EUROPE

Highlights on health
in Turkmenistan
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.

Contents

Summary: findings and policy considerations

Life expectancy

According to WHO calculations, a person born in Turkmenistan in 2003 could expect to live 60 years on average: 65 years if female and 56 years if male, the lowest life expectancy (LE) in the WHO European Region. Official LE in Turkmenistan is 2 or 3 years below the Eur-B+C average of 68.8 years, assuming the 1998 level is unchanged. However, the 2003 WHO estimate was considerably lower and about eight years below the Eur-B+C average, meaning that LE in Turkmenistan is probably about 17 years below the Eur-A average of 79.0 years.

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 1998, the regular infant mortality rate in Turkmenistan was very high: 33 deaths per 1000 live births. In 2003 the Eur-B+C average was 19.9 and the best achievement in the group was Lithuania's 6.7. Although trends are very difficult to assess due to the short time series, the data does show that the rate fell by one-third between 1990 and 1997, which is a good achievement, given the difficult period of economic transition in this low-income country.

There are no recent reports of neonatal mortality. The 1997 figure is around 8 per 1000 live births, which would be very good 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 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

In general, mortality rates in Turkmenistan are at the Eur-B+C average, twice as high as the Eur-A average. Mortality rates in children and young adults are above average, mostly due to external causes. However, across all age groups there is no excess mortality from external causes compared to the Eur-B+C average, unlike several other CIS counties. As could be expected, excess mortality is due to communicable, respiratory and digestive diseases. Its most prominent causes are infectious and parasitic diseases, which are 2.5 times the Eur-B+C average and 6 times the Eur-A average.

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, Turkmenistan had approximately 4.9 million people. About 45% of the population live in urban areas, below the Eur-B+C average. The proportion of the population 0 to 14 years old was relatively steady during the 1980s, but has fallen from about 41% of the population in 1990 to 32% in 2005 (projected), and is still one of the highest in Eur-B+C. Conversely, the percentage of Turkmenistan's population over 65 is well below the Eur-B+C average. By 2030, an estimated 8% of Turkmenistan's population will be 65 and over (Annex. Age pyramid). The Turkmen birth rate was among the highest in Eur-B+C in 2003.

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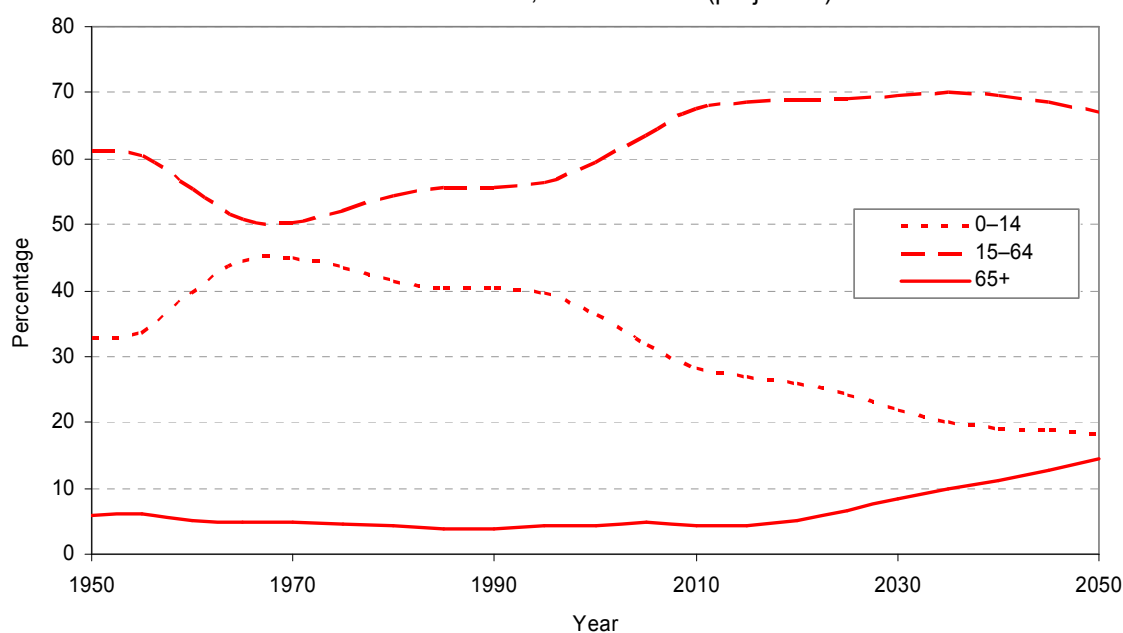
Source: United Nations (2005).

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

Indicators	Turkmenistan	Eur-B+C		
	Value	Average	Minimum	Maximum
Population (in 1000s)	4867.0	–	–	–
0–14 years (%)[b]	39.2	–	–	–
15–64 years (%)[b]	56.9	–	–	–
65+ years (%)[b]	3.8	–	–	–
Urban population (%)[a]	45.1	63.7	25.0	73.3
Live births (per 1000)[b]	21.1	12.8	8.6	27.1
Natural population growth (per 1000)	–	0.8	–7.5	23.0
Net migration (per 1000)	–	1.8	–6.6	2.1

[a] 2002; [b] 1998.

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.
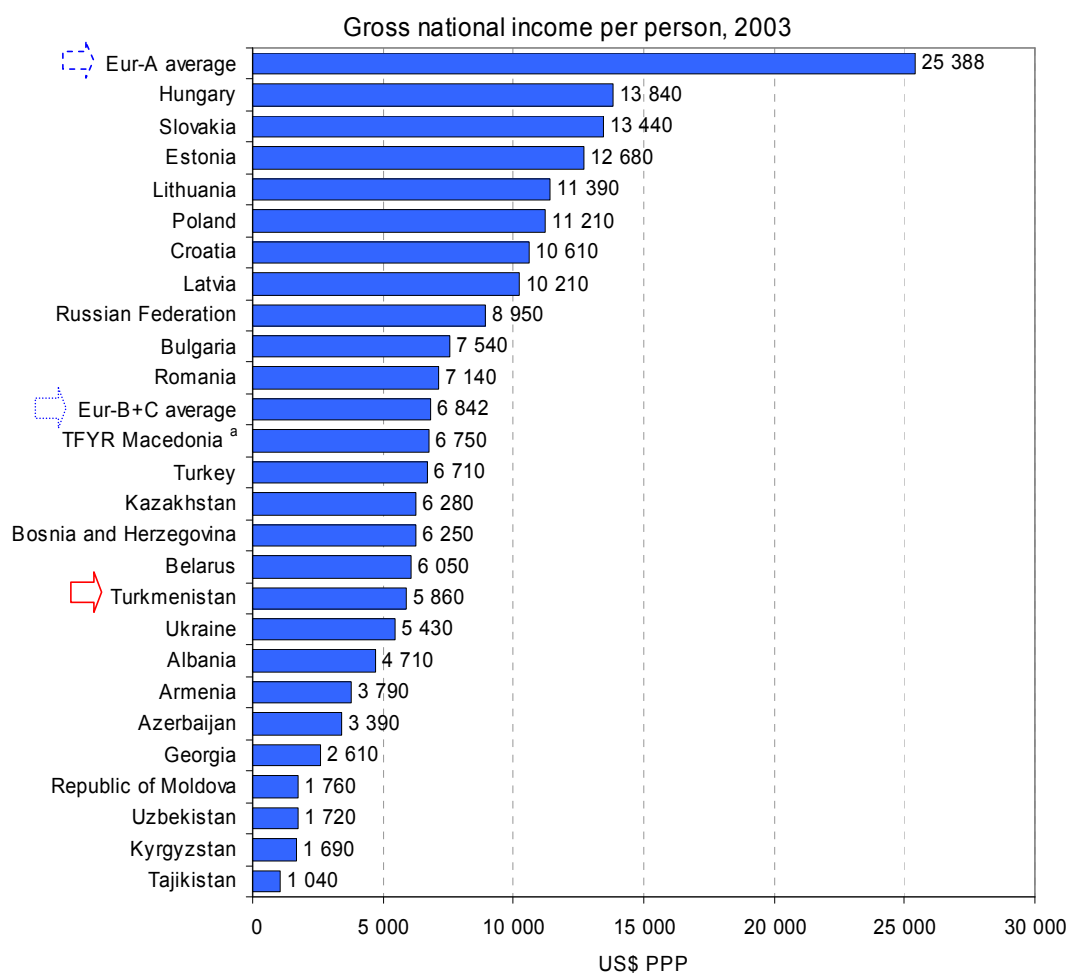
Income: absolute poverty, relative poverty and income distribution

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.

Turkmen per capita gross national income, adjusted for purchasing power parity, was US$ 5860 in 2003, below the Eur B+C average (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).

