EUROPE

Highlights on health
in Tajikistan
2005

Highlights on
health

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

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

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

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Summary: findings and policy considerations

Life expectancy

According to estimates, a person born in Tajikistan in 2003 can expect to live 61 years on average: 63 if female and 59 if male. Life expectancy (LE) in Tajikistan is the second lowest in the region; however, these WHO estimates differ considerably from the official LE figures based on regular registration of deaths in the country's statistical system, which are about 72 years for the both sexes combined, 73.9 years for women and 70.2 years for men.

Official LE in Tajikistan is about three years above the Eur-B+C average of 68.8 years but probably about 18 years below the Eur-A average of 79.0. This large difference indicates huge potential for improvement in Tajikistan in the middle-to-long term, provided that the best available knowledge and practices are appropriately implemented.

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

Ageing and employment policies (OECD, 2004)

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

Infant mortality

In 2001, the regular infant mortality rate in Tajikistan was very high: 28 deaths per 1000 live births; in 2003 the Eur-B+C average was 19.9 and the best achievement in the group was of Lithuania, at 6.7. Although trends are very difficult to assess due to the large fluctuations in reported figures year to year, it appears that the rate has fallen by 30% to 50% since 1990, a remarkable achievement given the extremely difficult period of civil war and economic transition in this poorest country in the region.

There are no recent reports of neonatal mortality. The figures for 1997 are around 8 deaths per 1000 live births, which would be a very good achievement but the data is not internationally comparable. In 2003, the Eur-B+C average was 7.3 and the best estimates of the Eur-A group were around 3 or 4 per 1000 live births.

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

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

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

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

Main causes of death

With minor exceptions, the main causes of death in all major age groups are lower than the respective Eur-B+C averages. As mentioned above, the data on the causes of mortality should be interpreted with some caution.

In 2003, noncommunicable diseases accounted for about 85% of all deaths in Tajikistan, external causes for about 3%, communicable diseases for about 4% and ill-defined conditions about 8%. In the Eur-B+C group the average proportion of deaths from external causes is considerably larger (10.6%) but those of ill-defined conditions and infectious diseases are lower. The proportion of deaths due to non-communicable diseases is the same.

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, Tajikistan had approximately 6.6 million people. About 25% of the population live in urban areas, the lowest among Eur-B+C countries.

The proportion of the population 0 to 14 years old was relatively steady during the 1980s but has fallen from about 43% of the population in 1990 to 39% in 2001, but is still the highest in Eur-B+C. Conversely, the percentage of Tajikistan's population over 65 years old is the lowest in Eur-B+C. By 2030, an estimated 6% of Tajikistan's population will be 65+ (Annex. Age pyramid) Figure. Population trends).

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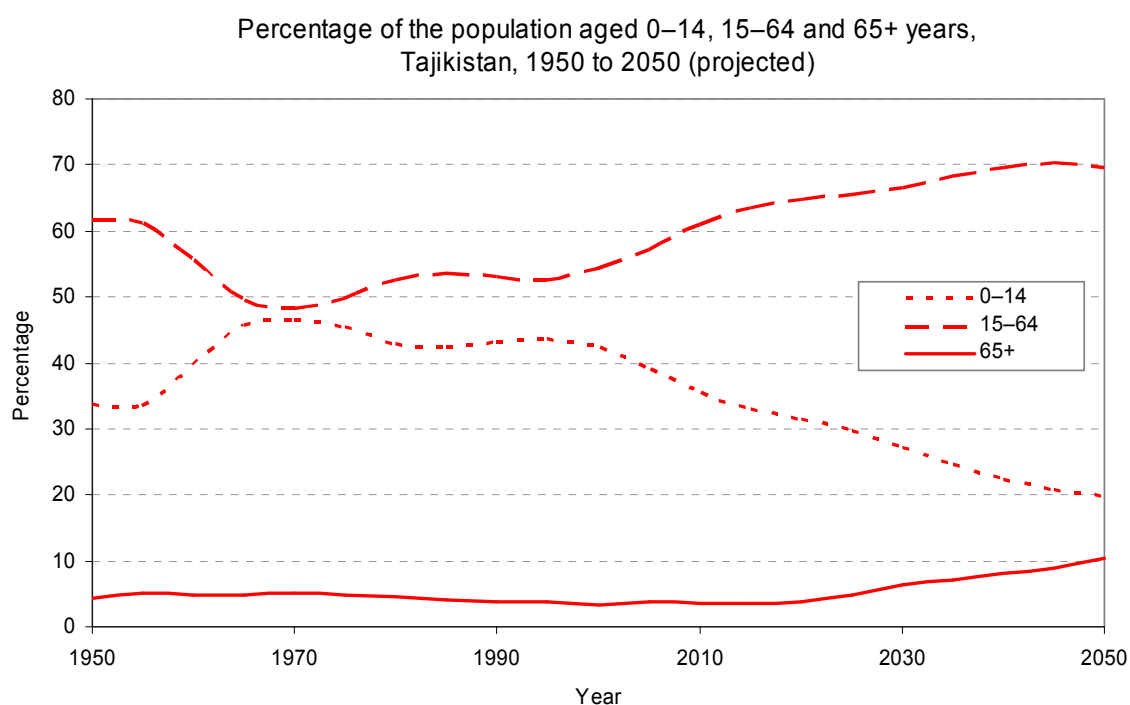
Source: United Nations (2005).

The birth rate in Tajikistan was the highest among Eur-B+C countries in 2003. Its natural population growth is positive and the highest in Eur-B+C (Table. Selected demographic indicators).

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

Indicators	Tajikistan	Eur-B+C		
	Value	Average	Minimum	Maximum
Population (in 1000s)	6573.2	–	–	–
0–14 years (%)	39.4	–	–	–
15–64 years (%)	56.7	–	–	–
65+ years (%)	4.0	–	–	–
Urban population (%)[a]	25.0	63.7	25.0	73.3
Live births (per 1000)	27.1	12.8	8.6	27.1
Natural population growth (per 1000)[b]	23.0	0.8	–7.5	23.0
Net migration (per 1000)	–	1.8	–6.6	2.1

[a] 2002; [b] 2001.
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.

In 2003, Tajikistan had the lowest per capita gross national income among Eur-B+C countries, at US$ 1040 compared to the Eur-B+C average of US$ 6842 (Figure. Gross national income per person).

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

[a] The former Yugoslav Republic of Macedonia

Source: World Bank (2005).

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

Using the World Bank's recommended benchmarks to measure absolute poverty in Europe, a household survey in 1999 found 92.9% of the Tajik population living on US$ 4.30 per day or less, with 58.6% living on US$ 2.15 per day or less. In the latest survey, in 2003, 42.8% of the population reported living on US$ 2.15 or less per day (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.

The latest available GINI index for Tajikistan is 34.7 for 1998. 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).

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 school.
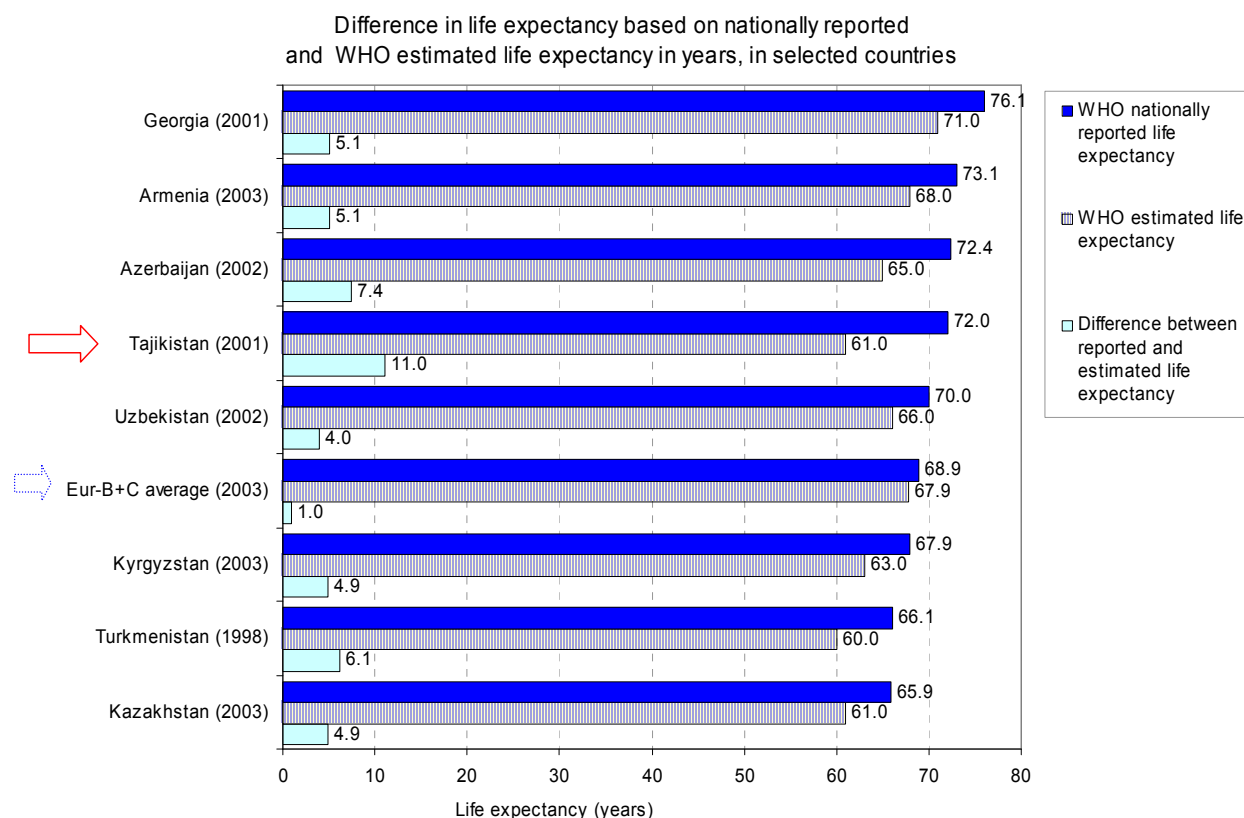
Secondary school enrolment in Tajikistan in 2000 was below the Eur-B+C average with data for that year, at 75.6% of the school age population compared to an 81.2% Eur-B+C average. In 2001, the rate in Tajikistan went up to 79.0%. In contrast, the average secondary school net enrolment in Eur-A in 2000 was 88.5% (UNESCO, 2005).

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

According to WHO calculations (WHO, 2005) a person born in Tajikistan in 2003 can expect to live 61 years on average: 63 years if female and 59 years if male. Life expectancy (LE) in Tajikistan is the second lowest in the WHO European Region. The WHO estimates differ considerably, however, from the official LE figures based on regular registration of deaths in the country statistical system, which are about 72 years (2003) for the both sexes, 73.9 years for women and 70.2 for men.

The difference of 11 years between the WHO estimated and the official LE figures is very large for a country in the Region and is mostly due to under-registration of child mortality. This means that the adult mortality data are more reliable and one can reasonably assume that they reflect the main pattern of mortality accurately enough for this report. For this reason and because the data are readily available for all age and sex-specific population groups, they are used almost exclusively in the report. In addition, the available WHO estimates are given to help assess the reality as far as indicators of maternal and early childhood mortality are concerned. A less obvious but important problem is ascertaining the quality of cause of death certification. There are several indications of gaps here that affect the strength of the conclusions and interpretations based on regular mortality statistics, particularly where international comparisons are concerned.

Keeping this in mind, the mortality data indicate the following in brief. Official LE in Tajikistan is about three years above the Eur-B+C average of 68.8 years based on regular mortality registration. However, the WHO estimate of LE is considerably lower and about seven years below the corresponding Eur-B+C average of about 68 years (2002, calculated exclusively from WHO estimates for all countries of the Eur-B+C group). This means also that LE in Tajikistan is probably about 18 years below the Eur-A average of 79.0 years (Figure. Difference in life expectancy).

