



Highlights on health in the Russian Federation

2005

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

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

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

Keywords

HEALTH STATUS
BURDEN OF DISEASE
COMPARATIVE STUDY
RUSSIAN FEDERATION
EUR/05/5046415P
<http://www.euro.who.int/highlights>

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
Scherfigsvej 8
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the WHO/Europe web site at <http://www.euro.who.int/pubrequest>.

© World Health Organization 2006

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation "country or area" appears in the headings of tables, it covers countries, territories, cities, or areas. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. The views expressed by authors or editors do not necessarily represent the decisions or the stated policy of the World Health Organization.

Contents

	<i>Page</i>
Summary: findings and policy considerations	1
Selected demographic and socioeconomic information.....	3
Population profile.....	3
Socioeconomic indicators	4
Life expectancy (LE) and healthy life expectancy (HALE)	7
Burden of disease	10
Main conditions.....	10
Main risk factors	11
Mortality.....	11
Infant, neonatal and child mortality	11
Maternal mortality.....	11
Excess mortality	12
Main causes of death.....	15
References	20
Annexes.....	22
<i>Annex. Age pyramid</i>	22
<i>Annex. Selected mortality</i>	23
<i>Annex. Mortality data</i>	24
Technical notes.....	27
Glossary.....	29

Summary: findings and policy considerations

Life expectancy

WHO estimates that a person born in the Russian Federation in 2003 could expect to live 65 years on average: 72 years if female and 58 years if male. The average life expectancy is about 4 years less than the Eur-B+C average and 14 years less than in Eur-A countries. Across the 89 administrative territories in the country, there is a difference of about 20 years between the highest and lowest life expectancy. The crude death rate in 2003 was the highest in the region, particularly high among middle-aged adults.

WHO estimates average healthy life expectancy in the Russian Federation to be about 2 years below the Eur-B+C average. The gender difference in healthy years of life (11.5 years difference) is the largest in the European Region. Among males, the conditions that account for the highest disease burden are cardiovascular diseases (CVD) and unintentional injuries; alcohol and tobacco are the dominant contributing risk factors. Among females, the highest burden is attributed to CVD and neuropsychiatric conditions. Main risk factors for women are high blood pressure and high cholesterol.

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.

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

Ageing and employment policies (OECD, 2004)

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

Infant mortality

In 2003, the infant mortality rate in the Russian Federation was better than the Eur-B+C average, having fallen by 27% since 1995. The neonatal mortality rate also fell during that time by about one third. The under-five mortality rate was estimated at between 15 and 16 per 1000 live births, on target with the Millennium Development Goal.

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

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

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

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

Maternal mortality

Between 1990 and 2002, the maternal mortality rate in the Russian Federation first rose, from 1990 to 1994, then fell to below the 1990 rate in 2002. Just over 20% of all maternal deaths reported in 2003 were attributed to abortion. For the Russian Federation to reach its Millennium Development Goal by 2015, its MMR would have to fall another 64%.

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

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

Main causes of death

Mortality in the Russian Federation was higher in 2003 than in 1981 in all age groups for both sexes, except for children 0–14 years old. Overall, the rates of death are about 20% higher than in Eur-B+C countries, and nearly 2.5 times higher than the Eur-A average.

Non-communicable diseases accounted for about 76% of all deaths in the Russian Federation in 2002. Communicable diseases accounted for less than 2%, but the mortality rate was about 20% higher than the Eur-B+C average, and 200% higher than Eur-A .

CVD caused 56% of all deaths in 2003; ischemic heart disease alone caused 26%. Death rates from CVD are higher than the Eur-B+C averages in all age groups. CVD are about 3.5 times more frequently the cause of death in the Russian Federation than in Eur-A countries on average.

The Russian Federation is experiencing an epidemic of injury and violence. The highest excess mortality in the country, relative to Eur- B+C averages, is due to intentional and unintentional injuries. In 2003, the overall mortality rate from these causes was 1.6 times the Eur- B+C average and 5.6 times the Eur-A average. Deaths reported as accidental poisoning are high, understood to be largely due to alcohol.

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

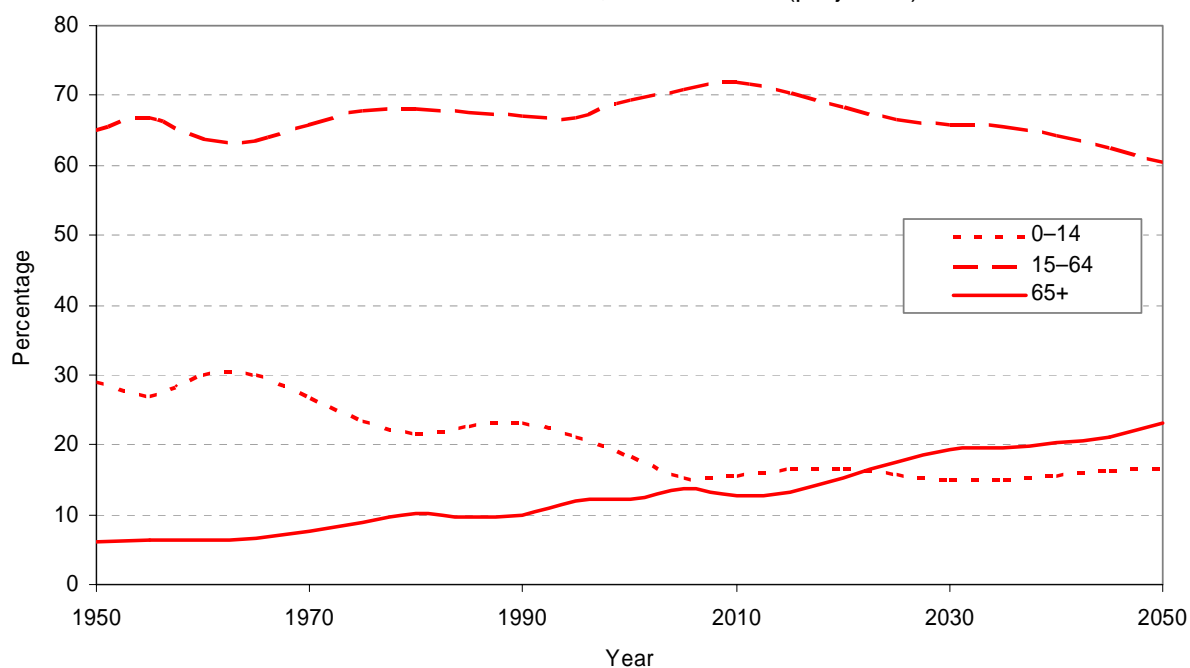
On 1 January 2004 the resident population of the Russian Federation was 144.2 million (Council of Europe, 2005).

The total fertility rate in the Russian Federation is estimated at 1.1 for the period 2000–2005 (it needs to be above 2.1 to ensure a stable population size).

The crude death rate of 16.4 per 1000 population in 2003 was the highest in the region, an increase of 46% since 1990. The mortality is particularly high in middle-aged adults. The mortality pattern and the low fertility explain the paradox that the Russian Federation has an increasingly aging population, despite relatively low average life expectancy.

Overall, there is a natural population decrease due to the death rate exceeding the birth rate, for which the positive migratory growth does not fully compensate. Since 1992 the population has decreased by 4.1 million or 2.8%. According to demographic projections, the resident population is expected to decline by 5% or 6% before the situation stabilizes around 2016, when each fifth inhabitant would be 60 years old and over (Annex. Age pyramid).

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



Source: United Nations (2005).

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

Indicators	Russian Federation	Eur-B+C		
	Value	Average	Minimum	Maximum
Population (in 1000s)	144565.9	–	–	–
0–14 years (%)	15.8	–	–	–
15–64 years (%)	70.9	–	–	–
65+ years (%)	13.3	–	–	–
Urban population (%) ^a	73.3	63.7	25.0	73.3
Live births (per 1000)	10.1	12.8	8.6	27.1
Natural population growth (per 1000)	–6.3	0.8	–7.5	23.0
Net migration (per 1000)	0.6	1.8	–6.6	2.1

^a 2002.