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

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

Using the World Bank's recommended benchmarks to measure absolute poverty in Europe, household surveys conducted in Turkmenistan between 1988 and 1998 found the proportion of people living in absolute poverty to be increasing. The 1988 survey identified 62.0% of the population as living on US$ 4.30 per day or less, and almost 10% living on US$ 2.15 per day or less. The latest survey in 1998 found that 79.4% lived on US$ 4.30 per day and almost 44% on US$ 2.15 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 Turkmenistan is 40.7 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).

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

According to WHO calculations (2003c), a person born in Turkmenistan in 2003 could expect to live 60 years on average: 65 years if female and 56 years if male, the lowest life expectancy (LE) in the Region. However, the official LE figures based on regular registration of deaths in the country's statistical system differ by 6 years from the WHO estimates – a large gap for a country in the Region – mostly due to under-registration of child mortality. The adult mortality data are believed to be considerably more reliable and are assumed to reflect accurately enough for this report the main pattern of mortality, if not always the levels. For this reason, and because these data are readily available for all age and sex-specific population groups, they are used almost exclusively in the report. The last year for which national mortality statistics have been reported to WHO was 1998. In addition, the available WHO estimates are given to help better assess the true situation, mainly with regard to the indicators of maternal and early childhood mortality.

A less obvious but important problem beyond completeness of death registration is ascertaining the quality of the causes of death certification. There are several indications of gaps that affect the strength of the conclusions and interpretations based on regular mortality statistics, particularly as far as international comparisons are concerned. Keeping this in mind, the mortality data indicate the following, in brief. Official LE in Turkmenistan is 2 or 3 years below the Eur-B+C average of 68.8 years, assuming the 1998 level is unchanged. However, the 2003 WHO LE estimate is considerably lower and about eight years below the Eur-B+C average (2002, calculated exclusively from WHO estimates for all countries in the group). This means that LE in Turkmenistan is probably about 17 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

Source: WHO Regional Office for Europe (2005); WHO (2005).
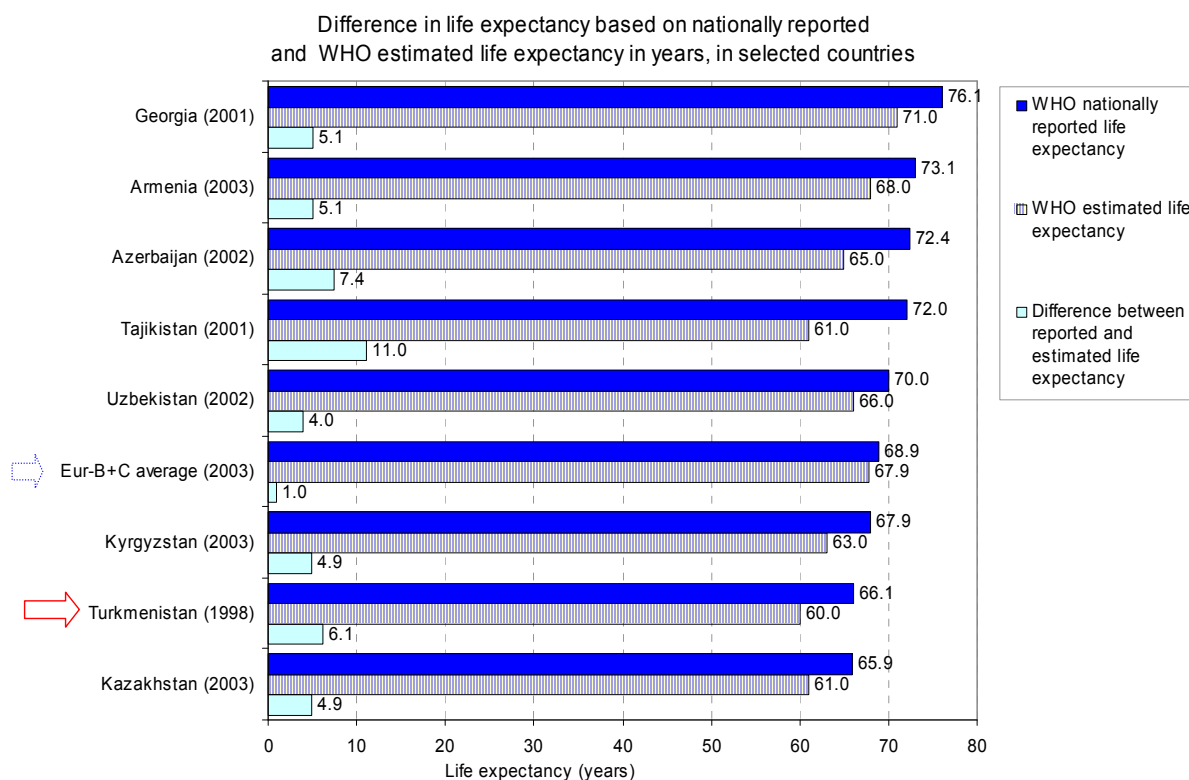
In 1990, official LE in Turkmenistan was about 3 years below the Eur-B+C average of about 70 years. Since independence, there was a typical CIS decline in LE to about 64 years in 1994. By 1997 it was nearly restored to previous levels.

It should be noted also that 7.4 year female-male LE difference in Turkmenistan is relatively small. 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, Turkmenistan, Eur-A and Eur-B+C averages, 1980 to latest available year
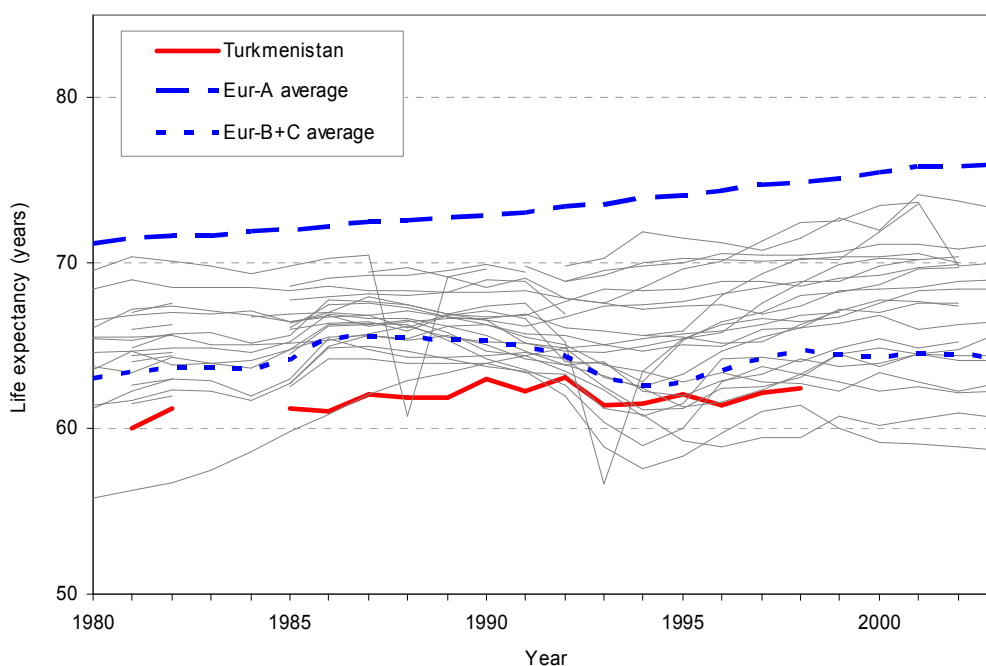
Life expectancy at birth for females, Turkmenistan, Eur-A and Eur-B+C averages, 1980 to latest available year
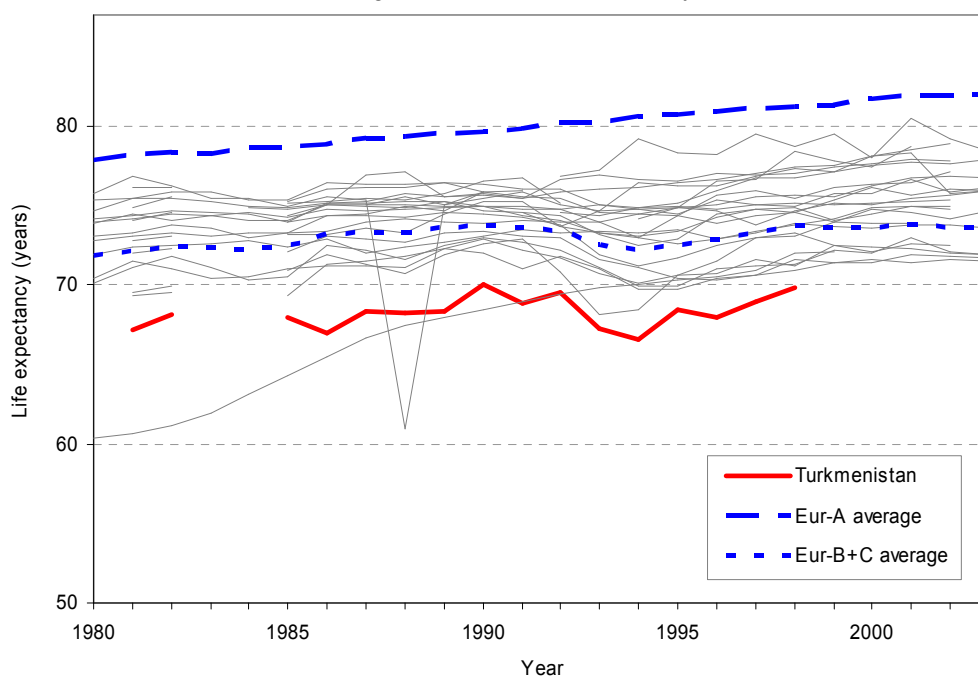
Healthy life expectancy

WHO (2004) estimated for the year 2002 that people in Turkmenistan had 54.4 healthy years on average (57.2 for women, 51.6 for men). This is about 17.2 years less than the Eur-A average of 71.6 years and 6.1 years below the Eur-B+C average of 60.5 years. The best achievement in the region is Sweden's 73.3 years (female 74.8, male 71.9). At 60 years old, healthy life expectancy in Turkmenistan is 11.5 years for women and 9.2 years for men, while in Sweden the figures 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 Turkmenistan this is 9.7 years for women and 7.1 years for men. The estimates for Sweden are 7.9 for women and 6.2 for men (Figure.LE and HALE in Turkmenistan; Figure. LE and HALE).