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

Country	WHO nationally reported life expectancy	WHO estimated life expectancy	Difference between reported and estimated life expectancy
Georgia (2001)	76.1	71.0	5.1
Armenia (2003)	73.1	68.0	5.1
Azerbaijan (2002)	72.4	65.0	7.4
Tajikistan (2001)	72.0	61.0	11.0
Uzbekistan (2002)	70.0	66.0	4.0
Eur-B+C average (2003)	68.9	67.9	1.0
Kyrgyzstan (2003)	67.9	63.0	4.9
Turkmenistan (1998)	66.1	60.0	6.1
Kazakhstan (2003)	65.9	61.0	4.9

Life expectancy (years)

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

Back in 1990, official LE in Tajikistan was at the Eur-B+C average of about 70 years. Since independence, the civil war of 1992–1997 compounded the problems stemming from the collapse of the Soviet Union and these resulted in a sharp drop in LE to about 62 years in 1993. By 1997 previous levels of LE were restored, however. It increased by two more years and by 2001 was already three years above the Eur-B+C average.

It should also be noted that the female-male difference in Tajik LE is only 3.6 years due to the unusually high LE in males. This is the smallest difference in the WHO European Region. The Eur-B+C average is nine years and the Eur-A average is six years (Figure. Life expectancy for males; Figure. Life expectancy for females).

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

Life expectancy at birth for females, Tajikistan, Eur-A and Eur-B+C averages, 1980 to latest available year
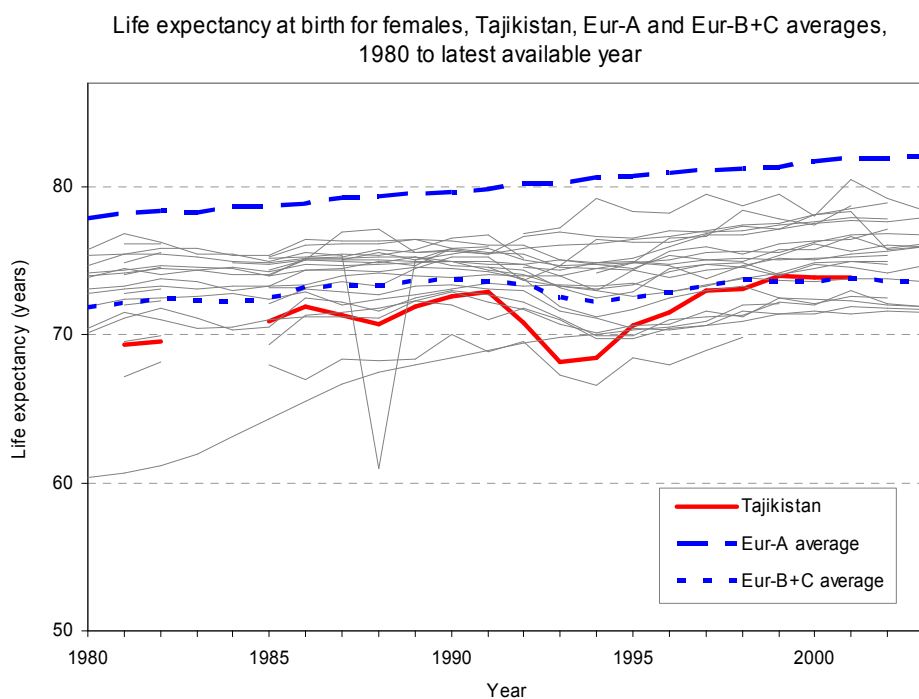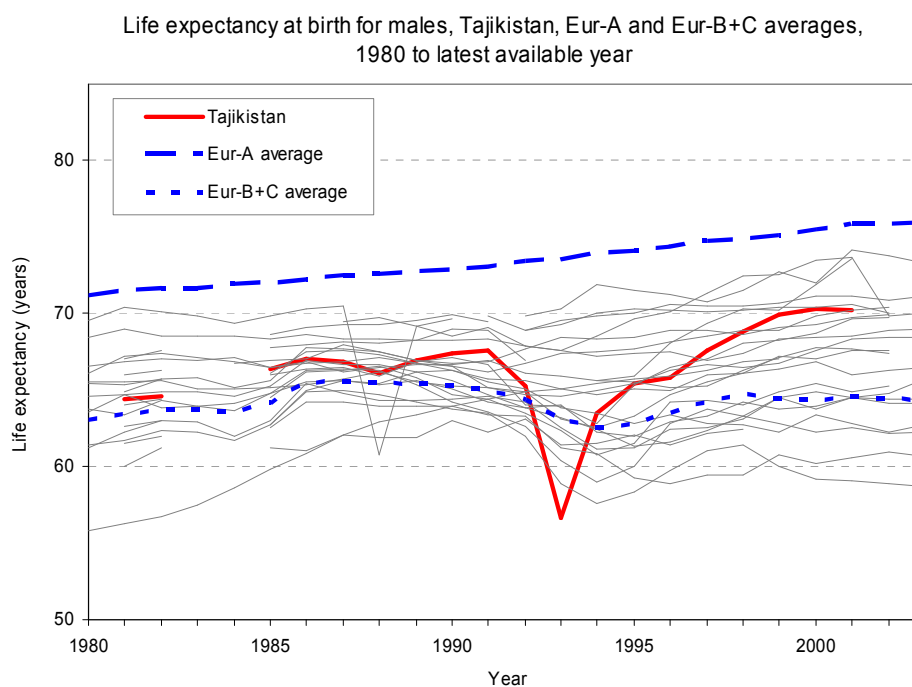
In addition to longevity in general it is increasingly important to consider the length of life in good health. This is measured by the relatively new indicator of healthy life expectancy – HALE. WHO has produced HALE estimates that should be used in conjunction with the WHO estimates of total LE, not the regular LE statistics.

WHO (WHO, 2004) estimated for 2002 that people in Tajikistan have 54.7 healthy years on average (56.4 for women, 53.1 for men), about 16.9 years less than the Eur-A average of 71.6 and 5.8 years

below the Eur-B+C average of 60.5. The best achievement in the region is 73.3 years in Sweden (74.8 female, 71.9 male). At 60 years, healthy life expectancy in Tajikistan is 11.0 years for women and 9.5 years for men, while the Swedish averages are 19.6 and 17.1 years, respectively. An alternative way to present the same concept is to estimate the expectation of life years to be spent in less than good health. In Tajikistan this is 10.1 years for women and 7.9 years for men. The respective averages for Sweden are 7.9 and 6.2 years (Figure. LE and HALE; Figure. LE and HALE in Tajikistan).

LE and HALE, Tajikistan, 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

Years

Source: WHO (2003c).

LE and HALE in Tajikistan,
Sweden, Eur-A and Eur B+C averages, latest available year
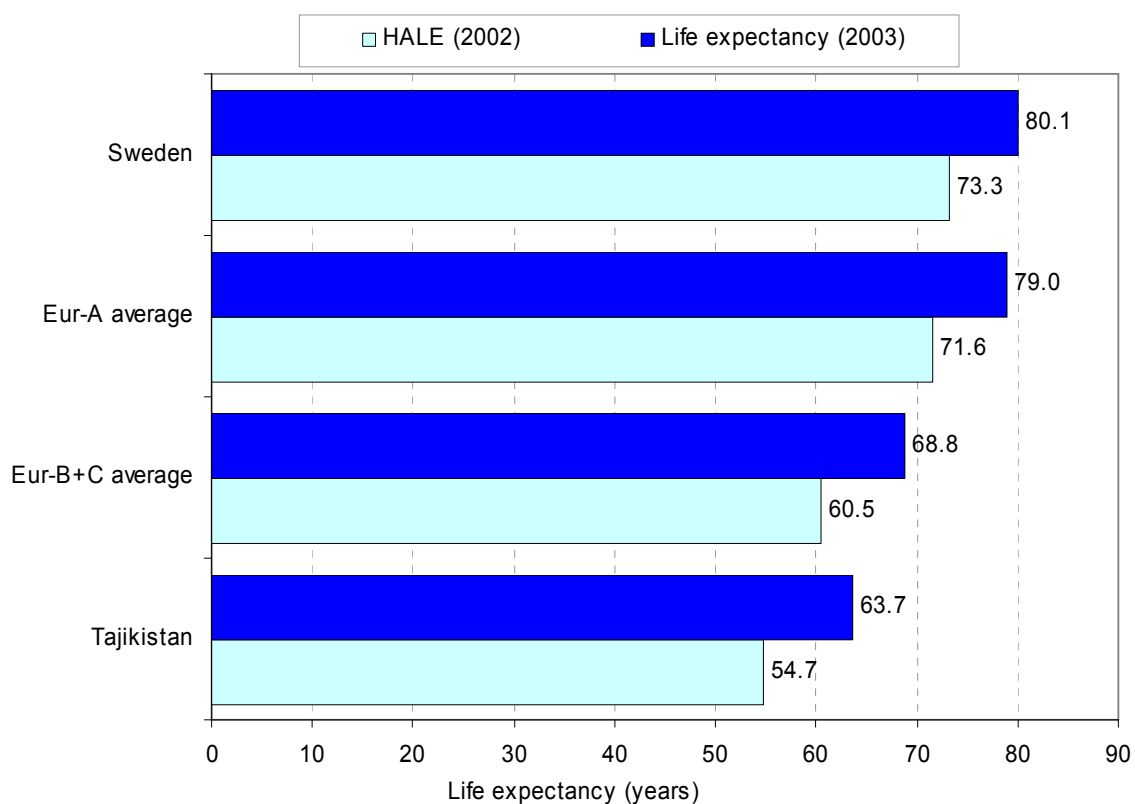
Note: data for life expectancy for Sweden is 2002.

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

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

Rank	Males		Females	
	Disability groups	**Total DALYs (%)**	**Disability groups**	**Total DALYs (%)**
1	Infectious and parasitic diseases	14.6	Neuropsychiatric conditions	16.7
2	Cardiovascular diseases	13.8	Cardiovascular diseases	14.9
3	Neuropsychiatric conditions	13.2	Infectious and parasitic diseases	13.6
4	Perinatal conditions	10.7	Respiratory infections	9.7
5	Unintentional injuries	9.9	Perinatal conditions	8.5
6	Respiratory infections	9.0	Digestive diseases	4.4
7	Intentional injuries	4.5	Maternal conditions	4.3
8	Digestive diseases	4.5	Nutritional deficiencies	4.2
9	Respiratory diseases	3.4	Respiratory diseases	3.9
10	Malignant neoplasms	3.2	Sense organ diseases	3.3

Source: Background data from WHO (2003c).

Main risk factors

The table shows the top 10 risk factors with their relative contributions, in descending order, to burden of disease in the Tajik male and female populations. According to DALYs, alcohol and high blood pressure places the greatest burden of disease on men and high blood pressure and high BMI on women Table. Ten leading risk factors).

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

Rank	Males		Females	
	Risk factors	**Total DALYs (%)**	**Risk factors**	**Total DALYs (%)**
1	Alcohol	7.1	High blood pressure	6.6
2	High blood pressure	5.1	High BMI	6.2
3	High BMI	4.7	Indoor smoke from solid fuels	4.8
4	Unsafe water, sanitation, and hygiene	4.3	Unsafe water, sanitation, and hygiene	4.3
5	Tobacco	4.0	Childhood and maternal underweight	4.2
6	Childhood and maternal underweight	3.9	High cholesterol	3.2
7	High cholesterol	3.8	Iron deficiency	3.1
8	Indoor smoke from solid fuels	3.6	Alcohol	2.1
9	Low fruit and vegetable intake	1.9	Low fruit and vegetable intake	1.6
10	Physical inactivity	1.7	Physical inactivity	1.6

Source: Background data from WHO (2003c).