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

Socioeconomic indicators

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

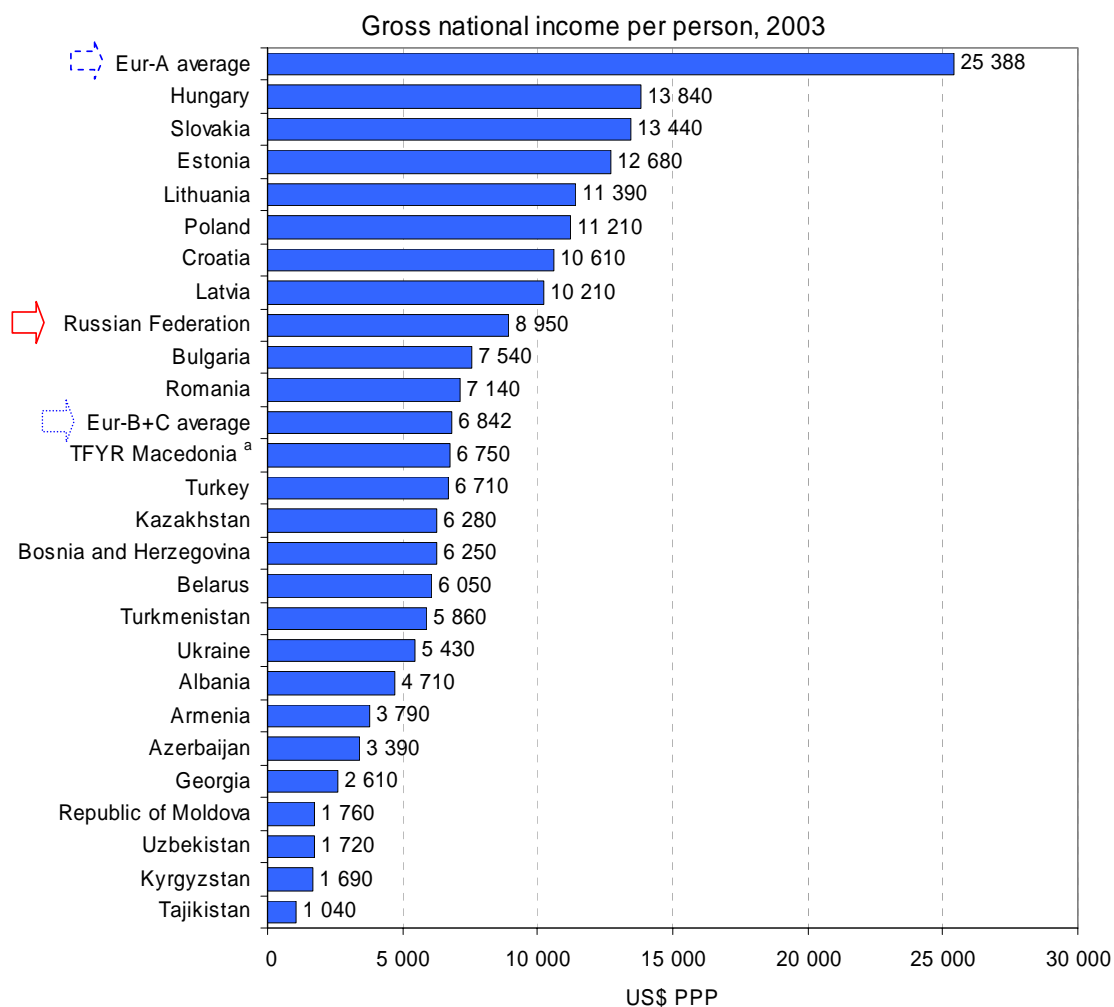
Income: absolute poverty, relative poverty and income distribution

Most of the countries of the Commonwealth of Independent States (CIS) have seen poverty decline in recent years, owing to the rapid and real recovery of the gross domestic product (GDP) since 1995, when the economic depression in these countries was at its worst. By 1999, real GDP surpassed the levels of 1990. Many health indicators replicated this U-turn curve of economic slump and rebound, although with a time delay, so that around 2000 the health situation in the CIS countries had apparently turned the corner.

Similarly, two distinct stages of human development in CIS were identified in global reports on this issue. The first stage (1990-1995) was characterized by a sharp deterioration in all the main indicators of human development. During the second stage (1996-2002), the indicators were slowly restored.

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

In 2003, the per capita gross national income in the Russian Federation was US\$ 8950, above the Eur-B+C average.



^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.

Household surveys conducted in the Russian Federation over 13 years, have found that from 1988, when the absolute poverty rate was 5.8% (using the US\$ 4.30 per person per day benchmark) the rates climbed, peaking in 1998 at 70.2% of the population living on US\$ 4.30 or less per day. By 2000, the rate was 57.7%, with 23.7% of the population living on US\$ 2.15 or less per day. In the last survey, in 2002, 7.5% of the population reported living on US\$ 2.15 or less per day (World Bank, 2005).

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

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

Despite the pervasive poverty, the Russian Federation's GINI index (45.6) was the highest among the 25 Eur-B+C countries for which indices are available for 2000 to 2002, indicating a very inequitable distribution of income (World Bank, 2005).

Employment

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

The total unemployment rate in the Russian Federation in 2001 was 8.9%, lower than a Eur-B+C country average of 12.9%, keeping in mind that national rates are based on estimates of people available and seeking employment, and that countries have different definitions of labour force and unemployment. Recent unemployment rates for youth are unavailable (ILO, 2005).

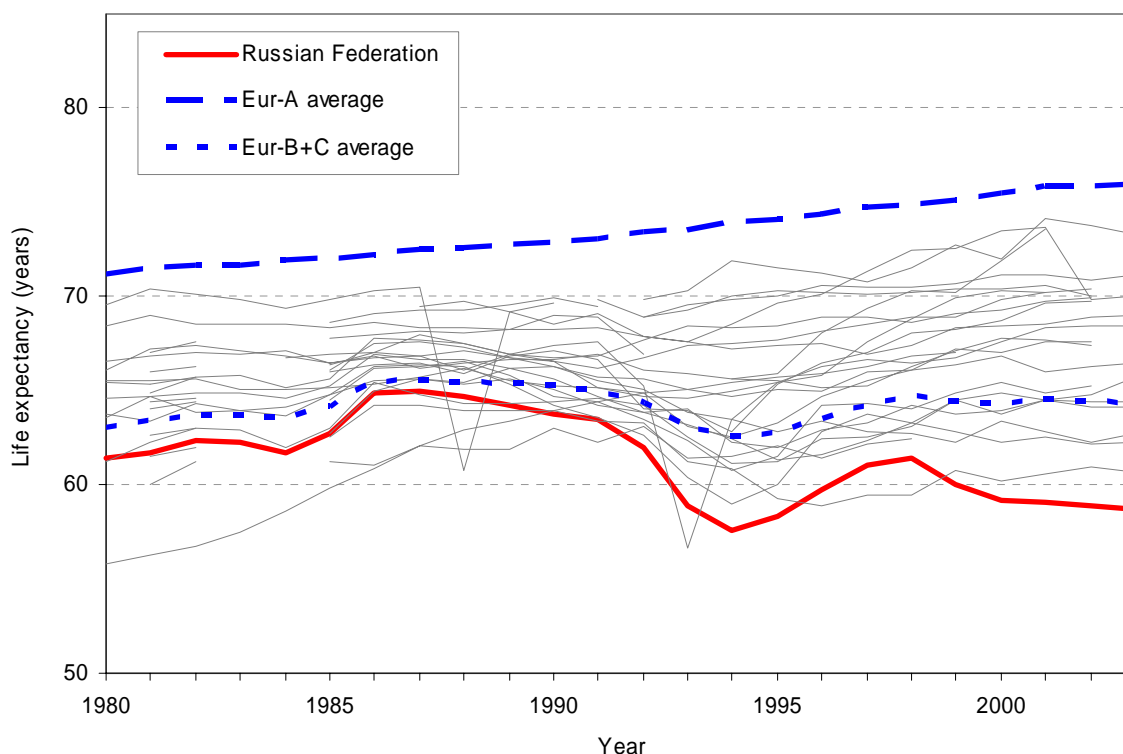
Life expectancy (LE) and healthy life expectancy (HALE)