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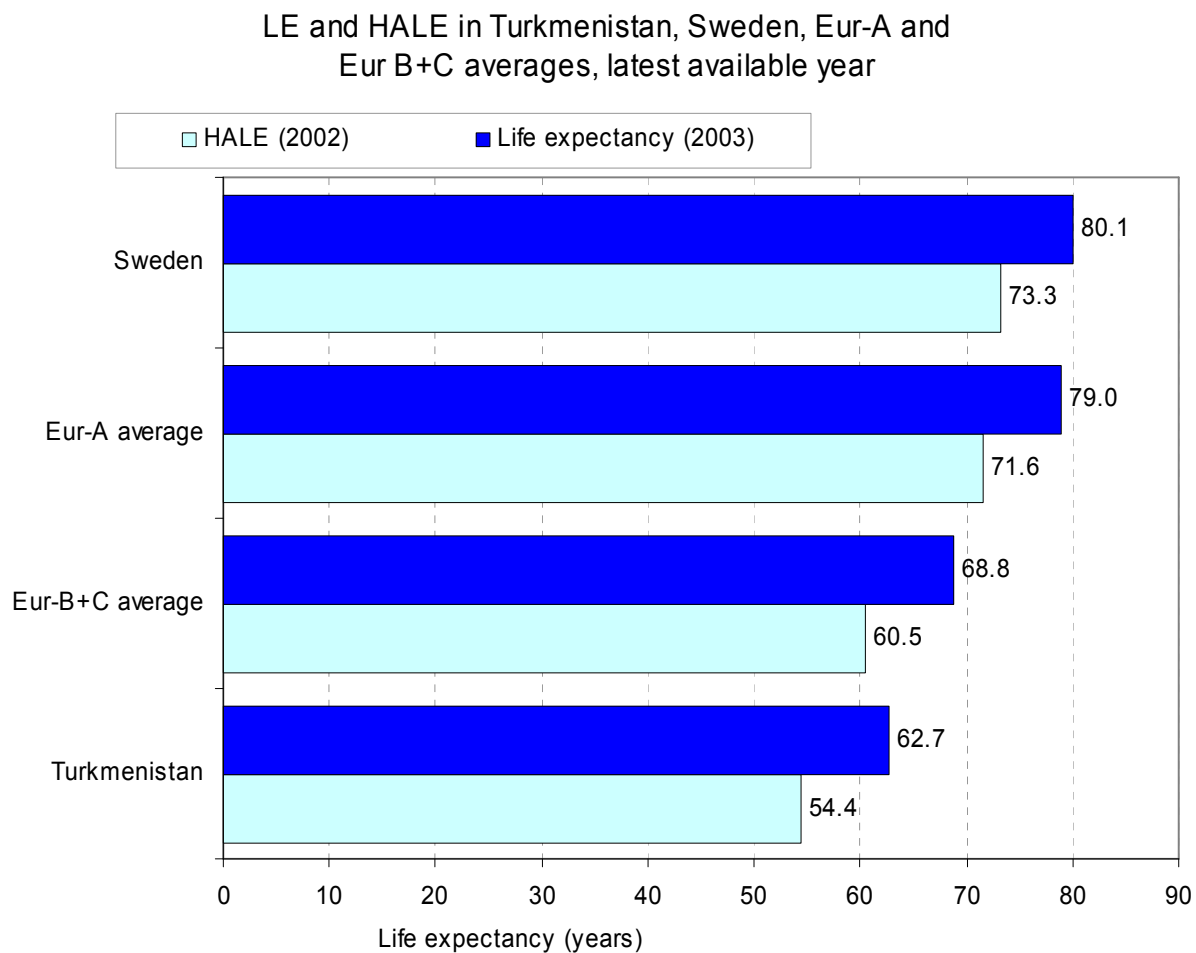
Note : data for life expectancy for Sweden is 2002.

LE and HALE, Turkmenistan, 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

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 Turkmenistan. Cardiovascular diseases and unintentional injuries account for the highest burden of disease both among males and cardiovascular diseases and neuropsychiatric conditions on 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 Turkmenistan (2002)

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Cardiovascular diseases	22.4	Cardiovascular diseases	21.7
2	Unintentional injuries	12.0	Neuropsychiatric conditions	17.5
3	Respiratory infections	11.5	Respiratory infections	10.6
4	Neuropsychiatric conditions	11.1	Infectious and parasitic diseases	8.5
5	Infectious and parasitic diseases	10.2	Unintentional injuries	6.7
6	Digestive diseases	6.8	Digestive diseases	5.9
7	Intentional injuries	4.6	Malignant neoplasms	4.2
8	Perinatal conditions	4.2	Sense organ diseases	3.8
9	Malignant neoplasms	3.8	Nutritional deficiencies	3.3
10	Respiratory diseases	2.8	Perinatal conditions	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 on the male and female Turkmen populations. According to DALYs, alcohol and tobacco use place the greatest burdens of disease on the male Turkmen population and high BMI and high blood pressure on females.

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

Rank	Males		Females	
	Risk factors	Total DALYs (%)	Risk factors	Total DALYs (%)
1	Alcohol	8.7	High BMI	8.4
2	Tobacco	8.5	High blood pressure	8.1
3	High BMI	6.7	High cholesterol	4.7
4	High blood pressure	6.4	Childhood and maternal underweight	4.5
5	High cholesterol	6.2	Indoor smoke from solid fuels	3.7
6	Childhood and maternal underweight	4.4	Unsafe water, sanitation, and hygiene	3.3
7	Indoor smoke from solid fuels	3.6	Iron deficiency	2.8
8	Unsafe water, sanitation, and hygiene	3.1	Alcohol	2.5
9	Low fruit and vegetable intake	2.9	Low fruit and vegetable intake	2.4
10	Physical inactivity	2.6	Physical inactivity	2.3

Source: Background data from WHO (2003c).

Mortality

Infant, neonatal and child mortality

In 1998, the regular infant mortality rate in Turkmenistan was very high: 33 deaths per 1000 live births. Trends are very difficult to assess due to the short time series, nevertheless, the data show that the rate fell by one-third between 1990 and 1997, a good achievement given the difficult period of economic transition in this low-income country. However, in 2002, WHO estimated that for every 1000 live births in Turkmenistan, there was a probability that 55 children would die before age 5. The 2002 WHO estimate for neighbouring Uzbekistan was about 32 deaths under 5 years of age per 1000 live births. In 2003, the Eur-B+C average was 19.9 and the lowest WHO estimates for Eur-B+C countries were Lithuania's 6.7 (2003) and Estonia's and Slovakia's 8.0 (2002).

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. Whether Turkmenistan reaches the MDG by 2015 is uncertain, according to WHO estimates, as extrapolation of the current WHO figures is not certain and there are no national data available.

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

There are no recent reports of neonatal mortality. The 1997 figure of around 8 per 1000 live births 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 3 or 4 per 1000 live births.

