WORLD HEALTH ORGANIZATION
EUROPE

Highlights on health in Georgia

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, Tajikistan, 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

HEALTH STATUS
BURDEN OF DISEASE
COMPARATIVE STUDY
GEORGIA

EUR/05/5046415G
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Life expectancy

WHO estimates that a person born in Georgia in 2003 can expect to live 71 years on average: 75 years if female and 67 years if male. The population average is about three years above the estimated average for Eur-B+C, and eight years below the Eur-A average. The official national figure for the population average is 76.1 years of life expectancy (2001): 78.7 years if female and 73.5 years if male. The difference between WHO estimates and national figures is due mostly to under-registration of child mortality.

WHO also estimates that, using data from 2002, people in Georgia live 64.4 healthy years on average: 66.6 years if female and 62.2 years if male. This is 7.2 years lower than the corresponding Eur-A average, but is 3.9 years higher than the corresponding Eur-B+C average. Cardiovascular diseases (CVD) and neuropsychiatric conditions account for the highest burden of disease for both males and females. High blood pressure and tobacco are the dominant risk factors that contribute to the burden for males. For females, the main risk factors are high blood pressure and excess weight. In Georgia, measures to improve health and prevent disease need to focus on people of working age.

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

Infant and neonatal deaths, and under-5 mortality appear to be underreported in Georgia. Between 1990 and 2001, the infant mortality rate decreased by a third. The 1999 national statistics on neonatal mortality show about 12 deaths per 1000 live births. The 2001 nationally reported under-5 mortality rate is about a half of the WHO estimate.

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)

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

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

Maternal mortality

Between 1990 and 2002, the maternal mortality rate (MMR) in Georgia increased by almost 80%, with the peak rate in 1997. From 1997, the rate fell by 22% to reach the 2002 level. To achieve its Millennium Development Goal (MDG) in 2015, Georgia's MMR would have to fall another 86%.

More important than reaching the exact Millennium Development Goals for maternal mortality rates is that countries take concrete action to provide women with access to adequate care during pregnancy and childbirth. There are evidence-based initiatives proven to bring down the rates.

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

Main causes of death

In 2001, noncommunicable diseases accounted for about 87% of all deaths in Georgia; external causes for 3.5%; communicable diseases for 1.1%; and 3.6% was attributed to ill-defined conditions.

With due consideration to integrity of data, overall mortality rates in all age groups, among both children and adults of both sexes in Georgia, are below Eur-B+C average rates. However, reported deaths due to certain conditions that originate in the perinatal period show high rates – about 50% above the corresponding Eur-B+C average. Similarly, for Georgians between 15 and 29 years old, the mortality rate for respiratory diseases in this group is about three times as high as the corresponding Eur-B+C average rate, while the mortality rate for all causes is about half of the Eur-B+C average.

Cardiovascular diseases are the main cause of death in Georgia (2002), responsible for 70% of the overall mortality. About half of all CVD mortality is due to ischaemic heart disease, and about a third is attributed to cerebrovascular diseases.

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

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

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

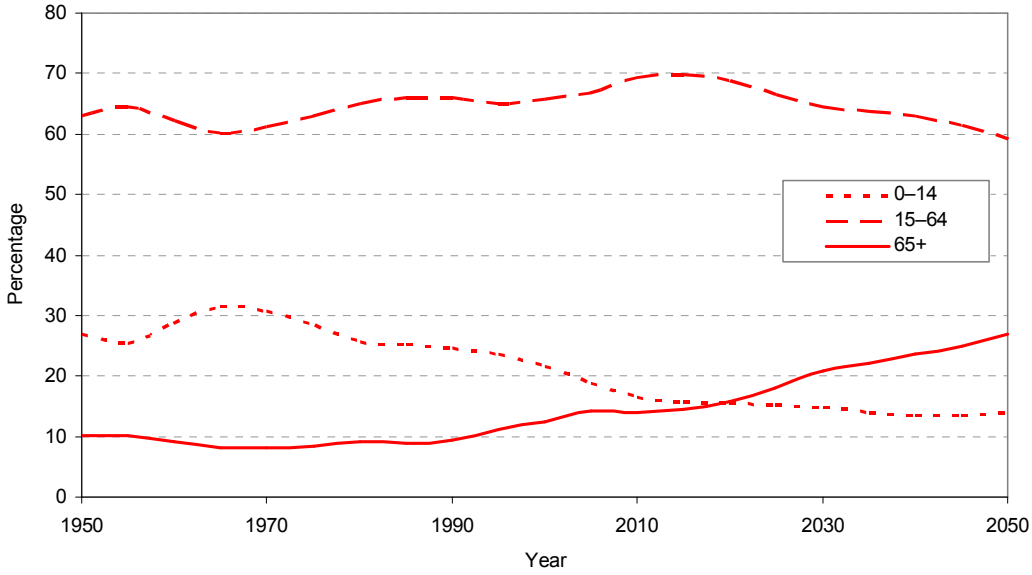
What are the advantages and disadvantages of restructuring a health care system to be more focused on primary health care services? (Health Evidence Network, 2004)

Selected demographic and socioeconomic information

Population profile

In mid-2003, Georgia had about 4.3 million people. About 52% of the population lived in urban areas, which is below the corresponding average for Eur-B+C. The percentage of the youngest population, 0–14 years old, was relatively steady during the 1980s but fell from about 25% in 1990 to 20% by 2001. The percentage is slightly below the corresponding Eur-B+C average. The percentage of Georgia's oldest population, over 65 years old, is slightly above the corresponding Eur-B+C average. By 2030, an estimated 21% of Georgia's population will be 65 years old and older (Annex. Age pyramid).

Percentage of the population aged 0–14, 15–64 and 65+ years, Georgia, 1950 to 2050 (projected)



Source: United Nations (2005).

The birth rate in Georgia was slightly below the Eur-B+C average in 2003. Natural population growth in Georgia is positive and slightly below the Eur-B+C average. Net migration is negative and the lowest in Eur-B+C.

Selected demographic indicators in Georgia and Eur-B+C
2003 or latest available year

Indicators	Georgia	Eur-B+C		
	Value	Average	Minimum	Maximum
Population (in 1000s)	4328.9	–	–	–
0–14 years (%)	20.4	–	–	–
15–64 years (%)	65.5	–	–	–
65+ years (%)	14.2	–	–	–
Urban population (%)	52.2	63.7	25.0	73.3
Live births (per 1000)[a]	10.8	12.8	8.6	27.1
Natural population growth (per 1000)	0.3	0.8	–7.5	23.0
Net migration (per 1000)	–6.6	1.8	–6.6	2.1

[a] 2002.

Sources: Council of Europe (2005), 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.

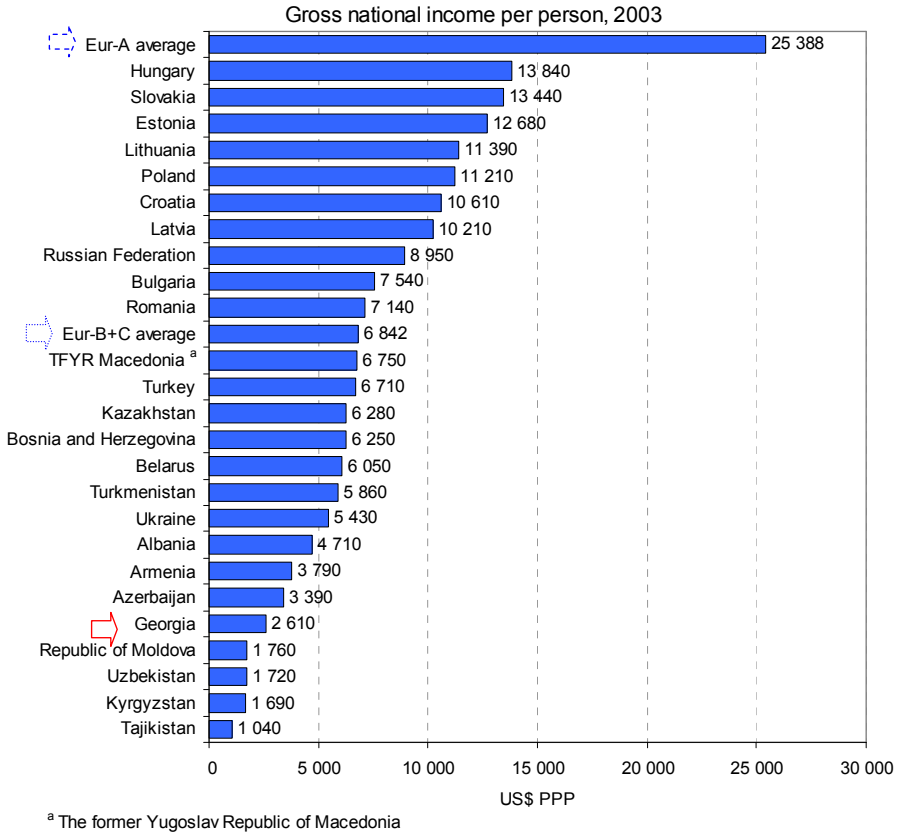
The sections that follow are a profile of three key socioeconomic determinants for Georgia, along with averages for the Eur-B+C countries, where relevant, to permit comparisons.

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.

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.

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. In Georgia, per person gross national income, adjusted for PPP, was US$ 2610 in 2003. It was the fifth lowest per person income in the Eur-B+C group that year.



[a] The former Yugoslav Republic of Macedonia
Source: World Bank (2005).

Using the World Bank's recommended benchmarks to measure absolute poverty in Europe, annual household surveys in Georgia from 1996 to 2001 found that more people were living in poverty each year. In 1996, 8.5% of people lived on US$ 2.15 per day or less; by 2001, the percentage had increased to almost 16%. If the US$ 4.30 poverty line is applied, the 1996 survey found 30.8% of people living in absolute poverty, and almost 50% were in 2001 (World Bank, 2005).

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 Georgia was 36.9, among the higher indices for the Eur-B+C countries with estimates. The Gini indices for 15 Eur-B+C countries for 2000 to 2002 range from 26.1 for Bosnia and Herzegovina (2001) to 45.6 for the Russian Federation (2000) (World Bank, 2005).

Education

Education tends to enhance an individual's job opportunities. In so doing, it can improve income, which in turn affects health positively. Education can also give more access to knowledge about healthy behaviour and increase the tendency to seek treatment when needed. A lower level of education – independent of individual income – is correlated with the inability to cope with stress, with depression and hostility and with adverse effects on health.

School enrolment is an indicator of access to education. The secondary school net enrolment represents the percentage of the total population of official school age (defined nationally) that is enrolled in secondary schools.

The latest available data on net secondary school enrolment in Georgia is for 1998, when it was 71.1%. The percentage that year was lower than it was in 1995 and 1996. In 2000, the average net enrolment in 14 Eur-B+C countries with data was 81.2%, in contrast, the average net enrolment in Eur-A countries in 2000 was 88.5% (UNESCO, 2005).

Employment

Being employed tends to be better for health than being unemployed, except in circumstances where employment exposes the individual to physical injury or psychological stress. National unemployment rates and rates for particular sub-populations are monitored to assess the extent to which people have or lack access to opportunities that would enable them to earn an income and feel secure. Vulnerability to health risk is increased by long-term unemployment, that is, continuous periods without work, usually for a year or longer; the socioeconomic status of an individual and of his/her dependents can slide as the period of unemployment increases.

The total unemployment rate in Georgia was 11% in 2001, which was lower than the Eur-B+C average rate of 12.9%, keeping in mind that national rates are based on estimates of people available and seeking employment and that countries have different definitions of labour force and unemployment. That same year, the unemployment rate among young people aged 15–24 years was 20.1% in Georgia; in comparison, the average rate was 25.2% for nine Eur-B+C countries with data for that year (ILO, 2005).

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

Life expectancy

According to figures compiled by WHO (WHO, 2005) – to assure comparability for all Member States (which are not necessarily the official statistics of Member States) – a person born in Georgia in 2003 can expect to live an average of 71 years: 75 years if female and 67 years if male.

Two types of mortality data are available: (1) official mortality statistics produced by Georgia, on the basis of regular registration of deaths by the statistical system and reported to WHO; and (2) the international mortality estimates produced by WHO, which are aimed at compensating for gaps in availability, comparability and other quality shortcomings in the regular statistics.

As in all countries of the Commonwealth of Independent States (CIS), a careful consideration of demographic developments is important, due to the massive internal migration within the CIS and due to the changes in the statistical and administrative information systems.