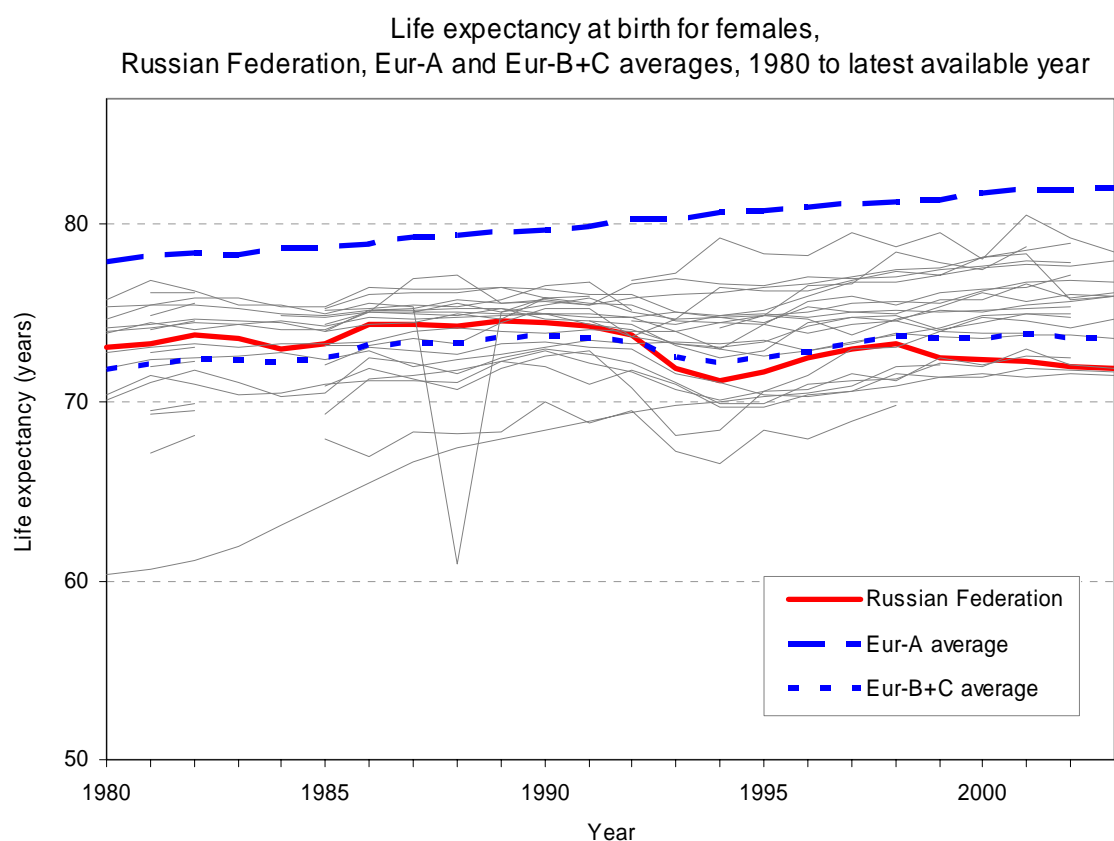
According to figures that are not necessarily official national statistics, compiled by WHO (2005) for all Member States to ensure comparability, a person born in the Russian Federation in 2003 could expect to live 65 years on average: 72 years if female and 58 years if male. As WHO estimates are mostly equivalent to the official statistics of the Russian Federation, the latter are used almost exclusively henceforth in this report, except for the indicators of maternal and early childhood mortality, for which both the official country statistics and the WHO estimates are given.

According to the official statistics, life expectancy (LE) in the Russian Federation is 64.9 years (WHO, 2005), about four years less than the Eur-B+C average of 68.7 years, but a staggering 14 years below the Eur-A average of 79.0 years. The Russian Federation has both the largest population among the 52 countries of the WHO European Region and the lowest official LE. Considering WHO estimated LE, however, Kyrgyzstan (63 years), Tajikistan (61 years), Kazakhstan (61 years) and Turkmenistan (60 years) all have lower LE.

Historically, in the immediate post-war period in the countries of the former Soviet Union, there were large gains in LE. However, by 1965 these stagnated and subsequently declined, interrupted by a short improvement in the late 1980s during the ‘Gorbachev anti-alcohol campaign’. There was further deterioration in the 1990s and although LE started to improve around 1995, by 1999 the positive trend lost momentum and turned downwards. This suggests that the economic recovery of recent years has not tangibly improved LE and other key health indicators. It is believed that the stagnation in health trends is partly due to the relatively rapid increase in the income inequalities in the countries of the Soviet Bloc in the 1990s.

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





It should also be pointed out that there is a difference of about 20 years between the highest and the lowest LE of the 89 administrative territories. In 2002, the LE of the Republic of Ingushetia (population 466 000) was 74.8 years while that of the Republic of Tuva (population 311 000) was 55.0 years.

Comparative analyses of variations of LE by sex, age and socioeconomic factors can help in understanding the situation. LE for females presents slightly smaller gaps vis-à-vis the Eur-A and Eur-B+C averages than that of males. At 71.9 years in 2003, it was about 1.6 years less than the Eur-B+C average but still ten years less than Eur-A. (The best achievement in the Eur-B+C group was Poland's 78.9 years.) But the male LE of 58.7 years is the lowest in the region, if official statistics are considered. According to WHO estimates, however, there is lower male LE in Azerbaijan (59 years), Kyrgyzstan (59), Tajikistan (58), Kazakhstan (56) and Turkmenistan (56). It is two years lower than the next worse, Kazakhstan, five and half years lower than the Eur-B+C average (64.2 years) and 17.2 years under than the Eur-A average (75.9). It should be noted that the female to male LE ratio of 1.19 is the highest in the WHO European Region, compared to the Eur-B+C and Eur-A averages of 1.14 and 1.09, respectively.

By age, the mortality trends have influenced the average LE in opposite directions as the decrease in children's mortality over time has somewhat mitigated the negative effect of the broadly based mortality increase in adults. The result is that in the period 1981–2003 LE at birth decreased by 2.8 years while LE at age 15 decreased by 3.8 years. In Eur-A the respective LE estimates have increased by 4.1 and 3.5 years, respectively. For 65 year-olds the Russian Federation's LE decreased by 1.2 years in the same period while the Eur-A average improved by 0.5 years.

Mortality in the 0-14 years age group – 145 per 100 000 – is slightly better than the Eur-B+C average, although three times higher than the Eur-A average. However, in all age groups from 15 to 60 years old the Russian Federation rates are the highest in the WHO European Region. In people older than 60 years mortality is a little less extreme but still close to the maximum in the region (Annex. Mortality data). Moreover, mortality in the Russian Federation was higher in 2003 than in 1981 in all age groups except for 0–14 years, for both sexes. The increase was around 40% or 50% for females in the 30–44 age group and males in the 30–59 group. In the 25–64 age group female mortality increased by 33% and male by 44%. The Eur-B+C averages have increased 15% for females and 27% for males. In contrast, the corresponding Eur-A averages decreased by 28% for females and 30% for males.

Overall, there has been a systematic increase of mortality across all age groups in adults of both sexes. The significance of premature mortality (under the age of 65) is that if it were eliminated LE would increase by 13.4 years, the largest hypothetical gain of average life span in the WHO European Region. The Eur-B+C average for this indicator is 10.6 years and the Eur-A average is just 4.6 years.

The mortality data are less accessible by socioeconomic groups, but several research studies have documented steep gradients. The mortality crises of the last decades affected mainly the socially weaker groups. Men in the Russian Federation cities with higher levels of education (13 and more years of schooling) did not experience increases in mortality in the period 1975–1997 and their mortality figures were similar to those in Nordic cities (Shkolnikov, 2004).

In general, the Russian Federation presents a phenomenon that can be observed to a certain degree in neighbouring countries – particularly of the Eur-B+C group – namely, a broad-based mortality increase over the last several decades across most population groups. The underlying causes of this unprecedented development in time of peace are yet to be understood. However, individual health behaviour and risk factors cannot fully explain the decline in public health and the social determinants of health should be taken adequately into account, too (Lee, 2005).