As mentioned, in 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 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 Turkmenistan based on
nationally reported data and WHO estimates to assure comparability

Indicator	Nationally reported [a]	WHO estimates
Infant mortality per 1000 live births (MDG indicator)	33 (1998)	51 (2000)[b]
Neonatal mortality per 1000 live births, 2000	8 (1998)	35 (2000)[c]
Under-5 mortality per 1000 live births (MDG indicator)	53 (1998)	102 (93–112) (2003)[c]
Maternal mortality per 100 000 live birth, 2000 (MDG indicator)	44 (1996)	31 (2000)[c]

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

The data show that regularly reported under-five mortality in Turkmenistan is about one-half the likely real rate. As under-registration of child deaths mostly occurs for under-one-year-olds, this discrepancy is consistent with the infant and neonatal mortality data in the table, indirectly confirming that infant and neonatal mortality have been considerably under-reported. More importantly, WHO estimates that under-five mortality has actually been increasing in 2000–2003 at an average annual rate of around 1%. The respective rate for the Region as a whole has been falling by around 3.5% per year. This deterioration in Turkmenistan is naturally a serious concern and requires further exploration. In any case it is not common for the CIS countries with high child mortality (WHO, 2005).
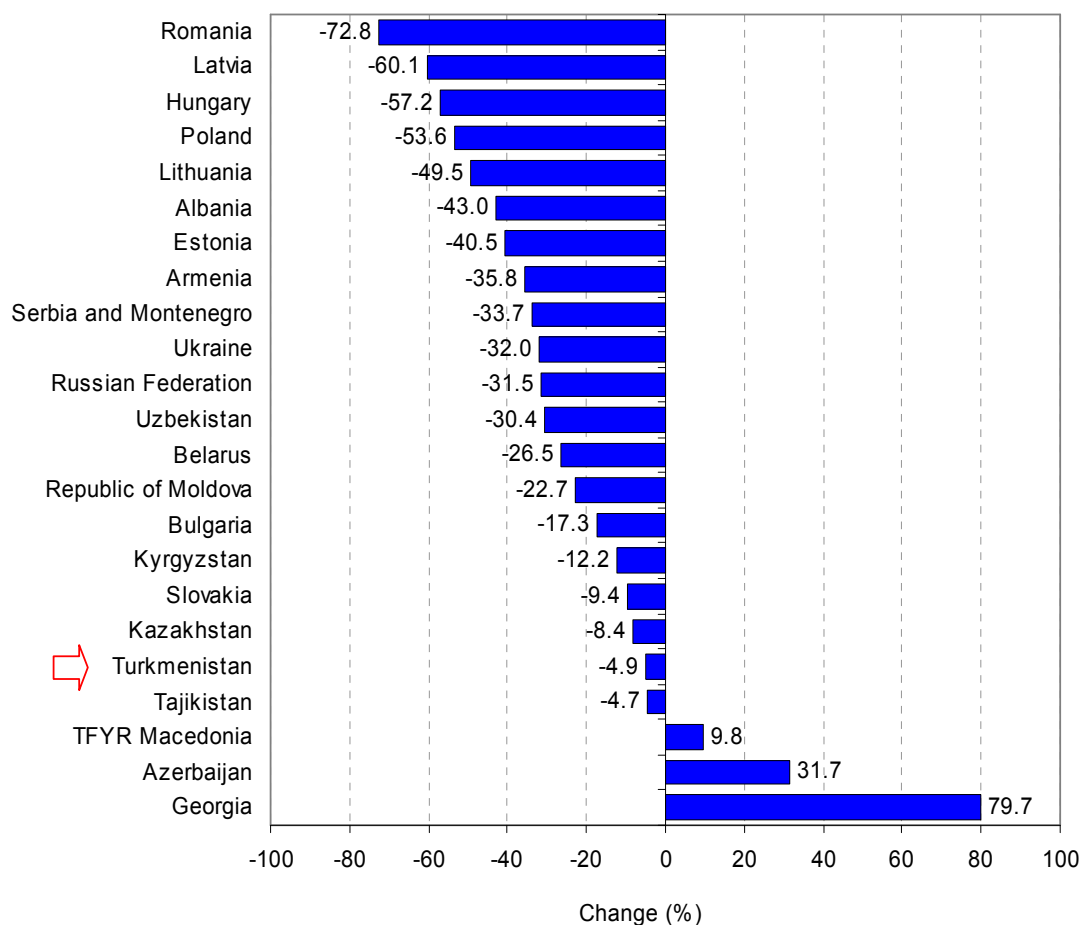
Maternal mortality

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 MMR targets is that countries take 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 difficult to ascertain, even in countries with strong registration systems. Usually WHO estimates are higher than the country reports, but the opposite seems to be the case in Turkmenistan, as shown in table above. This apparent contradiction is difficult to interpret in the absence of country-specific information and detailed analysis. However, maternal mortality is an MDG indicator all counties have committed to reduce by three-quarters between 1990 (baseline) and 2015. Given the mentioned difficulties in ascertaining maternal mortality figures, a direct assessment of progress on the basis of the limited data available is not possible. Nevertheless, it should be mentioned that the 1996 figure was 44 deaths per 100 000 live births, and the 1990 level 42 – a possible sign of deterioration rather than improvement (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 Turkmenistan are at the Eur-B+C average, twice as high as the Eur-A average (Annex. Selected mortality). Mortality rates for children and young adults are above average, mostly due to external causes. However, 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. Excess mortality is observed, as expected, from communicable, respiratory and digestive diseases (Figure. Total mortality by sex and age group).

Total mortality by sex and age group in Turkmenistan
in comparison with Eur-B+C (Eur-B+C = 100), 2003
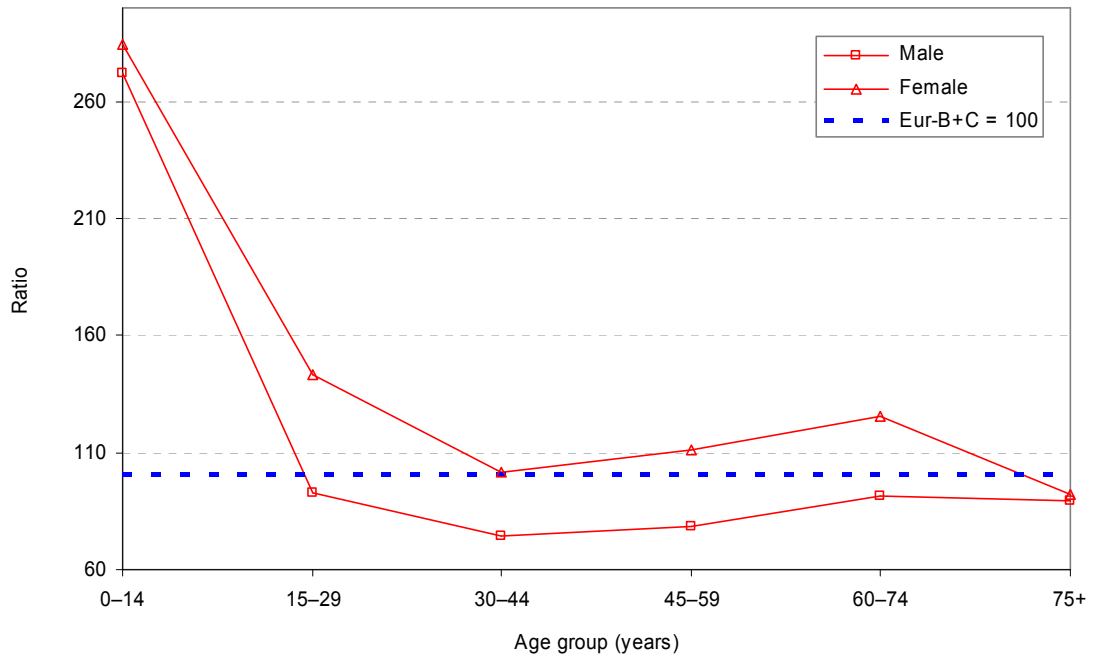
The most prominent group of causes of excess mortality is communicable conditions (infectious and parasitic diseases), 2.5 times the Eur-B+C average and six times the Eur-A average (Figure. SDR for infectious and parasitic diseases in people of all ages).

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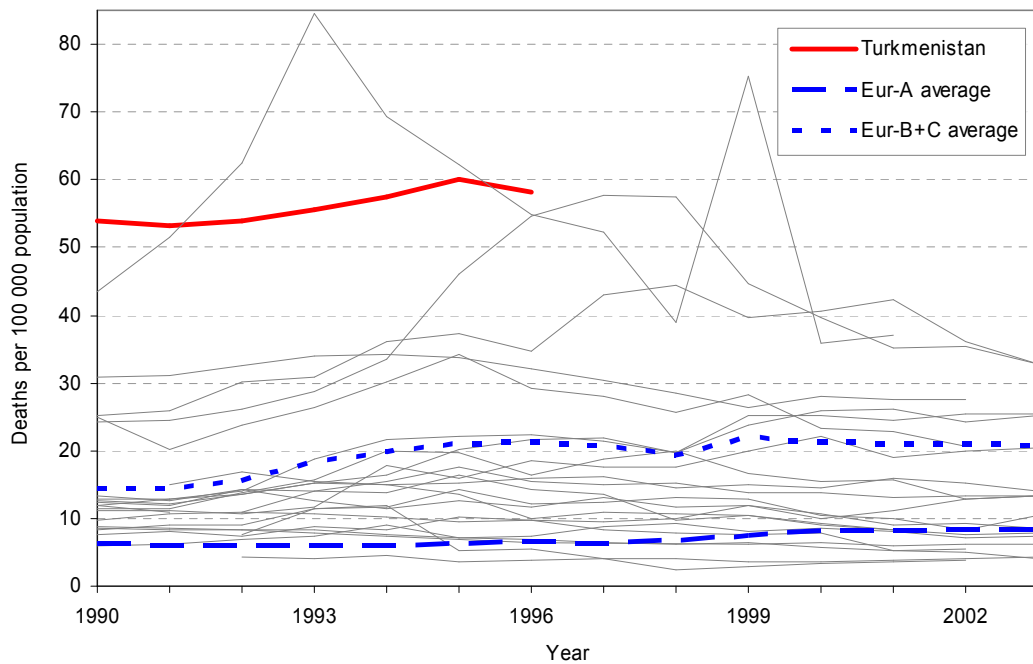
Note: Data for Turkmenistan are 5-year moving averages.