Mortality

Infant, neonatal and child mortality

Based on nationally reported deaths and births in 2001, there is a probability that out of every 1000 live births in Tajikistan, 21 children will die before age 5 (the Millennium Development Goal [MDG] for under-five mortality for Europe and central Asia is 15 per 1000 live births by 2015). Adjusting for the known biases in national data (under-reporting of vital statistics), WHO estimated Tajikistan's probability to be about 86 per 1000 live births in 2001. For 2002, the WHO estimate went down to 63 per 1000. In neighbouring Uzbekistan, the WHO estimate is 32 per 1000, and for Kyrgyzstan 59. It appears unlikely that Tajikistan can reach the MDG goal by 2015 based on the WHO estimates, even though extrapolation of the current WHO figures is not certain (Figure. Infant and neonatal deaths).

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

Country (year)	Infant deaths	Neonatal deaths
Turkey (2002)	36.0	
Tajikistan (2001)	27.9	
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	
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

There are no recent reports of neonatal mortality. The 1997 figures were around 8 deaths per 1000 live births, which would be a very good achievement, but the data are not internationally comparable. In 2003, the Eur-B+C average was 7.3 and the best estimates of the Eur-A group were around 3 or 4 per 1000.

In an attempt to compensate for 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 WHO estimates for four indicators particularly prone to under-registration (Table. Comparison of key indicators, child and maternal mortality).

Comparison of key indicators of child and maternal mortality in Tajikistan 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)	15.5	51[b]
Neonatal mortality per 1000 live births, 2000	na	38[c]
Under-5 mortality per 1000 live births (MDG indicator)	21	118 (100–136)[c]
Maternal mortality per 100 000 live birth, 2000 (MDG indicator)	48.4	100[c]

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

The data show that regularly reported under-five mortality in Tajikistan is at most about one-fifth of the WHO estimate and probably only one-sixth. As under-registration of child deaths mostly occurs for under one-year-olds, this discrepancy is consistent with the other data in the table, indirectly confirming that infant and neonatal mortality continue to be under-reported although more recent concurrent estimates are not available.

In addition, WHO estimates that under-five mortality dropped from 2000 to 2003 at an average annual rate of around 0.5%. The respective rate for the Region as a whole is around 3.5%. It is quite common for improvement to be slower than average in the CIS counties with high child mortality, although more progress should be expected, even taking into account the prevailing resource limitations (WHO, 2005).
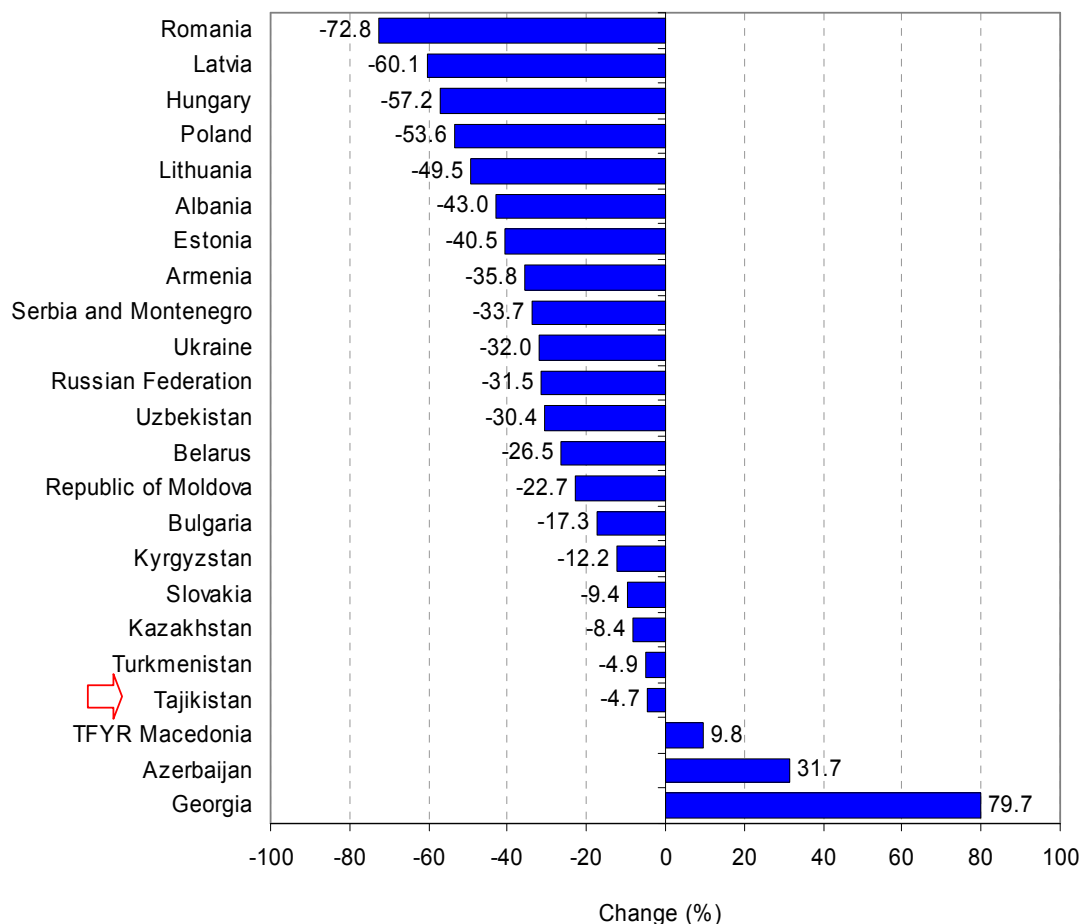
Maternal mortality

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

Despite the difficulties in accurately measuring maternal mortality rates (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 is very difficult to ascertain even in countries with strong registration systems, and the level of under-registration in Tajikistan is difficult to interpret. Given the uncertainty of the reported maternal deaths, a direct assessment of progress on their basis only is not plausible. Nevertheless, it should be mentioned that the 2003 reported figure is 52 per 100 000, while the 1990 level is 63. Between 1990 and 2002, the Tajik MMR fell by only about 5% due to a jump in rates from 1990 to a peak in 1993 (about 105 maternal deaths per 100 000 live births). Between 1993 and 2002, the rate fell by almost 60%. From the 2002 level, the MMR would have to fall almost 74% to reach the MDG target. Of the 79 maternal deaths reported in 2001, two were attributed to abortion (Figure. Percent change for maternal mortality).

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 Tajikistan are about 20% lower than the Eur-B+C average but 60% higher than the Eur-A average (Annex. Selected mortality). In middle-aged adults, male mortality seems to be more similar to the Eur-A average while female mortality is closer to the Eur-B+C pattern. With due consideration of data completeness, this means that the level of adult health is much better than expected given the average level of income (GDP per person) (Figure. Total mortality by sex and age group).

Total mortality by sex and age group in Tajikistan
in comparison with Eur-B+C (Eur-B+C = 100), 2003
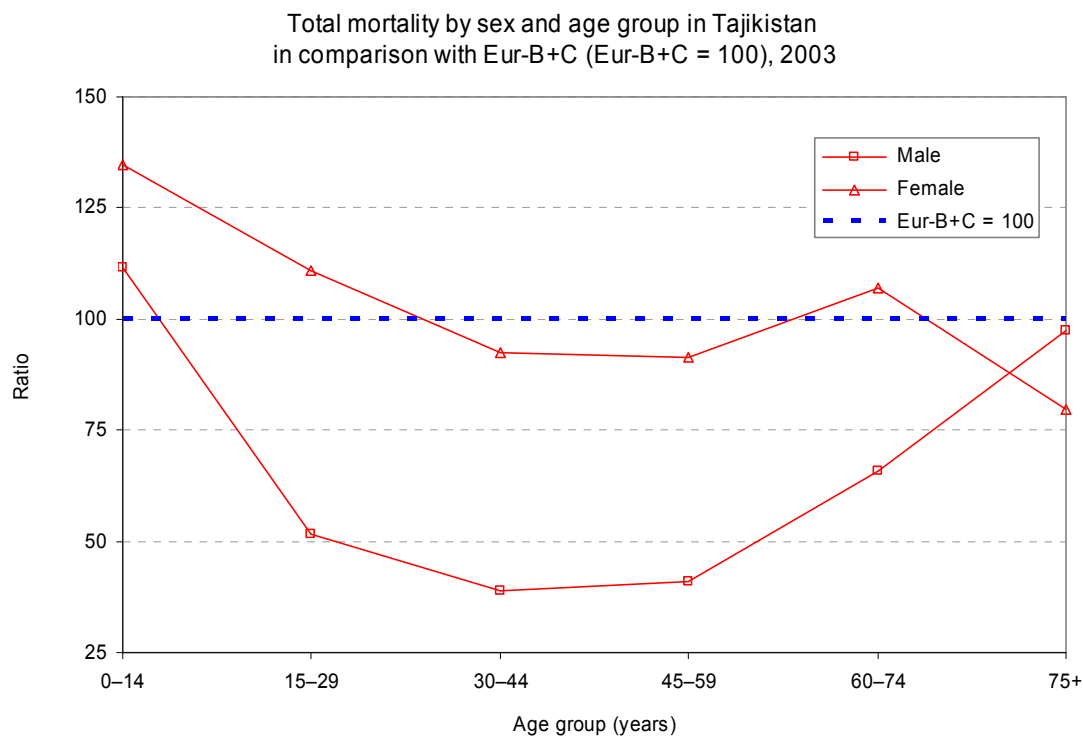
Most importantly perhaps, across all age groups there is no excess mortality from external causes compared to the Eur-B+C average, unlike in several other CIS counties. Moreover, in people over 14 years old mortality from external causes in Tajikistan is around the Eur-A average or lower.

Mortality from all other causes is also lower than the Eur-B+C average, except for communicable and respiratory diseases. The single most prominent cause of excess mortality is pneumonia. Rates of chronic liver disease and cirrhosis mortality are on a par with the Eur-B+C average. This relatively frequent cause of death indicates that alcohol consumption levels are probably considerable but this finding is not backed by observations of high mortality from external causes. The reason is not clear but the apparent lack of association may be a useful entry point for further analyses (Figure. SDR for communicable conditions in people of all ages; Figure. SDR for chronic liver disease and cirrhosis in people of all ages).

Standardized death rate (SDR) for communicable conditions in people of all
ages, Tajikistan, Eur-A and Eur-B+C averages, 1990 to latest available year

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

SDR for chronic liver disease and cirrhosis in people of all ages,
Tajikistan, Eur-A and Eur-B+C averages, 1990 to latest available year

