EUROPE

Highlights on health
in Kyrgyzstan
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.

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Summary: findings and policy considerations

Life expectancy

WHO estimates that a person born in the Kyrgyz Republic in 2003 could expect to live 63 years on average: 68 years if female and 59 years if male. The WHO estimate is considerably lower than what official national death registration data suggest: an average of 67.9 years (2003), 71.9 years if female and 64.1 years if male. The difference between the WHO estimates and the official figures is mostly due to under-registration of child deaths.

In Kyrgyzstan, measures to improve health and prevent disease need to focus on working-age people.

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 under-reported in Kyrgyzstan. Between 1995 and 2003, the infant mortality rate fell by about one-quarter. In 2003, neonatal mortality was 11 per 1000 live births compared to the Eur-B+C average of 7.3. Between 2000 and 2003, WHO estimates that under-5 mortality dropped at an annual average rate of around 1%, while the comparable annual rate of decline for the European region was 3.5%.

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)

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

Maternal mortality

Accepting nationally reported figures for the period from 1990 to 2002, the MMR in Kyrgyzstan fell by only 12%, due to an increase in rates observed from 1990 to a peak in 1993. Between 1993 and 2002, the rate fell by 30%. For Kyrgyzstan to reach its Millennium Development Goal by 2015, its MMR would have to fall another 72%.

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, 2003b)

Main causes of death

In 2003, non-communicable diseases accounted for about 86% of all deaths in Kyrgyzstan, external causes for about 7% and communicable diseases for about 3%. Cardiovascular diseases (CVD) are the main causes of death (2003), responsible for 54% of the overall mortality. About half of all CVD mortality is due to ischaemic heart disease, and about one-third is attributed to cerebrovascular diseases. Since 1990 the rates have increased considerably and continue rising, as in most CIS countries.

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, Kyrgyzstan had approximately 5 million people. About 34% of the population lives in urban areas, one of the lowest degrees of urbanization in Eur-B+C countries.

The proportion of the population aged 0 to 14 years was relatively steady during the 1980s but fell from about 38% of the population in 1990 to 33% by 2002. Nevertheless, this proportion is still one of the highest among Eur-B+C countries. Conversely, the percentage of Kyrgyzstan's population over 65 years old is significantly below the Eur-B+C average. By 2030, an estimated 10% of Kyrgyzstan's population will be over 65 (Annex. Age pyramid).

Percentage of the population aged 0–14, 15–64 and 65+ years,
Kyrgyzstan, 1950 to 2050 (projected)
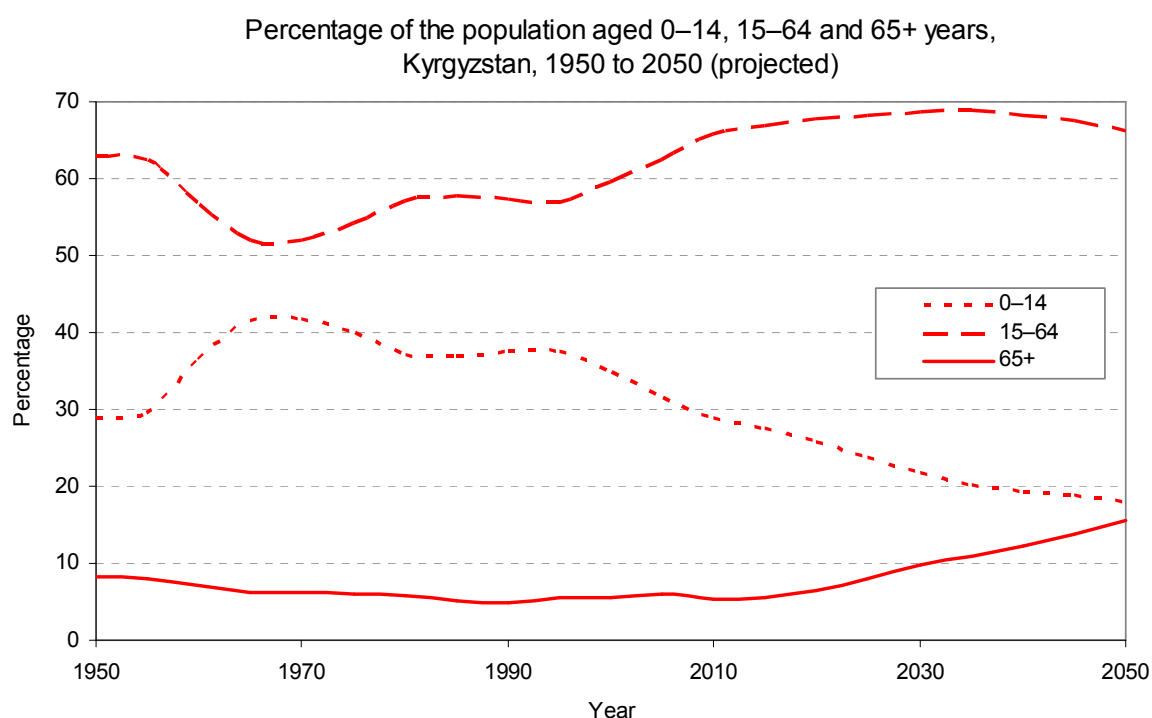
Source: United Nations (2005).

The birth rate in Kyrgyzstan was among the highest in the Eur-B+C in 2003. Natural population growth in Kyrgyzstan is positive and well above the Eur-B+C average.

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

Indicators	Kyrgyzstan	Eur-B+C		
	Value	Average	Minimum	Maximum
Population (in 1000s)	5010.8	–	–	–
0–14 years (%)	32.5	–	–	–
15–64 years (%)	62.0	–	–	–
65+ years (%)	5.5	–	–	–
Urban population (%)[a]	34.0	63.7	25.0	73.3
Live births (per 1000)	21.1	12.8	8.6	27.1
Natural population growth (per 1000)	13.9	0.8	–7.5	23.0
Net migration (per 1000)	–	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.

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.

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 Kyrgyzstan was 29.0, consistent with the pervasiveness of poverty in the country. 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 in the Russian Federation (2000) (World Bank, 2005).

In Kyrgyzstan, per capita gross national income, adjusted for purchasing power parity, was US$1690 in 2003, the second lowest among Eur-B+C countries.

Gross national income per person, 2003

Country	US$ PPP
Eur-A average	25 388
Hungary	13 840
Slovakia	13 440
Estonia	12 680
Lithuania	11 390
Poland	11 210
Croatia	10 610
Latvia	10 210
Russian Federation	8 950
Bulgaria	7 540
Romania	7 140
Eur-B+C average	6 842
TFYR Macedonia [a]	6 750
Turkey	6 710
Kazakhstan	6 280
Bosnia and Herzegovina	6 250
Belarus	6 050
Turkmenistan	5 860
Ukraine	5 430
Albania	4 710
Armenia	3 790
Azerbaijan	3 390
Georgia	2 610
Republic of Moldova	1 760
Uzbekistan	1 720
Kyrgyzstan	1 690
Tajikistan	1 040

US$ PPP

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

In 1999, relative to a national poverty line, 64.1% of the population of the Kyrgyzstan Republic was living in poverty (World Bank, 2005). Using the World Bank's recommended benchmarks to measure absolute poverty in Europe, annual household surveys from 1993 to 2000 in Kyrgyzstan found that more people were living in poverty each year. In 1993, 17.2% of people lived on US$ 2.15 per day or less; by 2000, the proportion had doubled to 34.0%. If the US$ 4.30 poverty line is applied, the 1993 survey identified 34.7% of the population as living in absolute poverty, and 81.1% in 2000. In 2001, the proportions had fallen to 27.1% living on US$ 2.15 per day and 77.2% living on US$ 4.30 per day (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.

Net school enrolment data are not available for Kyrgyzstan. The percentage gross secondary school enrolment (the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to secondary education) was 85.3% in 2001. In the neighbouring countries with

data for the same year, gross enrolment rates were 88.7% in Kazakhstan, 82.0% in Tajikistan and 98.6% in Uzbekistan.

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 the Kyrgyzstan Republic was 7.8% in 2001, compared to a Eur-B+C average 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 (ILO, 2005).
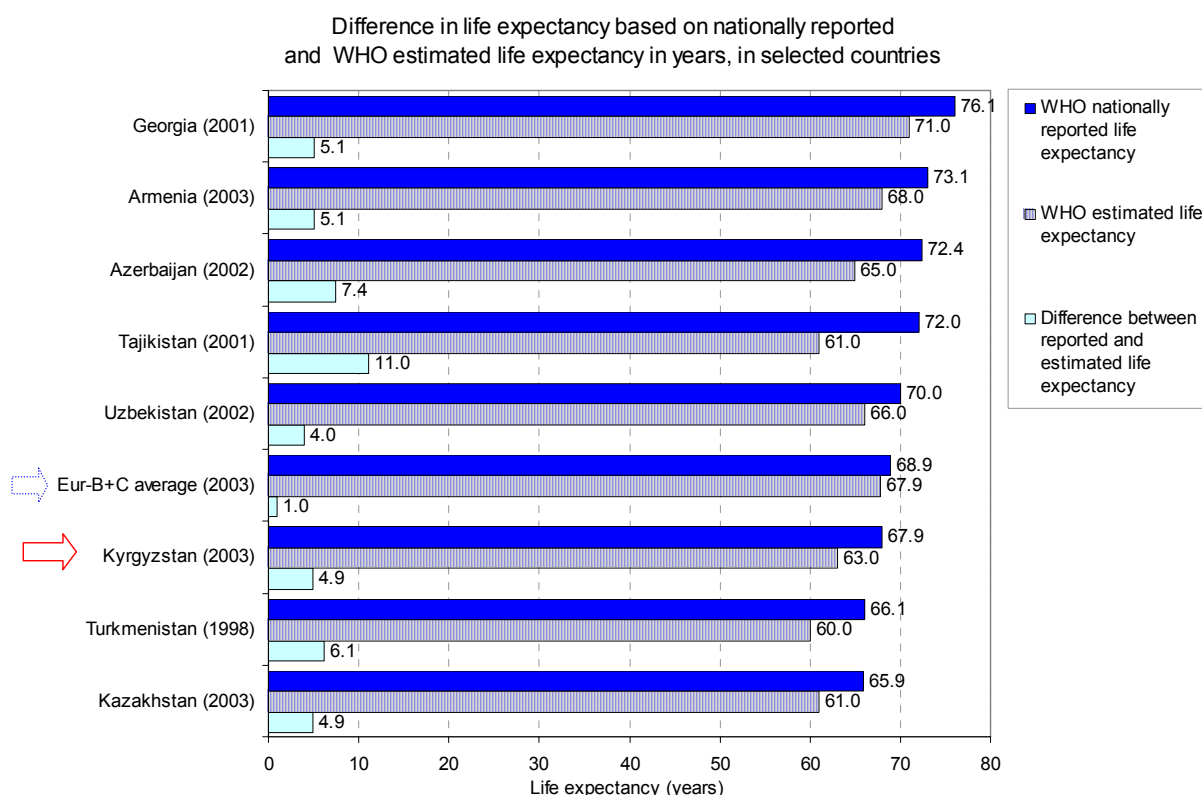
Life expectancy (LE) and healthy life expectancy (HALE)

Life expectancy

According to figures (not necessarily the official statistics of Member States) compiled by WHO (2005) for all Member States to assure comparability, a person born in the Kyrgyzstan in 2003 can expect to live 63 years on average: 68 years if female and 59 years if male. According to these estimates only three other countries in the region have lower life expectancy than Kyrgyzstan. However, the WHO estimate is considerably lower than the registration-based official LE which was about 67.9 years in 2003: 71.9 years if female and 64.1 years if male.