Population estimates for Georgia from the early 1990s are particularly inaccurate, due to armed conflicts in the first half of the 1990s and to unregistered migration. From 1992 to 1994, the Abkhazia and Tzkhinvali (South Osetia) regions, which are not under central government control, were not included in national-mortality and other health-related statistics. Population figures that were used as denominators for calculation of mortality rates and other indicators in the European health for all database have been adjusted as far as possible to take into account the non-reporting regions and migration. It is recognized, however, that these figures still may be significantly biased, and the interpretation of mortality statistics and other indicators for Georgia after 1990 should be done with caution, keeping in mind the relatively low accuracy of data used for both the numerators and the denominator of the rates.

Scientific studies (Badurashvili et al., 2001) also point out that the situation in the countries of the Caucasus remains poorly understood, and information on Georgia is especially fragmentary, as a fifth of the country remains outside government control. Also, there has been large-scale migration since 1991, and the introduction of fees for vital registration has compromised the quality of official statistics. This particular study (Badurashvili et al., 2001) was unable to provide a precise figure for life expectancy (LE) in Georgia, but could indicate that official data may overestimate LE at birth by up to eight years.

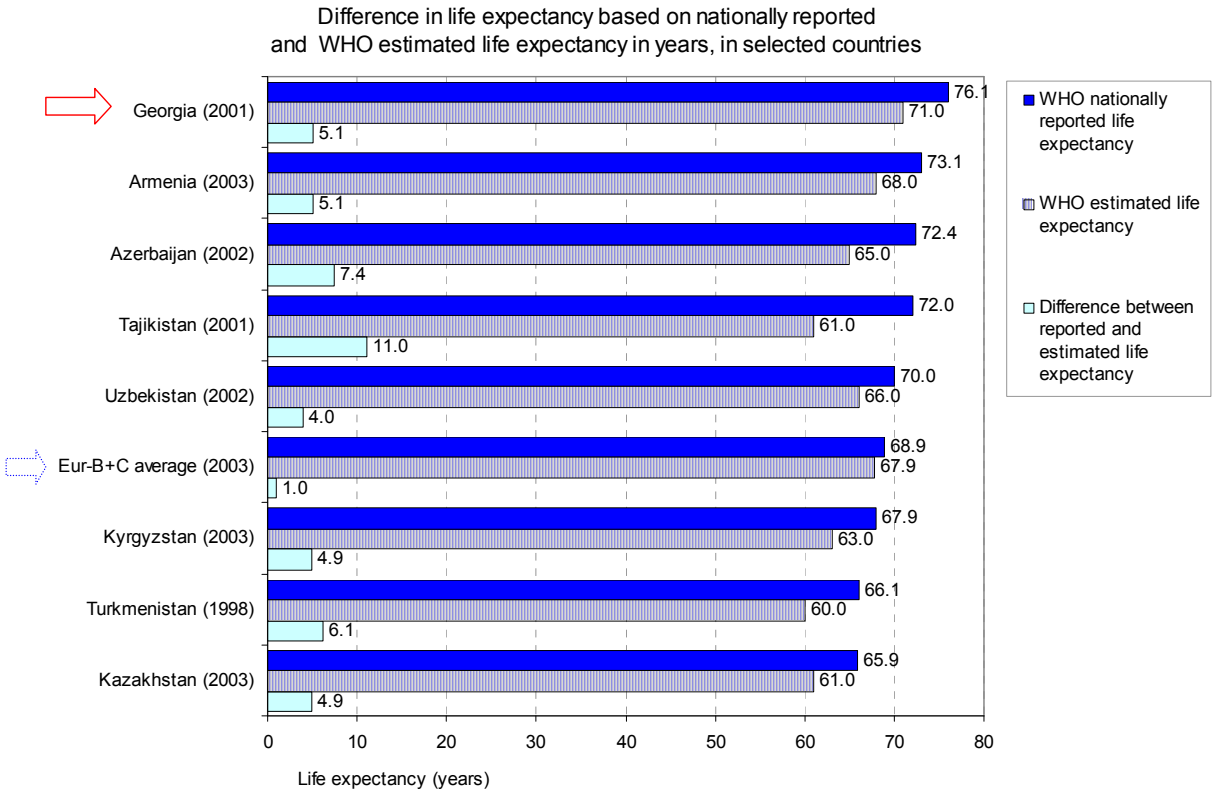
In this context, the above WHO estimates are five years lower than the official LE figures, which are 76.1 years (2001) for the both sexes combined: 78.7 years if female and 73.5 years if male. A large part of the difference is due to under-registration of child mortality. The adult mortality data is likely to be more reliable. In general, however, considerable uncertainty shrouds about three-fourths of the information upon which assessments of the state of health in Georgia are based.

Nevertheless, as in the other *Highlights on health* reports, it is assumed that official data reflect broadly and reasonably accurately the main pattern of mortality in the country, if not necessarily the levels. With these caveats and because the official statistics show details by age- and sex-specific population groups, the official statistics are used almost exclusively in the present report. The official statistics are complemented by the best available WHO estimates to help assess the health situation.

A problem related to the completeness of reporting of deaths, but less obvious to the user of these reports, is whether the cause of death is identified and coded correctly in the death certificates that form the basis for the mortality statistics. As in the other southern CIS countries, there are indications of misclassification of causes of death, which are difficult to quantify. Such misclassification inevitably affects the results of the official statistics, particularly where international comparisons are concerned.

With these comments in mind, the basic facts about mortality in Georgia can be summarized as follows. The official LE in Georgia is 7.3 years higher than the official Eur-B+C average LE of 68.8 years. However, the WHO estimate puts it about 3 years higher than the Eur-B+C average LE of 68 years, the latter average being calculated on the basis of WHO estimates exclusively. Moreover, LE in Georgia is likely about 8 years lower than the Eur-A average LE of 79.0 years. This latter difference would indicate the likely scope of middle- to long-term improvements in Georgia, provided that the best available knowledge and practice are appropriately implemented. The following figure shows that LE in

Georgia is three years higher than in Armenia and six years higher than in Azerbaijan, which suggests that the health status of the population is generally better.



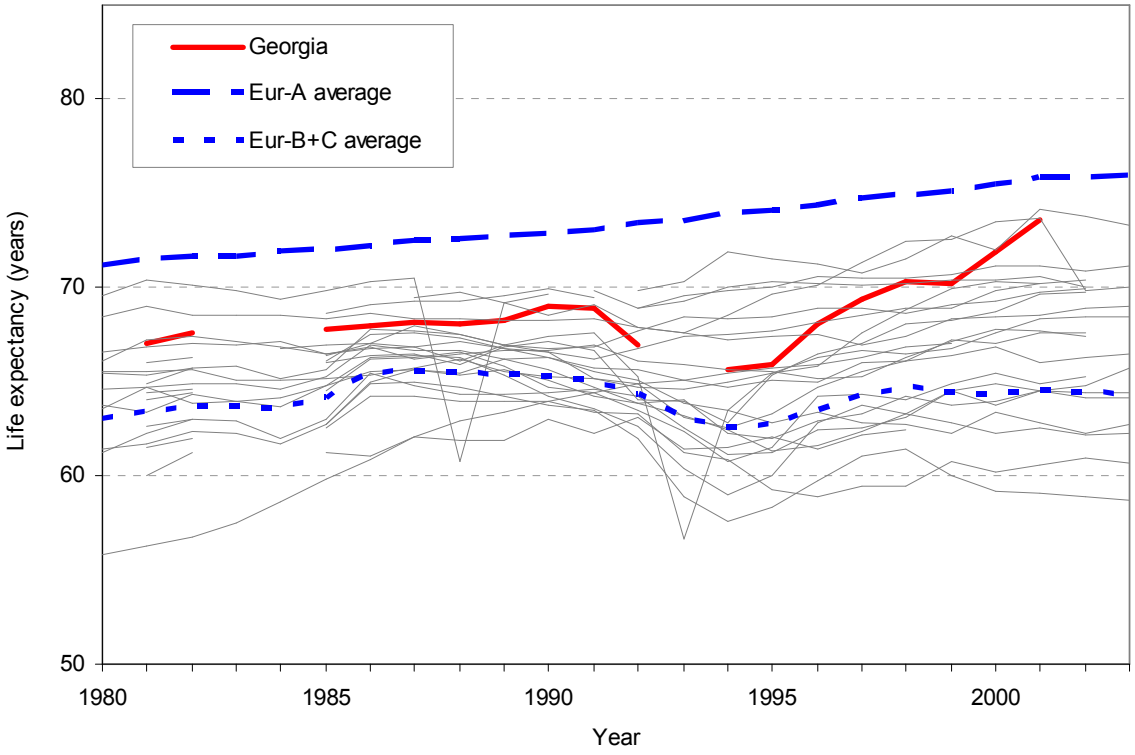
Sources: WHO Regional Office for Europe (2005); WHO (2005).

The official LE in Georgia has changed since the mid-1980s. In the mid-1980s, it was 2–3 years higher than the Eur-B+C average LE of about 70 years. Since then, it has fluctuated with the Eur-B+C average LE, as a result of the impact of economic and social changes in eastern Europe and, in particular, the CIS. Around 1997, the official LE reached the 1990 level of about 73 years. During the period 1997–2001, the official LE in Georgia increased by three years.

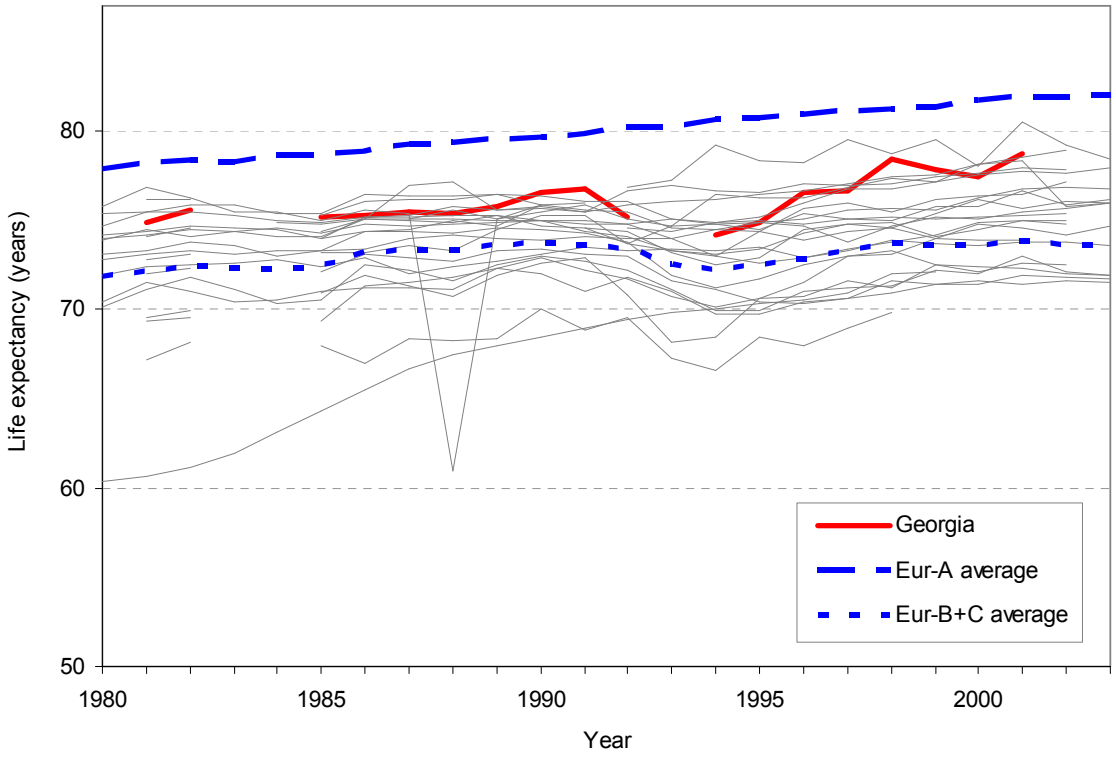
For trends (over time) in mortality, however, one should also keep in mind that the mortality crisis in the CIS countries peaked around 1994–1995 (in the aftermath of the geopolitical collapse of the former Soviet Union). Therefore the trends since 1995 in CIS countries are generally more favourable than those for the whole period 1990–2003.