Note: Data for Tajikistan are 5-year moving averages.
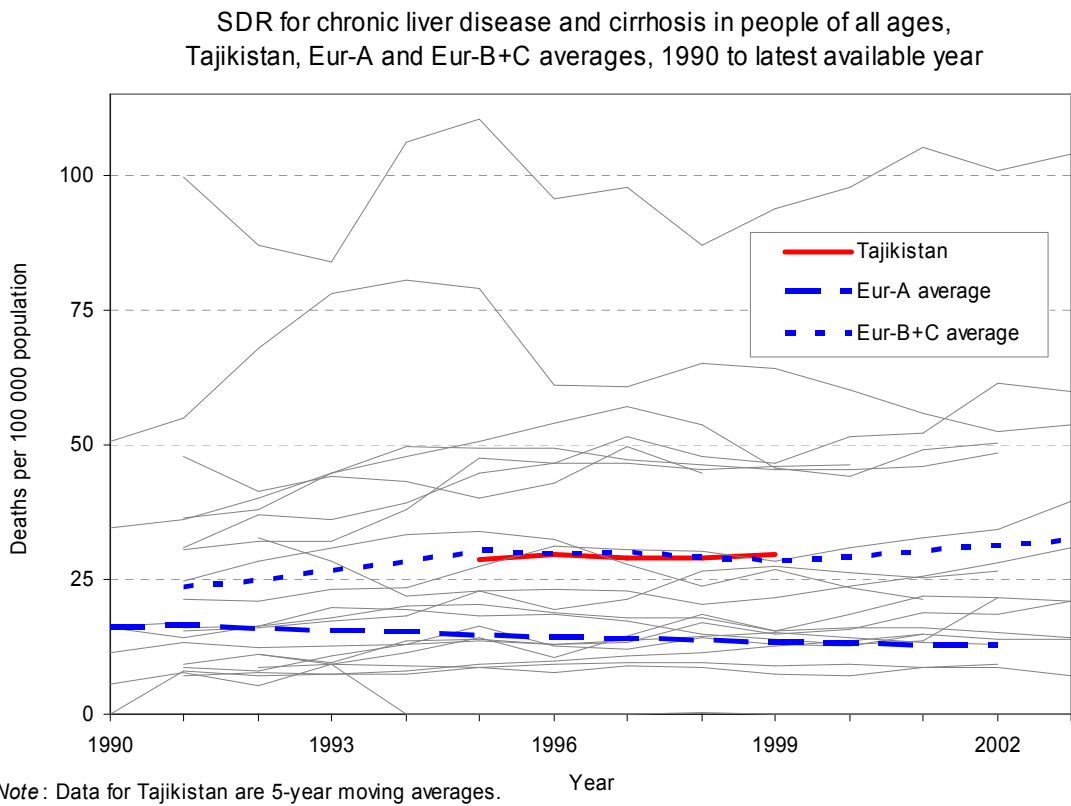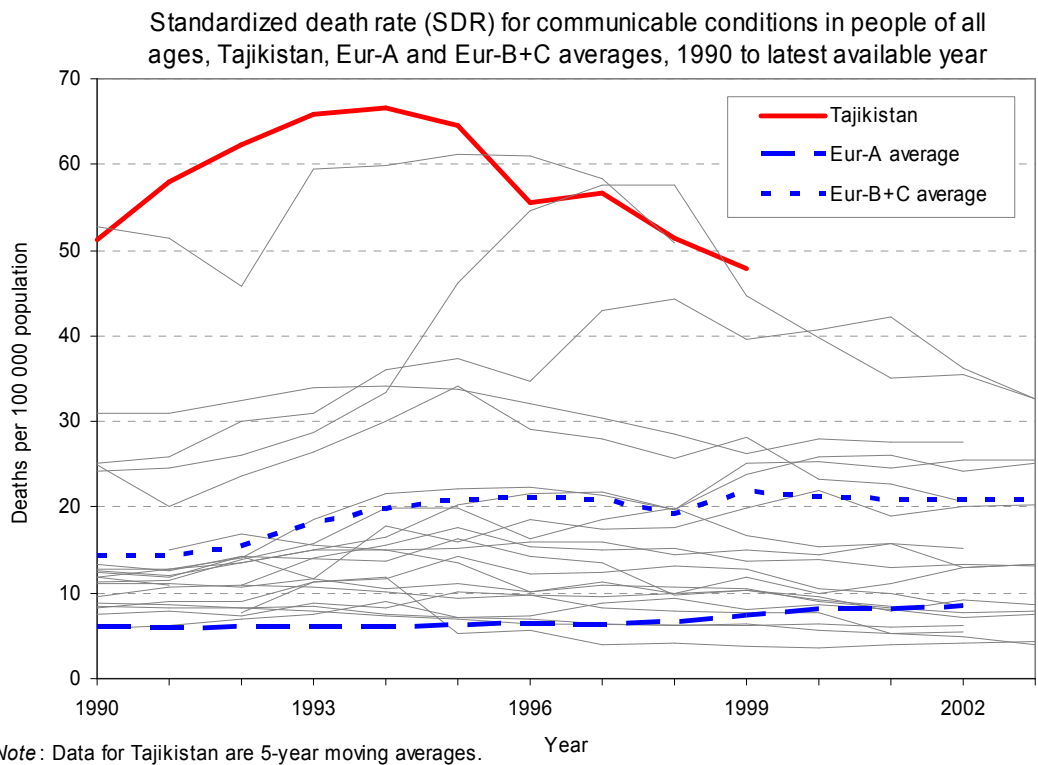
One should also keep in mind that the mortality crisis in the CIS countries peaked around 1994–
1995 (in the aftermath of the collapse of the Soviet Union). Therefore the more recent trends from 1995
to 2003 are more favourable than those for the whole period beginning in 1990.

In the 0–14 years age group the Tajik rate of 184 deaths per 100 000 (2003) is about 30% higher than the Eur-B+C average of 152 and more than three times higher than the Eur-A average of 49 (Annex. Mortality data). It improved by 8.0% from 1995, while the Eur-B+C improvement rate Eur-B+C was 3.8%. The improvement is practically comprehensive across all causes by gender. The reported deaths due to perinatal causes are half of the Eur-B+C average but the number of non-registered deaths is probably high.

However, in the 15–29 years age group the total Tajik mortality rate of 106 is considerably lower than the Eur-B+C average of 161 (Annex. Mortality data), mainly due to the lower rates from external causes. This is an important observation which points to an emerging pattern in younger adults compared to several other CIS countries, namely less violent behaviour. Male mortality in this group is closer to the Eur-A levels while that of females is closer to the Eur-B+C averages.

Mortality from infectious and respiratory diseases is relatively high.

Since 1995 total mortality levels have improved across most causes of death and, even more importantly, the overall levels have returned to or fallen below those of 1990 (Figure. SDR for all causes in males 15–29 years; Figure. SDR for all causes in females 15–29 years).

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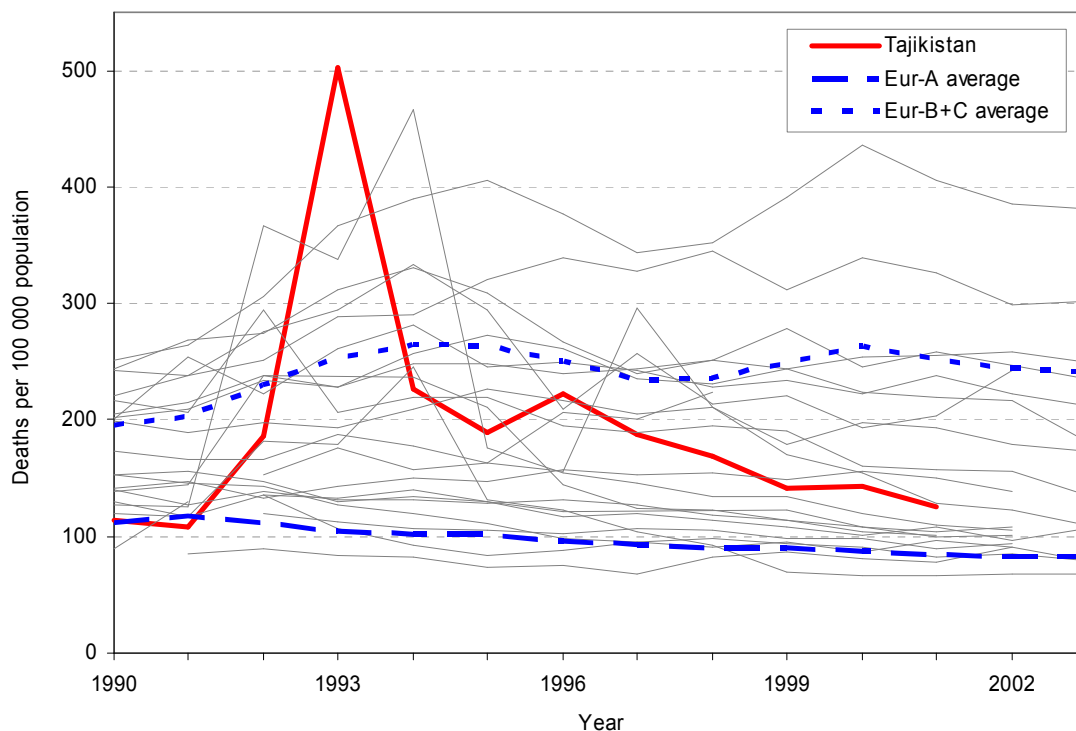
SDR for all causes in females aged 15–29 years,
Tajikistan, Eur-A and Eur-B+C averages, 1990 to latest available year
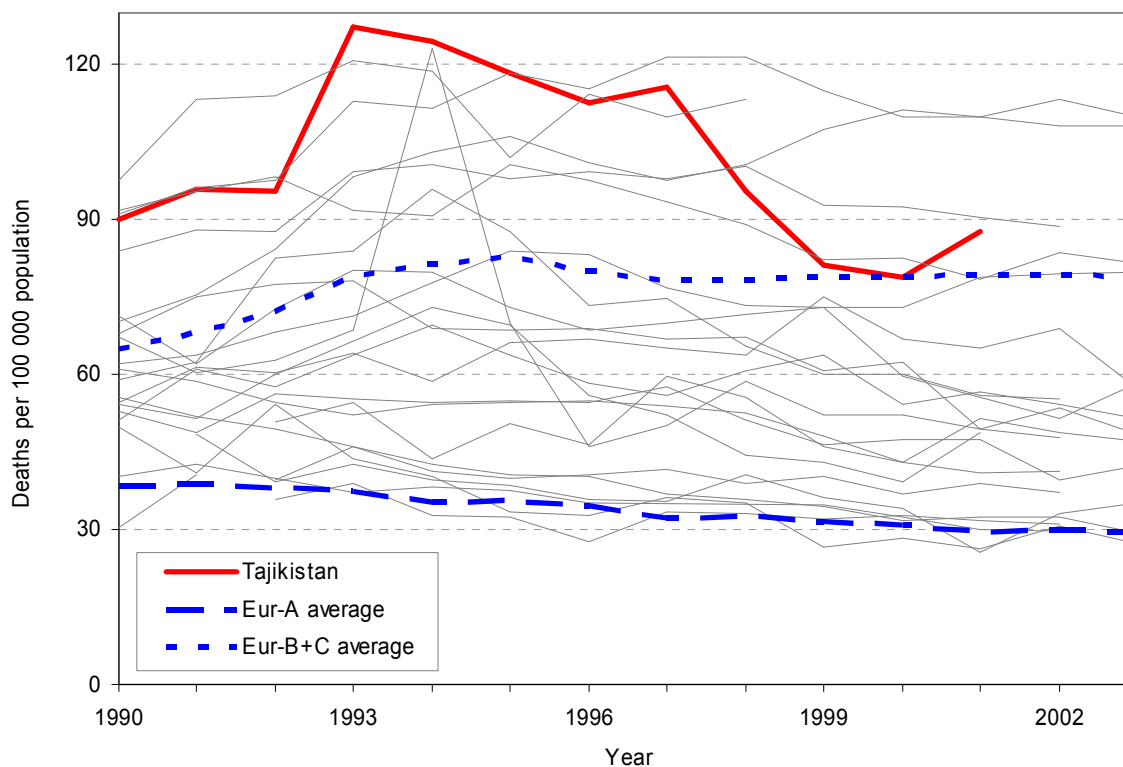
In the 30–44 years age group the situation is similar to the above in that the country performs slightly better than the Eur-B+C average overall, mainly due to considerably less deaths from external causes (Annex. Mortality data). Although the trend closely followed the Eur-B+C average until about 1997,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

In the 45–59 years age group, the situation and trends are very similar (Annex. Mortality data). Mortality from all causes is lower than the Eur-B+C average, particularly as related to deaths from external causes and CVD in males.

The trends in the older age groups are less stable and probably incomplete registration plays a role. The general impression however, is that mortality is at the Eur-B+C average which means relatively higher than in younger adults. This may indicate a relative disadvantage of older people in Tajikistan compared to middle-aged adults.

Main causes of death

With minor exceptions, the rates of the main causes of death in all major age groups are lower than the Eur-B+C averages, though once again data on the causes of mortality should be interpreted with some caution (Figure. Main causes of mortality by sex and age group).