On the other hand, comparisons of the WHO-estimated probability of dying in the 15–60 years age range and official adult mortality show no major discrepancies, suggesting that the 5-year difference between the WHO estimate and the official LE figures – relatively large for a county in the WHO European Region – is mostly due to under-registration of child mortality. Therefore it is reasonable to assume that the official adult mortality data are sufficiently complete for the purpose of this analysis. These data are used almost exclusively henceforth, except for the indicators of maternal and early childhood mortality, for which both the official country statistics and the WHO estimates are given (see comparative table below). There are indications, however, that the accuracy of coding of some causes of death creates problems. This needs to be taken into account when interpreting international comparisons of the rates of causes of death.

In this context, while the official LE in Kyrgyzstan is only about one year below the Eur-B+C average of 68.8 years (based on regular mortality registration), the WHO estimate of LE points to a considerably lower level, about five years below the Eur-B+C average (2002). Moreover, this means that that LE in Kyrgyzstan is probably about 16 years below the Eur-A average of 79.0 years, and that the overall health situation and rank of the country in international LE comparisons is less favourable than the official mortality statistics would indicate. It should be noted, though, that LE in Kyrgyzstan is appreciably better than in many countries with greater income, as is true of other CIS countries.

Difference in life expectancy based on nationally reported
and WHO estimated life expectancy in years, in selected countries

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

Official LE has been slightly below the Eur-B+C average for the last two decades, although in the mid-1990s the difference was increasing. The LE trends for both sexes follow remarkably closely the contours of the respective Eur-B+C averages.

It should also be noted that the female-male difference in LE in Kyrgyzstan is 7.8 years – smaller than in most of the CIS. The Eur-B+C average is nine years and the Eur-A average is six years.

Generally, LE trends in low and low-middle income countries are strongly associated with GDP indicators. However, while real GDP in Kyrgyzstan has never returned to the 1990 level, and the latest estimate (2002) of US$ 1620 PPP is less than a half of the 1990 value, LE improved after 1995. This improvement is more clear than for the CIS counties on average, despite the very critical economic situation in the country. The reasons for this relatively good performance are not obvious and it would be important to explore possible explanations while keeping in mind the data problems previously mentioned.

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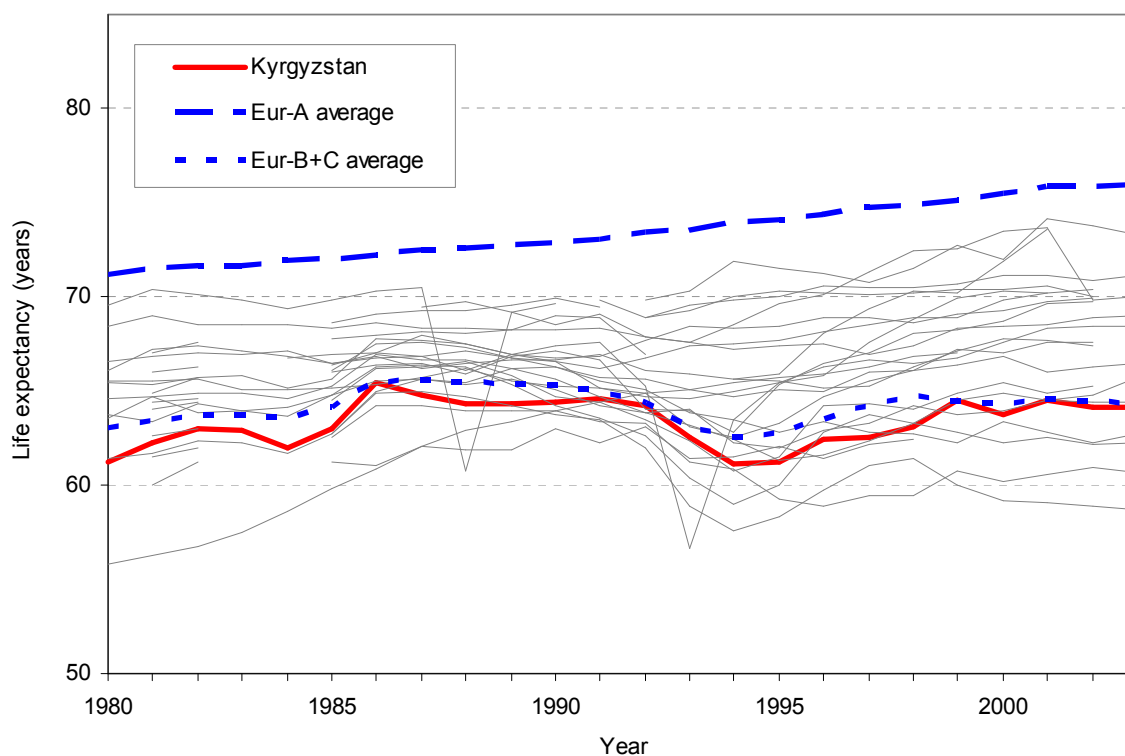
Life expectancy at birth for females, Kyrgyzstan, Eur-A and Eur-B+C averages,
1980 to latest available year
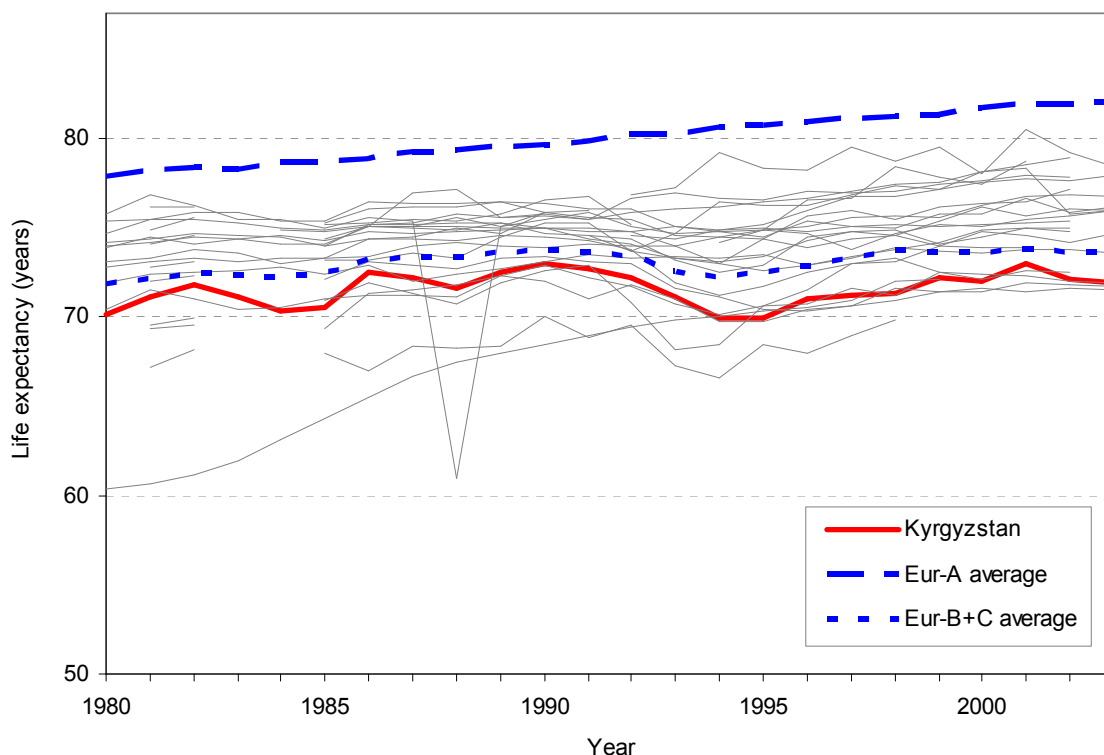
Healthy life expectancy

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.

According to WHO estimates for 2002 (WHR, 2004), people in Kyrgyzstan have 55.3 healthy years on average (female 58.4, male 52.2), about 16.3 years less than the Eur-A average of 71.6 years and 4.5 years below the Eur-B+C average of 60.5 years. It should be noted, however, that some statistical uncertainties are inherent in those estimates and they should not be regarded as exact. The best achievement in the region is Sweden's 73.3 years (female 74.8, male 71.9). At the age of 60 years, healthy life expectancy in Kyrgyzstan is 12.6 years for women and 9.8 years for men, while in Sweden those estimates are 19.6 and 17.1 years respectively. Alternatively, life expectancy for a person in less than good health is 10.6 years for women and 8.2 years for men, close to Sweden's respective 7.9 and 6.2.

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

Country	LE	HALE
Eur-A average	78.9	71.6
Poland	74.7	65.8
Slovakia	74.0	66.2
Bosnia and Herzegovina	72.8	64.3
Hungary	72.6	64.9
Serbia and Montenegro	72.3	63.8
TFYR Macedonia	72.0	63.4
Bulgaria	71.9	64.6
Lithuania	71.9	63.3
Georgia	71.7	64.4
Romania	71.4	63.1
Estonia	71.1	64.1
Albania	70.4	61.4
Latvia	70.3	62.8
Turkey	70.0	62.0
Armenia	70.0	61.0
Belarus	68.3	60.7
Uzbekistan	68.2	59.4
Eur-B+C average	68.1	60.5
Republic of Moldova	67.8	59.8
Ukraine	67.2	59.2
Azerbaijan	65.8	57.2
Russian Federation	64.8	58.6
Kyrgyzstan	64.5	55.3
Tajikistan	63.7	54.7
Kazakhstan	63.6	55.9
Turkmenistan	62.7	54.4

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 below shows the top 10 conditions, in descending order, that account for approximately 90% of the disease burden among males and females in Kyrgyzstan. Cardiovascular diseases account for the highest burden both among males and females. Unintentional injuries rank second among males and neuropsychiatric disorders rank second among 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 Kyrgyzstan (2002)

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Cardiovascular diseases	17.4	Cardiovascular diseases	17.4
2	Unintentional injuries	14.2	Neuropsychiatric conditions	17.3
3	Neuropsychiatric conditions	12.1	Perinatal conditions	8.1
4	Infectious and parasitic diseases	9.5	Infectious and parasitic diseases	7.4
5	Perinatal conditions	8.1	Respiratory infections	7.3
6	Respiratory infections	6.8	Unintentional injuries	6.1
7	Digestive diseases	6.2	Respiratory diseases	5.1
8	Respiratory diseases	5.5	Digestive diseases	5.0
9	Intentional injuries	4.3	Malignant neoplasms	4.7
10	Malignant neoplasms	4.0	Sense organ diseases	4.3

Source: Background data from WHO (2003c).

Main risk factors

The table shows the top 10 risk factors with their relative contributions, in descending order, towards disease burden in the male and female populations of Kyrgyzstan. According to DALYs, tobacco and alcohol use place the greatest burden on males and high blood pressure and high BMI on females.

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

Rank	Males		Females	
	Risk factors	Total DALYs (%)	Risk factors	Total DALYs (%)
1	Tobacco	10.3	High blood pressure	7.1
2	Alcohol	9.3	High BMI	6.2
3	High cholesterol	5.6	Indoor smoke from solid fuels	5.2
4	High blood pressure	5.3	High cholesterol	5.1
5	High BMI	4.8	Childhood and maternal underweight	3.5
6	Indoor smoke from solid fuels	4.1	Iron deficiency	2.8
7	Childhood and maternal underweight	2.9	Alcohol	2.6
8	Low fruit and vegetable intake	2.7	Low fruit and vegetable intake	2.5
9	Physical inactivity	2.4	Physical inactivity	2.4
10	Unsafe water, sanitation, and hygiene	1.8	Unsafe water, sanitation, and hygiene	2.2

Source: Background data from WHO (2003c).