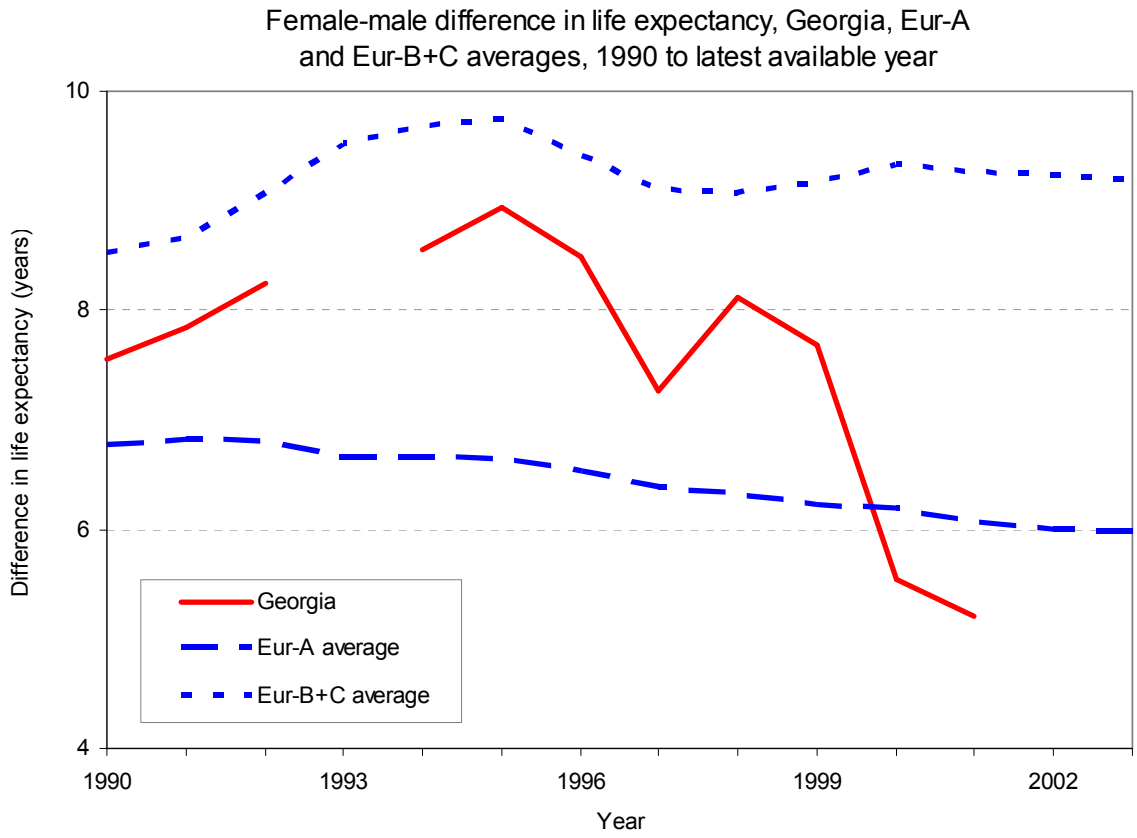
The female–male difference in LE in Georgia is 5.2 years and is relatively low, as the Eur-B+C average for the difference is 9 years and the corresponding Eur-A average is 6 years. The smaller difference between sexes in Georgia is a result of the rapid improvement in the LE of females since 1997.

Life expectancy at birth for males, Georgia, Eur-A and Eur-B+C averages, 1980 to latest available year



Life expectancy at birth for females, Georgia, Eur-A and Eur-B+C averages, 1980 to latest available year





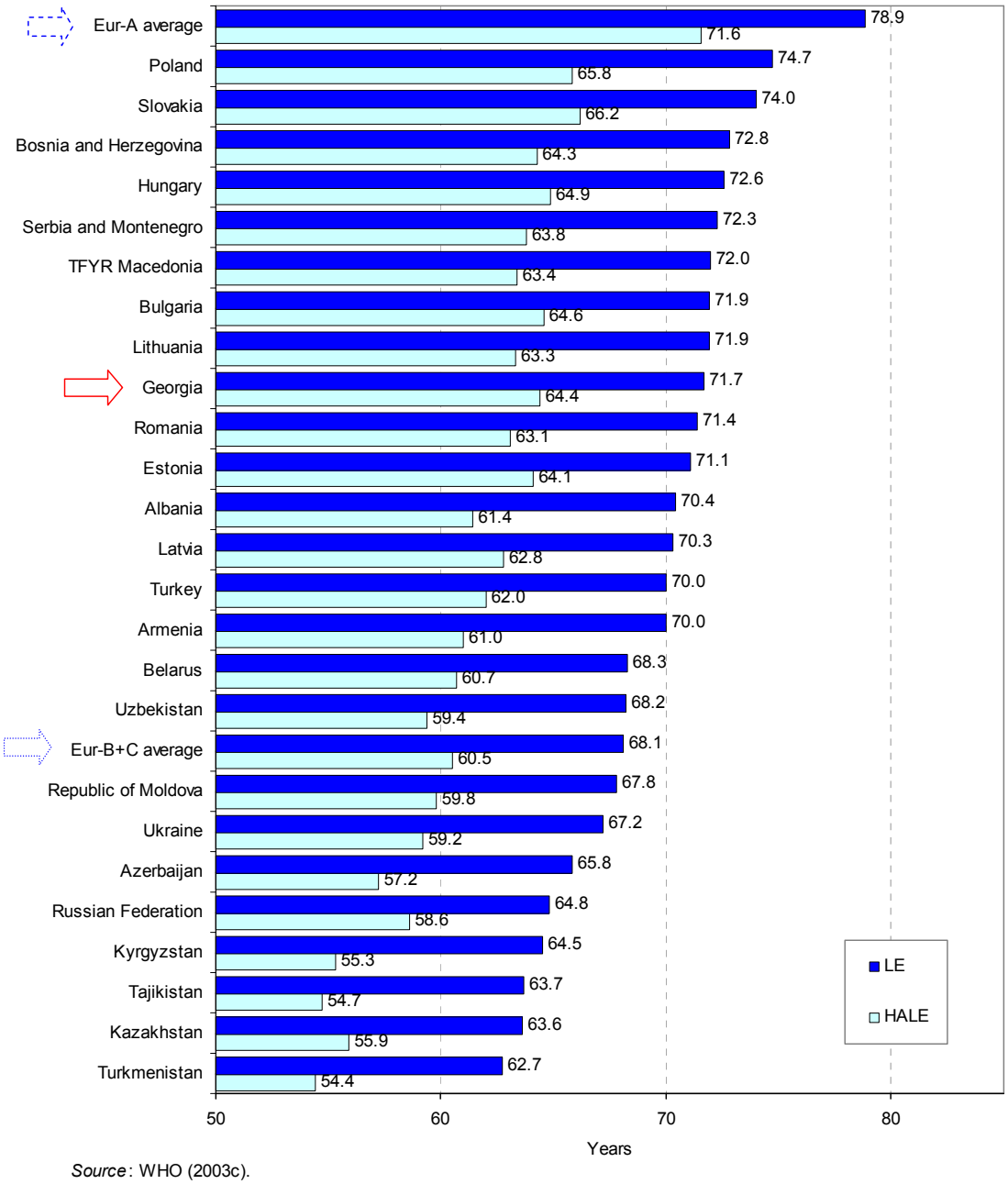
Healthy life expectancy

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. WHO has produced HALE estimates, which should be used in conjunction with the above-mentioned WHO estimates of total LE, but not in conjunction with the official LE statistics from Georgia.

WHO estimated (WHO, 2004) that, for the year 2002, people in Georgia have 64.4 healthy years on average: 66.6 years if female and 62.2 years if male. This is 7.2 years shorter than the Eur-A average of 71.6 years but 3.9 years longer than the Eur-B+C average of 60.5 years. The best achievement in the Region is 73.3 years, for people living in Sweden: 74.8 years if female and 71.9 years if male. At 60 years of age, the HALE in Georgia is 14.6 years if female and 12.6 years if male, while in Sweden those estimates are 19.6 years if female and 17.1 years if male.

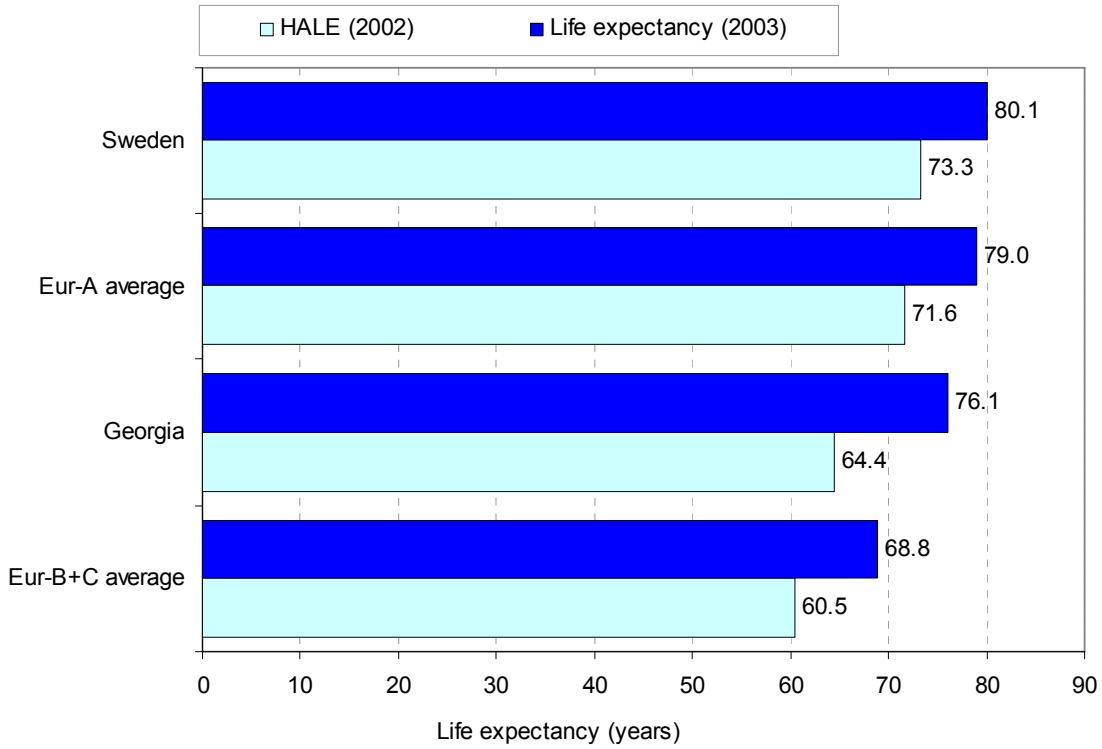
An alternative way to present the same concept is the expectation of life years spent in less than good health. In Georgia, this is 8.4 years if female and 6.2 years if male. The estimates for Sweden are 7.9 years if female and 6.2 years if male.

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



Source: WHO (2003c).

LE and HALE in Georgia, Sweden, Eur-A and Eur B+C averages, latest available year



Note: data for life expectancy for Georgia is 2001 and for Sweden is 2002.

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

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

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Cardiovascular diseases	36.8	Cardiovascular diseases	35.7
2	Neuropsychiatric conditions	17.8	Neuropsychiatric conditions	21.4
3	Malignant neoplasms	7.7	Malignant neoplasms	9.4
4	Unintentional injuries	6.3	Sense organ diseases	6.3
5	Perinatal conditions	4.7	Musculoskeletal diseases	6.0
6	Digestive diseases	4.4	Perinatal conditions	3.7
7	Sense organ diseases	3.9	Diabetes mellitus	2.3
8	Infectious and parasitic diseases	3.7	Infectious and parasitic diseases	2.2
9	Musculoskeletal diseases	3.4	Digestive diseases	2.2
10	Respiratory diseases	2.2	Unintentional injuries	1.9

Source: Background data from WHO (2003c).

Main risk factors

The following table shows the top 10 risk factors with their relative contributions, in descending order, to the burden of disease in the male and female populations of Georgia. According to the DALYs, high blood pressure and tobacco place the greatest burden of disease on the Georgian male population, and high blood pressure and high body mass index (BMI) place the greatest burden of disease on females.