One should 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 trends of the period 1995–2003 are generally more favourable than those for the whole period 1990–2003.

In the 0–14 years age group (Annex. Mortality data), the Turkmen mortality from all causes of 420 deaths per 100 000 (1998) is about three times higher than the Eur-B+C average of 152 (2003). It improved by 6.0% over the 1995 rate but the period is too short and distant from 2005 to attempt any conclusions. The reported deaths due to perinatal causes are similar to the Eur-B+C average but the number of non-registered deaths is probably high.

The 15–29 year age group's 1998 total mortality rate of 106 was down to the Eur-B+C 2003 average of 161 (Annex. Mortality data). An important observation is the lower rates from external causes, compared to the Eur-B+C average, pointing to a different pattern of mortality emerging in younger adults, namely less violent behaviour than in some other CIS countries. This pattern is clearer in the next age groups.

Mortality from infectious, respiratory and digestive diseases is also higher than the Eur-B+C average.

In the 30–44 (Annex. Mortality data) and 45–59 years age groups (Annex. Mortality data) 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.

The overall mortality levels in the older age groups are very close to the Eur-B+C average, with CVDs –particularly ischemic heart disease – more frequently the cause of death, while external causes remain at low levels.

Main causes of death

The main causes of death in all major age groups present lower rates than the Eur-B+C averages, except for mortality from external causes in children and young adults. As above, the observations upon 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 Turkmenistan in comparison with Eur-B+C (Eur-B+C = 100), 2003
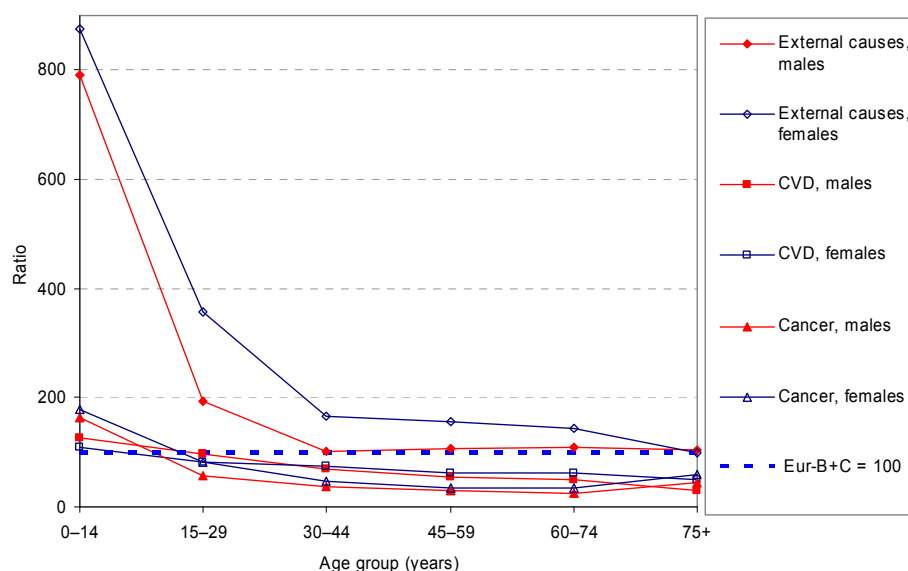
In 1998, noncommunicable diseases (NCD) accounted for about 88% of all deaths in Turkmenistan, external causes for about 5%, communicable diseases for about 4% and ill-defined conditions about 3% (Annex. Selected mortality). In the Eur-B+C group the average proportion of deaths from external causes is considerably larger (11%) but those of ill-defined conditions and infectious diseases are lower. The proportion of deaths due to non-communicable diseases is a little lower.

CVD

CVDs are the main group of causes of death in Turkmenistan, responsible for 63% of the overall mortality (1998) which is above the Eur-B+C average of 57%. About half of all CVD mortality is due to ischemic heart disease. The proportion of the deaths attributed to cerebrovascular diseases (6%) is, however, 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 Turkmenistan but of course this requires more data and analysis.

Unfortunately, from 1990 to 1998 the rates increased considerably in line with the general Eur-B+C trend, but at an even higher level and will probably continue rising (Figure. SDR for cardiovascular diseases).

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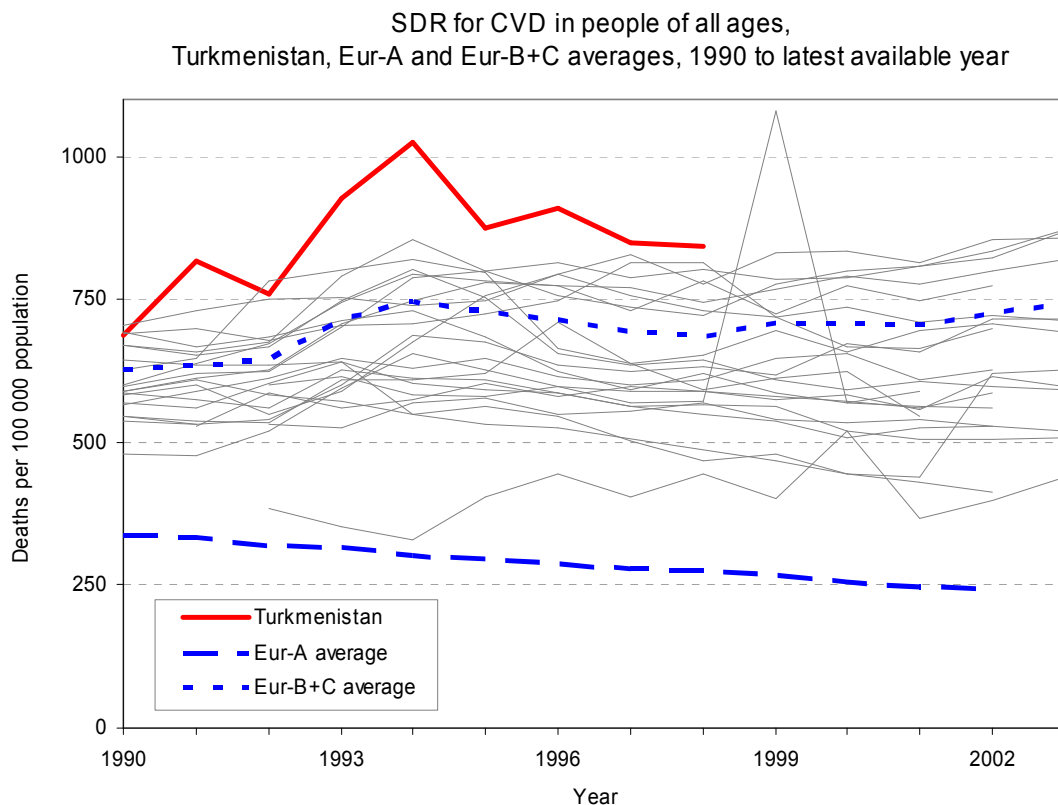
Cancer

Cancer mortality is relatively equally distributed across the Region. The rates in Turkmenistan 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 8% of the total mortality in Turkmenistan (2003) and this proportion is considerably higher than the Eur-B+C average. The same is true for the rate per 100 000 population (Figure. SDR for diseases of the respiratory system).