Mortality

Infant, neonatal and child mortality

National data and WHO estimates for 2002 show that out of every 1000 live births in Kyrgyzstan, about 29 children will die before age five. The Millennium Development Goal (MDG) for the under-five mortality rate for Europe and central Asia is 15 deaths per 1000 live births by 2015. Adjusting for the known biases in national data (under-reporting of vital statistics), WHO estimates Kyrgyzstan's latest probability to be 59 under-five deaths per 1000 live births. WHO estimates for neighbouring Kazakhstan and Uzbekistan are both lower, at 33 and 32, respectively. WHO estimates make it unlikely that Kyrgyzstan can reach the MDG by 2015, even though extrapolation of the current WHO estimates is uncertain. The lowest WHO estimates for the Eur-B+C countries are for Estonia and Slovakia, at 8 deaths per 1000 live births each.

In 2003, the registered infant mortality rate in Kyrgyzstan was 20.7 per 1000 live births – about the same as the Eur-B+C average of 19.9. The best achievement in the Eur-B+C group was Lithuania at 6.7. Between 1995 and 2003, infant mortality fell by about one-quarter, a notable achievement in such a

difficult economic period. It is also noteworthy that infant mortality has been steadily falling since 1985 according to the data.

Infant deaths and neonatal deaths per 1000 live births,
Kyrgyzstan, Eur-A and Eur-B+C averages, latest available year

Country (Year)	Infant deaths	Neonatal deaths
Turkey (2002)	36.0	
Turkmenistan (1998)	32.8	8.0
Tajikistan (2001)	27.9	8.0
Kyrgyzstan (2003)	20.7	11.2
Eur-B+C average (2003)	19.9	7.3
Romania (2002)	17.3	8.4
Uzbekistan (2002)	16.6	
Kazakhstan (2003)	15.4	9.3
Republic of Moldova (2003)	14.3	7.4
Azerbaijan (2002)	12.8	2.7
Russian Federation (2003)	12.4	7.4
Bulgaria (2003)	12.0	6.6
Armenia (2003)	11.8	8.1
TFYR Macedonia (2003)	11.3	8.6
Georgia (2001)	10.4	11.9
Serbia and Montenegro (2002)	10.2	7.4
Ukraine (2003)	9.5	5.3
Latvia (2003)	9.4	5.7
Albania (2003)	8.4	2.6
Belarus (2003)	7.7	3.5
Slovakia (2002)	7.6	4.7
Poland (2002)	7.5	5.3
Hungary (2003)	7.3	4.7
Lithuania (2003)	6.7	3.7
Estonia (2002)	5.7	3.6
Eur-A average (2003)	4.6	3.2

Deaths per 1000 live births

Registration-based neonatal mortality was around 11 per 1000 live births in 2003, which would be a very good achievement if valid in international comparison, but trend data are not available. In 2003, the Eur-B+C average was 7.3 and the best estimates of the Eur-A group were around 3–4 per 1000 live births.

As mentioned, in an attempt to estimate possible under-reporting of mortality data in the official statistics, WHO produces concurrent estimates by systematically analyzing complementary information from various sources and statistical modelling. The following table compares the official and the WHO estimates for four indicators prone to under-registration.

Comparison of key indicators of child and maternal mortality in Kyrgyzstan 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	52[b]
Neonatal mortality per 1000 live births, 2000	11.2	31[c]
Under-5 mortality per 1000 live births (MDG indicator)	27.5	68 (53–84)[c]
(MDG indicator)	46.5	110[c]

[a] WHO Regional Office for Europe (2005); [b] WHO (2004); [c] WHO (2005).

The data show that the mortality of the under-fives in Kyrgyzstan is clearly under-reported. This means that infant and neonatal mortality registration are also under-reported as under-registration occurs mostly for infants under one year old. This conclusion is confirmed by the other data in the above table. Nevertheless, WHO estimates that under-five mortality dropped between 2000 and 2003 at an average annual rate of around one per cent, compared to minus 3.5% for the European Region as whole. This means that the improvement in Kyrgyzstan is slower than average, although the level of under-five mortality is relatively high, requiring more progress, regardless of resource constraints (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.

From 1990 to 2002, the MMR in Kyrgyzstan fell by only 12%, due to an increase in rates from 1990 to a 1993 peak of almost 77 maternal deaths per 100 000 live births. Between 1993 and 2002, the rate fell by 30%. From the 2002 level, the MMR would have to fall almost 72% to reach the MDG target.

Maternal mortality, however, is very difficult to ascertain even in countries with very strong registration systems, and the level of under-registration in Kyrgyzstan is difficult to interpret. As maternal mortality is one of the MDG indicators, it should be pointed out that the 2003 reported figure is 52 per 100,000 live births. The 1990 level (baseline for the MDGs) is 63.

Of the 59 maternal deaths reported in 2002, five were attributed to abortion.

Per cent change for maternal mortality (3-year moving averages),
1990 to 2002 or latest available year

Country	Change (%)
Romania	-72.8
Latvia	-60.1
Hungary	-57.2
Poland	-53.6
Lithuania	-49.5
Albania	-43.0
Estonia	-40.5
Armenia	-35.8
Serbia and Montenegro	-33.7
Ukraine	-32.0
Russian Federation	-31.5
Uzbekistan	-30.4
Belarus	-26.5
Republic of Moldova	-22.7
Bulgaria	-17.3
Kyrgyzstan	-12.2
Slovakia	-9.4
Kazakhstan	-8.4
Turkmenistan	-4.9
Tajikistan	-4.7
TFYR Macedonia	9.8
Azerbaijan	31.7
Georgia	79.7

Change (%)
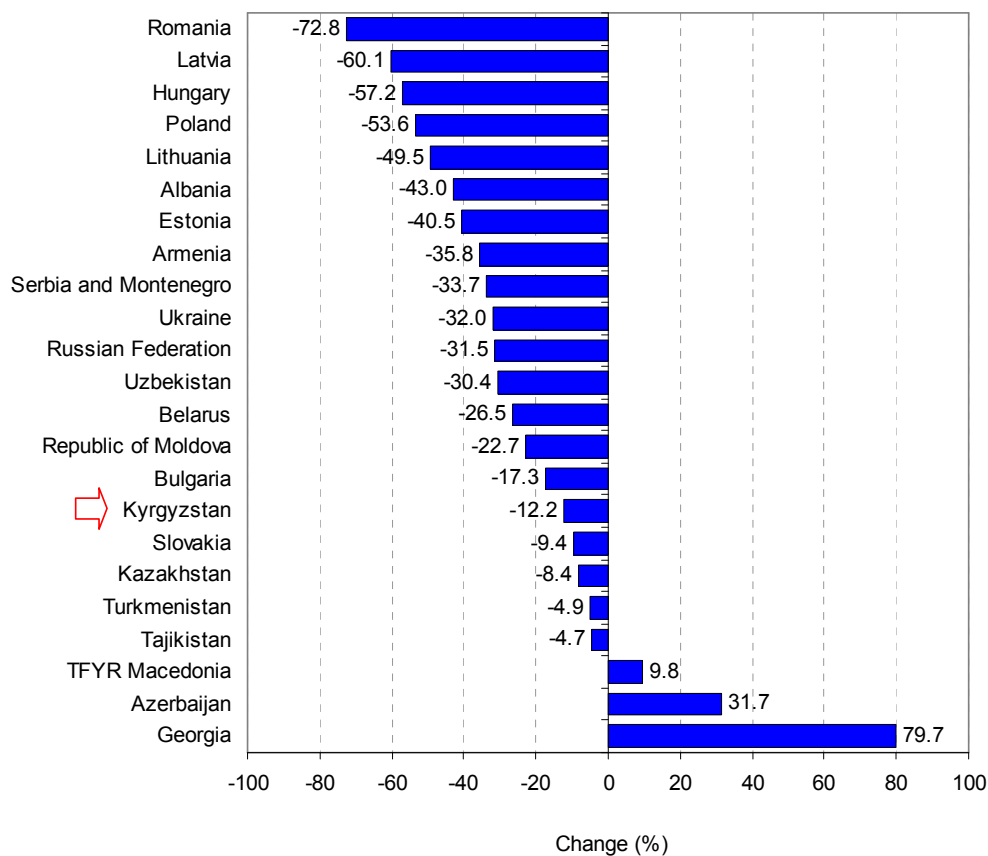
Excess mortality

In general, mortality rates in Kyrgyzstan are at the Eur-B+C average but two times higher than the Eur-A average (Annex. Selected mortality).

Total mortality by sex and age group in Kyrgyzstan
in comparison with Eur-B+C (Eur-B+C = 100), 2003

Age group (years)
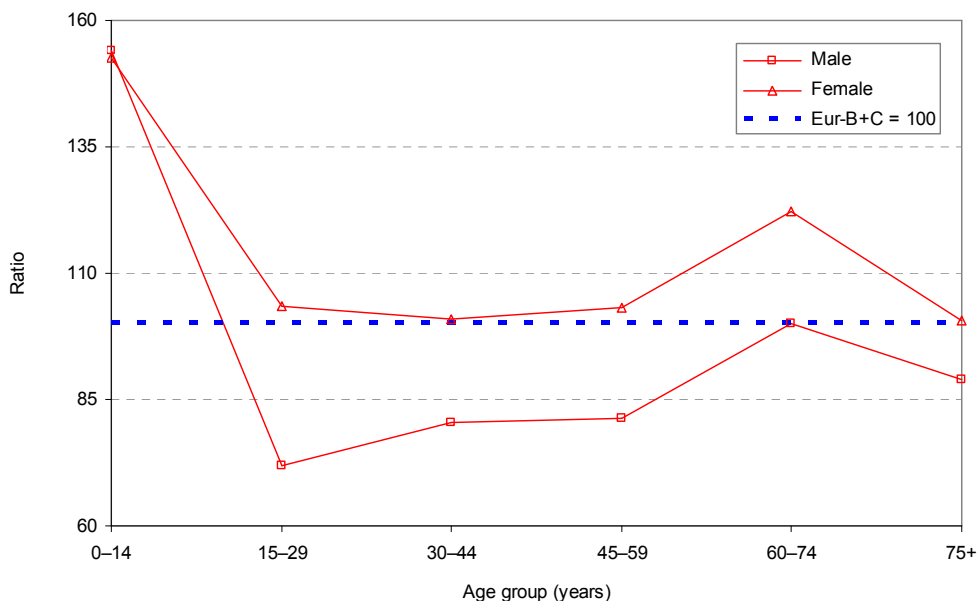
As this report uses the Eur-B+C average for comparisons, it should be noted that across all age groups the highest excess mortality is not due to external causes (unlike in some other CIS counties) but to respiratory diseases, followed by digestive and infectious diseases. The single most prominent cause of excess mortality is chronic lower respiratory disease. Although this category may harbour other causes of death, a number of unfavourable environmental (use of solid fuels) and behavioural (smoking) factors could be important causes. Chronic liver disease and cirrhosis are relatively frequent causes of death, indicating high alcohol consumption, with all of the harms that implies. However, this finding is not accompanied by observations of high mortality from external causes. This lack of association may be a useful entry point for further analyses of accident prevention.

Standardized death rate (SDR) for chronic lower respiratory diseases in people of all ages, Kyrgyzstan, Eur-A and Eur-B+C averages, 1990 to latest available year

Note: Data for Kyrgyzstan are 5-year moving averages.

