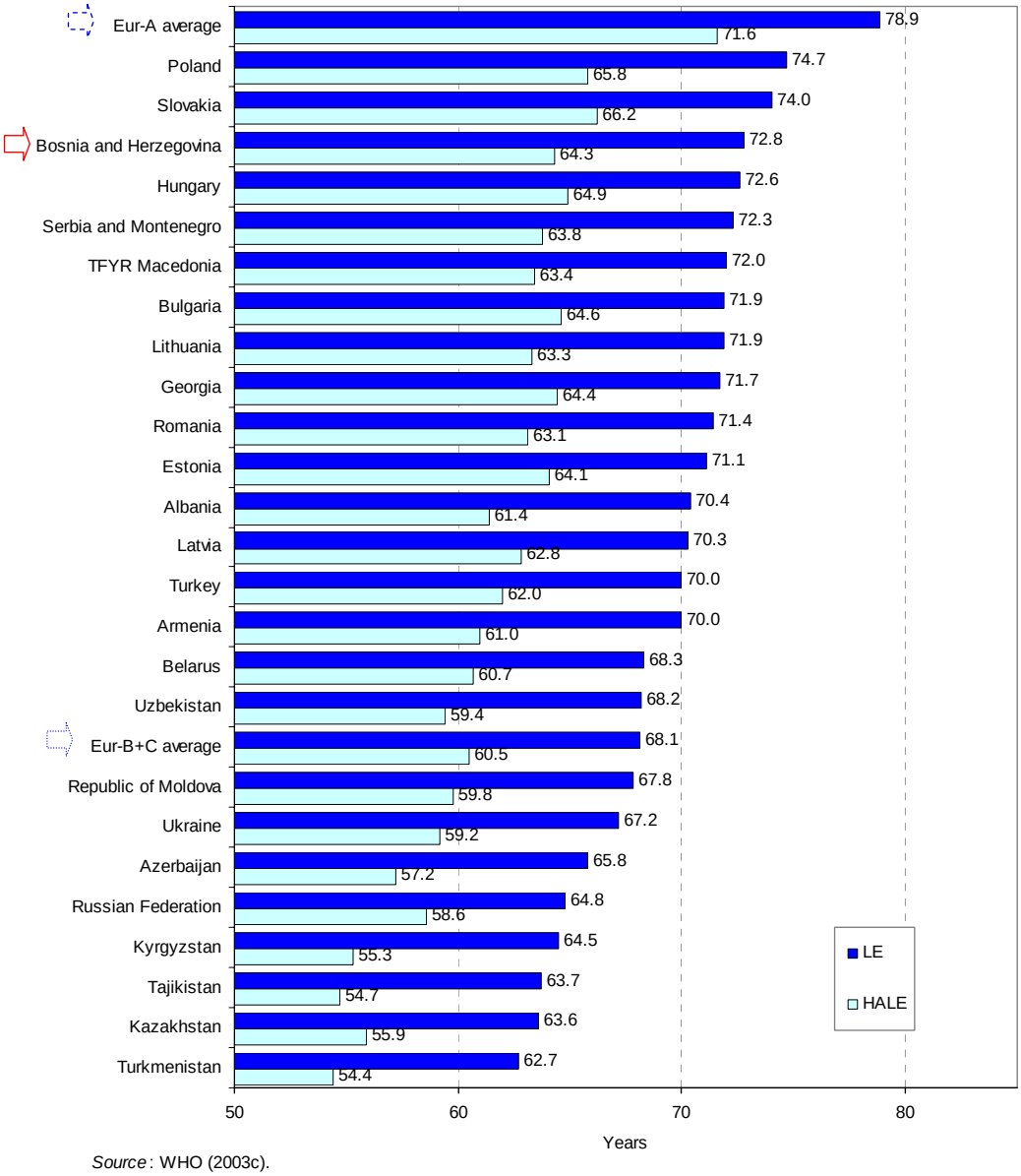
Life expectancy (LE) and healthy life expectancy (HALE)

According to WHO (2005) estimates, a person born in Bosnia and Herzegovina in 2003 can expect to live 73.0 years on average: 76.0 years if female and 69.0 years if male. Similar to other Eur-B+C countries there has been no notable increase over the 1990 LE.