Ten leading risk factors as causes of disease burden measured in DALYs in Georgia (2002)

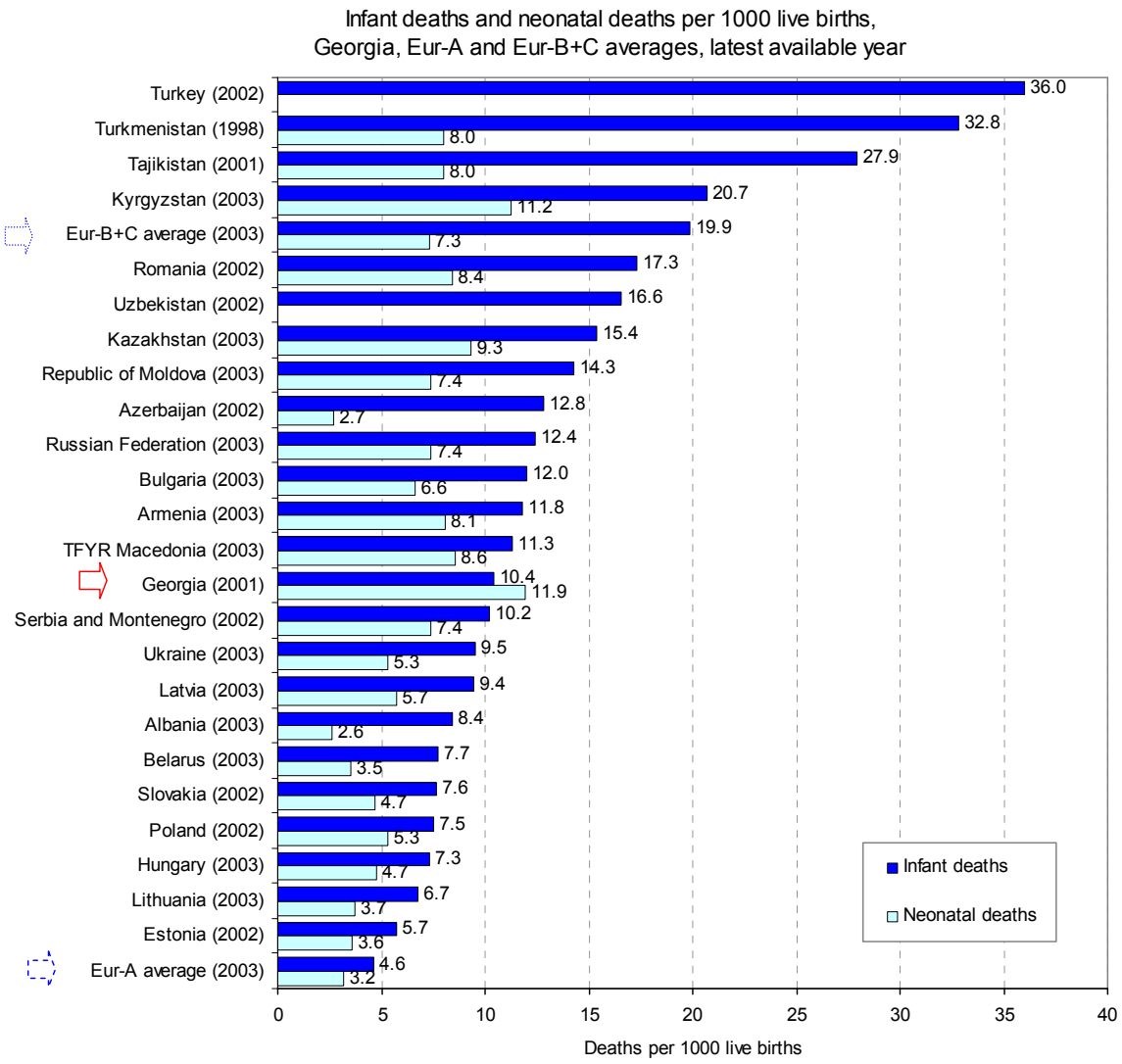
Rank	Males		Females	
	Risk factors	Total DALYs (%)	Risk factors	Total DALYs (%)
1	High blood pressure	24.4	High blood pressure	22.4
2	Tobacco	15.1	High BMI	13.3
3	High cholesterol	12.8	High cholesterol	11.0
4	High BMI	10.7	Physical inactivity	5.6
5	Alcohol	9.9	Low fruit and vegetable intake	5.4
6	Low fruit and vegetable intake	6.3	Unsafe sex	2.8
7	Physical inactivity	5.6	Tobacco	2.5
8	Illicit drugs	3.8	Illicit drugs	1.4
9	Lead	2.0	Alcohol	1.2
10	Urban outdoor air pollution	1.1	Lead	1.1

Source: Background data from WHO (2003c).

Mortality

Infant, neonatal and child mortality

By 2001, the official infant mortality rate in Georgia was 10.4 deaths per 1000 live births. For comparison, in 2003 the Eur-B+C-average infant mortality rate was 19.9 deaths per 1000 live births, and Lithuania had the lowest rate in Eur-B+C, at 6.7 deaths per 1000 live births. Since 1990, the reported infant mortality rate in Georgia has decreased by a third. The rate of improvement is about the same as that of the Eur-B+C average.



Reports from Georgia on neonatal mortality present figures of about 12 neonatal deaths per 1000 live births for 1999, while the Eur-B+C average neonatal mortality rate was about 7 deaths per 1000 live births. The lowest WHO estimates for the Eur-B+C countries are for Estonia and Slovakia, each at 8 deaths per 1000 live births.

As mentioned previously, in an attempt to estimate possible underreporting of mortality data in the official statistics, WHO produces concurrent estimates by systematically analysing complementary information from various sources and from statistical modelling. The following table compares official estimates with WHO estimates for three indicators particularly prone to under-registration. The WHO estimates make use of the best information available. Being, of course, only estimates, they take into account statistical uncertainties and have calculated ranges of statistical uncertainty. In particular, the lower boundary of such an interval of uncertainty can be interpreted to mean that official data below the level are likely underreported.

Comparison of key indicators of child and maternal mortality in Georgia based on nationally reported data and WHO estimates to assure comparability

Indicator	Nationally reported [a]	WHO estimates
Infant mortality per 1000 live births, 2000 (MDG indicator)	23.1	21[b]
Under-5 mortality per 1000 live births (MDG indicator)	27.6	45 (40–49) (2003)[c]
Maternal mortality per 100 000 live birth, 2000 (MDG indicator)	49.2	32[c]

[a] Statistical Yearbook of Georgia (2004); [b] WHO (2004); [c] WHO (2005).

The data show that regularly reported under-5 mortality per 1000 live births in Georgia is about a half of the estimated actual rate, which is similar to the underreporting levels in the other countries of the south Caucasus. As under-registration of child deaths occurs mostly in the age under 1 year, this discrepancy indicates that infant mortality and neonatal mortality must be underestimated as well.

Based on nationally reported deaths and births in 2001, there is a probability that of every 1000 live births in Georgia, about 27.6 children will die before age five (the MDG for the under-5 mortality rate for Europe and central Asia is 15 deaths per 1000 live births by 2015). Adjusting for the known biases in national data (underreporting of vital statistics), WHO estimates Georgia's latest probability to be 45 under-5 deaths per 1000 live births. Whether Georgia reaches the MDG by 2015 (according to WHO estimates) is uncertain, as extrapolation of the current WHO estimates is not valid.

In addition, WHO estimates that the under-5 mortality rate has not changed during the period 2000–2003. The respective rate for the European Region as a whole decreased at an average annual rate of about 3.5% (WHO, 2005).

Maternal mortality

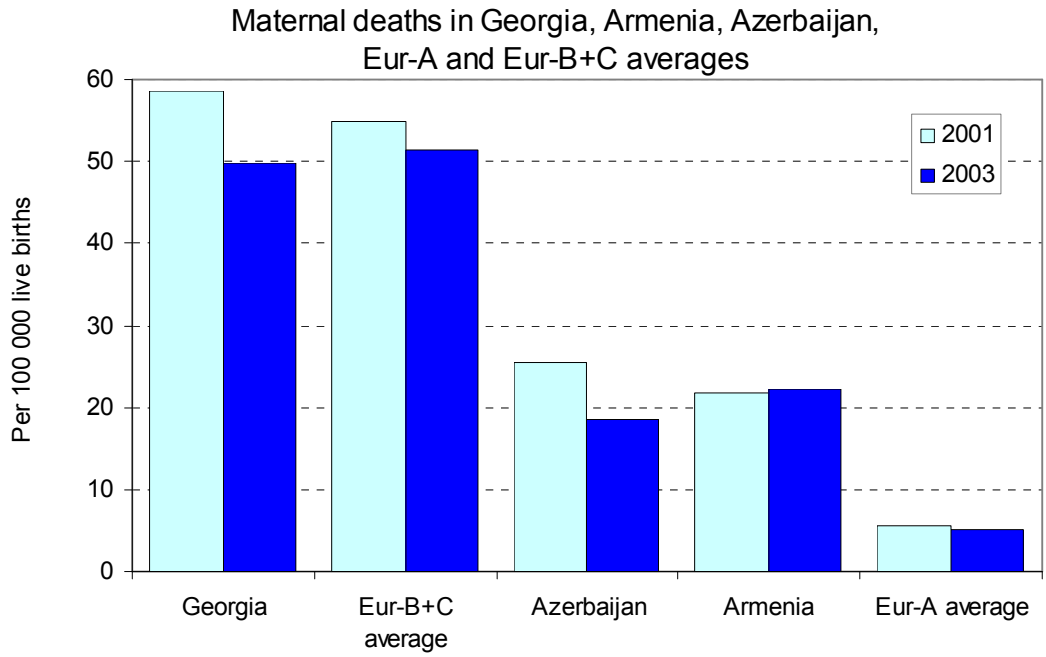
Maternal mortality rates (MMR) and the Millennium Development Goal (MDG)

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.

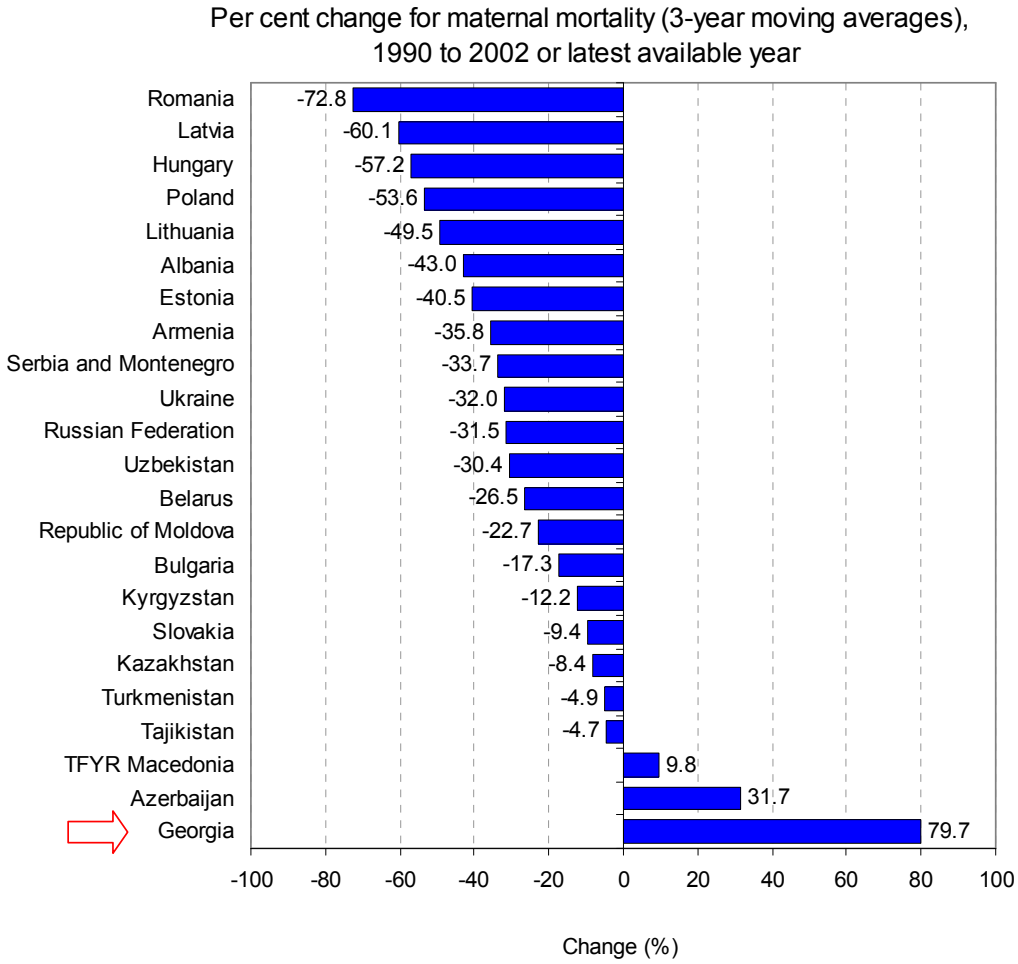
Maternal mortality, however, is very difficult to ascertain, even in countries with strong registration systems. WHO estimates, derived by regression analysis and similar methods, are usually higher than the numbers reported by a country. But the opposite is the case in Georgia, as shown in the preceding table. This apparent contradiction is likely due to the use of different sources of data (such as Central Statistical Office data and Ministry of Health data based on reports of health care institutions and sample populations surveys), but the discrepancy is comparatively small and actually suggests that the maternal mortality rates are lower than generally expected. Such adjustments of maternal mortality data could not be arranged for a longer retrospective period and, for this reason, it is at present not possible to make any assessments of trends.

It should be emphasized that maternal mortality is a MDG indicator and that all counties have made the commitment to reduce it by three-quarters between 1990 (baseline) and 2015. Although a direct assessment of progress based on the limited data available is not possible, the available information suggests limited progress.