SDR for chronic liver disease and cirrhosis in people of all ages,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1990 to latest available year
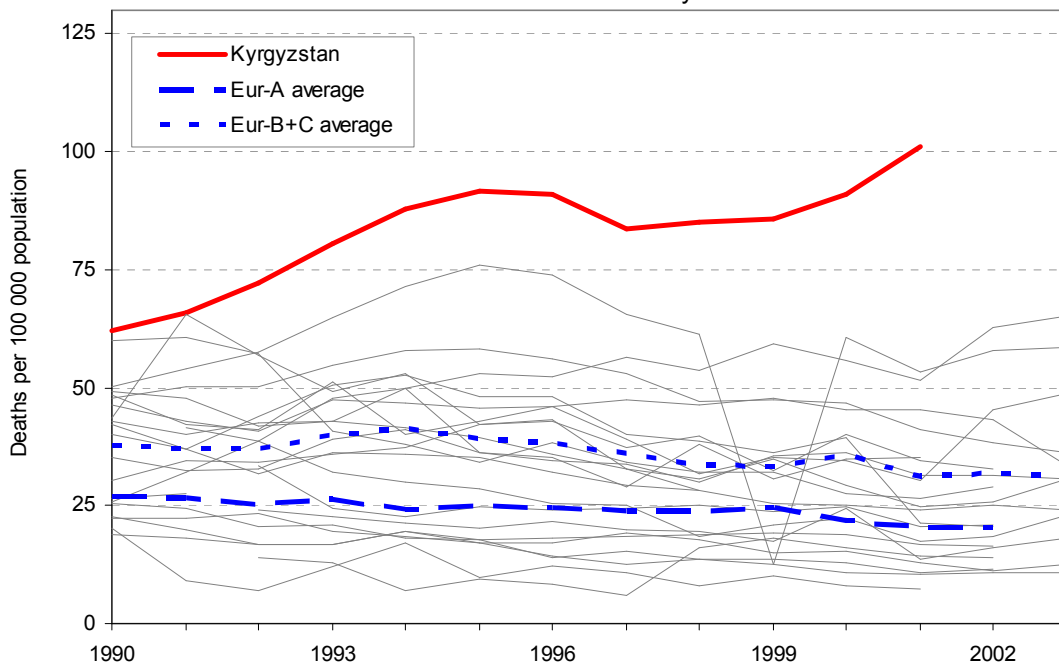
Note: Data for Kyrgyzstan are 5-year moving averages.
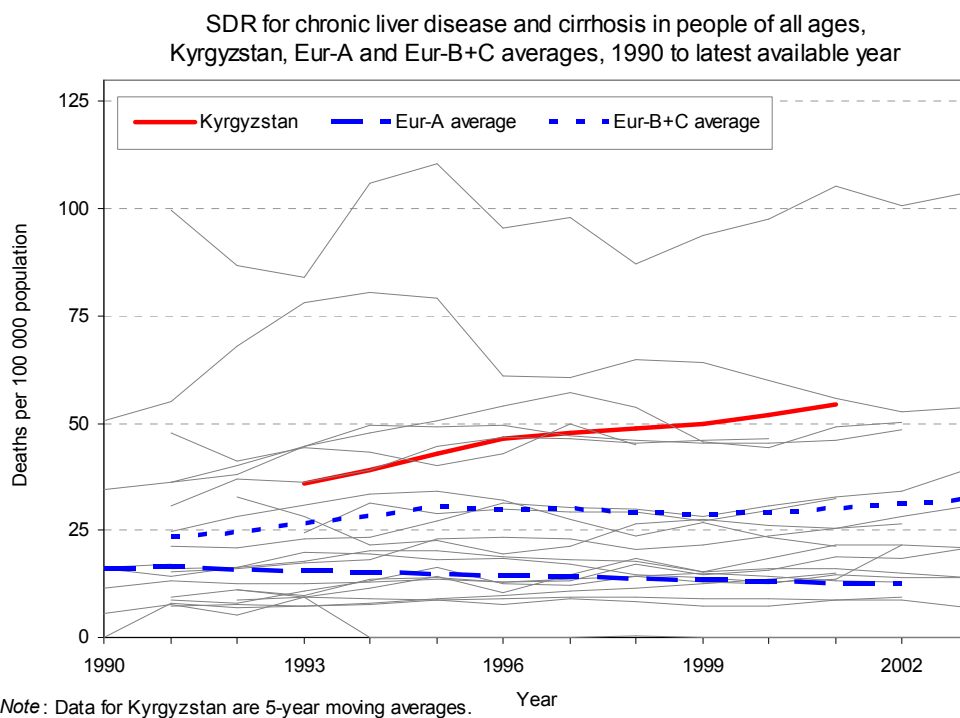
Comparative analyses of variations of mortality by age and sex, and possibly other socioeconomic variables, can provide more specific insights into the country's excess mortality. It is worth mentioning that the CIS post-Soviet mortality crisis peaked around 1994–1995, making the 1995–2003 trends generally more favourable than those for 1990–2003 (Annex. Mortality data).

In the age group 0–14 years, the 2003 Kyrgyz mortality rate of 233 per 100 000 was about 50% higher than the Eur-B+C average of 152 and more than four times higher than the Eur-A average of 49. It has improved by 4.0% from the 1995 level, similar to the Eur-B+C average of 3.8%. The improvement is practically comprehensive across all causes of death and by gender, except for the perinatal and congenital conditions. Deaths due to perinatal causes remain a major problem in Kyrgyzstan.

Death rate for certain conditions originating in perinatal period,
both sexes, Kyrgyzstan, Eur-A and Eur-B+C averages,
1990 to latest available year
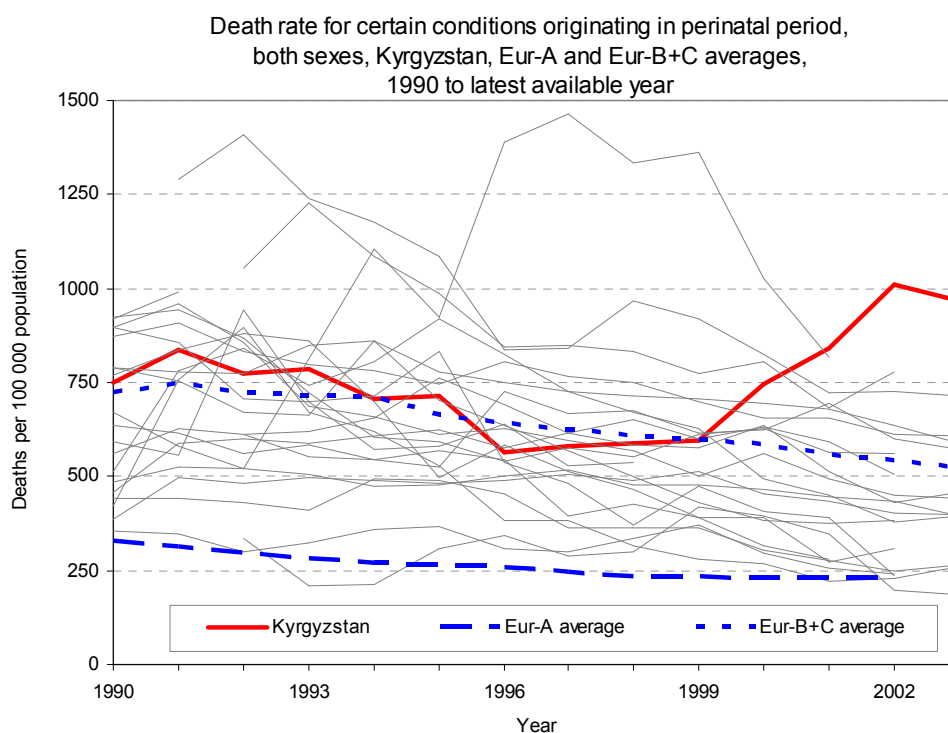
Total mortality of 128 per 100 000 in the 15–29 age group is 20% lower than the Eur-B+C average of 161. The lower overall mortality is due mainly to lower rates from external causes, in particular suicides and accidental poisoning in males. This is an important observation, suggesting an emerging pattern of less violent behaviour in young adults compared to several other CIS countries. However, the excess mortality from infectious diseases should also be mentioned.

Since 1995 total mortality levels have improved across most causes of death and, even more importantly, the levels have fallen below those of 1990, an achievement reached by fewer than half of the CIS counties.

SDR for all causes in people aged 15–29 years,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1990 to latest available year
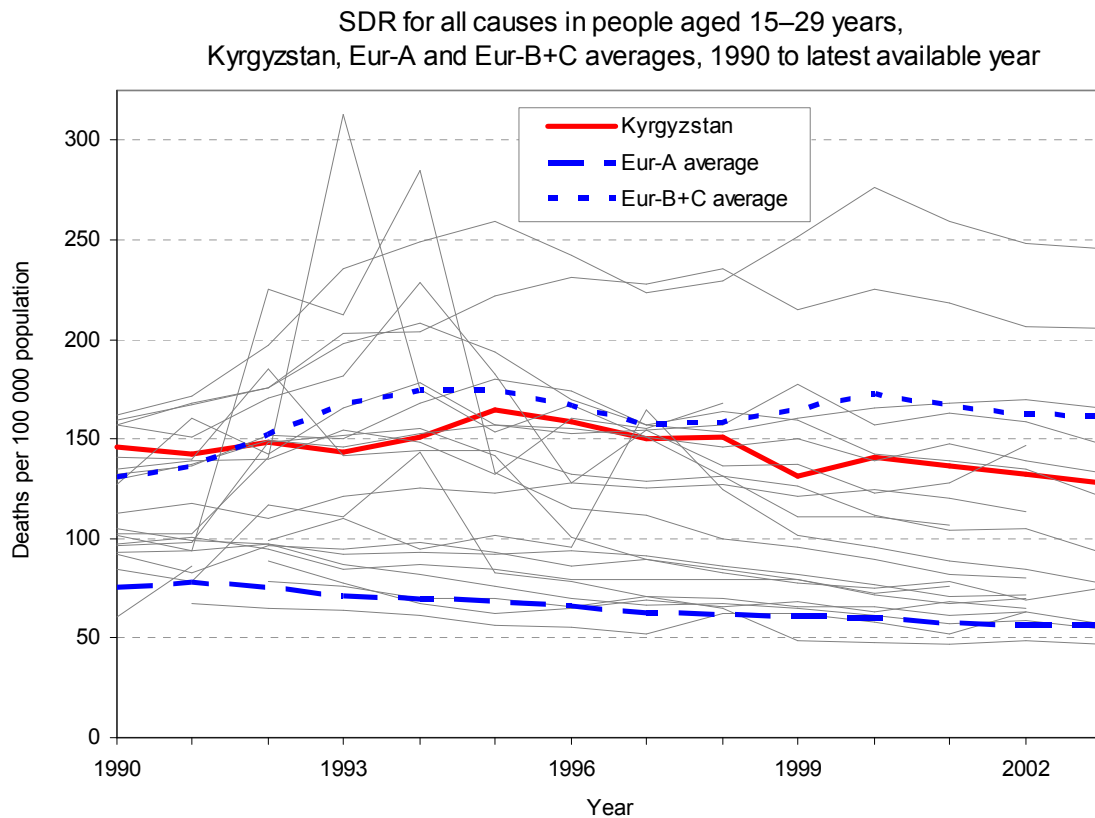
In the 30–44 years age group the situation is similar to the above in that the country performs slightly better than the Eur-B+C average overall, mainly due to considerably fewer deaths from external causes. Although the trend closely followed the Eur-B+C average until about 1997, the distance to the average seems to have increased since. The 1990 level of mortality could not be completely recouped.