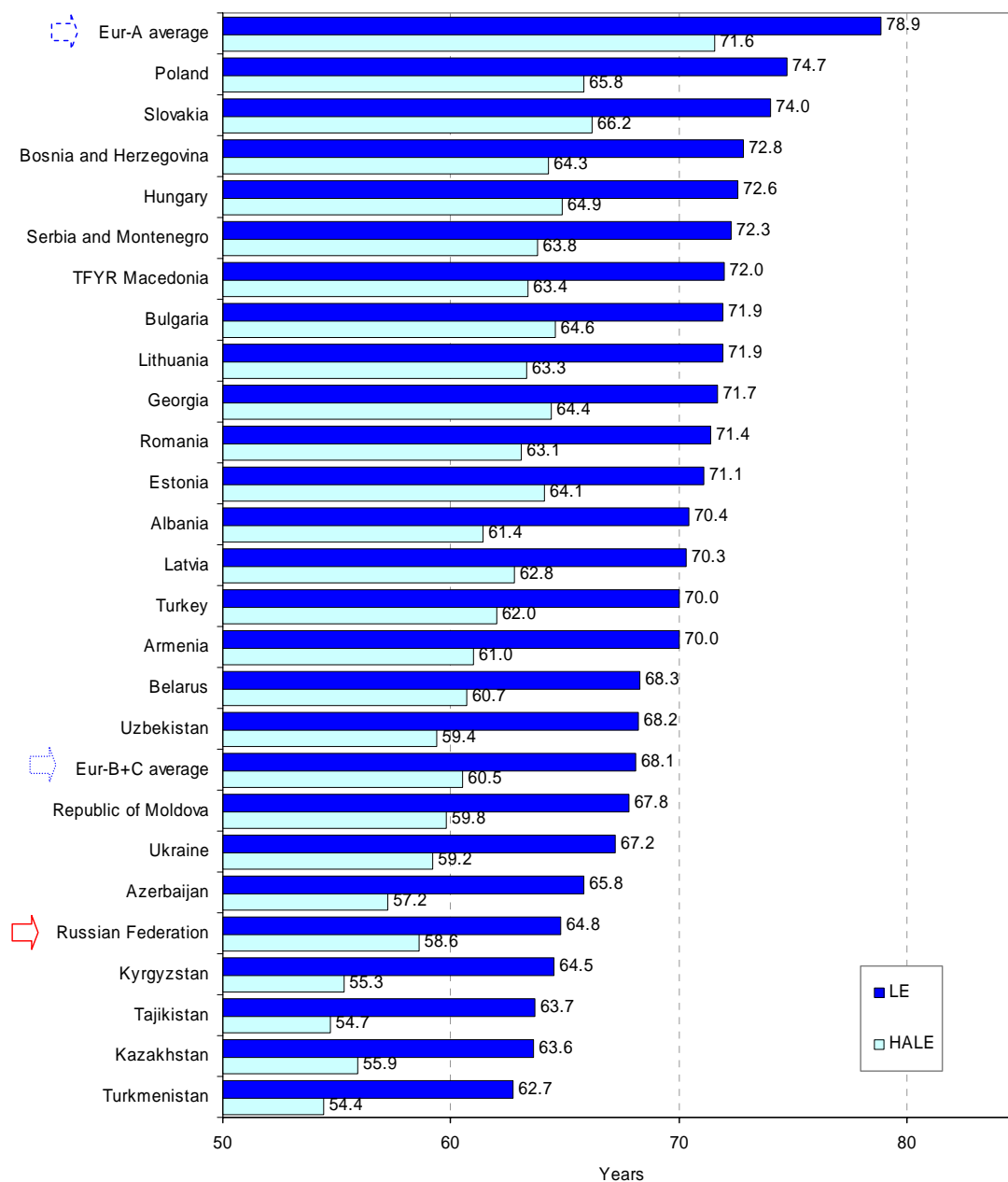
Healthy life expectancy

In addition to LE, that is longevity in general, it is increasingly important to know the expected length of life spent in good health. WHO uses a relatively new indicator for this purpose – healthy life expectancy (HALE), subtracting estimated years of life spent with illness and disability from estimated LE. According to WHO estimates for the year 2002, people in the Russian Federation have 58.4 healthy years on average (64.1 for women, 58.4 for men), which is about 13.2 years less than the Eur-A average (73.3 years) and 2.1 years below the Eur-B+C average (76.4 years). It should be noted, however, that some statistical uncertainties are inherent to those estimates and they should not be regarded as exact measurements. The best achievement in the European region is 73.3 years in Sweden (women 74.8, men 71.9). At age 60, healthy life expectancy in the Russian Federation is 14.0 years for women and 9.7 years for men, while in Sweden the averages are 19.6 and 17.1 years, respectively. Consequently, the expectation of life years to be spent in less than good health in the Russian Federation is 7.7 years for women and 5.5 years for men.

It has been shown also that the decline in healthy life expectancy with age is much steeper in the Russian Federation than in eastern or western Europe and the decline is steeper for men than for women. Of the survivors to older age, however, women in the Russian Federation have substantially worse health than men (Andreev, 2003).

This means that the Russian Federation people live fewer years overall and in worse health than people in most countries in the Region. Therefore, it is particularly important that the future increases in LE in the Russian Federation go hand in hand with improvements in functioning, capacity and health-related quality of life in general.

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



Source: WHO (2003c).

Burden of disease

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

Main conditions

The table below shows the top 10 conditions, in descending order, that account for approximately 90% of the burden of disease among males and females in the Russian Federation. Cardiovascular diseases and unintentional injuries account for the highest burden of disease both among males and cardiovascular

diseases and neuropsychiatric conditions among females. Because mortality from neuropsychiatric conditions is minor, disability in daily living comprises the bulk of their burden.

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

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Cardiovascular diseases	26.1	Cardiovascular diseases	31.2
2	Unintentional injuries	20.6	Neuropsychiatric conditions	16.5
3	Neuropsychiatric conditions	11.6	Unintentional injuries	9.3
4	Intentional injuries	11.5	Malignant neoplasms	9.3
5	Malignant neoplasms	6.9	Digestive diseases	5.1
6	Infectious and parasitic diseases	6.5	Sense organ diseases	4.9
7	Digestive diseases	4.3	Musculoskeletal diseases	4.9
8	Sense organ diseases	2.4	Intentional injuries	3.7
9	Respiratory diseases	2.4	Infectious and parasitic diseases	3.2
10	Musculoskeletal diseases	1.8	Respiratory diseases	2.3

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 male and female populations of the Russian Federation. According to DALYs, alcohol and tobacco use place the greatest burden on males and high blood pressure and high cholesterol on females.

Ten leading risk factors as causes of disease burden measured in DALYs
in the Russian Federation (2002)

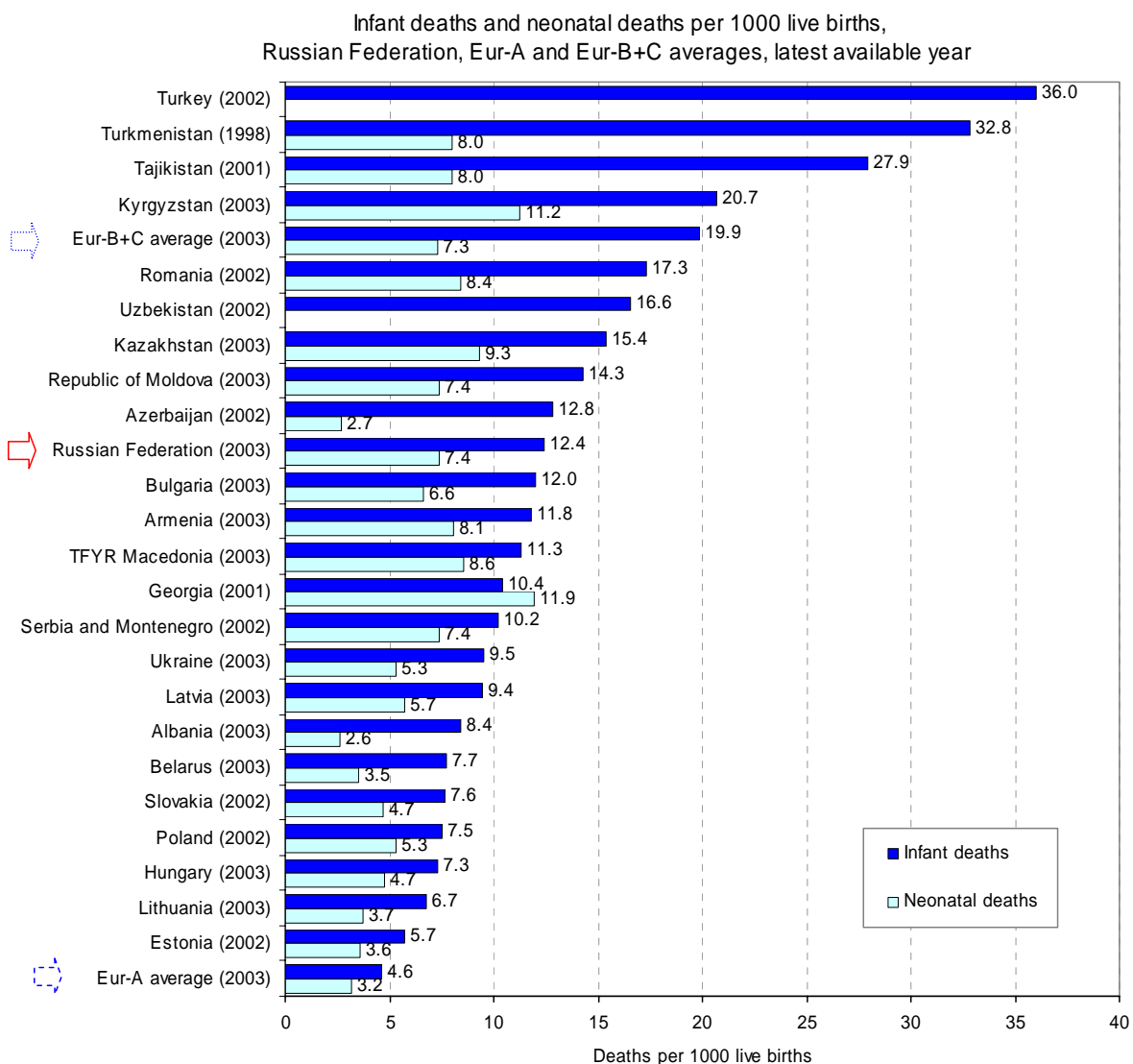
Rank	Males		Females	
	Risk factors	Total DALYs (%)	Risk factors	Total DALYs (%)
1	Alcohol	22.8	High blood pressure	19.6
2	Tobacco	20.5	High cholesterol	12.7
3	High blood pressure	14.1	High BMI	10.7
4	High cholesterol	12.0	Low fruit and vegetable intake	7.0
5	High BMI	7.1	Alcohol	6.8
6	Low fruit and vegetable intake	7.0	Physical inactivity	5.2
7	Physical inactivity	4.3	Tobacco	2.5
8	Illicit drugs	2.7	Unsafe sex	1.8
9	Occupational risk factors for injuries	1.3	Illicit drugs	1.3
10	Lead	1.2	Lead	0.9

Source: Background data from WHO (2003c).