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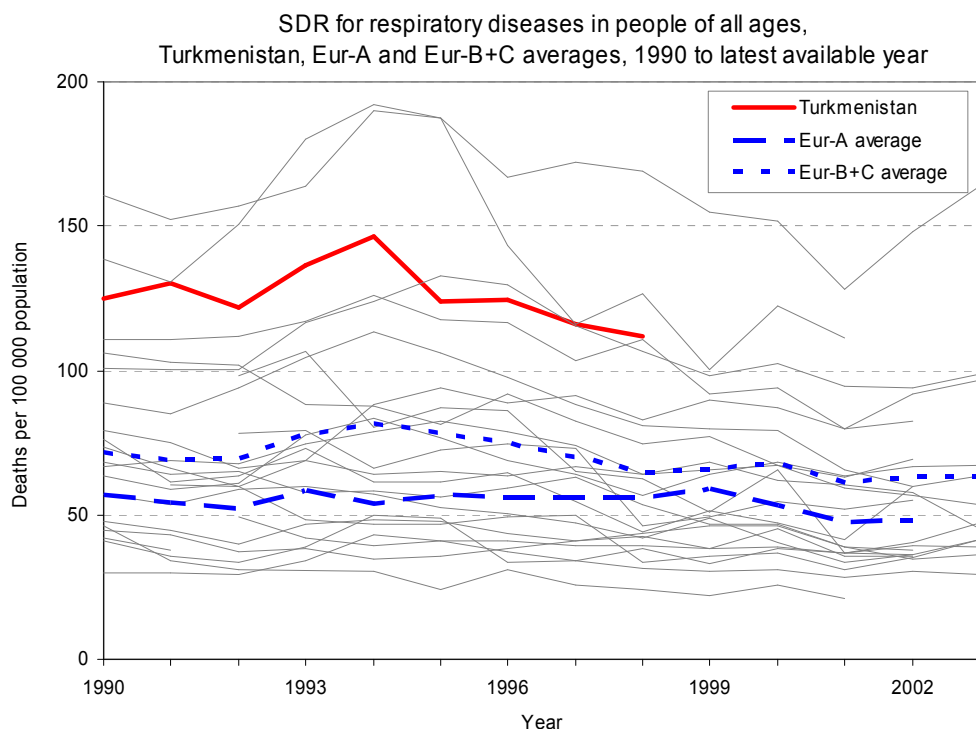
Digestive diseases

Mortality from digestive diseases has increased considerably in Eur-B+C since 1990. The trend in Turkmenistan is probably flat but at a very high level. About two-thirds of the deaths in this category are due to chronic liver disease and cirrhosis. While 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).

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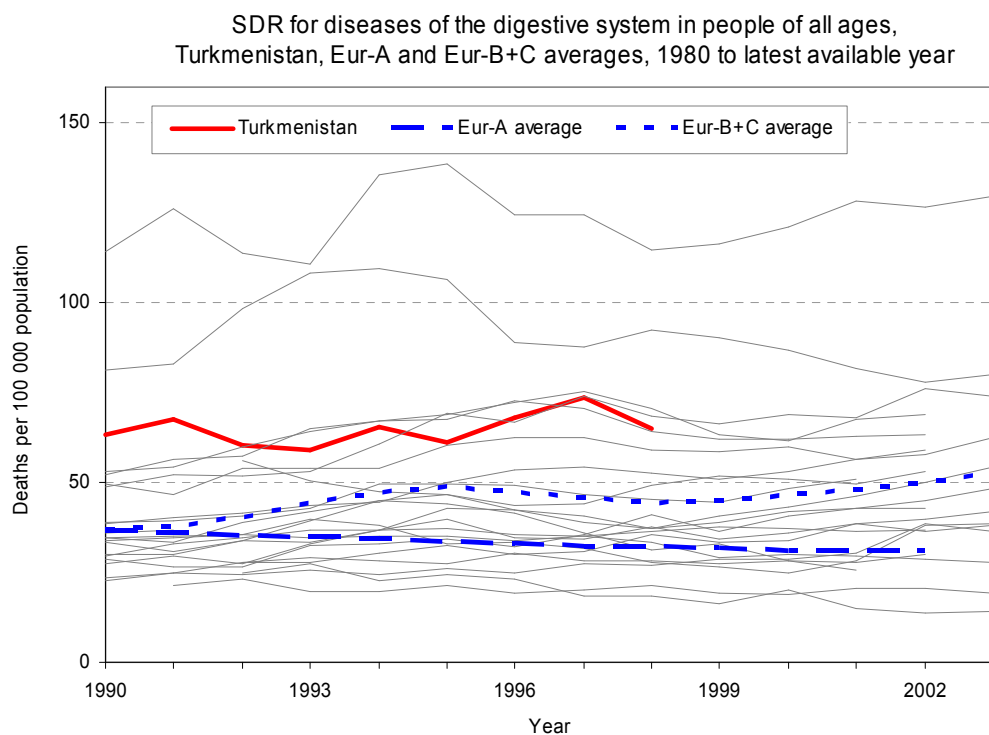
External causes

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 63 deaths per 100 000 population in Turkmenistan (1998) while the Eur-B+C average is 140 and the Eur-A average 40 (Figure. SDR for external causes of injury and poisoning).

SDR for external causes of injury and poisoning in people of all ages, Turkmenistan, Eur-A and Eur-B+C averages, 1980 to latest available year
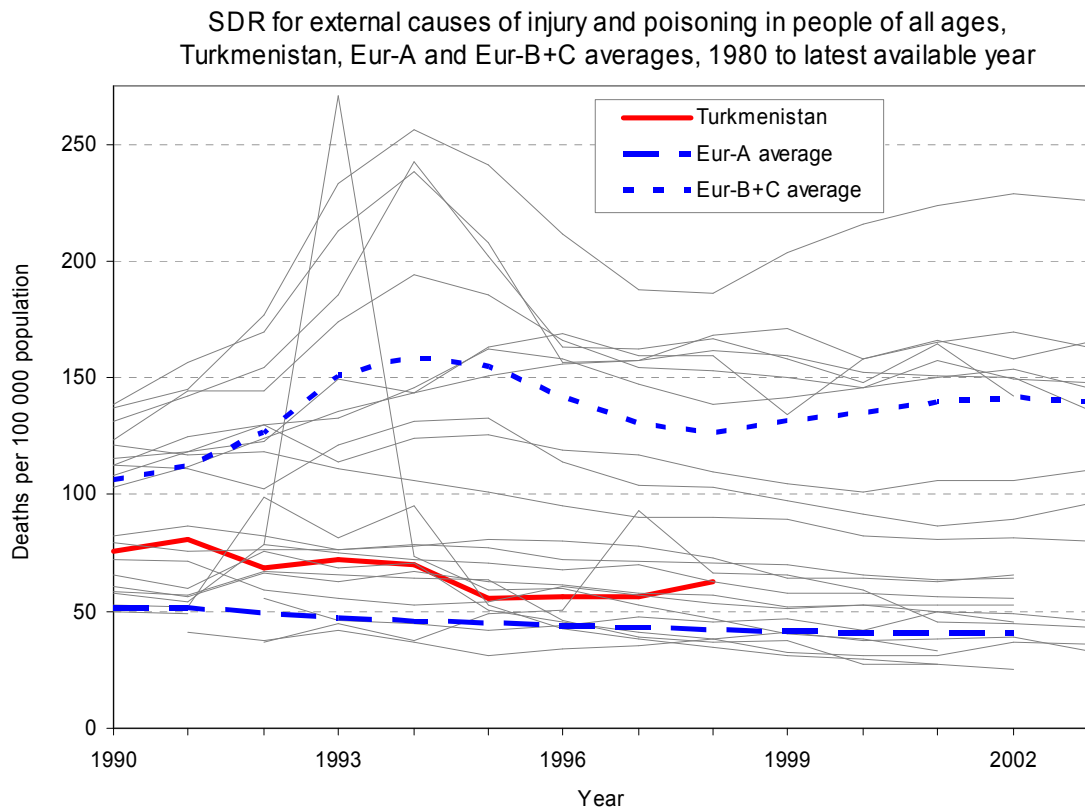
There is a relatively low level of violent deaths.

In contrast to the Eur-B+C average, the rates tended to decrease rather than increase in 1990–1998.
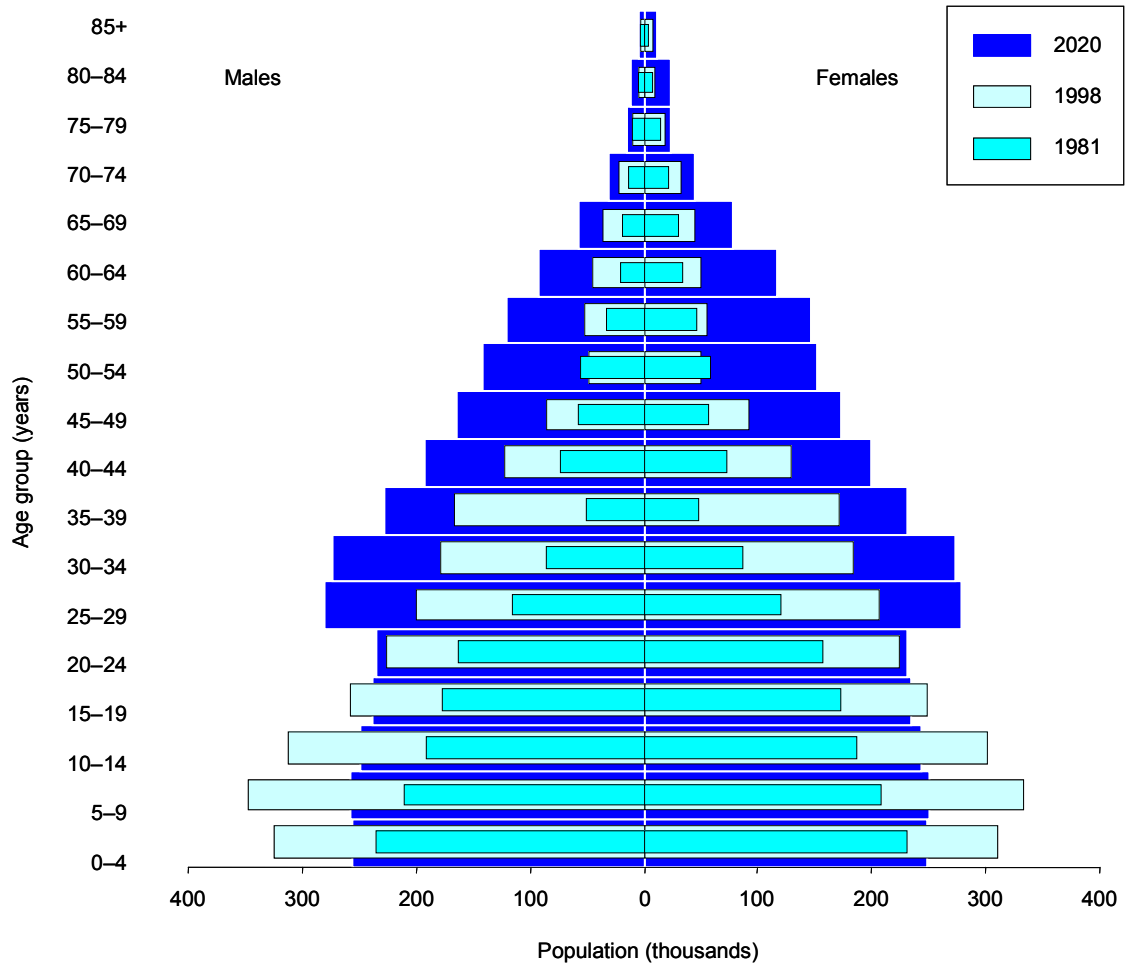
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Annexes