Main causes of mortality by sex and age group in Tajikistan
in comparison with Eur-B+C (Eur-B+C = 100), 2003
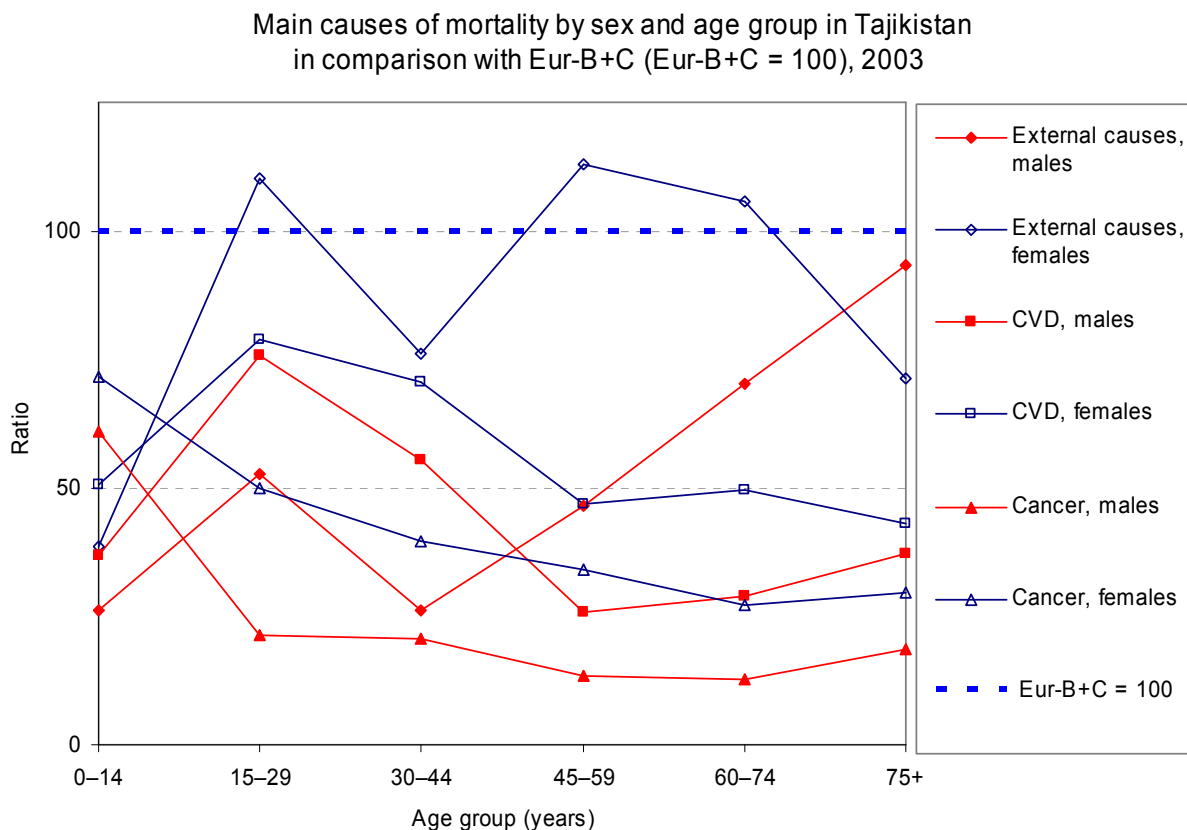
In 2003, noncommunicable diseases (NCD) accounted for about 85% of all deaths in Tajikistan, external causes for about 3%, communicable diseases for about 4% and ill-defined conditions about 8% (Annex. Selected mortality). In the Eur-B+C group the average proportion of deaths from external causes is considerably larger (10.6%) but deaths due to ill-defined conditions and infectious diseases are lower. The proportion of deaths due to non-communicable diseases is the same.

CVD

CVD are the main causes of death in Tajikistan (2003), responsible for 57% of overall mortality, equivalent to the Eur-B+C average. About half of all CVD mortality is due to ischaemic heart disease. The proportion of deaths attributed to cerebrovascular diseases (8%) is closer to the Eur-A average of 9% than to the 17% Eur-B+C average. This may mean that risk factors for CVD, such as high blood pressure and cholesterol, are at lower levels in Tajikistan. Overall, the Tajik CVD situation is more favourable than that in many other CIS countries. Unfortunately, since 1990 the rates have increased considerably in line with the general Eur-B+C trend, albeit at a lower level, and continue to rise, as in most CIS countries (Figure. SDR for cardiovascular diseases in people of all ages).

SDR for CVD in people of all ages,
Tajikistan, Eur-A and Eur-B+C averages, 1990 to latest available year
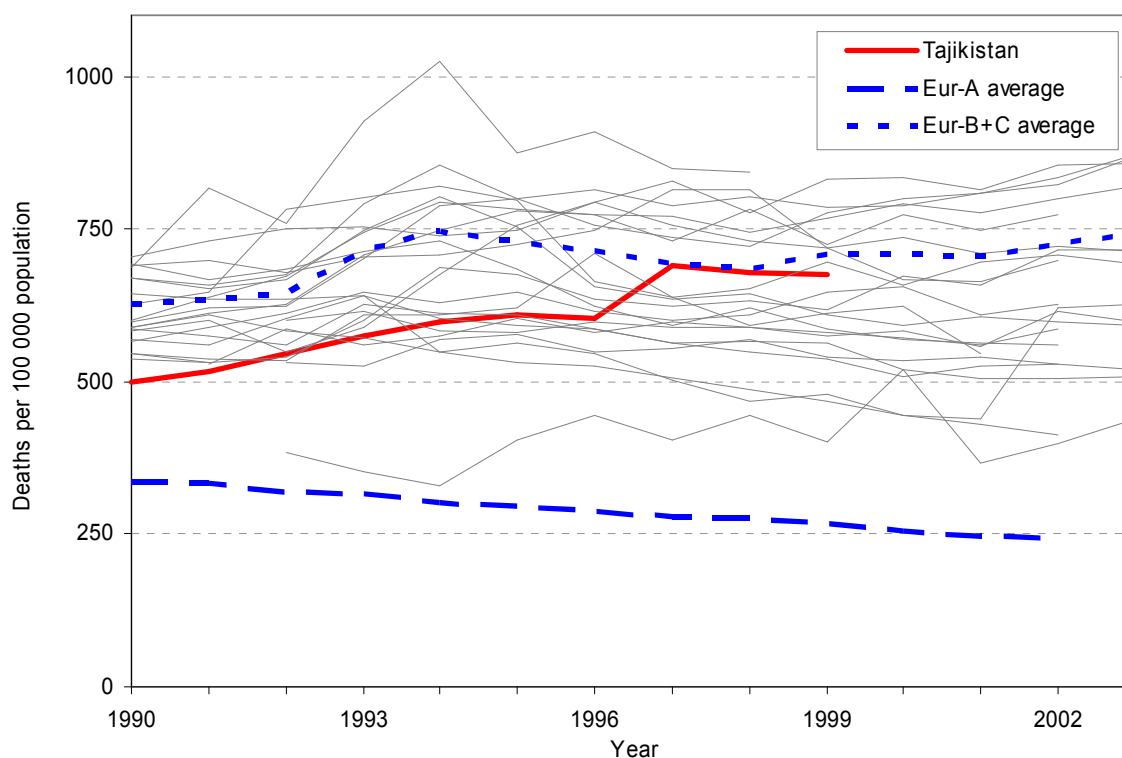
Note : Data for Tajikistan are 5-year moving averages.

Cancer

Cancer mortality is equally distributed across the Region. The rates in Tajikistan are considerably lower than the Eur-B+C and the Eur-A averages. The interpretation of the observation is not straightforward as the possibilities for detailed analyses are limited by the completeness and quality of the registration and coding of cancer deaths, a common problem in central Asian republics (CAR).

Respiratory diseases

Respiratory diseases account for about 11% of total mortality in Tajikistan (2003), about twice the Eur-B+C average, and the same is true for the rate per 100 000 population. The rates may be artificially inflated by coding of other deaths as caused by respiratory diseases (Figure. SDR for respiratory diseases in people of all ages).

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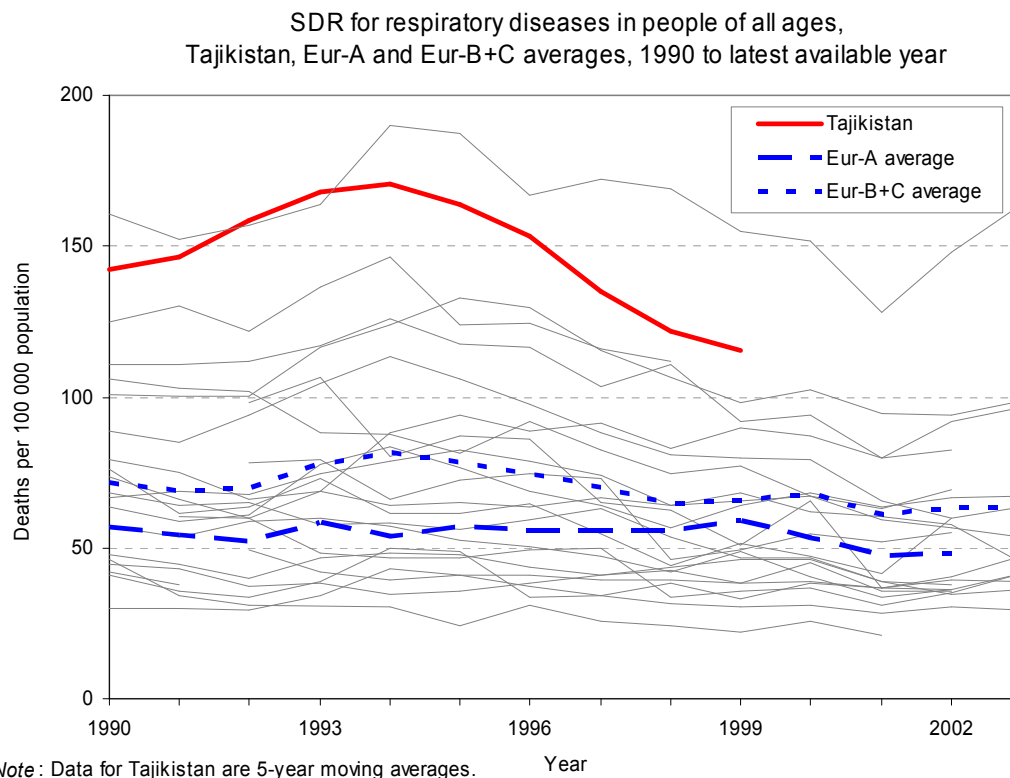Tajikistan, Eur-A and Eur-B+C averages, 1990 to latest available year

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

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 this is also the case in Tajikistan. By 2003, the rate was at the Eur-B+C average. As already mentioned, a considerable part of the problem is excess mortality from chronic liver disease and cirrhosis. While a history of high morbidity from hepatitis may play a role, it is probably compounded by high alcohol consumption (Figure. SDR for diseases of the digestive system in people of all ages).

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

Note : Data for Tajikistan are 5-year moving averages.
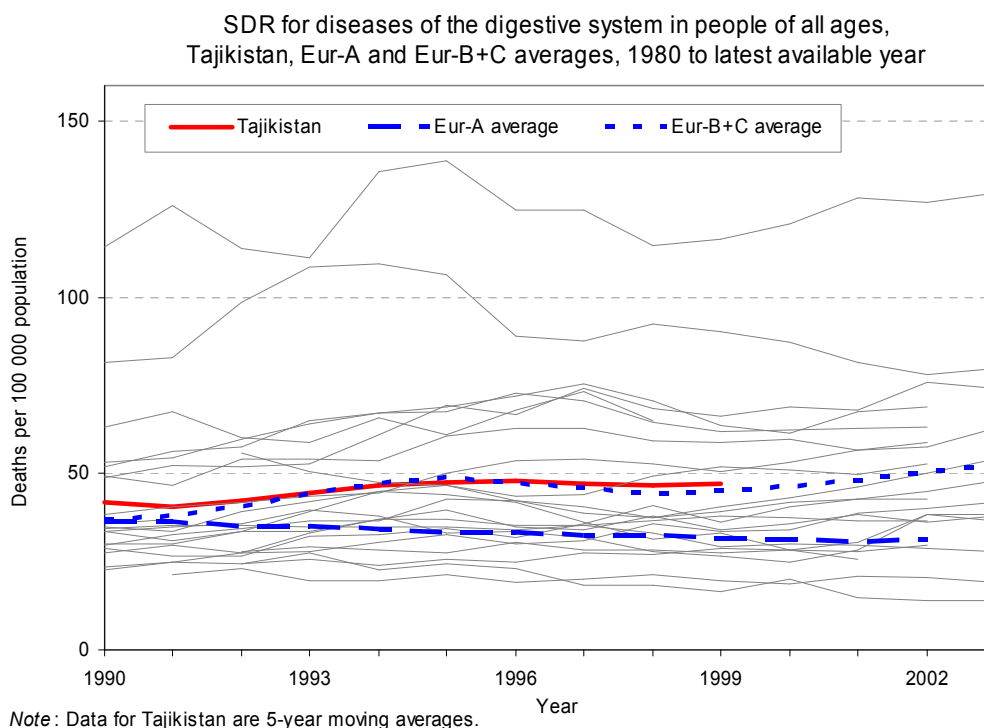
External causes

External causes of injury include unintentional injuries (transport injury, poisoning, injury due to falls, fires and drowning and other) as well as intentional injuries (self-inflicted injuries, injuries due to violence and war and other). Overall external causes are responsible for 33 deaths per 100 000 population in Tajikistan (2003), while the Eur-B+C average is 140 and the Eur-A average 40 (Figure. SDR for external causes of injury and poisoning in people of all ages).