Mortality

Infant, neonatal and child mortality

In 2003, the infant mortality rate in the Russian Federation was 12.4 per 1000 live births – considerably better than the Eur-B+C average of 19.9 and best achievement of 6.7 in Lithuania. Between 1995 and 2003, infant mortality fell by 27%.



Neonatal mortality also fell from 11.0 (1995) to 7.4 per 1000 live births (2003). In 2003, the Eur-B+C average was 7.3 and the best estimates of the Eur-B+C group were around 3-4 per 1000 live births.

Maternal mortality

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

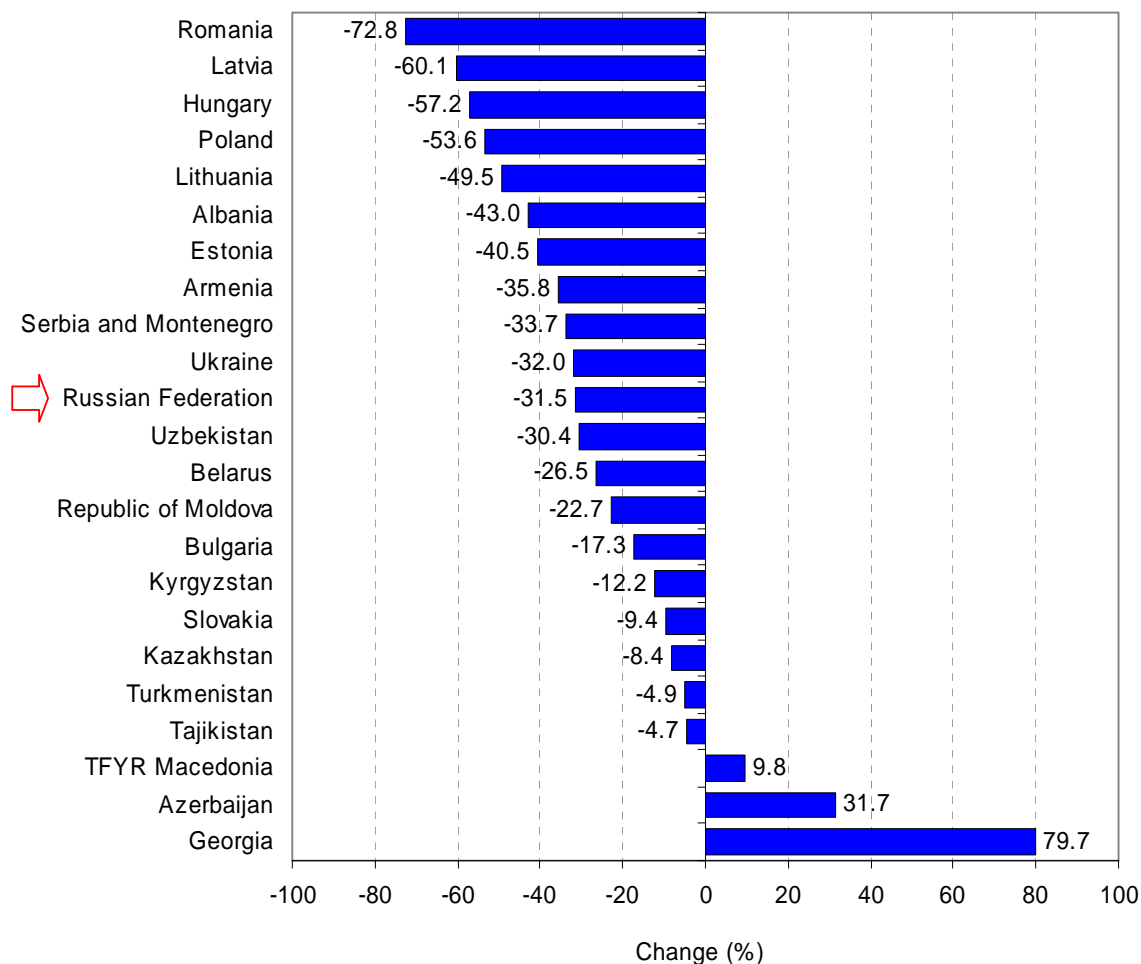
Despite the difficulties in accurately measuring MMR, nationally reported figures are accepted at face value relative to the MDG to improve maternal health – to reduce the MMR by 75% between 1990 and 2015. In some countries, the 2015 target may be equal to or lower than the average current MMR for high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

However, in some countries, MMR were higher in 2002 than they had been in 1990. Applying the 75% reduction to the 1990 baseline in these countries creates in some cases a 2015 MDG target that requires dramatic reductions in MMR before 2015. In these cases, more important than reaching 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.

Of the 472 maternal deaths reported in 2003, 103 were attributed to abortions.

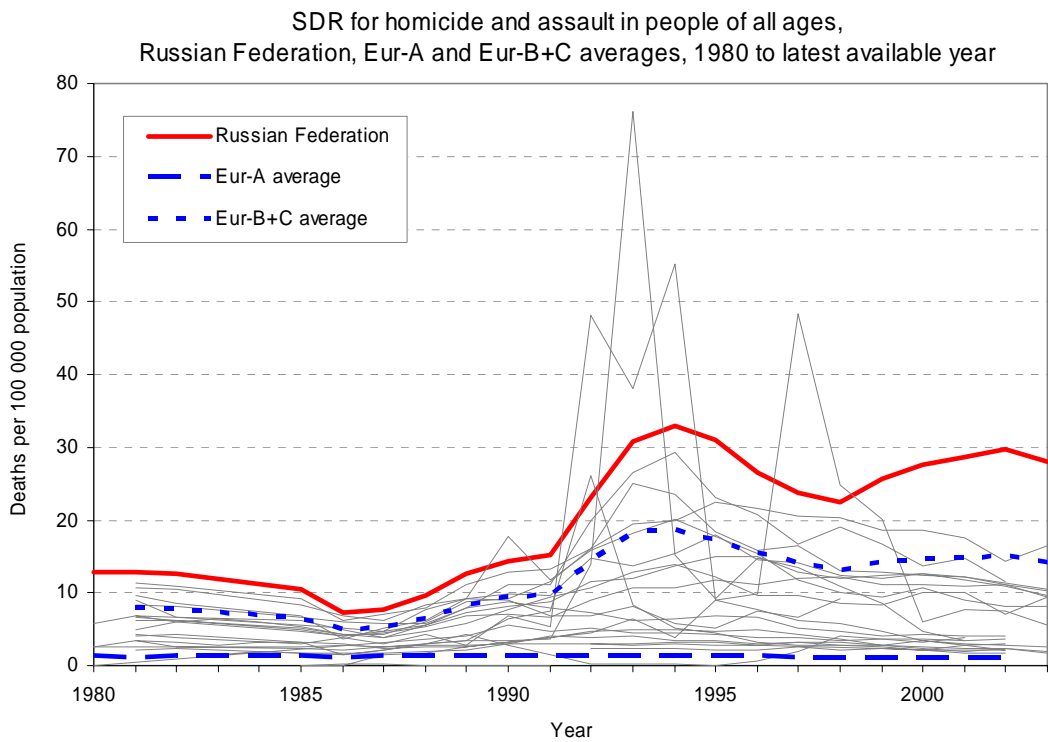
Between 1990 and 2002, the MMR in the Russian Federation fell by 31%, despite an increase between 1990 and 1994 (peaking at about 52 per 100 000). From 1994 to 2002, the rate fell by about 35%. For the Russian Federation to reach its MDG target, MMR would have to fall almost 64% from the 2002 level.