In addition to LE, it is increasingly important to know the expected length of life spent in good health. WHO uses a relatively new indicator for this purpose – healthy life expectancy (HALE), subtracting estimated years of life spent with illness and disability from estimated LE. For Bosnia and Herzegovina, WHO (2005) estimates that people can expect to be healthy for about 88% of their lives. They lose an average of 8.7 years to illness – the difference between LE and HALE. This loss is higher than the Eur-A average (7.3 years) and the Eur-B+C average (7.6 years).

Unlike in most countries women in Bosnia and Herzegovina lose less healthy years of life (6.6 years) than men (7.7 years). The longer LE for women in Bosnia and Herzegovina gives them about three extra years of healthy life. According to WHO estimates (2005) for 60 year-olds the HALE for women (15.4 years) is three years longer than that for men (12.4 years) (Figure. LE and HALE).

LE and HALE, Bosnia and Herzegovina, Eur-A and Eur-B+C averages, 2002



Source: WHO (2003c).

Burden of disease

The burden of disease in a population can be viewed as the gap between current health status and an ideal situation in which everyone lives into old age, free of disease and disability. Causing the gap are premature mortality, disability and certain risk factors that contribute to illness. The analysis that follows elaborates on the burden of disease in the population. The disability-adjusted life-year (DALY) is a summary measure that combines the impact of illness, disability and mortality on population health.

Main conditions

The table shows the top 10 conditions, in descending order, that account for approximately 90% of the burden of disease among males and females in Bosnia and Herzegovina. Cardiovascular diseases and neuropsychiatric conditions account for the highest burden of disease both among males and females (Table. Ten leading disability groups). Because mortality from neuropsychiatric conditions is minor, disability in daily living comprises the bulk of their burden on the population's health (WHO, 2003c).

Ten leading disability groups as percentages of total DALYs for both sexes in Bosnia and Herzegovina (2002)

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Cardiovascular diseases	30.1	Cardiovascular diseases	28.5
2	Neuropsychiatric conditions	16.5	Neuropsychiatric conditions	23.6
3	Malignant neoplasms	11.5	Malignant neoplasms	9.9
4	Unintentional injuries	10.5	Musculoskeletal diseases	7.0
5	Intentional injuries	4.2	Sense organ diseases	6.6
6	Sense organ diseases	4.1	Respiratory diseases	3.2
7	Digestive diseases	4.0	Digestive diseases	3.2
8	Respiratory diseases	3.9	Unintentional injuries	2.6
9	Musculoskeletal diseases	3.8	Perinatal condition	2.5
10	Perinatal conditions	2.7	Infectious and parasitic diseases	1.9

Source: Background data from WHO (2003c).

Main risk factors

The table shows the top 10 risk factors with their relative contributions, in descending order, to burden of disease in the male and female populations of Bosnia and Herzegovina (Table. Ten leading risk factors). According to DALYs, tobacco and high blood pressure places the greatest burden of disease on the Bosnia and Herzegovina male population and high blood pressure and high BMI on females (WHO, 2003c).

Ten leading risk factors as causes of disease burden measured in DALYs in Bosnia and Herzegovina (2002)

Rank	Males		Females	
	Risk factors	Total DALYs (%)	Risk factors	Total DALYs (%)
1	Tobacco	20.9	High blood pressure	13.8
2	High blood pressure	12.9	High BMI	8.2
3	Alcohol	9.4	Tobacco	6.9
4	High cholesterol	6.8	High cholesterol	5.1
5	High BMI	6.7	Physical inactivity	2.8
6	Low fruit and vegetable intake	3.7	Low fruit and vegetable intake	2.7
7	Physical inactivity	3.2	Unsafe sex	1.5
8	Illicit drugs	1.5	Alcohol	1.3
9	Lead	1.4	Childhood sexual abuse	1.1
10	Occupational risk factors for injuries	0.9	Lead	0.9

Source: Background data from WHO (2003c).

Mortality

Infant, neonatal and child mortality

In 2003, WHO estimated that 18 of 1000 every 1000 children born in Bosnia and Herzegovina would die before age five. The Millennium Development Goal (MDG) for the under-5 mortality rate for Europe and central Asia is 15 deaths per 1000 live births by 2015. Whether Bosnia and Herzegovina will reach the MDG goal by 2015 is uncertain as extrapolation of the current WHO estimates is not valid (WHO, 2005). The lowest WHO estimates for the Eur-B+C countries are for Estonia and Slovakia, each at 8 deaths per 1000 live births.