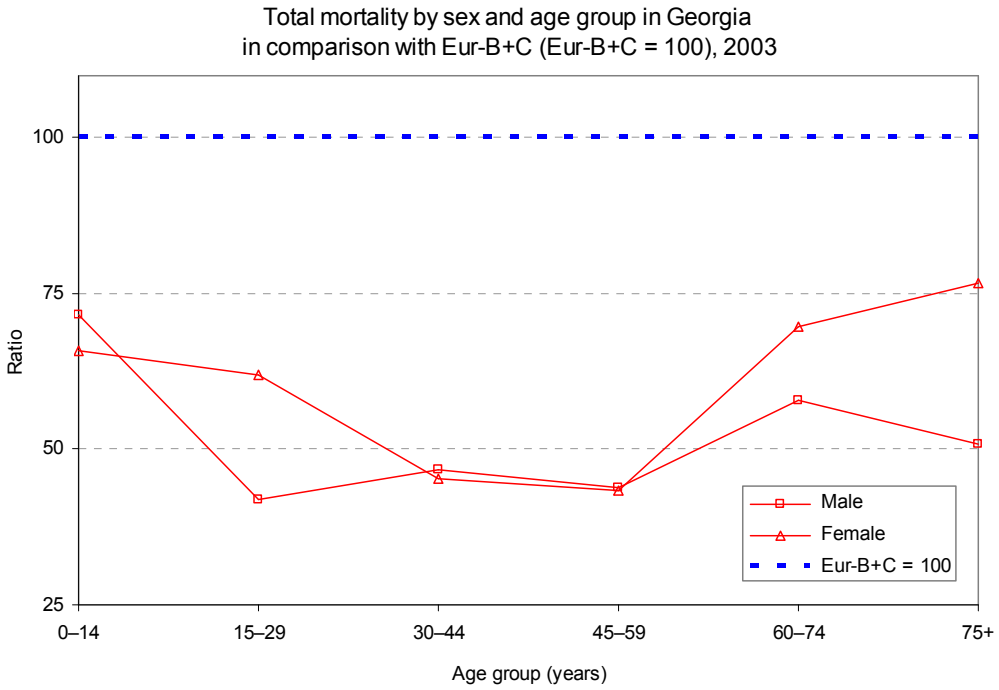
Note: data Eur-A average is from 2002.

In 1990, Georgia's MMR was less than half the average rate for Eur-B+C countries with data for that year. But between 1990 and 2002, the MMR in Georgia increased by almost 80% (from about 28 to 51 maternal deaths per 100 000 live births) (see following figure). The peak rate in the period was in 1997, at 65.3 maternal deaths per 100 000 live births. From that point, the rate fell by 22% to reach the 2002 level. Of the 24 maternal deaths reported in 2000, 1 was attributed to abortion. To achieve the MDG target in 2015, Georgia's MMR would have to fall another 86%.



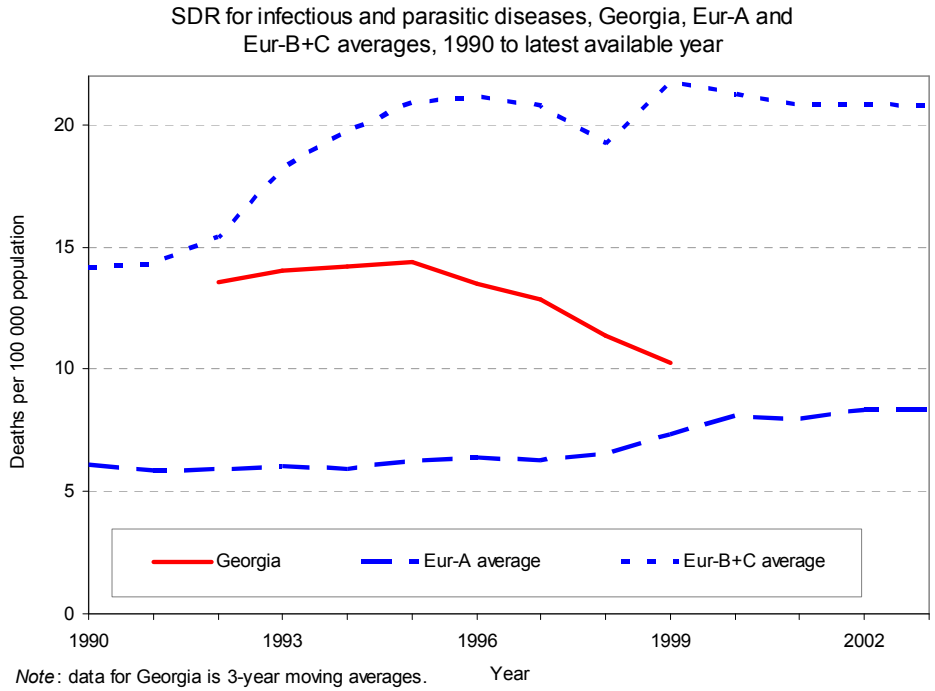
Excess mortality

In general, mortality rates in Georgia are about 40% lower than the corresponding Eur-B+C average rates, but 20% higher than the corresponding Eur-A average rates (Annex. Selected mortality). In all age groups, both children and adults, mortality rates are below the corresponding Eur-B+C average rates. With due consideration to completeness of data, this suggests that the level of health in Georgia might be better than in several other CIS countries (that suffer extremely high middle-age adult mortality) and in central Asian republics (that still have higher child mortality).



An important observation to make is that, as with other southern CIS countries (Caucasus and central Asian republics), and in contrast to the northern CIS countries, there is no excess mortality in Georgia from external causes of death – the rates are even below the Eur-A average rates, not to mention the Eur-B+C average rates, which are about five times higher than those for Georgia.

As mortality from all groups of diseases and specific individual causes appear to be relatively low, and in the context of the data limitations, there is not much more to say about excess mortality in this report. The trend for infectious and parasitic diseases is shown in the following figure.

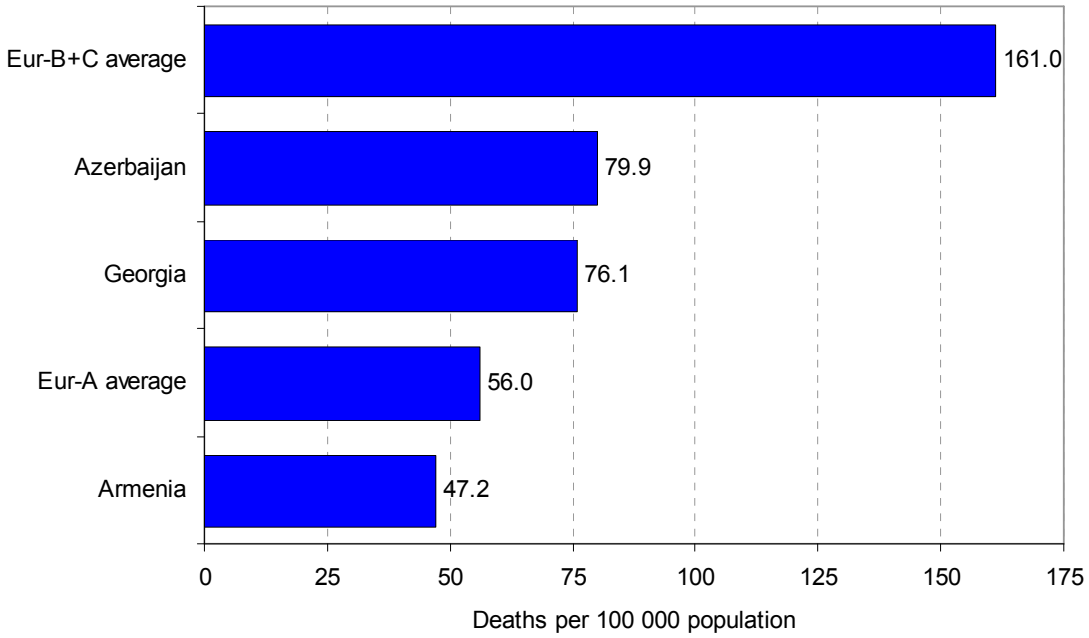


In the age group 0–14 years (Annex. Mortality data), the mortality rate in Georgia of 106 deaths per 100 000 population in 2001 was about a third lower than the Eur-B+C average of 152 deaths per

100 000 population and two times higher than the Eur-A average of 49 deaths per 100 000 population. It should be noted, however, that the reported deaths due to certain conditions that originate in the perinatal period show high rates – about 50% higher than the corresponding Eur-B+C average rates.

In the age group 15–29 years (Annex. Mortality data), the total mortality rate of 76 deaths per 100 000 population in Georgia is half of the Eur-B+C average of 161 deaths per 100 000 population, but is similar to the levels in the other countries of the south Caucasus. The lower overall mortality is due mainly to very low rates for external causes. It should be mentioned, however, that mortality rates for respiratory diseases in this age group is about three times as high as the corresponding Eur-B+C average rates.

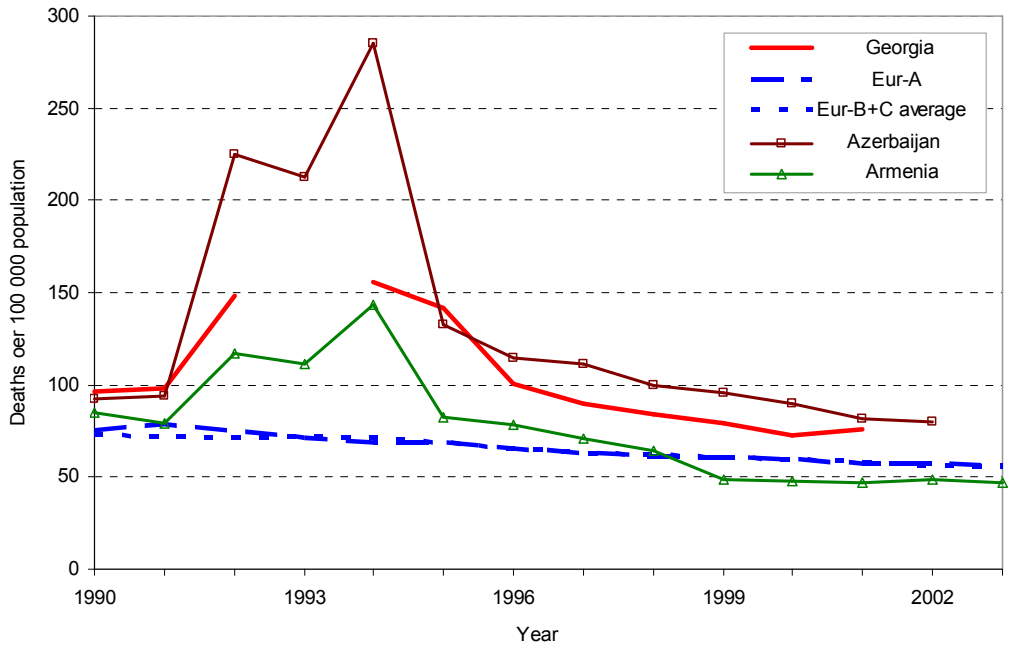
SDR for all causes of death in people aged 15–29 years, Georgia, Armenia, Azerbaijan, Eur-A and Eur-B+C averages, latest available data



In the age groups 30–44 years and 45–59 years (Annex. Mortality data), the situation is similar to that of the 15–29 year olds, in that the country data are considerably better than the Eur-B+C averages.

Mortality from lung cancer is surprisingly low, which might be due to under-diagnosis or underreporting. However, there is no discontinuity in the trends and the levels are similar to those in Azerbaijan. This probably means that the mortality data in Georgia, despite the numerous caveats discussed previously, are at least no less valid than those of other countries in the south Caucasus.

SDR for lung cancer in people aged 45–59 years, Georgia, Armenia, Azerbaijan, Eur-A and Eur-B+C averages, 1990 to latest available year

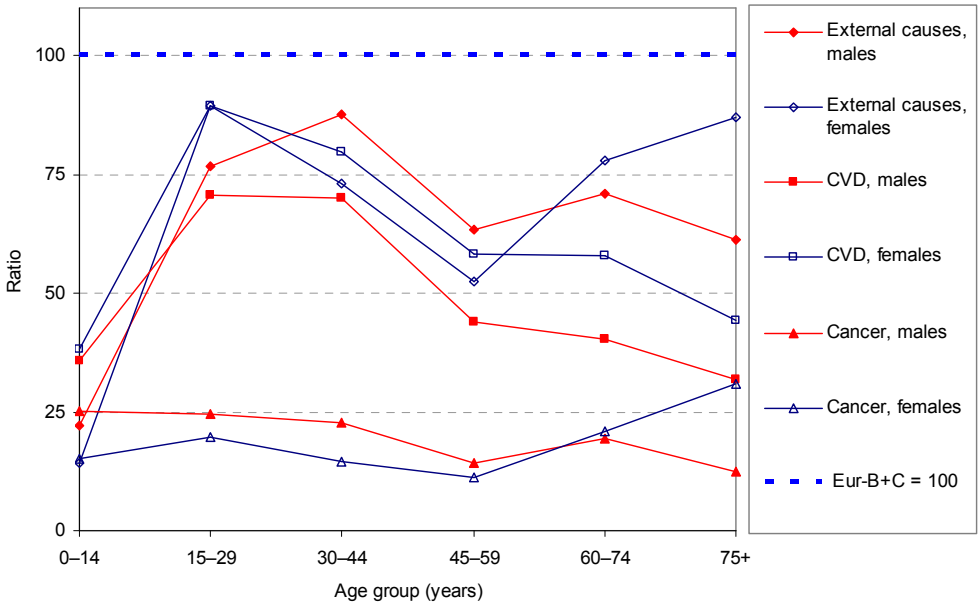


In the age groups above 60 years, the mortality rates fluctuate considerably and are generally difficult to judge, due to the uncertainty in the validity of the data.