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



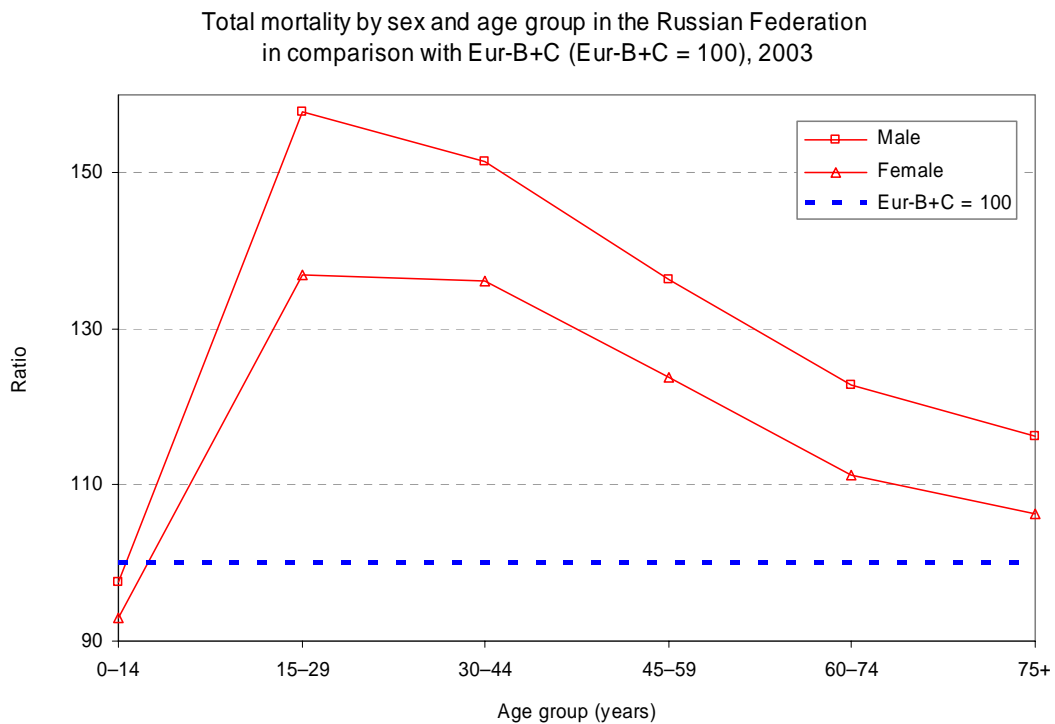
Excess mortality

In general, mortality rates in the Russian Federation are about 20% higher than the Eur-B+C average but nearly 2.5 times higher than the Eur-A average. It should be noted out that the highest excess mortality is due to external causes. The rate is 60% higher than the Eur-B+C average but 460% higher than the Eur-A average. Deaths due to violence are particularly frequent: 28 times the Eur-A average and twice the Eur-B+C average.



Mortality from communicable diseases is about 20% higher than the Eur-B +C average and 200% higher than the Eur-A average.

Mortality from non-communicable diseases is about 15% higher than the Eur-B+C average and 125% higher than the Eur-A average.

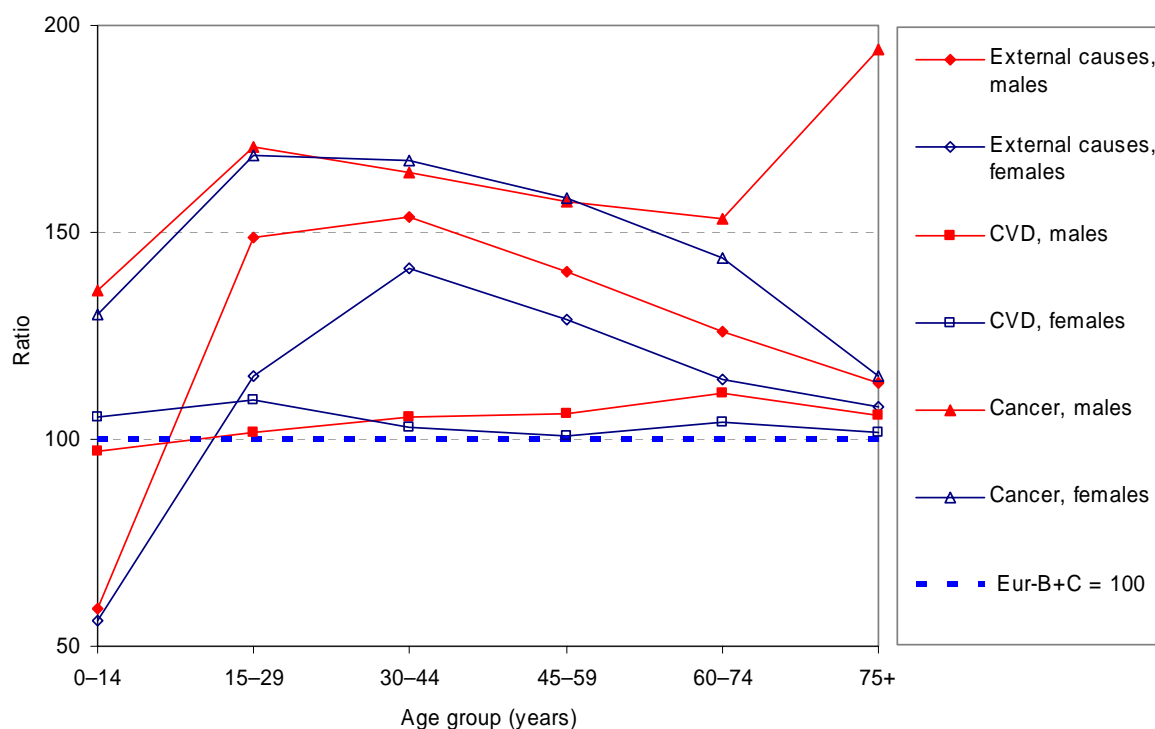


Main causes of death

In 2002, noncommunicable diseases accounted for about 76% of all deaths in the Russian Federation, external causes for about 14% and communicable diseases for less than 2% (Annex. Selected mortality).

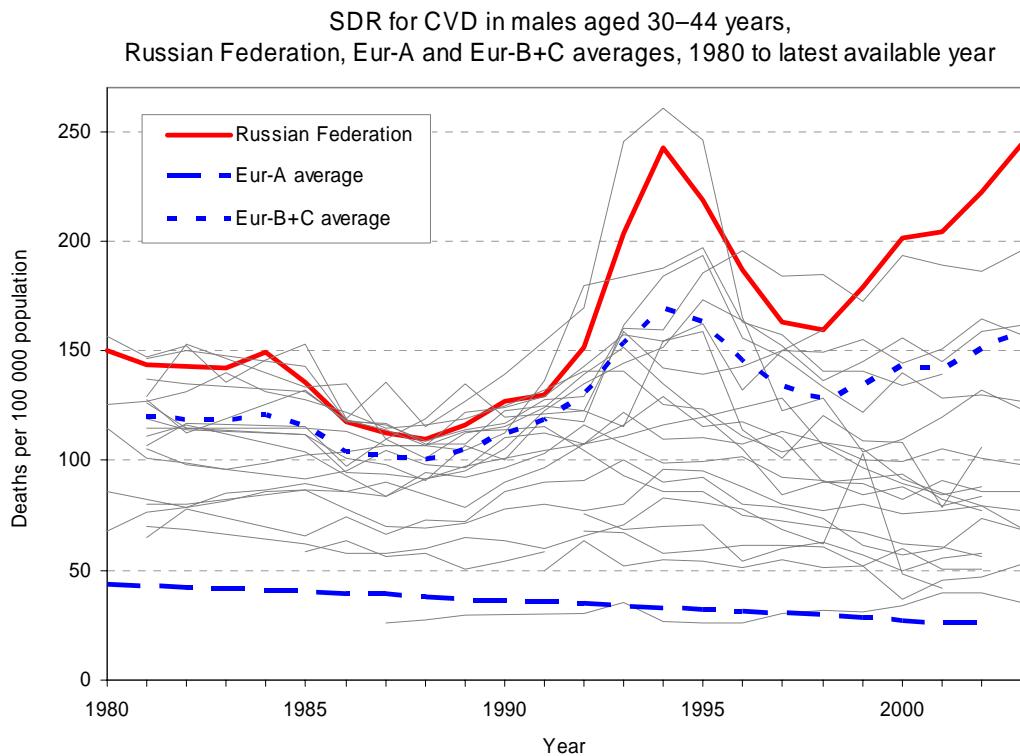
Across most age groups, progress since 1995 has been uneven, with improvements in some groups but increases in others, most frequently among young and middle-aged adults. The pattern is generally similar to that of the Eur-B+C averages overall, although the latter have been more frequently positive than the Russian Federation's. The trends have been overall positive in the Eur-A group.