SDR for all causes in people aged 30–44 years,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1990 to latest available year
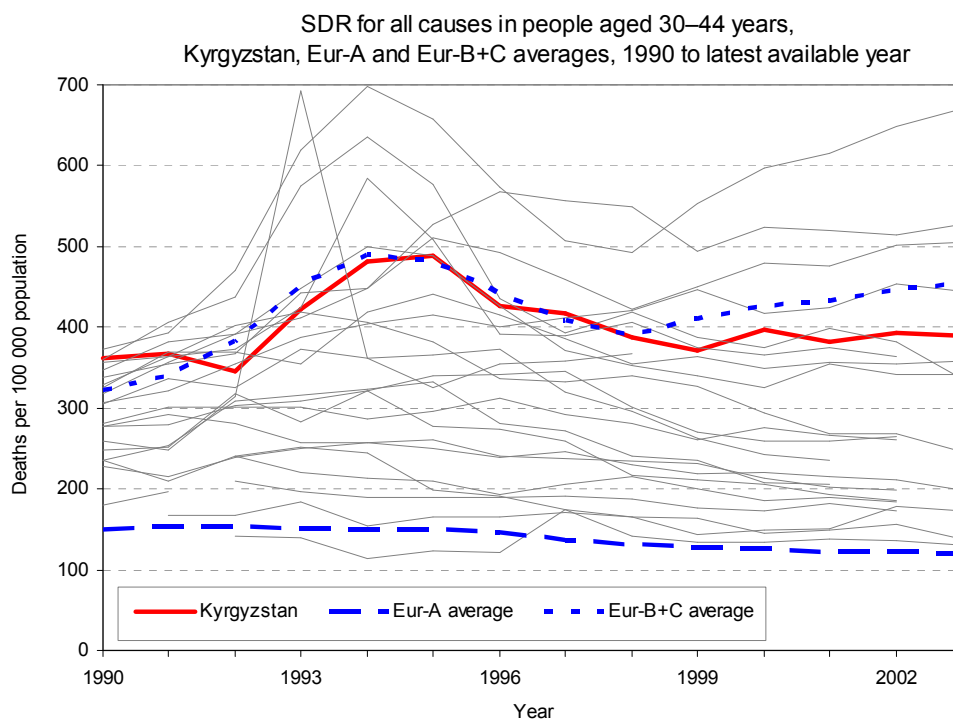
In the 45–59 years age group the trends are very similar. CVD emerge as the major problem, however, they remain at the level of the Eur-B+C average. Respiratory and digestive diseases are disproportionately frequent causes of death compared to the Eur-B+C averages. The trends in the older age groups are less stable, possibly due to incomplete mortality registration. The general impression is, however, that mortality is above average, and higher than for the middle-aged group.

Main causes of death

With minor exceptions, the main causes of death at all major ages are lower than the Eur-B+C averages, but due to the problems previously mentioned with ascertaining and coding the underlying causes of death, the figures should be interpreted with some caution.

Main causes of mortality by sex and age group in Kyrgyzstan
in comparison with Eur-B+C (Eur-B+C = 100), 2003
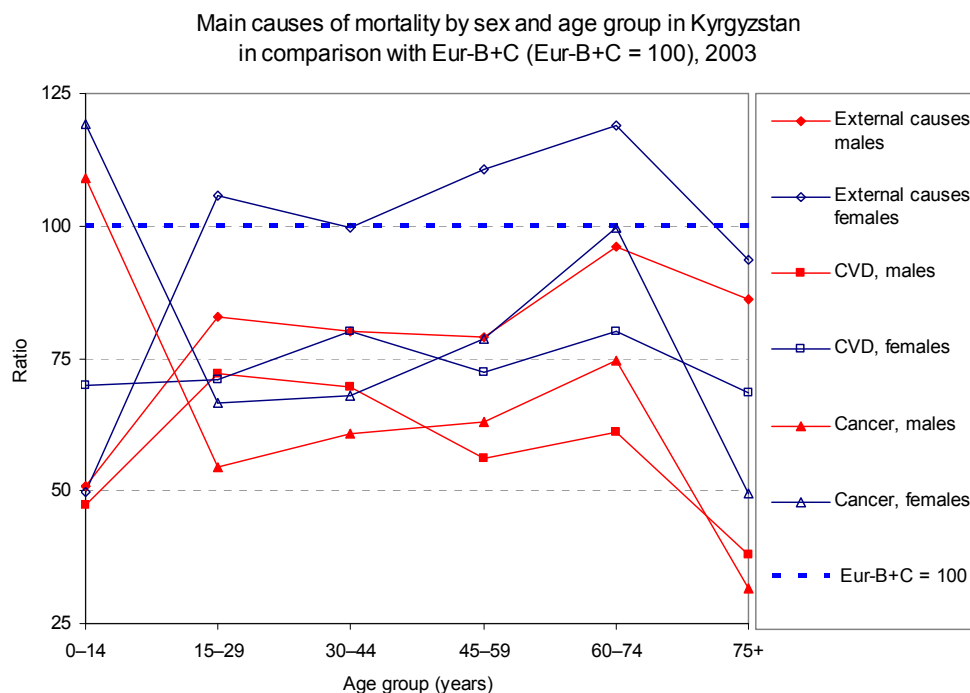
In 2003, non-communicable diseases (NCD) accounted for about 86% of all deaths in Kyrgyzstan, external causes for about 7% and communicable diseases for about 3% (Annex 2). These proportions are very similar to the Eur-B+C averages. If rates per 100 000 of the population are considered, however, it is easier to see that the NCD mortality rates in Kyrgyzstan are twice the Eur-A averages.

CVD

CVD represents the main group of causes of death in Kyrgyzstan (2003), responsible for 54% of overall mortality, practically equivalent to the Eur-B+C average. About half of all CVD mortality is due to ischaemic heart disease, and about one-third to cerebrovascular diseases.

Overall, CVD are at the Eur-B+C average and about 50% higher than in the Eur-A group, which places Kyrgyzstan in a better position than some other CIS countries. Since 1990 the rates have been increasing considerably, as they have throughout the CIS.

SDR for CVD in people of all ages,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1990 to latest available year
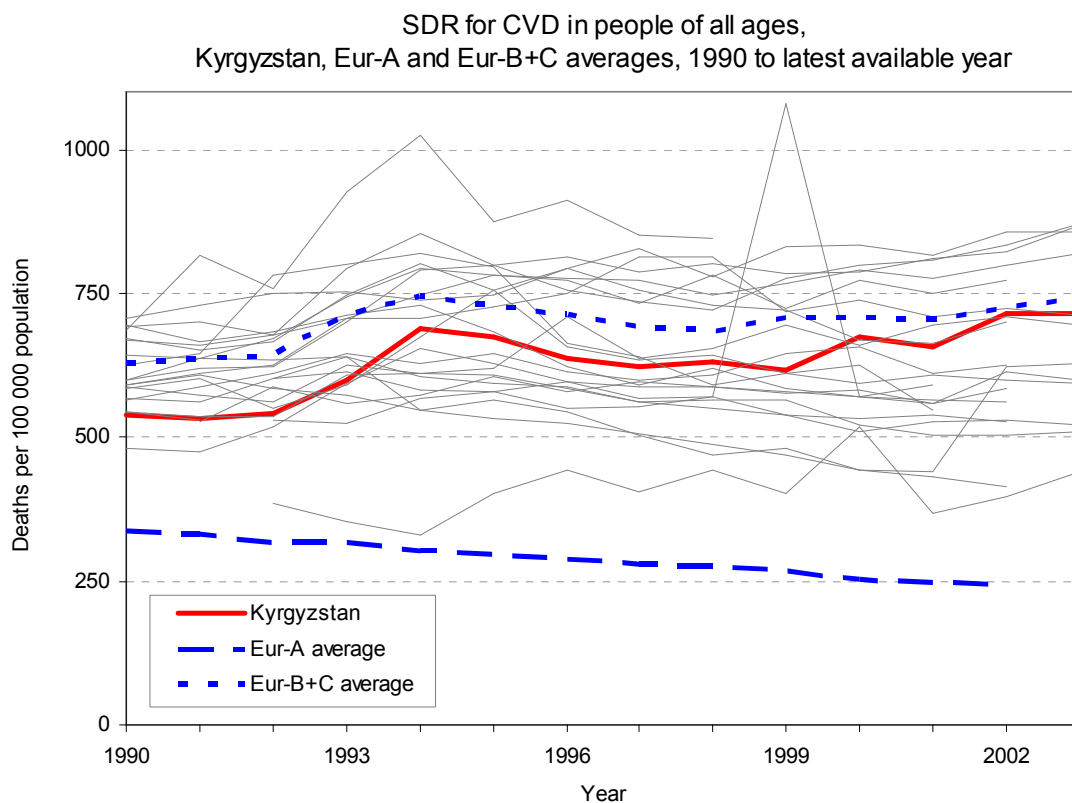
Cancer

Cancer mortality is relatively equally distributed across the Region. The rates in Kyrgyzstan are considerably lower than the Eur-B+C and Eur-A averages, but the completeness and accuracy of the records is questionable.

Respiratory diseases

Respiratory diseases account for about 12% of total mortality in Kyrgyzstan (2003), more than twice the Eur-B+C average, while the rate per 100 000 population is about 2.5 times higher than the Eur-B+C average. The rates may be artificially inflated by incorrect coding.

**SDR for respiratory diseases in people of all ages,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1990 to latest available year**
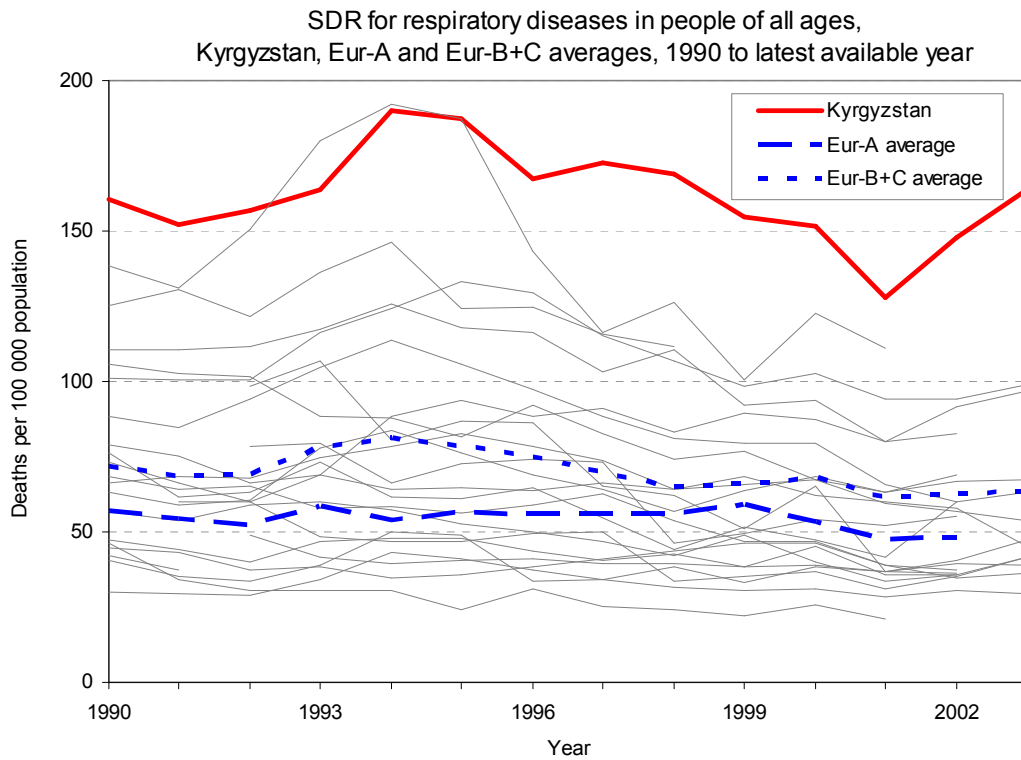
Digestive diseases

Mortality from digestive diseases has dropped steadily in Eur-A over the last 20 years but in Eur-B+C increased considerably since 1990 and even more so in Kyrgyzstan. By 2003, the rate was clearly higher than the Eur-B+C average and more than twice as high as the Eur-A average. As already mentioned, a considerable part of the problem is the excess mortality from chronic liver disease and cirrhosis. While high morbidity from hepatitis may play a role, it is probably compounded by high alcohol consumption levels.