Annex. Age pyramid

Age pyramid for Turkmenistan

Males
Females

2020
1998
1981

85+
80–84
75–79
70–74
65–69
60–64
55–59
50–54
45–49
40–44
35–39
30–34
25–29
20–24
15–19
10–14
5–9
0–4

Age group (years)

400   300   200   100   0   100   200   300   400

Population (thousands)

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

Annex. Selected mortality

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

Condition	SDR per 100 000		Excess mortality in Turkmenistan (%)	Total deaths in Turkmenistan (%)	Total deaths in Eur-B+C (%)	Eur-A average	Excess Turkmenistan to Eur-A (%)	Total deaths in Eur-A (%)
	Turkmenistan (1998)	Eur-B+C average (2003)						
Selected non-communicable conditions	1132.8	1044.9	8.4	85.1	79.6	533.8	112.2	82.4
Cardiovascular diseases	844.4	741.8	13.8	63.4	56.5	243.4	246.9	37.6
Ischaemic heart disease	440.3	362.7	21.4	33.1	27.6	95.9	359.1	14.8
Cerebrovascular diseases	85.6	221.7	−61.4	6.4	16.9	61.1	40.1	9.4
Diseases of pulmonary circulation and other heart disease	108.2	68.9	57.0	8.1	5.3	56.6	91.2	8.7
Malignant neoplasms	97.9	172.0	−43.1	7.4	13.1	181.5	−46.1	28.0
Trachea/bronchus/lung cancer	10.3	33.9	−69.6	0.8	2.6	37.1	−72.2	5.7
Female breast cancer	8.7	22.1	−60.6	0.7	1.7	27.0	−67.8	4.2
Colon/rectal/anal cancer	4.9	19.0	−74.2	0.4	1.4	20.7	−76.3	3.2
Prostate	2.2	14.3	−84.6	0.2	1.1	25.1	−91.2	3.9
Respiratory diseases	111.8	63.1	77.2	8.4	4.8	47.8	133.9	7.4
Chronic lower respiratory diseases	28.4	31.2	−9.0	2.1	2.4	20.2	40.6	3.1
Pneumonia	43.5	23.6	84.3	3.3	1.8	16.2	168.5	2.5
Digestive diseases	64.8	52.3	23.9	4.9	4.0	30.8	110.4	4.8
Chronic liver disease and cirrhosis	44.8	32.0	40.0	3.4	2.4	12.6	255.6	1.9
Neuropsychiatric disorders	13.9	15.7	−11.5	1.0	1.2	30.3	−54.1	4.7
Communicable conditions	50.8	20.8	144.2	3.8	1.6	8.4	504.8	1.3
AIDS/HIV	0.0	0.8	−100.0	0.0	0.1	1.1	−100.0	0.2
External causes	63.1	139.6	−54.8	4.7	10.6	40.3	56.6	6.2
Unintentional	43.1	102.2	−57.8	3.2	7.8	28.7	50.2	4.4
Road traffic injuries	8.5	14.7	−42.2	0.6	1.1	9.9	−14.1	1.5
Falls	1.8	7.5	−76.0	0.1	0.6	6.1	−70.5	0.9
Intentional	20.1	37.4	−46.3	1.5	2.9	11.6	73.3	1.8
Self-inflicted (suicide)	10.9	23.2	−53.0	0.8	1.8	10.6	2.8	1.6
Violence (homicide)	9.2	14.2	−35.2	0.7	1.1	1.0	820.0	0.2
Ill-defined conditions	33.8	64.0	−47.2	2.5	4.9	20.9	61.7	3.2
All causes	1331.0	1312.2	1.4	100.0	100.0	647.8	105.5	100.0

Annex. Mortality data

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

Causes of death	Sex	Turkmenistan (1998)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	420.2	–6.0	49.4	–2.4	151.7	–3.8
	M	463.9	–6.2	55.3	–2.5	170.5	–3.9
	F	374.7	–5.7	43.3	–2.4	131.9	–3.8
Infectious and parasitic diseases	M	76.9	–14.8	1.4	–1.1	10.9	–7.0
	F	69.5	–13.1	1.1	–3.0	9.5	–6.6
Intestinal infectious diseases	M	58.9	–15.5	0.2	–0.7	5.1	–8.2
	F	56.3	–13.6	0.1	–7.3	4.7	–7.9
Malignant neoplasms	M	6.5	13.5	3.3	–1.8	5.1	–1.9
	F	4.6	0.9	2.6	–1.8	4.2	–1.9
Cardiovascular diseases	M	26.0	60.2	1.4	–3.1	3.3	1.1
	F	22.7	88.1	1.3	–2.5	2.6	0.1
Respiratory diseases	M	221.1	–5.5	1.4	–4.3	35.9	–5.0
	F	186.6	–4.7	1.0	–4.2	30.7	–5.0
Pneumonia	M	106.3	–3.7	0.5	–6.0	20.9	–4.9
	F	86.5	–3.2	0.4	–5.1	17.9	–4.7
Certain conditions originating in perinatal period	M	662.3	–1.7	255.3	–2.1	607.6	–2.7
	F	401.9	–3.8	202.3	–1.6	427.5	–2.7
Congenital malformations & chromosomal abnormalities	M	11.9	–9.7	11.6	–2.9	24.2	–2.8
	F	8.6	–15.1	10.0	–3.3	21.0	–2.6
Ill-defined causes	M	5.5	–14.7	5.0	–3.9	5.6	–0.6
	F	3.9	–20.7	3.4	–4.2	4.6	–1.0
External causes of injury & poisoning	M	47.1	–4.4	7.0	–4.0	29.0	–3.4
	F	32.2	0.9	4.6	–3.2	18.1	–3.1
Road traffic injuries	M	5.0	–5.1	2.5	–4.5	4.7	–2.6
	F	2.8	–3.9	1.7	–4.8	3.0	–1.6

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

Causes of death	Sex	Turkmenistan (1998)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	168.3	9.0	56.0	–2.3	161.0	–0.9
	M	224.0	12.5	82.0	–2.3	241.7	–1.0
	F	113.2	3.6	29.3	–2.2	79.0	–0.6
Infectious and parasitic diseases	M	31.2	10.7	1.2	1.5	12.3	3.0
	F	14.5	0.3	0.8	1.9	5.1	2.5
Malignant neoplasms	M	8.5	0.8	6.2	–1.0	8.8	–1.9
	F	6.2	–1.6	4.7	–1.4	7.7	–1.9
Cardiovascular diseases	M	34.0	22.3	4.1	–2.4	17.6	0.0
	F	25.9	16.8	2.3	–2.0	7.3	–0.9
Respiratory diseases	M	13.1	9.7	1.4	–3.6	6.9	0.2
	F	8.9	–5.5	0.9	–2.7	3.8	–1.1
Digestive diseases	M	16.6	11.1	0.9	–3.5	8.0	3.0
	F	7.7	9.3	0.5	–3.8	3.7	3.1
Ill-defined causes	M	13.7	37.5	4.0	–3.1	11.6	7.1
	F	3.2	7.4	1.4	–1.3	3.3	5.8
External causes	M	90.7	13.3	58.3	–1.4	162.4	–1.6
	F	30.3	13.4	14.4	–1.6	36.9	–0.2
Road traffic injuries	M	11.6	–0.7	28.5	–1.3	27.8	–1.5
	F	1.8	28.0	7.3	–1.4	8.0	0.3
Accidental drowning	M	4.5	1.2	1.3	–2.2	10.8	–3.9
	F	2.4	23.4	0.2	–2.1	1.9	–2.2
Accidental poisoning	M	4.2	39.8	2.8	0.0	19.1	3.3
	F	1.3	0.5	0.7	0.8	4.4	2.5
Self-inflicted (suicide)	M	20.5	21.5	12.7	–1.8	36.8	0.0
	F	6.9	22.1	3.1	–2.2	5.8	–1.3