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



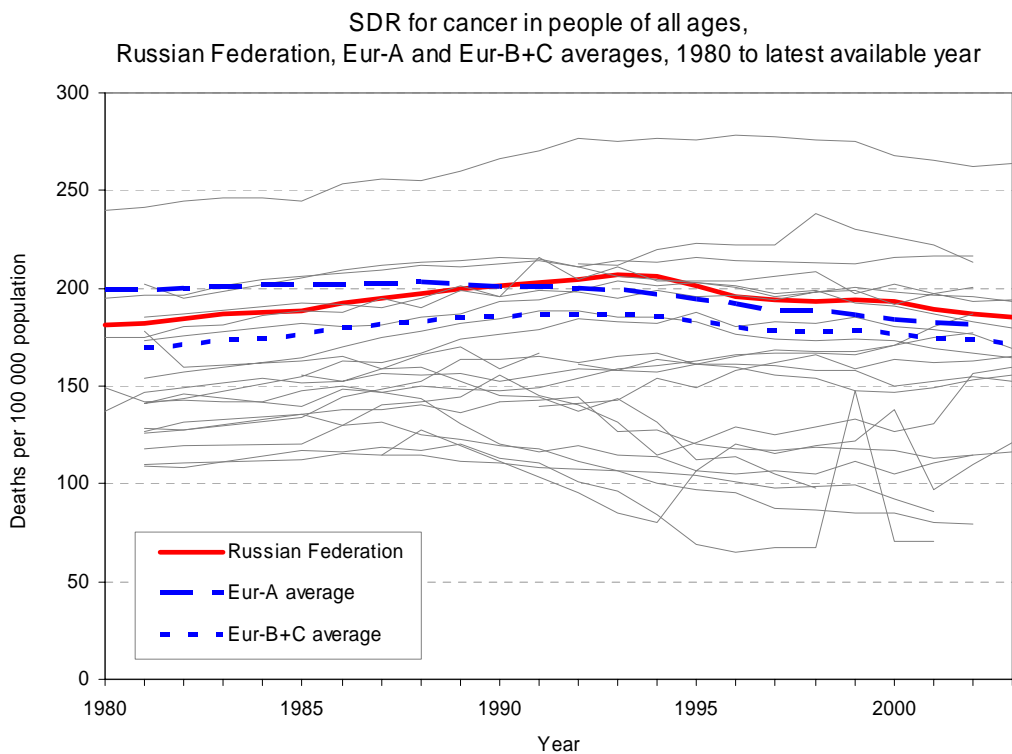
CVD

Cardiovascular diseases are the main causes of death in the Russian Federation (2003), responsible for 56% of overall mortality. Half of the CVD mortality is due to ischemic heart disease (26% of the total mortality) and 40% is due to cerebrovascular diseases (20% of total mortality). CVD are about 3.5 times more frequently the cause of death in the Russian Federation than in Eur-A on average. In the 45–59 year-old group, the Russian Federation mortality is seven times higher than the Eur-A average for both sexes, and was still increasing in 2003, compared to the 1995 level. In the 30–44 age group, CVD mortality in males is nearly 10 times the Eur-A average. Mortality from cardiovascular diseases in the Russian Federation is higher than the Eur-B+C average in all age groups.



Cancer

Cancer mortality is more evenly distributed across the Region. The rates in the Russian Federation are only 2% above the Eur-A average, closer than any other major causes of death. However, due to the generally higher mortality levels in the Russian Federation from most other causes, cancer accounts for about 12% of total mortality in the Russian Federation while this proportion is 28% on average in Eur-A.



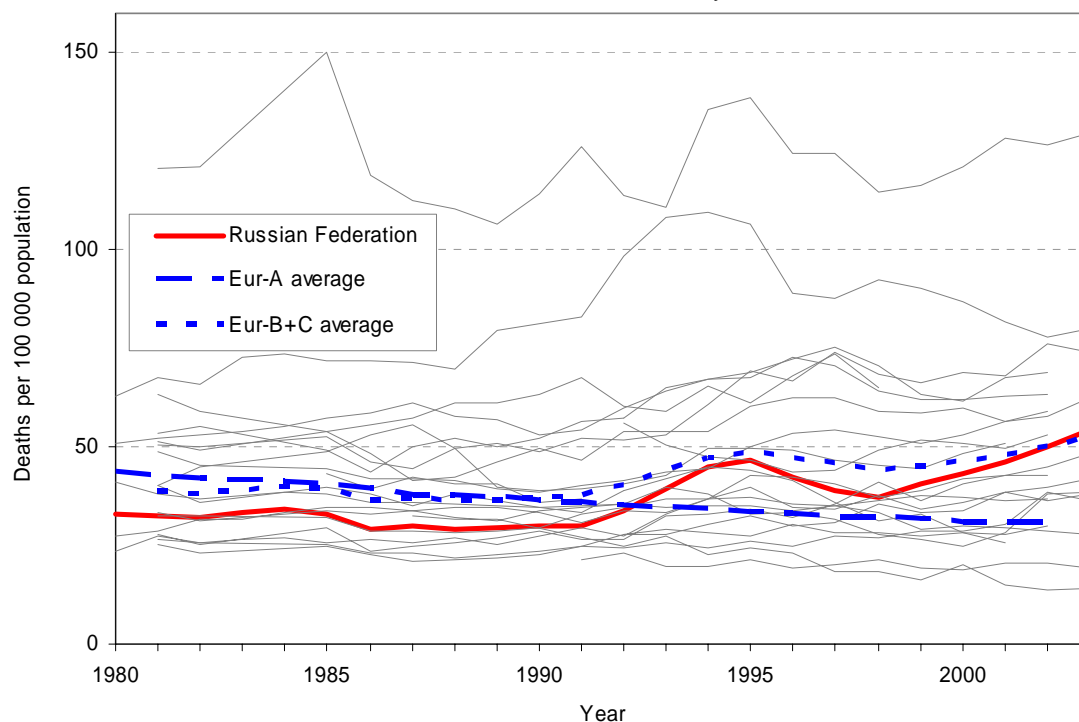
Respiratory diseases

In 2003, respiratory diseases accounted for about 4% of total mortality in the Russian Federation, close to the Eur-B+C average. Nevertheless, the rate per 100 000 population was 40% higher than the Eur-A average.

Digestive diseases

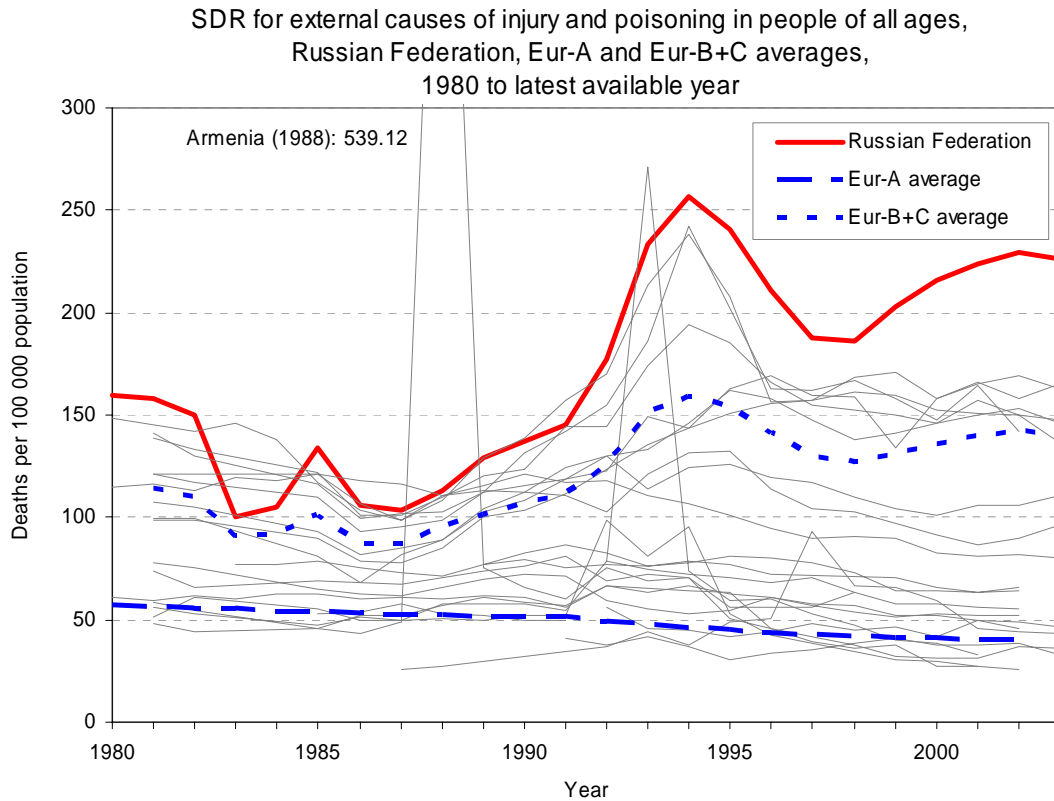
Mortality from digestive diseases has nearly doubled in the Russian Federation since 1990, although it has declined steadily in Eur-A over the last two decades. By 2003, the rate was 6.6 times higher than the Eur-A average. Nevertheless, mortality from digestive diseases in the Russian Federation is about the same as the Eur-B+C average.