**SDR for diseases of the digestive system in people of all ages,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1980 to latest available year**
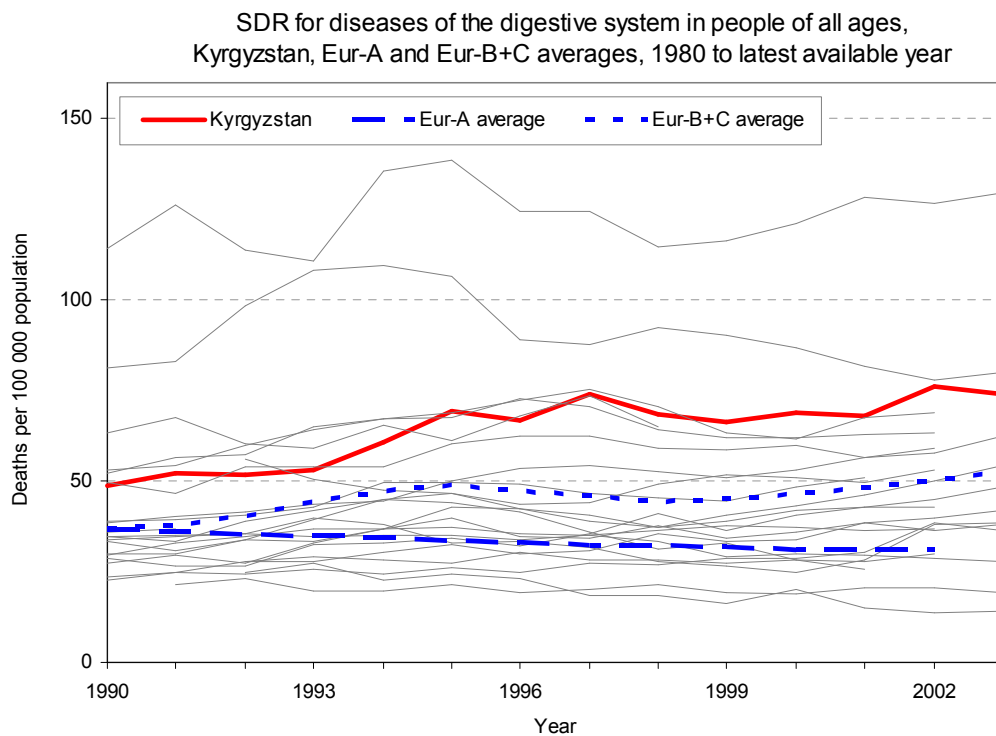
External causes

External causes of injury and poisoning include unintentional injuries (transport injury, injury due to falls, fires and drowning and other) as well as intentional injuries (injuries due to self-infliction, violence and war and other). Overall, external causes are responsible for 96 deaths per 100 000 of the population (2003) while the Eur-B+C average is 140 and the Eur-A average just 40.

SDR for external causes of injury and poisoning in people of all ages,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1980 to latest available year
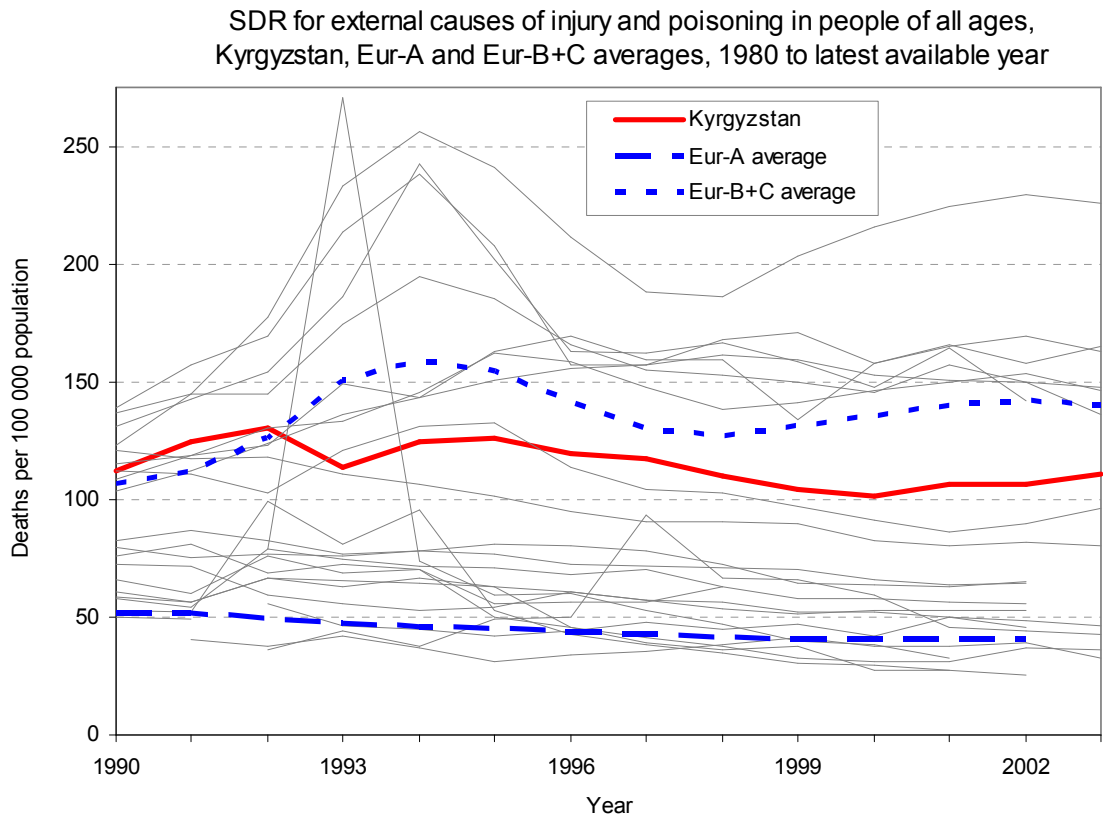
In contrast to the Eur-B+C average and similar to those in many other CIS countries, the rates decreased rather than increased from 1990 to 2003, although there was a typical CIS peak in mortality around 1995. Kyrgyzstan's favourable record seems to be real and driven by the reduction in accidental poisoning, suicides and homicides which are associated with alcohol consumption.

SDR for homicide in people of all ages, Kyrgyzstan, Eur-A and Eur-B+C averages, 1980 to latest available year
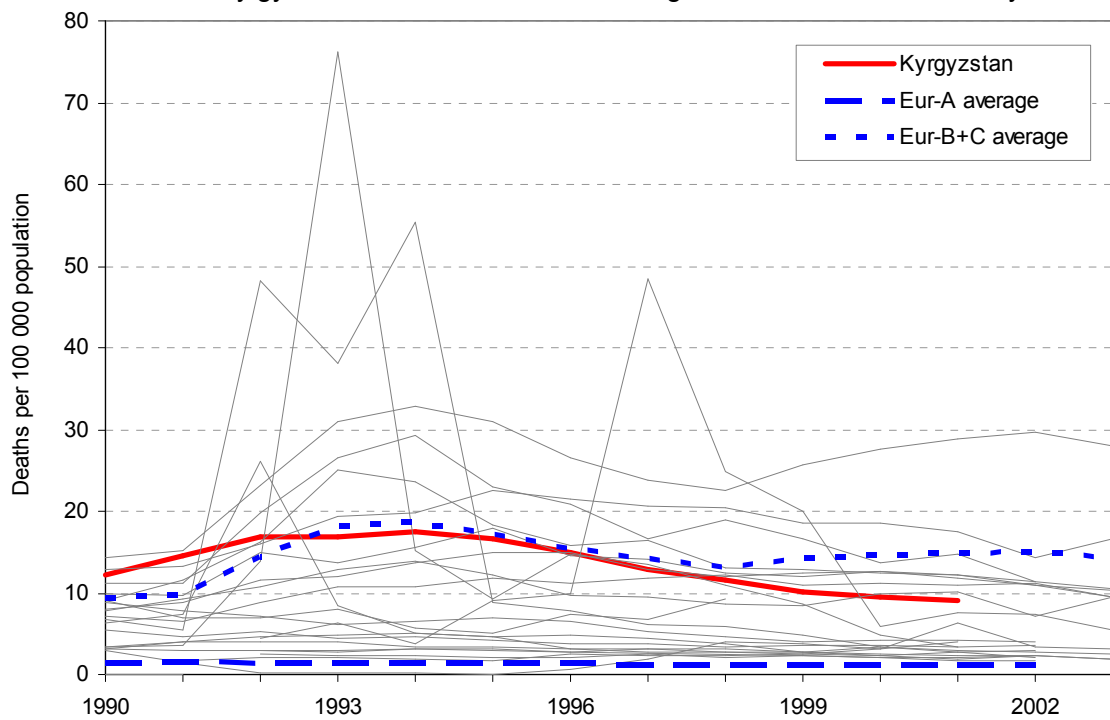
Note: Data for Kyrgyzstan are 5-year moving averages.   Year

SDR for suicide and self-inflicted injury in people of all ages, Kyrgyzstan, Eur-A and Eur-B+C averages, 1980 to latest available year
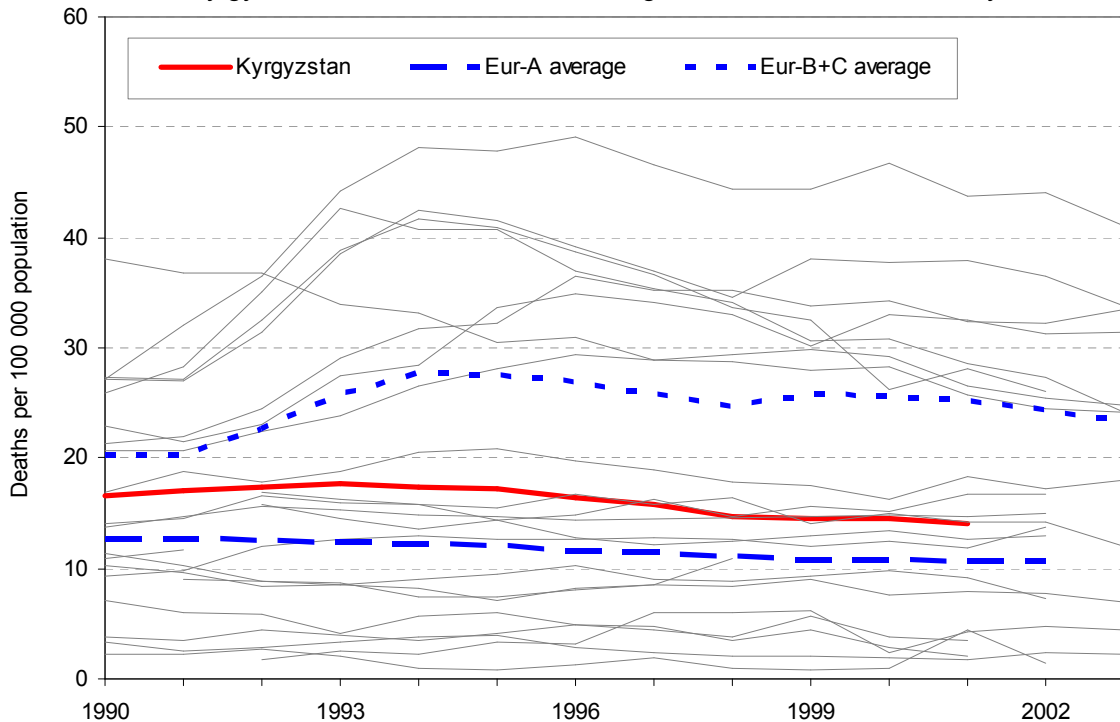
Note: Data for Kyrgyzstan are 5-year moving averages.   Year

Tuberculosis

TB deaths have clearly increased since 1990.