SDR for external causes of injury and poisoning in people of all ages,
Tajikistan, Eur-A and Eur-B+C averages, 1980 to latest available year

Note: Data for Tajikistan are 5-year moving averages.
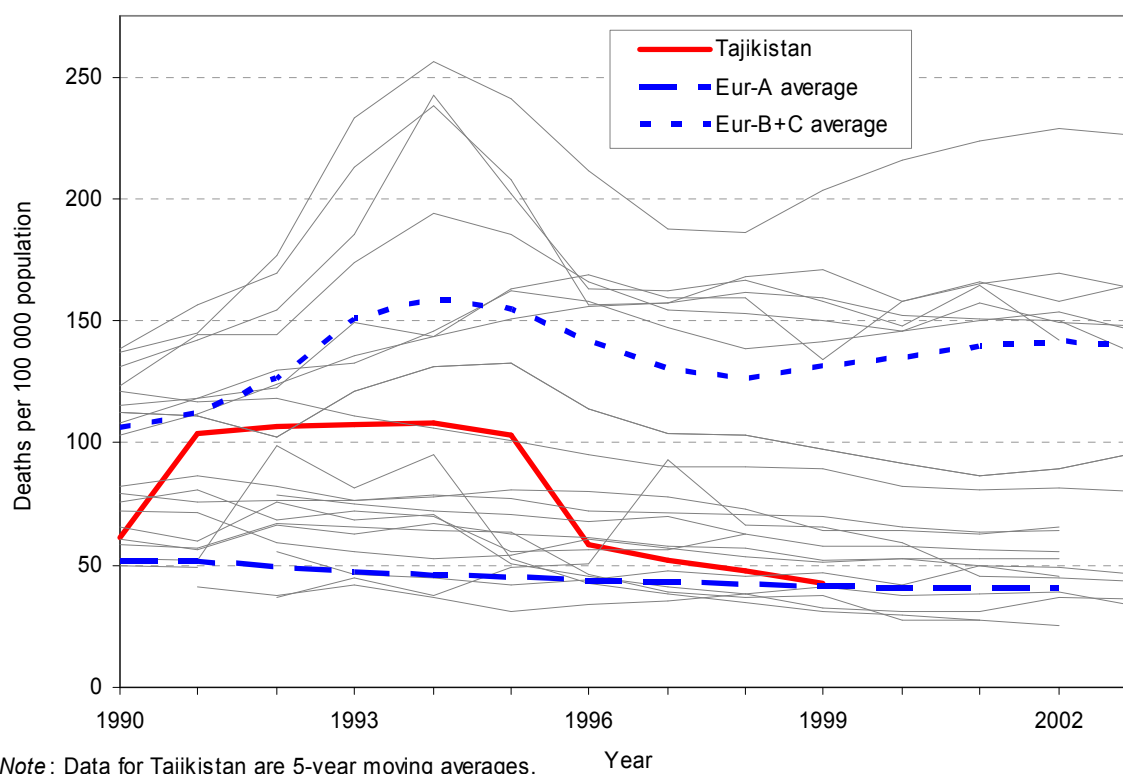
The low level of violent deaths is probably the most salient feature of middle-age mortality in Tajikistan. In contrast to the Eur-B+C average, the rates tended to decrease from 1990 to 2003 (discounting for the 1992–1997 civil war and the typical CIS mortality peak around 1995). Tajikistan's advantage over the Eur-B+C average is large and important for understanding the health situation and prospects. The causes can be attributed to the economic depression, which probably caused the decrease in transport accidents, or the county-specific trend away from an urban, industrial way of life to a more agricultural basis. The latter may explain to a certain extent why all other external causes have decreased too, for example accidental poisoning, suicides and homicides. While the underlying social trend may be the precipitating current cause, it is important to note that the baseline rates of all causes of violent death were low in the 1980s and probably before that time (Figure. SDR for transport accidents in people of all ages; Figure. SDR for homicides in people of all ages; Figure. SDR for suicides and self-inflicted injury in people of all ages).

SDR for transport accidents in people of all ages,
Tajikistan, Eur-A and Eur-B+C averages, 1980 to latest available year

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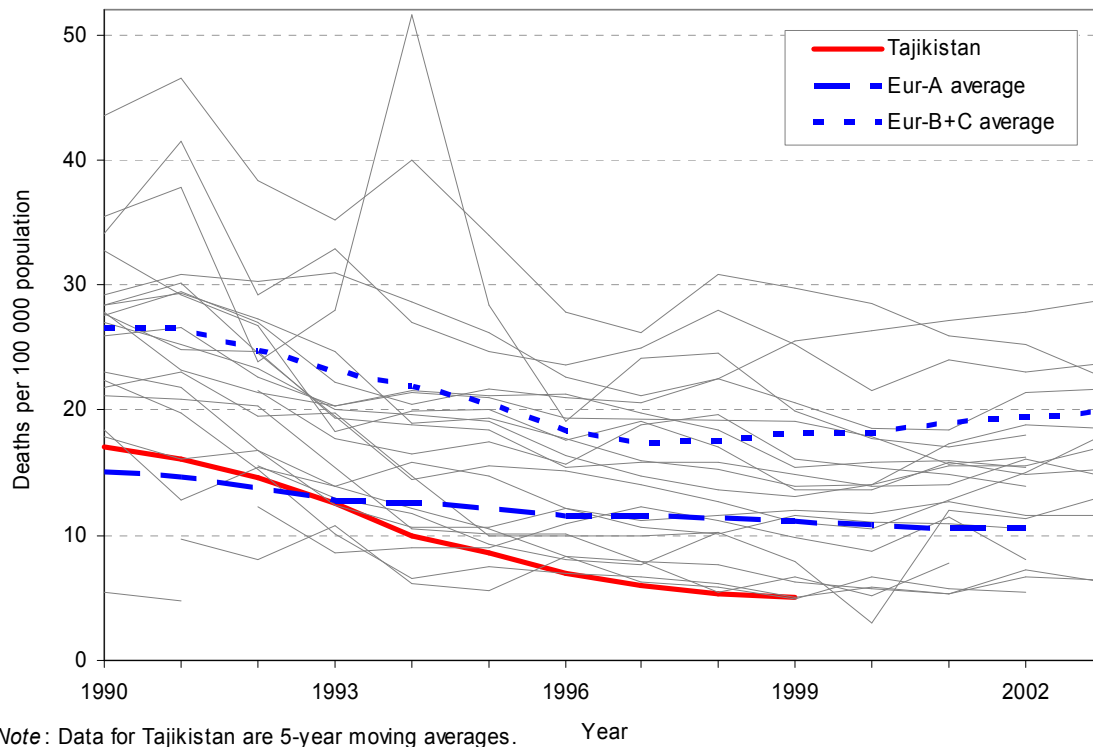
SDR for homicide in people of all ages,
Tajikistan, Eur-A and Eur-B+C averages, 1980 to latest available year

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

SDR for suicide and self-inflicted injury in people of all ages,
Tajikistan, Eur-A and Eur-B+C averages, 1980 to latest available year

Note : Data for Tajikistan are 5-year moving averages.
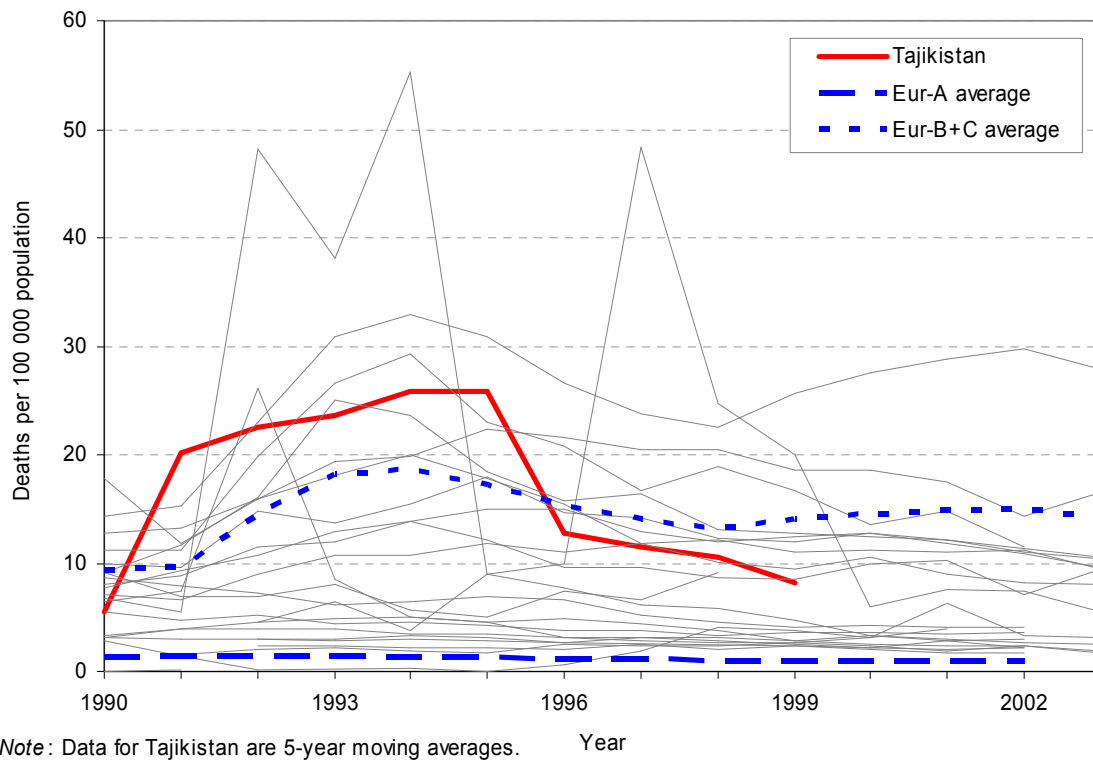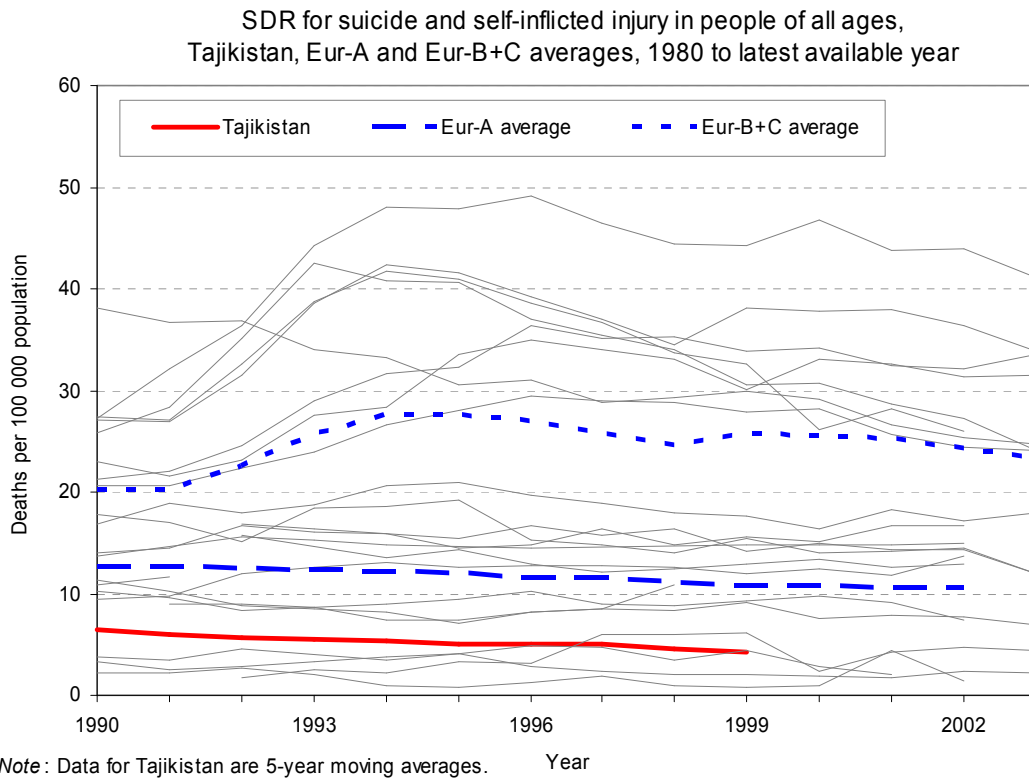
Tuberculosis