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

Causes of death	Sex	Turkmenistan (1998)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	367.0	4.3	120.3	–2.5	453.8	–0.7
	M	521.9	6.1	161.6	–2.6	700.0	–0.8
	F	218.5	0.8	78.5	–2.1	215.6	–0.2
Malignant neoplasms	M	27.7	–6.6	27.6	–2.3	40.2	–2.8
	F	32.4	–5.0	31.3	–2.0	43.8	–1.4
Trachea/bronchus/lung cancer	M	3.5	–11.9	5.0	–3.4	7.3	–4.2
	F	1.5	18.0	2.8	–0.6	2.2	–1.0
Female breast cancer							
	F	6.6	–10.1	10.0	–2.6	10.0	–2.3
Cardiovascular diseases	M	159.5	4.9	26.1	–2.5	158.6	–0.4
	F	75.6	8.1	10.4	–2.1	45.3	0.0
Ischaemic heart disease	M	78.1	–0.4	11.8	–3.1	73.7	–2.2
	F	24.4	–1.1	2.4	–2.7	14.4	–1.3
Cerebrovascular diseases	M	9.7	–16.5	4.4	–3.2	24.6	–0.4
	F	4.2	–15.6	3.6	–2.5	10.6	–1.3
Respiratory diseases	M	31.9	13.9	3.9	–3.5	34.3	0.9
	F	12.8	–3.8	2.2	–2.0	9.8	0.8
Digestive diseases	M	49.0	4.3	12.6	–2.4	50.2	1.4
	F	18.5	–4.0	5.4	–1.7	19.4	4.1
External causes	M	113.3	8.1	58.8	–1.2	299.5	–1.9
	F	27.7	3.4	15.1	–1.8	58.9	–1.0
Road traffic injuries	M	19.2	0.7	16.0	–0.5	31.4	–1.7
	F	5.5	16.2	3.9	–2.0	7.1	–0.5
Self-inflicted (suicide)	M	22.7	14.6	21.2	–1.5	54.9	–2.4
	F	3.0	1.9	5.8	–2.2	7.9	–2.5

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

Causes of death	Sex	Turkmenistan (1998)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	1156.0	–0.2	435.6	–1.3	1294.9	–0.6
	M	1560.0	0.9	580.1	–1.4	1981.7	–0.6
	F	776.6	–1.9	293.3	–1.0	698.9	–0.5
Malignant neoplasms	M	176.2	–3.5	218.2	–1.2	323.2	–1.9
	F	115.6	–5.7	155.0	–1.0	186.1	–0.5
Trachea/bronchus/lung cancer	M	29.6	–9.0	65.9	–1.5	101.4	–2.9
	F	6.7	–8.9	21.8	3.4	15.4	1.0
Female breast cancer							
	F	18.4	–7.2	44.0	–2.2	45.3	0.1
Cardiovascular diseases	M	842.0	0.4	156.4	–2.6	793.1	–0.1
	F	421.2	–2.8	50.9	–2.5	271.7	–0.6
Ischaemic heart disease	M	427.0	–3.3	86.2	–3.3	435.3	–0.7
	F	142.6	–9.3	17.8	–3.4	111.1	–0.6
Cerebrovascular diseases	M	65.1	–19.2	23.7	–2.6	168.6	–0.9
	F	49.3	–17.2	14.5	–2.1	88.4	–1.4
Respiratory diseases	M	86.4	7.9	20.3	–1.7	108.7	–1.4
	F	41.4	6.8	10.2	–1.3	24.5	–0.7
Digestive diseases	M	135.2	8.5	49.6	–0.8	129.7	0.7
	F	78.5	8.4	20.3	–0.7	57.3	1.9
External causes	M	118.1	–0.2	62.8	–1.0	409.2	–0.9
	F	30.0	0.2	20.9	–0.9	89.1	–1.1
Road traffic injuries	M	13.5	–6.0	13.0	–1.3	28.5	–1.8
	F	4.9	–9.3	4.1	–2.1	7.5	–1.4
Self-inflicted (suicide)	M	33.0	20.9	23.1	–1.1	68.1	–2.4
	F	4.8	36.6	8.5	–1.2	10.2	–3.4

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

Causes of death	Sex	Turkmenistan (1998)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	3664.1	−1.6	1570.9	−1.9	3411.7	−0.1
	M	4572.8	−1.9	2156.9	−2.1	4996.4	0.1
	F	2937.8	−1.9	1069.2	−1.9	2339.0	−0.6
Malignant neoplasms	M	498.1	−4.4	851.3	−1.4	1002.5	−0.8
	F	269.8	−6.2	439.8	−1.1	438.9	−0.7
Trachea/bronchus/lung cancer	M	77.4	−5.4	261.8	−1.9	321.7	−1.5
	F	18.7	−3.3	59.0	0.2	37.1	−1.4
Female breast cancer							
	F	21.9	−3.4	79.7	−1.6	68.7	1.3
Cardiovascular diseases	M	3171.1	−1.1	744.9	−3.6	2903.0	0.6
	F	2156.3	−0.1	335.7	−3.9	1507.8	−0.3
Ischaemic heart disease	M	1685.0	−4.9	381.3	−4.2	1582.2	1.2
	F	1007.1	−4.6	133.5	−4.6	731.4	0.5
Cerebrovascular diseases	M	327.2	−14.0	143.3	−3.7	833.7	0.2
	F	257.0	−15.1	86.7	−4.1	528.9	−0.8
Respiratory diseases	M	283.0	−1.8	144.0	−3.5	303.0	−2.4
	F	129.1	−8.8	62.5	−2.4	68.6	−3.6
Digestive diseases	M	243.6	−0.7	111.6	−1.6	193.0	0.1
	F	153.7	−0.3	54.1	−1.7	94.2	0.2
External causes	M	79.4	−2.2	79.3	−1.4	320.0	1.0
	F	31.4	−10.8	32.1	−2.1	88.7	−0.5
Road traffic injuries	M	12.4	−8.4	14.8	−3.0	24.3	−1.5
	F	4.0	−20.3	5.9	−3.4	9.5	−1.0
Self-inflicted (suicide)	M	8.6	−9.7	24.5	−1.6	60.5	−0.8
	F	3.2	−12.1	8.7	−2.6	12.7	−3.1

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

Causes of death	Sex	Turkmenistan (1998)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	11381.9	−3.0	8059.6	−1.0	12338.8	0.0
	M	13294.6	−1.4	9832.0	−1.1	14838.0	0.1
	F	10532.3	−3.7	7112.5	−0.9	11421.7	0.0
Malignant neoplasms	M	428.7	−8.5	2231.1	−0.4	1489.3	1.2
	F	358.5	2.4	1136.2	−0.4	721.7	0.8
Trachea/bronchus/lung cancer	M	36.2	3.5	457.1	−0.7	323.5	1.0
	F	10.9	−6.1	102.7	1.5	55.6	0.5
Female breast cancer							
	F	23.2	−3.4	159.6	−0.4	92.0	3.1
Cardiovascular diseases	M	10552.8	−1.2	4356.2	−2.1	10221.2	0.4
	F	8685.1	−3.5	3577.9	−1.9	8805.6	0.4
Ischaemic heart disease	M	6418.1	−4.6	1708.0	−2.2	4925.6	1.4
	F	4929.3	−6.0	1150.0	−2.2	4028.6	1.2
Cerebrovascular diseases	M	903.3	−12.7	1119.8	−2.5	3004.4	0.7
	F	957.8	−17.2	1026.9	−2.4	2967.6	0.5
Respiratory diseases	M	738.3	−6.5	1156.5	−2.4	824.1	−2.1
	F	529.5	−2.0	591.9	−2.1	302.3	−3.2
Digestive diseases	M	276.6	3.8	340.3	−1.1	270.4	0.3
	F	227.2	−7.0	279.8	−0.4	175.0	1.1
External causes	M	273.2	36.3	275.0	−0.6	604.2	0.1
	F	101.7	33.8	187.8	−1.2	172.4	−1.2
Road traffic injuries	M	42.9	3.5	28.1	−2.2	34.6	−3.1
	F	13.8	15.6	10.0	−3.1	14.7	−1.7
Self-inflicted (suicide)	M	14.5	13.1	49.5	−1.6	86.6	−1.1
	F	21.3	264.8	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

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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).

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

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

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

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

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

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

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

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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).