Main causes of death

As indicated above, all main causes of death in all groups, by age and sex, present lower rates than the respective Eur-B+C average rates. Again, the observations about the causes of mortality should be interpreted with caution.

Main causes of mortality by sex and age group in Georgia in comparison with Eur-B+C (Eur-B+C = 100), 2003

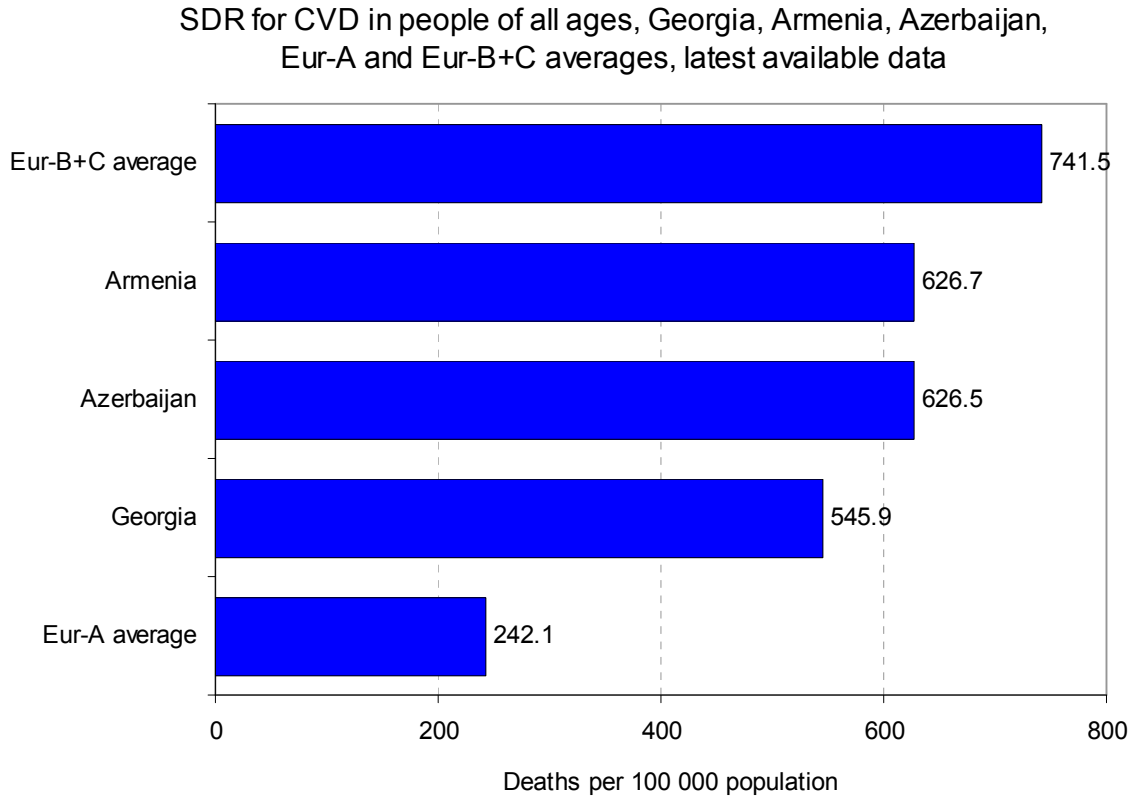


In 2001, the main noncommunicable diseases accounted for 87.3% of all deaths in Georgia; external causes accounted for 3.5% of all deaths; communicable diseases accounted for 1.1% of all deaths; and 3.6% of all deaths were due to ill-defined conditions (Annex. Selected mortality). In Eur-B+C, the average percentage of deaths from external causes was considerably larger (10.6%) and that from noncommunicable diseases was slightly smaller (79.6%). The rates for that year were very similar to those for Azerbaijan and Armenia.

CVD

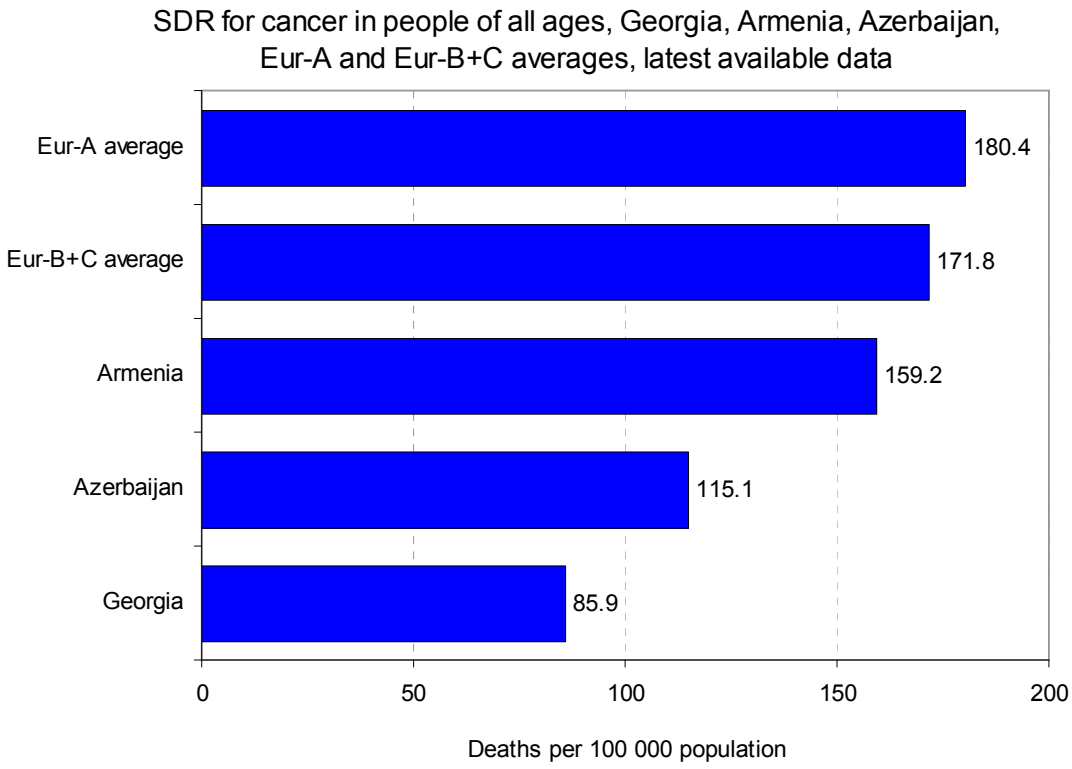
Cardiovascular diseases were the main cause of death in Georgia in 2001, having been responsible for 70% of the overall mortality, while the Eur-B+C average was 57%. Part of the difference is likely due to inaccurate coding of certain conditions as CVD.

About half of all mortality from CVD is attributed to ischaemic heart disease, and a third is attributed to cerebrovascular diseases. Overall, however, similar situations in other CIS countries are reflected in rates lower than the Eur-B+C average rate. This means that, in Georgia, CVD are by far the largest public health problem in terms of mortality, and the prospects of improving the situation are uncertain.



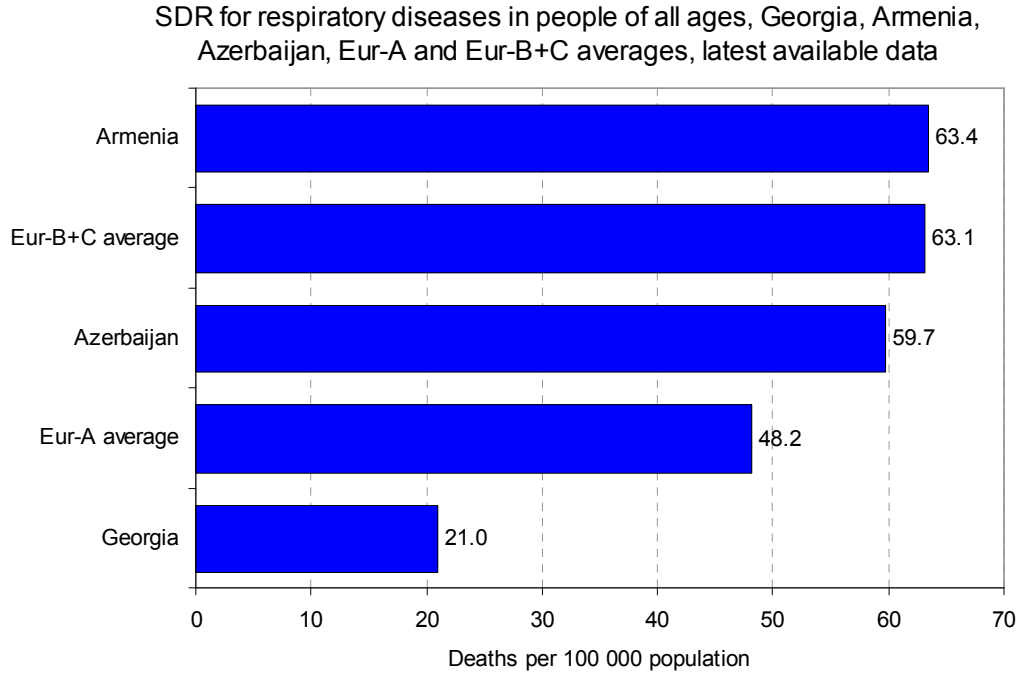
Cancer

Mortality due to cancer is distributed relatively equally across the Region, but the rates in Georgia are lower than the corresponding Eur-B+C average rates and considerably lower than the corresponding Eur-A average rates. The interpretation of the observation is not straightforward, as the completeness and quality of the registration and coding of cancer deaths, which is a common problem in the southern part of the CIS, limit the possibilities for detailed analyses.



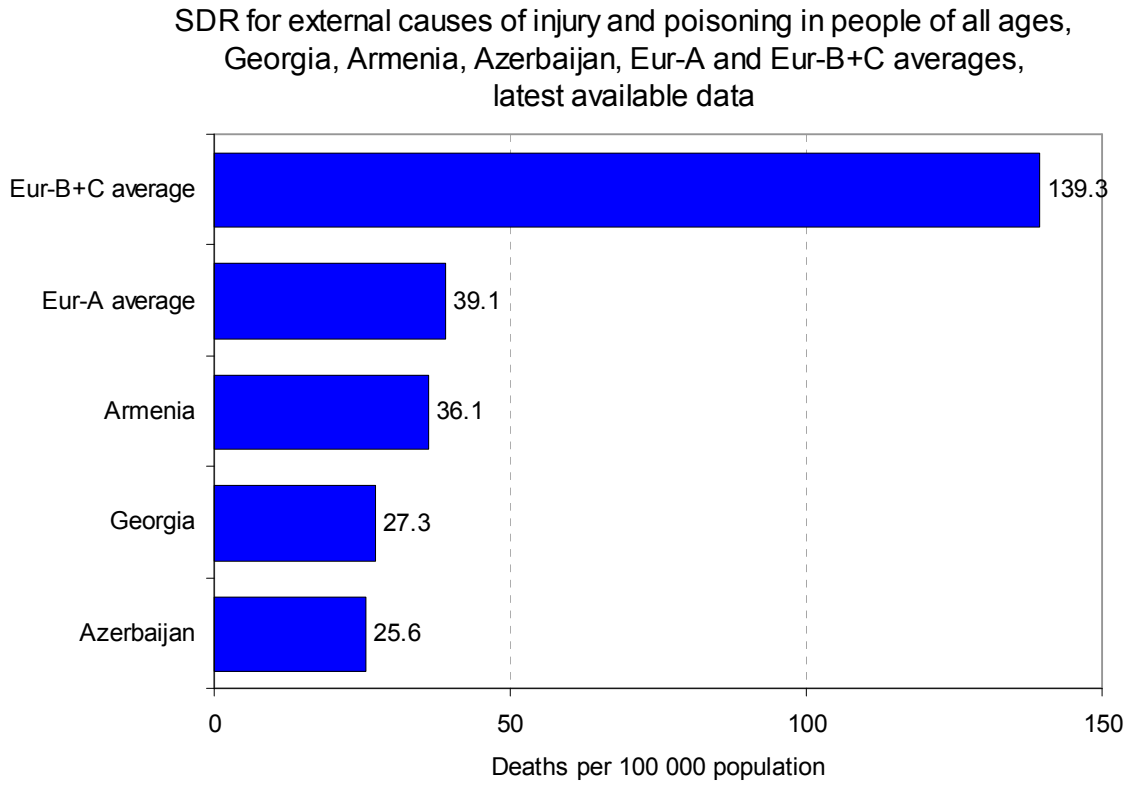
Respiratory diseases

Respiratory diseases accounted for 2.7% of the total mortality in Georgia in 2001, and this percentage is lower than that for any other country in the WHO European Region. This may reflect a good achievement, but the actual levels are probably higher.