SDR for TB in people aged 0–64 years,
Kyrgyzstan, Eur-A and Eur-B+C averages, 1980 to latest available year
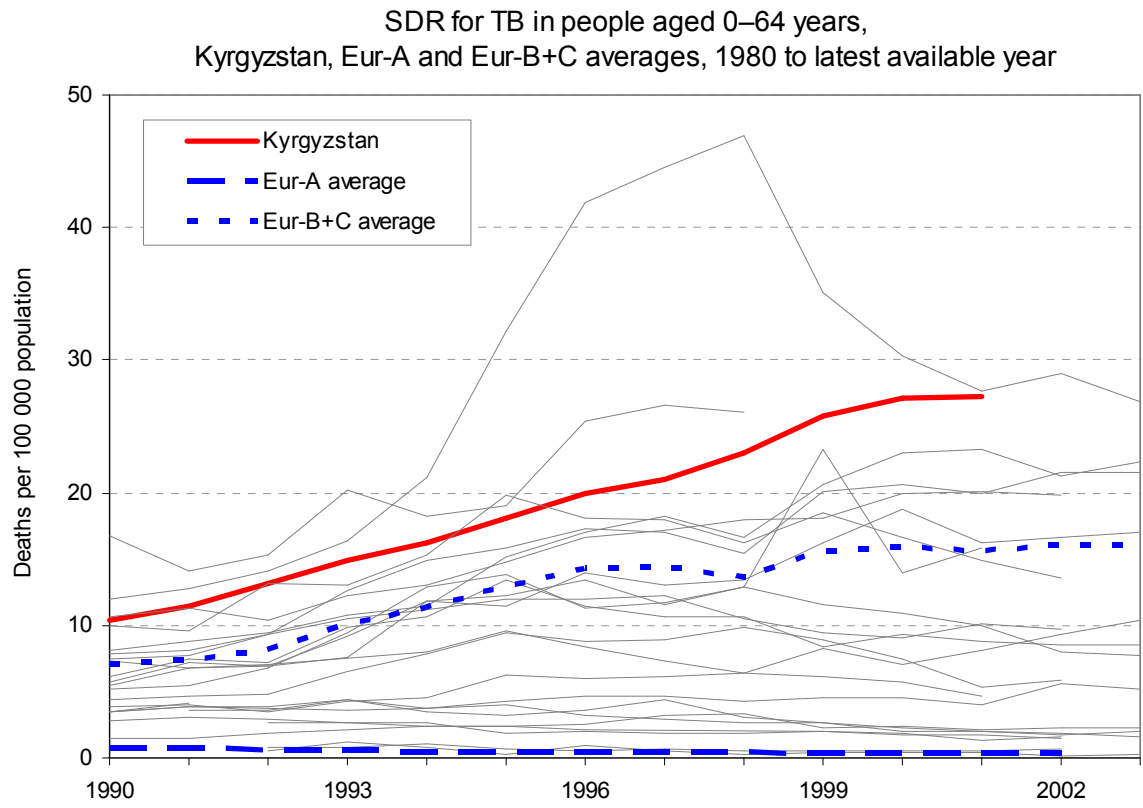
Note : Data for Kyrgyzstan are 5-year moving averages.

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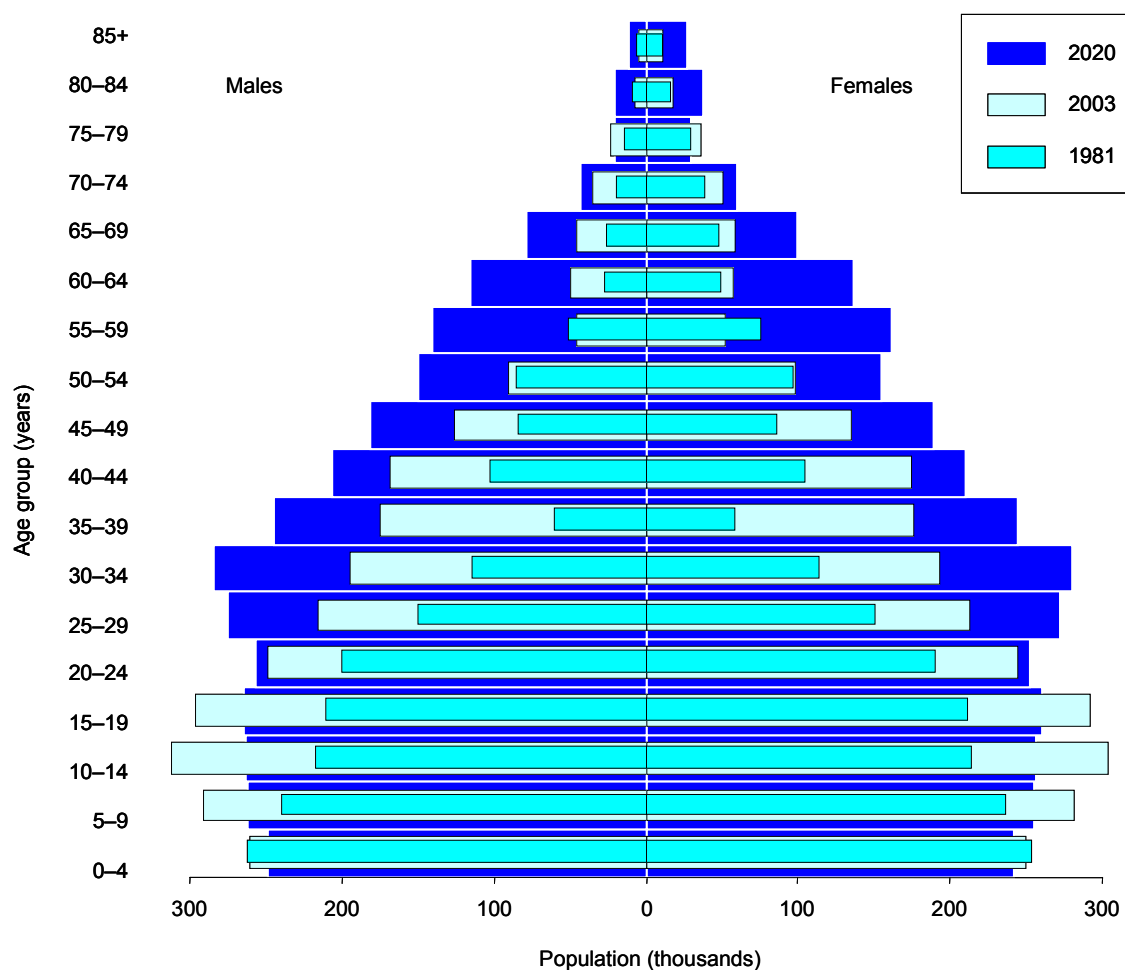World Bank (2004). *The Millennium Development Goals in Europe and Central Asia*. Washington, DC, World Bank.

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Annexes

Annex. Age pyramid

Age pyramid for Kyrgyzstan

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

Annex. Selected mortality

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

Condition	SDR per 100 000		Excess mortality in Kyrgyzstan (%)	Total deaths in Kyrgyzstan (%)	Total deaths in Eur-B+C (%)	Eur-A average	Excess Kyrgyzstan to Eur-A (%)	Total deaths in Eur-A (%)
	Kyrgyzstan (2003)	Eur-B+C average (2003)						
Selected non-communicable conditions	1090.7	1044.9	4.4	82.3	79.6	533.8	104.3	82.4
Cardiovascular diseases	715.7	741.8	−3.5	54.0	56.5	243.4	194.0	37.6
Ischaemic heart disease	389.4	362.7	7.4	29.4	27.6	95.9	306.0	14.8
Cerebrovascular diseases	261.2	221.7	17.8	19.7	16.9	61.1	327.5	9.4
Diseases of pulmonary circulation and other heart disease	31.8	68.9	−53.8	2.4	5.3	56.6	−43.8	8.7
Malignant neoplasms	116.5	172.0	−32.3	8.8	13.1	181.5	−35.8	28.0
Trachea/bronchus/lung cancer	17.8	33.9	−47.5	1.3	2.6	37.1	−52.0	5.7
Female breast cancer	16.0	22.1	−27.6	1.2	1.7	27.0	−40.7	4.2
Colon/rectal/anal cancer	8.0	19.0	−57.9	0.6	1.4	20.7	−61.4	3.2
Prostate	4.6	14.3	−67.8	0.3	1.1	25.1	−81.7	3.9
Respiratory diseases	163.9	63.1	159.7	12.4	4.8	47.8	242.9	7.4
Chronic lower respiratory diseases	129.7	31.2	315.7	9.8	2.4	20.2	542.1	3.1
Pneumonia	25.7	23.6	8.9	1.9	1.8	16.2	58.6	2.5
Digestive diseases	74.1	52.3	41.7	5.6	4.0	30.8	140.6	4.8
Chronic liver disease and cirrhosis	59.7	32.0	86.6	4.5	2.4	12.6	373.8	1.9
Neuropsychiatric disorders	20.4	15.7	29.9	1.5	1.2	30.3	−32.7	4.7
Communicable conditions	32.7	20.8	57.2	2.5	1.6	8.4	289.3	1.3
AIDS/HIV	0.1	0.8	−87.5	0.0	0.1	1.1	−90.9	0.2
External causes	96.0	139.6	−31.2	7.2	10.6	40.3	138.2	6.2
Unintentional	75.9	102.2	−25.7	5.7	7.8	28.7	164.5	4.4
Road traffic injuries	16.8	14.7	14.3	1.3	1.1	9.9	69.7	1.5
Falls	3.1	7.5	−58.7	0.2	0.6	6.1	−49.2	0.9
Intentional	20.1	37.4	−46.3	1.5	2.9	11.6	73.3	1.8
Self-inflicted (suicide)	12.0	23.2	−48.3	0.9	1.8	10.6	13.2	1.6
Violence (homicide)	8.0	14.2	−43.7	0.6	1.1	1.0	700.0	0.2
Ill-defined conditions	43.0	64.0	−32.8	3.2	4.9	20.9	105.7	3.2
All causes	1325.7	1312.2	1.0	100.0	100.0	647.8	104.6	100.0

Annex. Mortality data

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

Causes of death	Sex	Kyrgyzstan (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Annual change (%)	Average	Annual change (%)	Average	Average annual change (%)
All causes	Both	232.7	–4.0	49.4	–2.4	151.7	–3.8
	M	262.8	–3.9	55.3	–2.5	170.5	–3.9
	F	201.4	–4.1	43.3	–2.4	131.9	–3.8
Infectious and parasitic diseases	M	20.7	–8.0	1.4	–1.1	10.9	–7.0
	F	13.3	–8.9	1.1	–3.0	9.5	–6.6
Intestinal infectious diseases	M	15.9	–7.5	0.2	–0.7	5.1	–8.2
	F	8.4	–9.5	0.1	–7.3	4.7	–7.9
Malignant neoplasms	M	2.4	0.4	3.3	–1.8	5.1	–1.9
	F	2.9	–3.2	2.6	–1.8	4.2	–1.9
Cardiovascular diseases	M	1.7	–8.3	1.4	–3.1	3.3	1.1
	F	1.3	–9.2	1.3	–2.5	2.6	0.1
Respiratory diseases	M	81.2	–6.6	1.4	–4.3	35.9	–5.0
	F	64.6	–6.8	1.0	–4.2	30.7	–5.0
Pneumonia	M	58.2	–5.7	0.5	–6.0	20.9	–4.9
	F	47.7	–6.0	0.4	–5.1	17.9	–4.7
Certain conditions originating in perinatal period	M	1110.9	4.1	255.3	–2.1	607.6	–2.7
	F	820.8	5.0	202.3	–1.6	427.5	–2.7
Congenital malformations & chromosomal abnormalities	M	21.8	6.2	11.6	–2.9	24.2	–2.8
	F	20.6	8.2	10.0	–3.3	21.0	–2.6
Ill-defined causes	M	1.8	–8.3	5.0	–3.9	5.6	–0.6
	F	1.6	–5.6	3.4	–4.2	4.6	–1.0
External causes of injury & poisoning	M	31.6	–3.6	7.0	–4.0	29.0	–3.4
	F	21.5	–4.0	4.6	–3.2	18.1	–3.1
Road traffic injuries	M	4.5	–2.3	2.5	–4.5	4.7	–2.6
	F	2.3	0.8	1.7	–4.8	3.0	–1.6