Maternal mortality

Maternal mortality rates (MMR) and the Millennium Development Goal (MDG)

Despite the difficulties in accurately measuring MMR, nationally reported figures are accepted at face value relative to the MDG to improve maternal health – to reduce the MMR by 75% between 1990 and 2015. In some countries, the 2015 target may be equal to or lower than the average current MMR for high income countries in the European Region (the Eur-A 2001 average of five maternal deaths per 100 000 live births). Countries with 2015 targets lower than the current Eur-A average can be judged as having achieved or being likely to achieve the MDG (World Bank, 2004).

However, in some countries, MMR were higher in 2002 than they had been in 1990. Applying the 75% reduction to the 1990 baseline in these countries creates, in some cases, a 2015 MDG target that requires dramatic reductions in MMR before 2015. In these cases, more important than reaching maternal mortality targets is taking concrete action to provide women with access to adequate care during pregnancy and childbirth, initiatives that have proven to bring down MMR.

The latest available WHO-UNICEF-UNFPA estimate of MMR in Bosnia and Herzegovina is 31 per 100 000 live births for the year 2000, below the Eur-B+C average of 56 (UNSD, 2005; WHO, 2005).

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Technical notes

Calculation of averages

Averages for the reference group, when based on data in the European health for all database of the WHO Regional Office for Europe, are weighted by population. Some countries with insufficient data may be excluded from the calculation of averages. Otherwise, for data from other sources, simple averages have been calculated where required.

To smooth out fluctuations in annual rates caused by small numbers, three-year averages have been used, as appropriate. For example, maternal mortality, usually a small number, has three-year moving averages calculated for all countries. When extreme fluctuations are known to be due to population anomalies, data have been deleted, as appropriate.

Data sources

To make the comparisons as valid as possible, data for each indicator have, as a rule, been taken from one source to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data for figures and tables in this report is the January 2005 version of the European health for all database of the WHO Regional Office for Europe. The health for all database acknowledges the various primary sources of the data.

In cases where current census data for national population are unavailable, coupled with ongoing migrations of people in and out of countries, UN estimates or provisional figures supplied by the country are used to approximate national population. Such population figures create uncertainty in standardized death rates.

Disease coding

Case ascertainment, recording and classification practices (using the ninth and tenth revisions of the International Statistical Classification of Diseases and Related Health Problems: ICD-9 and ICD-10, respectively), along with culture and language, can influence data and therefore comparability across countries.

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

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

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

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

More explanation is provided in the statistical annex and explanatory notes of *The world health report 2003*[1].

Limitations of national-level data

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

[1] WHO (2003). *The world health report 2003 – Shaping the future.* Geneva, World Health Organization (http://www.who.int/whr/2003/en, accessed 10 June 2005).

Reference groups for comparison

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

The country groups[1] used for comparison are called reference groups and comprise:

- countries with similar health and socioeconomic trends or development; and/or
- geopolitical groups.

The 27 countries with very low child mortality and very low adult mortality are designated Eur-A by WHO. Eur-A comprises Andorra, Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. However, data for most indicators are unavailable for two of the 27 countries: Andorra and Monaco. Therefore, unless otherwise indicated, Eur-A and averages for Eur-A refer to the 25 countries for which data are available.

The 25 countries with low child mortality and low or high adult mortality are designated Eur-B+C by WHO. Eur-B+C comprises Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, and Uzbekistan. Unless otherwise indicated, Eur-B+C and averages for Eur-B+C refer to these countries.

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

Graphs have usually been used to show time trends from 1980 onwards. These graphs present the trends for all the reference countries as appropriate. Only the country in focus and the group average are highlighted and identified in the legend. This enables the country's trends to be followed in relation to those of all the reference countries, and performance in relation to observable clusters and/or the main trend or average to be recognized more easily.

[1] WHO (2004). *The world health report 2004 – Changing history*. Geneva, World Health Organization (http://www.who.int/whr/2004/en, accessed 26 August 2004.

Glossary

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

Technical terminology

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

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