Mortality from TB has clearly increased in Tajikistan since 1990, closely following the general trend in Eur-B+C (Figure. SDR for TB in people aged 0-64 years).

SDR for TB in people aged 0–64 years,
Tajikistan, Eur-A and Eur-B+C averages, 1980 to latest available year

Note : Data for Tajikistan are 5-year moving averages.
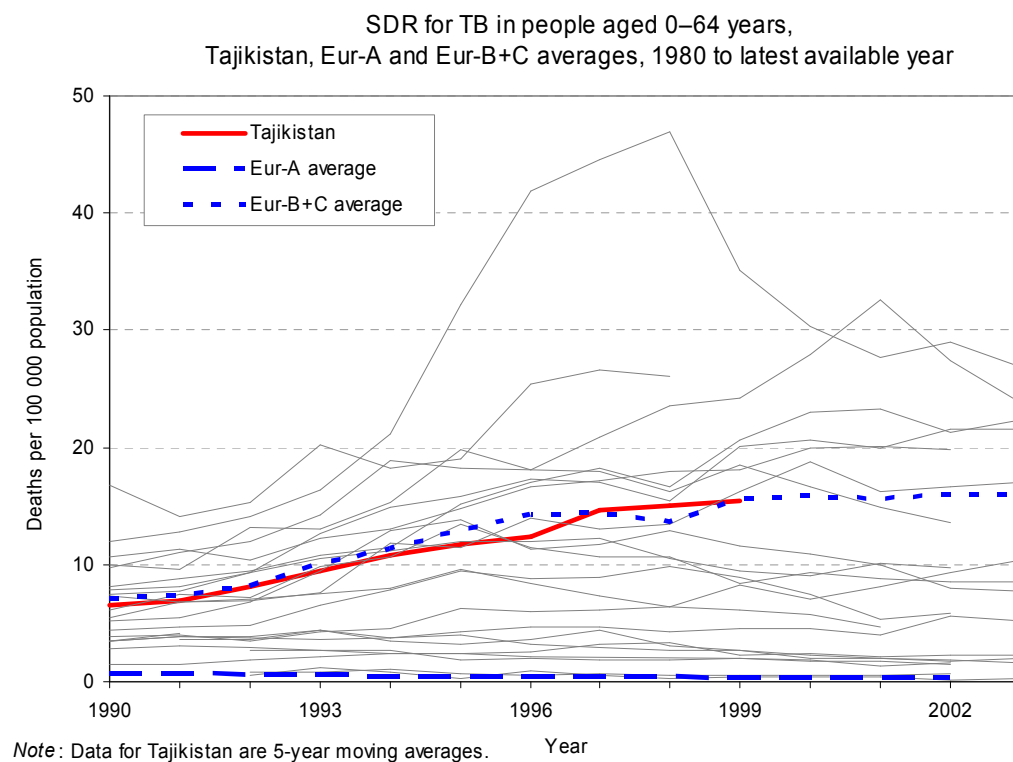
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Annexes

Annex. Age pyramid

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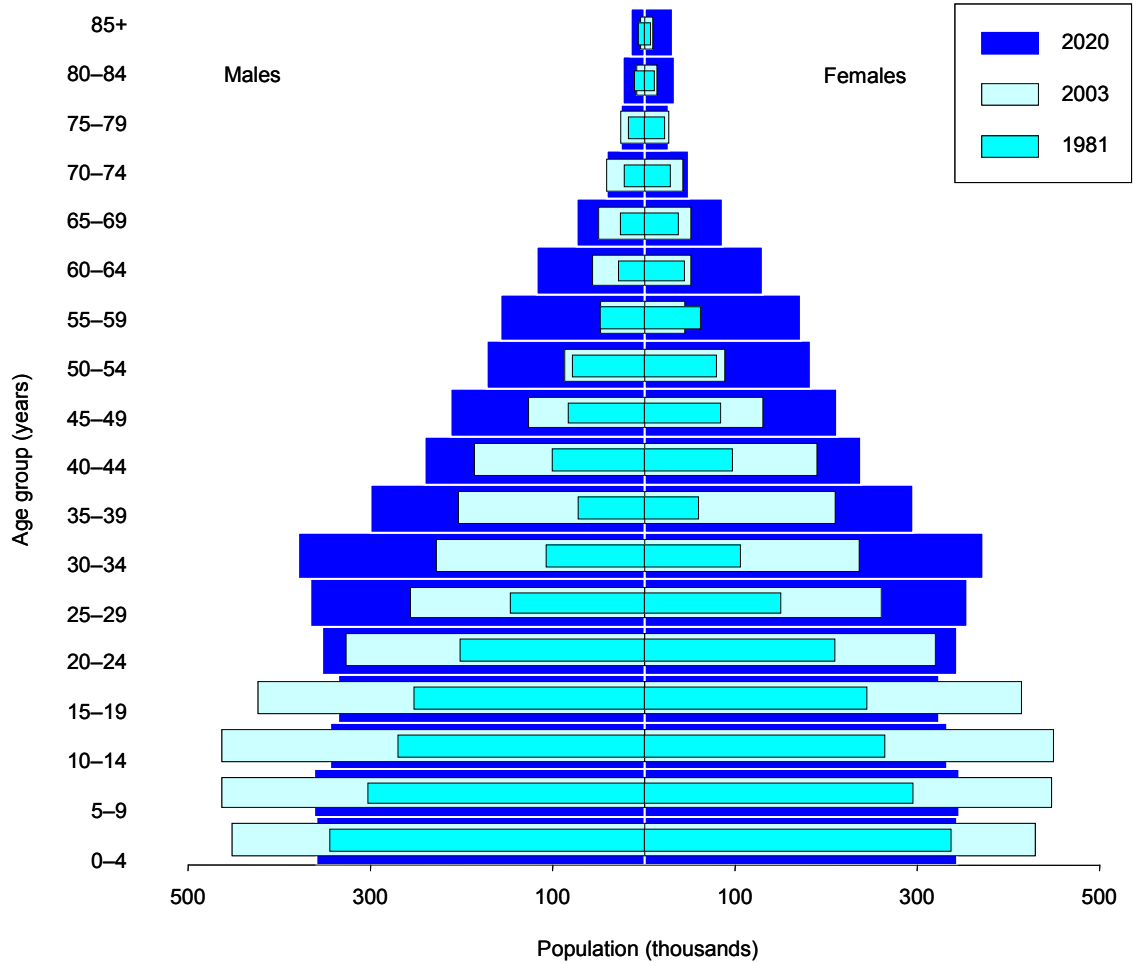
Sources: WHO Regional Office for Europe (2005) and United Nations (2005).

Annex. Selected mortality

Selected mortality in Tajikistan compared with Eur-A averages

Condition	SDR per 100 000		Excess mortality in Tajikistan (%)	Total deaths in Tajikistan (%)	Total deaths in Eur-B+C (%)	Eur-A average	Excess Tajikistan to Eur-A (%)	Total deaths in Eur-A (%)
	Tajikistan (2001)	Eur-B+C average (2003)						
Selected non–communicable conditions	832.8	1044.9	–20.3	80.3	79.6	533.8	56.0	82.4
Cardiovascular diseases	589.5	741.8	–20.5	56.9	56.5	243.4	142.2	37.6
Ischaemic heart disease	260.7	362.7	–28.1	25.1	27.6	95.9	171.8	14.8
Cerebrovascular diseases	80.6	221.7	–63.6	7.8	16.9	61.1	31.9	9.4
Diseases of pulmonary circulation and other heart disease	20.2	68.9	–70.7	1.9	5.3	56.6	–64.3	8.7
Malignant neoplasms	70.8	172.0	–58.8	6.8	13.1	181.5	–61.0	28.0
Trachea/bronchus/lung cancer	5.0	33.9	–85.3	0.5	2.6	37.1	–86.5	5.7
Female breast cancer	7.3	22.1	–67.0	0.7	1.7	27.0	–73.0	4.2
Colon/rectal/anal cancer	2.9	19.0	–84.7	0.3	1.4	20.7	–86.0	3.2
Prostate	3.9	14.3	–72.7	0.4	1.1	25.1	–84.5	3.9
Respiratory diseases	111.3	63.1	76.4	10.7	4.8	47.8	132.8	7.4
Chronic lower respiratory diseases	35.3	31.2	13.1	3.4	2.4	20.2	74.8	3.1
Pneumonia	44.9	23.6	90.3	4.3	1.8	16.2	177.2	2.5
Digestive diseases	51.1	52.3	–2.3	4.9	4.0	30.8	65.9	4.8
Chronic liver disease and cirrhosis	32.3	32.0	0.9	3.1	2.4	12.6	156.3	1.9
Neuropsychiatric disorders	10.2	15.7	–35	1.0	1.2	30.3	–66.3	4.7
Communicable conditions	37.0	20.8	77.9	3.6	1.6	8.4	340.5	1.3
AIDS/HIV	0.0	0.8	–100.0	0.0	0.1	1.1	–100.0	0.2
External causes	32.9	139.6	–76.4	3.2	10.6	40.3	–18.4	6.2
Unintentional	26.1	102.2	–74.5	2.5	7.8	28.7	–9.1	4.4
Road traffic injuries	4.1	14.7	–72.1	0.4	1.1	9.9	–58.6	1.5
Falls	1.3	7.5	–82.7	0.1	0.6	6.1	–78.7	0.9
Intentional	6.8	37.4	–81.8	0.7	2.9	11.6	–41.4	1.8
Self–inflicted (suicide)	3.4	23.2	–85.3	0.3	1.8	10.6	–67.9	1.6
Violence (homicide)	3.4	14.2	–76.1	0.3	1.1	1.0	240.0	0.2
Ill–defined conditions	78.0	64.0	21.9	7.5	4.9	20.9	273.2	3.2
All causes	1036.9	1312.2	–21.0	100.0	100.0	647.8	60.1	100.0