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

Causes of death	Sex	Kyrgyzstan (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Annual change (%)	Average	Annual change (%)	Average	Average annual change (%)
All causes	Both	128.0	–2.8	56.0	–2.3	161.0	–0.9
	M	173.7	–2.9	82.0	–2.3	241.7	–1.0
	F	81.7	–2.4	29.3	–2.2	79.0	–0.6
Infectious and parasitic diseases	M	18.9	3.5	1.2	1.5	12.3	3.0
	F	8.1	–3.1	0.8	1.9	5.1	2.5
Malignant neoplasms	M	6.3	–3.2	6.2	–1.0	8.8	–1.9
	F	5.5	–2.1	4.7	–1.4	7.7	–1.9
Cardiovascular diseases	M	14.6	–7.5	4.1	–2.4	17.6	0.0
	F	7.7	–7.6	2.3	–2.0	7.3	–0.9
Respiratory diseases	M	6.7	–5.0	1.4	–3.6	6.9	0.2
	F	4.6	–2.1	0.9	–2.7	3.8	–1.1
Digestive diseases	M	10.8	3.1	0.9	–3.5	8.0	3.0
	F	5.4	7.2	0.5	–3.8	3.7	3.1
Ill-defined causes	M	4.1	–1.4	4.0	–3.1	11.6	7.1
	F	1.1	–4.5	1.4	–1.3	3.3	5.8
External causes	M	88.3	–3.2	58.3	–1.4	162.4	–1.6
	F	24.6	–2.4	14.4	–1.6	36.9	–0.2
Road traffic injuries	M	23.4	3.8	28.5	–1.3	27.8	–1.5
	F	6.6	6.2	7.3	–1.4	8.0	0.3
Accidental drowning	M	7.6	–4.7	1.3	–2.2	10.8	–3.9
	F	1.7	–6.0	0.2	–2.1	1.9	–2.2
Accidental poisoning	M	5.1	–7.7	2.8	0.0	19.1	3.3
	F	2.0	–2.0	0.7	0.8	4.4	2.5
Self-inflicted (suicide)	M	17.8	–2.4	12.7	–1.8	36.8	0.0
	F	4.6	-6.2	3.1	–2.2	5.8	–1.3

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

Causes of death	Sex	Kyrgyzstan (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Annual change (%)	Average	Annual change (%)	Average	Average annual change (%)
All causes	Both	389.0	–2.5	120.3	–2.5	453.8	–0.7
	M	563.6	–2.7	161.6	–2.6	700.0	–0.8
	F	217.7	–2.3	78.5	–2.1	215.6	–0.2
Malignant neoplasms	M	28.0	–3.9	27.6	–2.3	40.2	–2.8
	F	35.1	–1.9	31.3	–2.0	43.8	–1.4
Trachea/bronchus/lung cancer	M	4.3	–6.0	5.0	–3.4	7.3	–4.2
	F	0.8	–8.6	2.8	–0.6	2.2	–1.0
Female breast cancer							
	F	6.3	–4.6	10.0	–2.6	10.0	–2.3
Cardiovascular diseases	M	126.9	–4.3	26.1	–2.5	158.6	–0.4
	F	45.1	–5.4	10.4	–2.1	45.3	0.0
Ischaemic heart disease	M	61.5	–3.7	11.8	–3.1	73.7	–2.2
	F	9.2	–6.5	2.4	–2.7	14.4	–1.3
Cerebrovascular diseases	M	28.4	–6.2	4.4	–3.2	24.6	–0.4
	F	16.4	–5.0	3.6	–2.5	10.6	–1.3
Respiratory diseases	M	27.9	–2.9	3.9	–3.5	34.3	0.9
	F	9.9	–3.7	2.2	–2.0	9.8	0.8
Digestive diseases	M	61.2	–1.1	12.6	–2.4	50.2	1.4
	F	28.4	2.0	5.4	–1.7	19.4	4.1
External causes	M	181.9	–4.0	58.8	–1.2	299.5	–1.9
	F	40.0	–1.9	15.1	–1.8	58.9	–1.0
Road traffic injuries	M	42.6	3.8	16.0	–0.5	31.4	–1.7
	F	8.9	3.9	3.9	–2.0	7.1	–0.5
Self-inflicted (suicide)	M	26.0	–4.2	21.2	–1.5	54.9	–2.4
	F	4.1	–3.5	5.8	–2.2	7.9	–2.5

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

Causes of death	Sex	Kyrgyzstan (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Annual change (%)	Average	Annual change (%)	Average	Average annual change (%)
All causes	Both	1144.0	–2.5	435.6	–1.3	1294.9	–0.6
	M	1612.6	–2.1	580.1	–1.4	1981.7	–0.6
	F	720.4	–3.0	293.3	–1.0	698.9	–0.5
Malignant neoplasms	M	181.7	–3.1	218.2	–1.2	323.2	–1.9
	F	134.8	–1.6	155.0	–1.0	186.1	–0.5
Trachea/bronchus/lung cancer	M	40.6	–4.8	65.9	–1.5	101.4	–2.9
	F	7.1	0.5	21.8	3.4	15.4	1.0
Female breast cancer							
	F	33.8	–0.2	44.0	–2.2	45.3	0.1
Cardiovascular diseases	M	626.2	–2.4	156.4	–2.6	793.1	–0.1
	F	300.6	–3.6	50.9	–2.5	271.7	–0.6
Ischaemic heart disease	M	282.5	–2.8	86.2	–3.3	435.3	–0.7
	F	85.8	–4.7	17.8	–3.4	111.1	–0.6
Cerebrovascular diseases	M	238.3	–2.3	23.7	–2.6	168.6	–0.9
	F	159.8	–3.1	14.5	–2.1	88.4	–1.4
Respiratory diseases	M	132.7	–3.6	20.3	–1.7	108.7	–1.4
	F	47.7	–3.7	10.2	–1.3	24.5	–0.7
Digestive diseases	M	189.0	3.7	49.6	–0.8	129.7	0.7
	F	72.5	–1.6	20.3	–0.7	57.3	1.9
External causes	M	257.7	–3.9	62.8	–1.0	409.2	–0.9
	F	70.1	–3.3	20.9	–0.9	89.1	–1.1
Road traffic injuries	M	30.8	0.3	13.0	–1.3	28.5	–1.8
	F	13.1	7.2	4.1	–2.1	7.5	–1.4
Self-inflicted (suicide)	M	34.4	–4.9	23.1	–1.1	68.1	–2.4
	F	4.7	–8.2	8.5	–1.2	10.2	–3.4

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

Causes of death	Sex	Kyrgyzstan (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Annual change (%)	Average	Annual change (%)	Average	Average annual change (%)
All causes	Both	3796.2	0.4	1570.9	−1.9	3411.7	−0.1
	M	4995.3	0.2	2156.9	−2.1	4996.4	0.1
	F	2860.5	0.3	1069.2	−1.9	2339.0	−0.6
Malignant neoplasms	M	612.0	−0.1	851.3	−1.4	1002.5	−0.8
	F	351.1	2.2	439.8	−1.1	438.9	−0.7
Trachea/bronchus/lung cancer	M	147.2	−0.1	261.8	−1.9	321.7	−1.5
	F	32.4	6.7	59.0	0.2	37.1	−1.4
Female breast cancer							
	F	48.3	4.7	79.7	−1.6	68.7	1.3
Cardiovascular diseases	M	2787.1	1.5	744.9	−3.6	2903.0	0.6
	F	1793.0	1.7	335.7	−3.9	1507.8	−0.3
Ischaemic heart disease	M	1480.3	2.9	381.3	−4.2	1582.2	1.2
	F	860.1	3.0	133.5	−4.6	731.4	0.5
Cerebrovascular diseases	M	1074.7	0.0	143.3	−3.7	833.7	0.2
	F	785.8	0.8	86.7	−4.1	528.9	−0.8
Respiratory diseases	M	729.6	0.2	144.0	−3.5	303.0	−2.4
	F	282.0	−0.8	62.5	−2.4	68.6	−3.6
Digestive diseases	M	303.0	0.4	111.6	−1.6	193.0	0.1
	F	172.2	1.7	54.1	−1.7	94.2	0.2
External causes	M	238.9	−1.9	79.3	−1.4	320.0	1.0
	F	88.3	−1.8	32.1	−2.1	88.7	−0.5
Road traffic injuries	M	27.3	1.1	14.8	−3.0	24.3	−1.5
	F	13.8	0.7	5.9	−3.4	9.5	−1.0
Self-inflicted (suicide)	M	35.8	−2.4	24.5	−1.6	60.5	−0.8
	F	5.8	−7.6	8.7	−2.6	12.7	−3.1

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

Causes of death	Sex	Kyrgyzstan (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Annual change (%)	Average	Annual change (%)	Average	Average annual change (%)
All causes	Both	12039.2	−1.2	8059.6	−1.0	12338.8	0.0
	M	13193.7	−2.2	9832.0	−1.1	14838.0	0.1
	F	11485.2	−0.8	7112.5	−0.9	11421.7	0.0
Malignant neoplasms	M	567.2	−1.8	2231.1	−0.4	1489.3	1.2
	F	493.7	4.6	1136.2	−0.4	721.7	0.8
Trachea/bronchus/lung cancer	M	129.4	4.3	457.1	−0.7	323.5	1.0
	F	36.4	3.9	102.7	1.5	55.6	0.5
Female breast cancer							
	F	51.7	5.9	159.6	−0.4	92.0	3.1
Cardiovascular diseases	M	8793.0	1.1	4356.2	−2.1	10221.2	0.4
	F	8238.8	2.6	3577.9	−1.9	8805.6	0.4
Ischaemic heart disease	M	5712.8	2.5	1708.0	−2.2	4925.6	1.4
	F	5040.1	4.7	1150.0	−2.2	4028.6	1.2
Cerebrovascular diseases	M	2592.0	−1.0	1119.8	−2.5	3004.4	0.7
	F	2706.5	−0.4	1026.9	−2.4	2967.6	0.5
Respiratory diseases	M	2247.2	−0.6	1156.5	−2.4	824.1	−2.1
	F	1428.9	1.1	591.9	−2.1	302.3	−3.2
Digestive diseases	M	244.5	−2.5	340.3	−1.1	270.4	0.3
	F	235.8	0.2	279.8	−0.4	175.0	1.1
External causes	M	190.4	−7.6	275.0	−0.6	604.2	0.1
	F	85.4	−2.9	187.8	−1.2	172.4	−1.2
Road traffic injuries	M	32.3	1.5	28.1	−2.2	34.6	−3.1
	F	18.2	7.0	10.0	−3.1	14.7	−1.7
Self-inflicted (suicide)	M	17.5	−8.5	49.5	−1.6	86.6	−1.1
	F	5.1	−7.6	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

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[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.

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[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.

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[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).