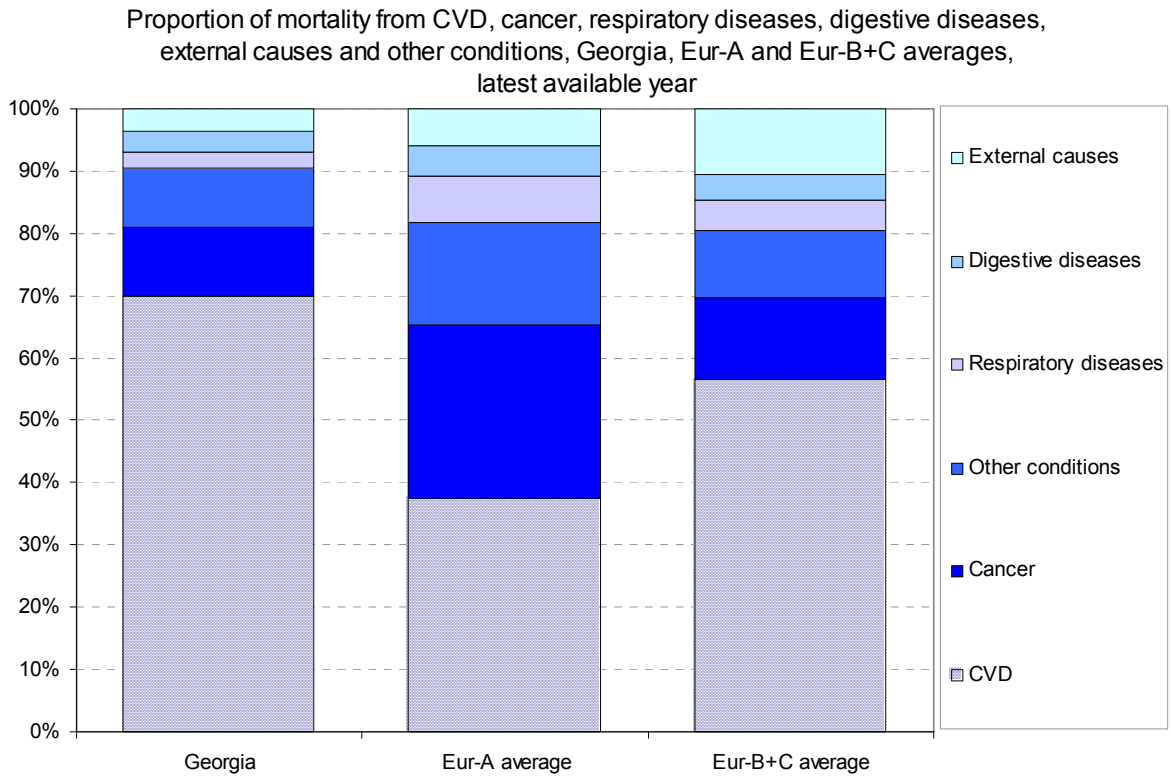


External causes

External causes of death include unintentional injuries (such as those caused by road-traffic, poisoning, falls, fires and drowning) and intentional injuries (such as those self-inflicted or due to violence and war). Overall, external causes were responsible for 27.3 deaths per 100 000 population in Georgia in 2001, while the Eur-B+C average was 139.6 deaths per 100 000 population and the Eur-A average was 40.3 deaths per 100 000 population.



Proportional mortality is a rough but robust measure which can help to consolidate the analysis of the recent situation in Georgia because of the often-uncertain reliability of the age- and cause-specific death rates in the country. The following figure shows both the differences and the similarities of the overall pattern of mortality in Georgia as compared to the Eur-A- and Eur-B+C averages.



The main difference is the lower proportion of deaths from external causes (3.5 %) as compared to both the A-average (6.0 %) and the BC-average (10.6%). The observation is likely real and therefore very important.

There is a considerably higher proportion of deaths from CVD in Georgia (70.0 %) than both the Eur-A average (37.4 %) and the Eur-B+C average (56.5 %). This may in part be due to imperfect coding practices which label avoidable mortality due to other causes than CVD, but nevertheless the CVD mortality rates in Georgia are lower than the Eur-B+C average.

On the other hand, it should be recognized that the general mortality structure in Georgia is quite similar to the average mortality structures in the Eur-A and the Eur-B+C-groups. This fact should not be overlooked in reading this report - which focuses primarily on deviations from the means - as it helps to balance the final analysis. The message is that there are no specific disease pattern for the rich countries and another for those most in need for international assistance. It is not the selection of the diseases as such but the frequency of occurrence of these diseases which varies within and between countries (International Institute for Society and Health (Marmot et al., 2005).

Moreover, since the main causes of these variations are social the challenge is to document the specific pathways between the causes and the alternative outcomes in a particular population so that policy can address the chains of circumstances and events more efficiently.

In conclusion, the overall health situation in Georgia seems to be relatively better than in many other CIS despite the extreme difficulties since independence. Many signs point to this, although the assessment is very difficult due to the numerous limitations of the available information. Overall, it seems likely that Georgia did exhibit less of the CIS typical large changes in mortality in the early post-Soviet period, although the country has undergone almost total economic collapse and has been beset by civil war. There are several signs of recent improvements but these conclusions are still to be confirmed by further studies and analyses.

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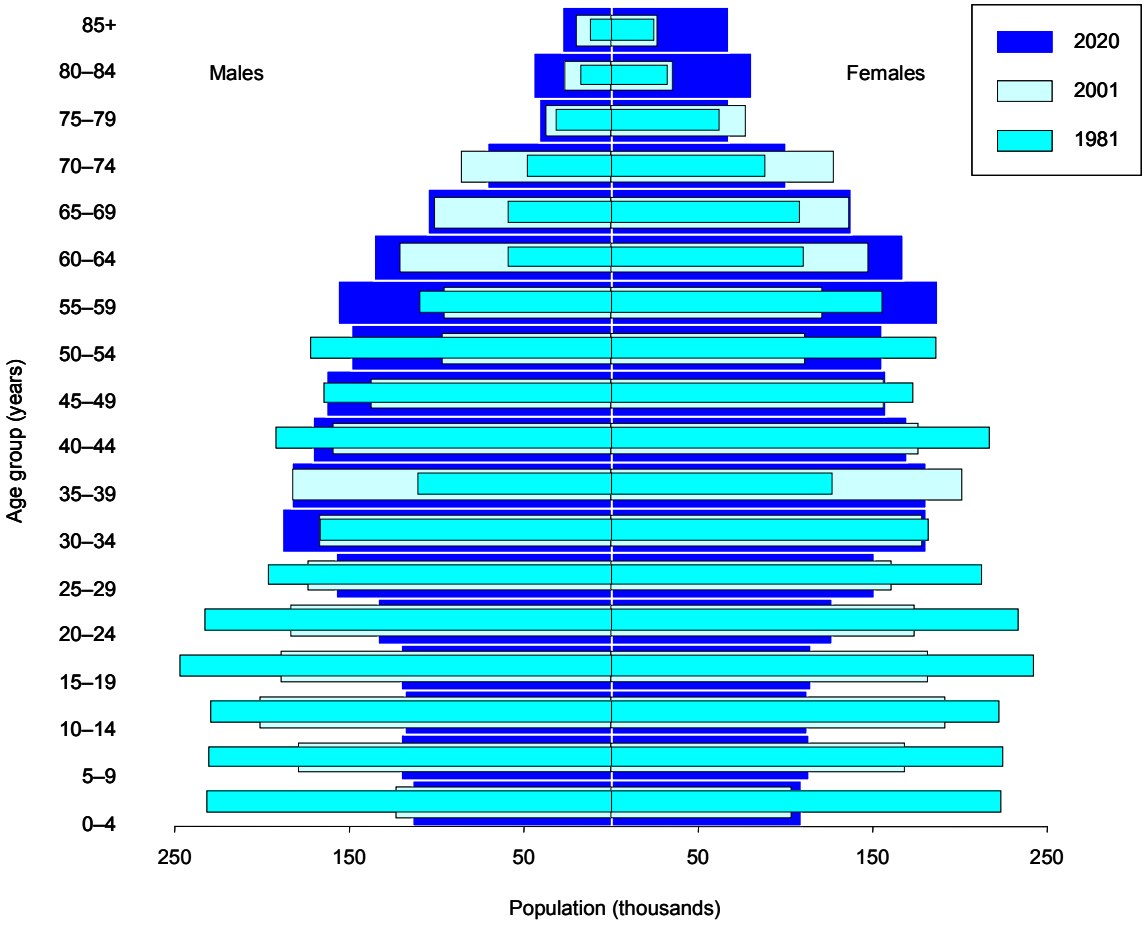
Annexes

Annex. Age pyramid



Sources: WHO Regional Office for Europe (2005) and United Nations (2005).

Annex. Selected mortality

Selected mortality in Georgia compared with Eur-B+C averages

Condition	SDR per 100 000		Excess mortality in Georgia (%)	Total deaths in Georgia (%)	Total deaths in Eur-B+C (%)	Eur-A average	Excess Georgia to Eur-A (%)	Total deaths in Eur-A (%)
	Georgia (2001)	Eur- B+C average (2003)						
Selected non–communicable conditions	680.7	1044.9	–34.9	87.3	79.6	533.8	27.5	82.4
Cardiovascular diseases	545.9	741.8	–26.4	70.1	56.5	243.4	124.3	37.6
Ischaemic heart disease	303.4	362.7	–16.3	38.9	27.6	95.9	216.4	14.8
Cerebrovascular diseases	184.3	221.7	–16.9	23.6	16.9	61.1	201.6	9.4
Diseases of pulmonary circulation and other heart disease	35.1	68.9	–49.1	4.5	5.3	56.6	–38	8.7
Malignant neoplasms	85.9	172.0	–50.1	11.0	13.1	181.5	–52.7	28
Trachea/bronchus/lung cancer	16.8	33.9	–50.4	2.2	2.6	37.1	–54.7	5.7
Female breast cancer	20.1	22.1	–9.0	2.6	1.7	27.0	–25.6	4.2
Colon/rectal/anal cancer	7.8	19.0	–58.9	1.0	1.4	20.7	–62.3	3.2
Prostate	4.2	14.3	–70.6	0.5	1.1	25.1	–83.3	3.9
Respiratory diseases	21.0	63.1	–66.7	2.7	4.8	47.8	–56.1	7.4
Chronic lower respiratory diseases	7.2	31.2	–76.9	0.9	2.4	20.2	–64.4	3.1
Pneumonia	10.8	23.6	–54.2	1.4	1.8	16.2	–33.3	2.5
Digestive diseases	25.9	52.3	–50.5	3.3	4.0	30.8	–15.9	4.8
Chronic liver disease and cirrhosis	21.4	32.0	–33.1	2.7	2.4	12.6	69.8	1.9
Neuropsychiatric disorders	2.1	15.7	–86.6	0.3	1.2	30.3	–93.1	4.7
Communicable conditions	8.4	20.8	–59.6	1.1	1.6	8.4	0.0	1.3
AIDS/HIV	0.0	0.8	–100.0	0.0	0.1	1.1	–100.0	0.2
External causes	27.3	139.6	–80.4	3.5	10.6	40.3	–32.3	6.2
Unintentional	21.3	102.2	–79.2	2.7	7.8	28.7	–25.8	4.4
Road traffic injuries	4.0	14.7	–72.8	0.5	1.1	9.9	–59.6	1.5
Falls	0.4	7.5	–94.7	0.1	0.6	6.1	–93.4	0.9
Intentional	6.0	37.4	–84.0	0.8	2.9	11.6	–48.3	1.8
Self–inflicted (suicide)	2.1	23.2	–90.9	0.3	1.8	10.6	–80.2	1.6
Violence (homicide)	3.9	14.2	–72.5	0.5	1.1	1.0	290.0	0.2
Ill–defined conditions	28.3	64.0	–55.8	3.6	4.9	20.9	35.4	3.2
All causes	779.3	1312.2	–40.6	100.0	100.0	647.8	20.3	100.0