Annex. Mortality data

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

Causes of death	Sex	Tajikistan (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	184.0	–8.4	49.4	–2.4	151.7	–3.8
	M	190.3	–8.8	55.3	–2.5	170.5	–3.9
	F	177.5	–7.8	43.3	–2.4	131.9	–3.8
Infectious and parasitic diseases	M	39.8	–10.7	1.4	–1.1	10.9	–7.0
	F	40.6	–9.4	1.1	–3.0	9.5	–6.6
Intestinal infectious diseases	M	32.9	–10.3	0.2	–0.7	5.1	–8.2
	F	33.6	–9.1	0.1	–7.3	4.7	–7.9
Malignant neoplasms	M	1.9	5.4	3.3	–1.8	5.1	–1.9
	F	2.1	49.0	2.6	–1.8	4.2	–1.9
Cardiovascular diseases	M	0.9	–12.6	1.4	–3.1	3.3	1.1
	F	1.0	–12.7	1.3	–2.5	2.6	0.1
Respiratory diseases	M	64.7	–10.2	1.4	–4.3	35.9	–5.0
	F	60.8	–9.8	1.0	–4.2	30.7	–5.0
Pneumonia	M	27.1	–9.9	0.5	–6.0	20.9	–4.9
	F	26.2	–9.3	0.4	–5.1	17.9	–4.7
Certain conditions originating in perinatal period	M	295.2	–8.2	255.3	–2.1	607.6	–2.7
	F	267.8	–5.8	202.3	–1.6	427.5	–2.7
Congenital malformations & chromosomal abnormalities	M	10.4	5.5	11.6	–2.9	24.2	–2.8
	F	9.4	7.5	10.0	–3.3	21.0	–2.6
Ill-defined causes	M	14.3	–3.9	5.0	–3.9	5.6	–0.6
	F	13.1	–3.9	3.4	–4.2	4.6	–1.0
External causes of injury & poisoning	M	17.7	–4.7	7.0	–4.0	29.0	–3.4
	F	12.9	–1.4	4.6	–3.2	18.1	–3.1
Road traffic injuries	M	1.7	–4.9	2.5	–4.5	4.7	–2.6
	F	0.8	–7.1	1.7	–4.8	3.0	–1.6

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

Causes of death	Sex	Tajikistan (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	106.3	–5.2	56.0	–2.3	161.0	–0.9
	M	125.1	–5.7	82.0	–2.3	241.7	–1.0
	F	87.6	–4.3	29.3	–2.2	79.0	–0.6
Infectious and parasitic diseases	M	20.3	–1.0	1.2	1.5	12.3	3.0
	F	13.5	–6.1	0.8	1.9	5.1	2.5
Malignant neoplasms	M	6.6	–1.9	6.2	–1.0	8.8	–1.9
	F	6.0	–2.6	4.7	–1.4	7.7	–1.9
Cardiovascular diseases	M	9.3	–3.7	4.1	–2.4	17.6	0.0
	F	8.0	–4.5	2.3	–2.0	7.3	–0.9
Respiratory diseases	M	12.5	–5.3	1.4	–3.6	6.9	0.2
	F	9.8	–6.6	0.9	–2.7	3.8	–1.1
Digestive diseases	M	7.5	–6.6	0.9	–3.5	8.0	3.0
	F	6.1	–1.9	0.5	–3.8	3.7	3.1
Ill-defined causes	M	14.0	–4.0	4.0	–3.1	11.6	7.1
	F	5.7	–7.4	1.4	–1.3	3.3	5.8
External causes	M	34.7	–9.7	58.3	–1.4	162.4	–1.6
	F	18.4	0.7	14.4	–1.6	36.9	–0.2
Road traffic injuries	M	3.2	–9.3	28.5	–1.3	27.8	–1.5
	F	1.4	–2.9	7.3	–1.4	8.0	0.3
Accidental drowning	M	2.9	–6.0	1.3	–2.2	10.8	–3.9
	F	2.3	13.5	0.2	–2.1	1.9	–2.2
Accidental poisoning	M	2.3	–3.9	2.8	0.0	19.1	3.3
	F	1.4	29.5	0.7	0.8	4.4	2.5
Self-inflicted (suicide)	M	4.2	–4.2	12.7	–1.8	36.8	0.0
	F	3.6	3.8	3.1	–2.2	5.8	–1.3

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

Causes of death	Sex	Tajikistan (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	235.3	–6.0	120.3	–2.5	453.8	–0.7
	M	272.0	–6.8	161.6	–2.6	700.0	–0.8
	F	199.5	–4.6	78.5	–2.1	215.6	–0.2
Malignant neoplasms	M	22.2	–4.3	27.6	–2.3	40.2	–2.8
	F	30.9	0.6	31.3	–2.0	43.8	–1.4
Trachea/bronchus/lung cancer	M	1.3	3.0	5.0	–3.4	7.3	–4.2
	F	1.5	–1.9	2.8	–0.6	2.2	–1.0
Female breast cancer							
	F	6.5	12.8	10.0	–2.6	10.0	–2.3
Cardiovascular diseases	M	41.8	–8.0	26.1	–2.5	158.6	–0.4
	F	34.5	–7.1	10.4	–2.1	45.3	0.0
Ischaemic heart disease	M	21.8	–9.2	11.8	–3.1	73.7	–2.2
	F	13.2	–6.6	2.4	–2.7	14.4	–1.3
Cerebrovascular diseases	M	3.9	–9.4	4.4	–3.2	24.6	–0.4
	F	5.1	–6.5	3.6	–2.5	10.6	–1.3
Respiratory diseases	M	22.5	–7.9	3.9	–3.5	34.3	0.9
	F	24.8	–6.9	2.2	–2.0	9.8	0.8
Digestive diseases	M	23.2	–6.0	12.6	–2.4	50.2	1.4
	F	12.5	–6.1	5.4	–1.7	19.4	4.1
External causes	M	61.8	–9.1	58.8	–1.2	299.5	–1.9
	F	23.3	–0.3	15.1	–1.8	58.9	–1.0
Road traffic injuries	M	5.3	–11.7	16.0	–0.5	31.4	–1.7
	F	3.1	–5.4	3.9	–2.0	7.1	–0.5
Self-inflicted (suicide)	M	6.4	–6.2	21.2	–1.5	54.9	–2.4
	F	4.4	9.1	5.8	–2.2	7.9	–2.5

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

Causes of death	Sex	Tajikistan (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	725.5	–4.9	435.6	–1.3	1294.9	–0.6
	M	808.8	–5.9	580.1	–1.4	1981.7	–0.6
	F	638.8	–3.2	293.3	–1.0	698.9	–0.5
Malignant neoplasms	M	83.9	–4.5	218.2	–1.2	323.2	–1.9
	F	87.4	–1.7	155.0	–1.0	186.1	–0.5
Trachea/bronchus/lung cancer	M	11.9	–2.0	65.9	–1.5	101.4	–2.9
	F	3.5	–1.9	21.8	3.4	15.4	1.0
Female breast cancer							
	F	14.4	–0.6	44.0	–2.2	45.3	0.1
Cardiovascular diseases	M	369.7	–5.3	156.4	–2.6	793.1	–0.1
	F	306.8	–2.5	50.9	–2.5	271.7	–0.6
Ischaemic heart disease	M	190.9	–5.8	86.2	–3.3	435.3	–0.7
	F	117.3	–3.4	17.8	–3.4	111.1	–0.6
Cerebrovascular diseases	M	37.8	–9.7	23.7	–2.6	168.6	–0.9
	F	46.9	–6.5	14.5	–2.1	88.4	–1.4
Respiratory diseases	M	59.1	–9.0	20.3	–1.7	108.7	–1.4
	F	49.9	–7.1	10.2	–1.3	24.5	–0.7
Digestive diseases	M	73.3	–5.1	49.6	–0.8	129.7	0.7
	F	55.4	–1.0	20.3	–0.7	57.3	1.9
External causes	M	54.8	–9.5	62.8	–1.0	409.2	–0.9
	F	30.5	3.4	20.9	–0.9	89.1	–1.1
Road traffic injuries	M	11.3	–5.6	13.0	–1.3	28.5	–1.8
	F	2.4	–9.9	4.1	–2.1	7.5	–1.4
Self-inflicted (suicide)	M	5.1	–11.8	23.1	–1.1	68.1	–2.4
	F	3.9	0.3	8.5	–1.2	10.2	–3.4

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

Causes of death	Sex	Tajikistan (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	2888.1	−1.0	1570.9	−1.9	3411.7	−0.1
	M	3284.7	−1.6	2156.9	−2.1	4996.4	0.1
	F	2503.0	−0.5	1069.2	−1.9	2339.0	−0.6
Malignant neoplasms	M	290.8	−1.2	851.3	−1.4	1002.5	−0.8
	F	217.7	3.2	439.8	−1.1	438.9	−0.7
Trachea/bronchus/lung cancer	M	25.1	−5.2	261.8	−1.9	321.7	−1.5
	F	14.5	7.3	59.0	0.2	37.1	−1.4
Female breast cancer							
	F	18.2	6.3	79.7	−1.6	68.7	1.3
Cardiovascular diseases	M	2042.9	−1.1	744.9	−3.6	2903.0	0.6
	F	1594.0	−1.3	335.7	−3.9	1507.8	−0.3
Ischaemic heart disease	M	902.2	−3	381.3	−4.2	1582.2	1.2
	F	653.3	−2.5	133.5	−4.6	731.4	0.5
Cerebrovascular diseases	M	314.5	−3.8	143.3	−3.7	833.7	0.2
	F	240.5	−5.5	86.7	−4.1	528.9	−0.8
Respiratory diseases	M	330.6	−4.3	144.0	−3.5	303.0	−2.4
	F	240.5	−2.6	62.5	−2.4	68.6	−3.6
Digestive diseases	M	206.5	3.4	111.6	−1.6	193.0	0.1
	F	140.7	3.0	54.1	−1.7	94.2	0.2
External causes	M	40.7	−10.2	79.3	−1.4	320.0	1.0
	F	24.1	−1.9	32.1	−2.1	88.7	−0.5
Road traffic injuries	M	8.6	−7.1	14.8	−3.0	24.3	−1.5
	F	4.2	14.6	5.9	−3.4	9.5	−1.0
Self-inflicted (suicide)	M	2.8	−13	24.5	−1.6	60.5	−0.8
	F	2.0	−7.3	8.7	−2.6	12.7	−3.1

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

Causes of death	Sex	Tajikistan (2001)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	10826.1	−0.6	8059.6	−1.0	12338.8	0.0
	M	14433.8	2.0	9832.0	−1.1	14838.0	0.1
	F	9088.9	−1.9	7112.5	−0.9	11421.7	0.0
Malignant neoplasms	M	553.5	8.9	2231.1	−0.4	1489.3	1.2
	F	309.6	7.0	1136.2	−0.4	721.7	0.8
Trachea/bronchus/lung cancer	M	21.0	−10.7	457.1	−0.7	323.5	1.0
	F	14.7	2.9	102.7	1.5	55.6	0.5
Female breast cancer							
	F	20.3	−1.2	159.6	−0.4	92.0	3.1
Cardiovascular diseases	M	9528.9	3.2	4356.2	−2.1	10221.2	0.4
	F	6276.1	−1.0	3577.9	−1.9	8805.6	0.4
Ischaemic heart disease	M	4237.8	1.4	1708.0	−2.2	4925.6	1.4
	F	2853.7	−1.8	1150.0	−2.2	4028.6	1.2
Cerebrovascular diseases	M	1191.6	−4.3	1119.8	−2.5	3004.4	0.7
	F	807.7	−6.6	1026.9	−2.4	2967.6	0.5
Respiratory diseases	M	1469.8	−6.2	1156.5	−2.4	824.1	−2.1
	F	968.5	−6.7	591.9	−2.1	302.3	−3.2
Digestive diseases	M	360.6	12.0	340.3	−1.1	270.4	0.3
	F	267.0	9.0	279.8	−0.4	175.0	1.1
External causes	M	111.7	−5.0	275.0	−0.6	604.2	0.1
	F	51.0	−7.7	187.8	−1.2	172.4	−1.2
Road traffic injuries	M	21.9	−6.1	28.1	−2.2	34.6	−3.1
	F	2.2	−13.8	10.0	−3.1	14.7	−1.7
Self-inflicted (suicide)	M	4.0	−13.7	49.5	−1.6	86.6	−1.1
	F	5.2	−8.6	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).