Annex. Mortality data

Table 1. Selected mortality for the group 0–14 years by sex in Georgia and Eur-B+C: SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Georgia (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	105.6	–7.7	49.4	–2.4	151.7	–3.8
	M	122.0	–7.6	55.3	–2.5	170.5	–3.9
	F	86.8	–7.9	43.3	–2.4	131.9	–3.8
Infectious and parasitic diseases	M	6.5	–11.8	1.4	–1.1	10.9	–7.0
	F	7.0	–7.2	1.1	–3.0	9.5	–6.6
Intestinal infectious diseases	M	0.9	–14.7	0.2	–0.7	5.1	–8.2
	F	2.2	–12.1	0.1	–7.3	4.7	–7.9
Malignant neoplasms	M	1.8	–11.3	3.3	–1.8	5.1	–1.9
	F	1.6	–10.2	2.6	–1.8	4.2	–1.9
Cardiovascular diseases	M	0.7	–15.5	1.4	–3.1	3.3	1.1
	F	0.4	–15.7	1.3	–2.5	2.6	0.1
Respiratory diseases	M	26.9	–8.6	1.4	–4.3	35.9	–5.0
	F	20.8	–7.7	1.0	–4.2	30.7	–5.0
Pneumonia	M	21.8	0.8	0.5	–6.0	20.9	–4.9
	F	17.4	–0.6	0.4	–5.1	17.9	–4.7
Certain conditions originating in perinatal period	M	949.5	–1.3	255.3	–2.1	607.6	–2.7
	F	659.1	–3.1	202.3	–1.6	427.5	–2.7
Congenital malformations and chromosomal abnormalities	M	3.3	–12.3	11.6	–2.9	24.2	–2.8
	F	2.0	–14.0	10.0	–3.3	21.0	–2.6
Ill-defined causes	M	3.0	–13.0	5.0	–3.9	5.6	–0.6
	F	1.6	–13.4	3.4	–4.2	4.6	–1.0
External causes of injury and poisoning	M	7.3	–11.5	7.0	–4.0	29.0	–3.4
	F	2.7	–13.9	4.6	–3.2	18.1	–3.1
Motor vehicle traffic injuries	M	0.5	–14.6	2.5	–4.5	4.7	–2.6
	F	0.7	–10.8	1.7	–4.8	3.0	–1.6

Table 2. Selected mortality for the group 15–29 years by sex in Georgia and Eur-B+C: SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Georgia (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	76.1	–7.7	56.0	–2.3	161.0	–0.9
	M	101.6	–8.6	82.0	–2.3	241.7	–1.0
	F	48.9	–5.0	29.3	–2.2	79.0	–0.6
Infectious and parasitic diseases	M	3.9	–8.9	1.2	1.5	12.3	3.0
	F	2.2	–7.8	0.8	1.9	5.1	2.5
Malignant neoplasms	M	6.2	–5.6	6.2	–1.0	8.8	–1.9
	F	6.9	–5.4	4.7	–1.4	7.7	–1.9
Cardiovascular diseases	M	13.5	–11.2	4.1	–2.4	17.6	0.0
	F	6.5	–11.8	2.3	–2.0	7.3	–0.9
Respiratory diseases	M	19.9	107.9	1.4	–3.6	6.9	0.2
	F	18.1	73.7	0.9	–2.7	3.8	–1.1
Digestive diseases	M	2.6	–10.5	0.9	–3.5	8.0	3.0
	F	0.6	–10.6	0.5	–3.8	3.7	3.1
Ill-defined causes	M	13.1	4.6	4.0	–3.1	11.6	7.1
	F	3.8	6.1	1.4	–1.3	3.3	5.8
External causes	M	39.7	–11.1	58.3	–1.4	162.4	–1.6
	F	7.3	–8.8	14.4	–1.6	36.9	–0.2
Motor vehicle traffic injuries	M	6.8	8.5	28.5	–1.3	27.8	–1.5
	F	1.5	13.5	7.3	–1.4	8.0	0.3
Accidental drowning	M	1.6	–12.4	1.3	–2.2	10.8	–3.9
	F	0.2	–13.6	0.2	–2.1	1.9	–2.2
Accidental poisoning	M	0.6	–14.4	2.8	0.0	19.1	3.3
	F	0.4	–11.8	0.7	0.8	4.4	2.5
Suicide	M	1.9	–11.2	12.7	–1.8	36.8	0.0
	F	0.2	–14.4	3.1	–2.2	5.8	–1.3

Table 3. Selected mortality for the group 30–44 years by sex in Georgia and Eur-B+C: SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Georgia (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	206.5	–6.3	120.3	–2.5	453.8	–0.7
	M	326.3	–6.2	161.6	–2.6	700.0	–0.8
	F	97.8	–6.8	78.5	–2.1	215.6	–0.2
Malignant neoplasms	M	28.2	–6.7	27.6	–2.3	40.2	–2.8
	F	35.0	–5.5	31.3	–2.0	43.8	–1.4
Trachea/bronchus/lung cancer	M	7.0	–5.5	5.0	–3.4	7.3	–4.2
	F	1.9	8.7	2.8	–0.6	2.2	–1.0
Female breast cancer							
	F	12.2	–5.1	10.0	–2.6	10.0	–2.3
Cardiovascular diseases	M	139.0	–4.9	26.1	–2.5	158.6	–0.4
	F	33.2	–7.0	10.4	–2.1	45.3	0.0
Ischaemic heart disease	M	80.7	–6.6	11.8	–3.1	73.7	–2.2
	F	18.1	–6.9	2.4	–2.7	14.4	–1.3
Cerebrovascular diseases	M	35.7	–2.6	4.4	–3.2	24.6	–0.4
	F	8.8	–8.7	3.6	–2.5	10.6	–1.3
Respiratory diseases	M	8.8	13.7	3.9	–3.5	34.3	0.9
	F	3.0	–2.5	2.2	–2.0	9.8	0.8
Digestive diseases	M	25.1	–6.2	12.6	–2.4	50.2	1.4
	F	2.4	–12.1	5.4	–1.7	19.4	4.1
External causes	M	67.8	–9.4	58.8	–1.2	299.5	–1.9
	F	8.6	–8.7	15.1	–1.8	58.9	–1.0
Motor vehicle traffic injuries	M	10.7	19.9	16.0	–0.5	31.4	–1.7
	F	0.9	15.6	3.9	–2.0	7.1	–0.5
Suicide	M	5.2	–5.8	21.2	–1.5	54.9	–2.4
	F	0.2	–14.1	5.8	–2.2	7.9	–2.5

Table 4. Selected mortality for the group 45–59 years by sex in Georgia and Eur-B+C: SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Georgia (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	560.8	–7.4	435.6	–1.3	1294.9	–0.6
	M	866.5	–7.2	580.1	–1.4	1981.7	–0.6
	F	303.2	–7.7	293.3	–1.0	698.9	–0.5
Malignant neoplasms	M	142.4	–5.8	218.2	–1.2	323.2	–1.9
	F	108.5	–5.6	155.0	–1.0	186.1	–0.5
Trachea/bronchus/lung cancer	M	47.9	–4.5	65.9	–1.5	101.4	–2.9
	F	8.1	–5.0	21.8	3.4	15.4	1.0
Female breast cancer							
	F	36.4	–4.6	44.0	–2.2	45.3	0.1
Cardiovascular diseases	M	502.5	–7.5	156.4	–2.6	793.1	–0.1
	F	142.2	–8.6	50.9	–2.5	271.7	–0.6
Ischaemic heart disease	M	313.8	–8.5	86.2	–3.3	435.3	–0.7
	F	74.2	–9.7	17.8	–3.4	111.1	–0.6
Cerebrovascular diseases	M	135.6	–6.6	23.7	–2.6	168.6	–0.9
	F	51.8	–7.5	14.5	–2.1	88.4	–1.4
Respiratory diseases	M	14.0	–3.6	20.3	–1.7	108.7	–1.4
	F	5.5	–3.4	10.2	–1.3	24.5	–0.7
Digestive diseases	M	69.6	–7.2	49.6	–0.8	129.7	0.7
	F	10.6	–10.0	20.3	–0.7	57.3	1.9
External causes	M	58.7	–8.6	62.8	–1.0	409.2	–0.9
	F	10.1	–9.4	20.9	–0.9	89.1	–1.1
Motor vehicle traffic injuries	M	8.3	95.6	13.0	–1.3	28.5	–1.8
	F	1.4	16.2	4.1	–2.1	7.5	–1.4
Suicide	M	3.3	–11.1	23.1	–1.1	68.1	–2.4
	F	1.6	–8.5	8.5	–1.2	10.2	–3.4

Table 5. Selected mortality for the group 60–74 years by sex in Georgia and Eur-B+C: SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Georgia (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	2161.1	–4.6	1570.9	–1.9	3411.7	–0.1
	M	2892.2	–4.4	2156.9	–2.1	4996.4	0.1
	F	1632.1	–4.7	1069.2	–1.9	2339.0	–0.6
Malignant neoplasms	M	403.9	–0.6	851.3	–1.4	1002.5	–0.8
	F	253.9	–0.8	439.8	–1.1	438.9	–0.7
Trachea/bronchus/lung cancer	M	133.6	2.0	261.8	–1.9	321.7	–1.5
	F	23.1	0.7	59.0	0.2	37.1	–1.4
Female breast cancer							
	F	62.1	1.0	79.7	–1.6	68.7	1.3
Cardiovascular diseases	M	2061.4	–4.8	744.9	–3.6	2903.0	0.6
	F	1175.1	–5.3	335.7	–3.9	1507.8	–0.3
Ischaemic heart disease	M	1159.7	–5.9	381.3	–4.2	1582.2	1.2
	F	619.6	–6.2	133.5	–4.6	731.4	0.5
Cerebrovascular diseases	M	714.0	–3.8	143.3	–3.7	833.7	0.2
	F	452.3	–5.3	86.7	–4.1	528.9	–0.8
Respiratory diseases	M	52.3	–0.1	144.0	–3.5	303.0	–2.4
	F	22.5	–3.0	62.5	–2.4	68.6	–3.6
Digestive diseases	M	120.0	–7.1	111.6	–1.6	193.0	0.1
	F	49.3	–7.0	54.1	–1.7	94.2	0.2
External causes	M	62.2	–7.4	79.3	–1.4	320.0	1.0
	F	18.5	–9.5	32.1	–2.1	88.7	–0.5
Motor vehicle traffic injuries	M	8.8	39.0	14.8	–3.0	24.3	–1.5
	F	2.6	32.8	5.9	–3.4	9.5	–1.0
Suicide	M	7.9	–7.3	24.5	–1.6	60.5	–0.8
	F	2.7	–2.4	8.7	–2.6	12.7	–3.1

Table 6. Selected mortality for the group 75+ years by sex in Georgia and Eur-B+C: SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Georgia (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	8131.7	–3.9	8059.6	–1.0	12338.8	0.0
	M	7542.1	–6.5	9832.0	–1.1	14838.0	0.1
	F	8764.2	–2.0	7112.5	–0.9	11421.7	0.0
Malignant neoplasms	M	473.1	–0.8	2231.1	–0.4	1489.3	1.2
	F	319.2	4.4	1136.2	–0.4	721.7	0.8
Trachea/bronchus/lung cancer	M	114.2	10.6	457.1	–0.7	323.5	1.0
	F	24.8	7.2	102.7	1.5	55.6	0.5
Female breast cancer							
	F	66.9	2.8	159.6	–0.4	92.0	3.1
Cardiovascular diseases	M	6259.3	–7.0	4356.2	–2.1	10221.2	0.4
	F	7645.4	–2.4	3577.9	–1.9	8805.6	0.4
Ischaemic heart disease	M	3537.6	–8.2	1708.0	–2.2	4925.6	1.4
	F	4217.3	–4.1	1150.0	–2.2	4028.6	1.2
Cerebrovascular diseases	M	2067.6	–6.3	1119.8	–2.5	3004.4	0.7
	F	2571.9	–2.7	1026.9	–2.4	2967.6	0.5
Respiratory diseases	M	117.6	–7.4	1156.5	–2.4	824.1	–2.1
	F	109.7	0.7	591.9	–2.1	302.3	–3.2
Digestive diseases	M	184.1	–4.6	340.3	–1.1	270.4	0.3
	F	118.2	–2.3	279.8	–0.4	175.0	1.1
External causes	M	75.4	–8.9	275.0	–0.6	604.2	0.1
	F	53.5	–6.5	187.8	–1.2	172.4	–1.2
Motor vehicle traffic injuries	M	8.1	4.7	28.1	–2.2	34.6	–3.1
	F	5.1		10.0	–3.1	14.7	–1.7
Suicide	M	5.3	–8.4	49.5	–1.6	86.6	–1.1
	F	5.0	18.4	11.8	–3.2	22.4	–1.9

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.

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

[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).

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, Tajikistan, 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 due to premature mortality. One DALY can be thought of as one lost year of healthy life.
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).