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

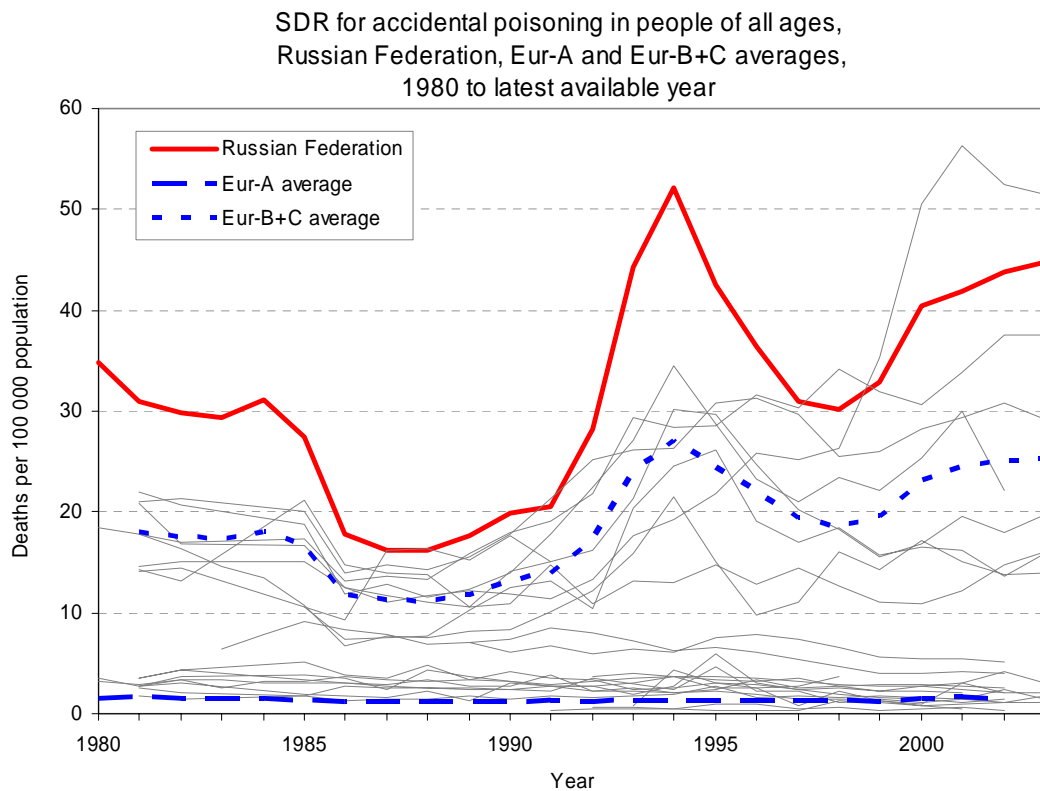


External causes

The high rate of deaths from external causes in the Russian Federation can be described as an epidemic of injury and violence. External causes of injury include unintentional injuries (transport-related 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 226 deaths per 100 000 population in the Russian Federation while the Eur-B+C average is 140 and the Eur-A average is 40. The rates in the Russian Federation have more than doubled since the mid-1980s. It is important to note that the trends are similar for most causes of injury and poisoning.

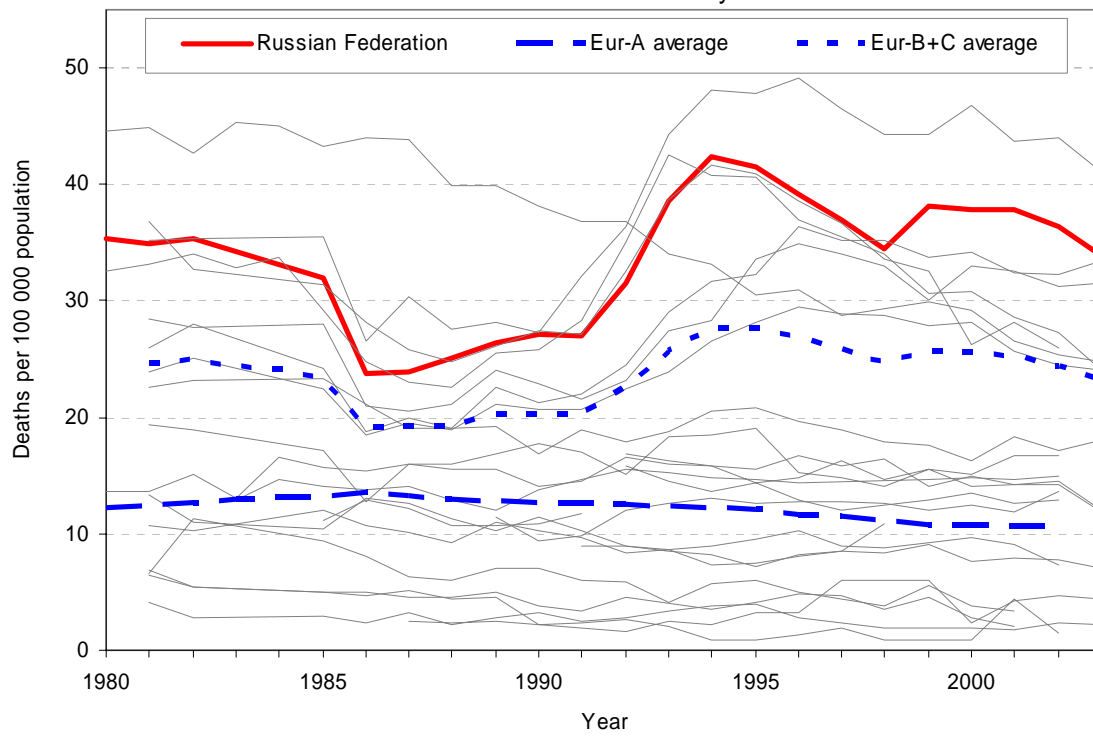


Since there are no specific data on deaths from alcohol poisoning in the Russian Federation, the mortality rate for accidental poisoning can be used as a proxy indicator; it is known that alcohol poisoning is the actual cause of large numbers of deaths registered as accidental poisoning.



Related to the above are the particularly high rates of homicide and suicide.

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



References

- Andreev EM et. al (2003). Health expectancy in the Russian Federation: a new perspective on the health divide in Europe. *Bulletin of the World Health Organization*, 81:778–787 (<http://www.who.int/bulletin/volumes/81/11/en/andreevwa1103.pdf>, accessed 11 October 2005)
- Council of Europe (2005). *Recent demographic developments in Europe 2004*. Strasbourg, Council of Europe.
- Health Evidence Network (2003a). *What are the main risk factors for disability in old age and how can disability be prevented?* Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/HEN/Syntheses/20030820_1, accessed 11 October 2005).
- Health Evidence Network (2003b). *What is the efficacy/effectiveness of antenatal care?* Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/HEN/Syntheses/20030820_1, accessed 11 October 2005).
- Health Evidence Network (2004). *What are the advantages and disadvantages of restructuring a health care system to be more focused on primary health care services?* Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/HEN/Syntheses/20030820_1, accessed 11 October 2005).
- ILO (2005). Key indicators of the labour market database [website]. Geneva, International Labour Organization (<http://www.ilo.org/public/english/employment/strat/kilm/index.htm>, accessed 29 November 2005).
- Lee J-W (2005). Public health is a social issue. *The Lancet*, 365:1005–1006.
- OECD (2004). *Ageing and employment policies*. Paris, Organization for Economic Cooperation and Development (http://www.oecd.org/document/37/0,2340,en_2649_201185_32019685_1_1_1_1,00.html, accessed 14 November 2005).
- Shkolnikov VM et al (2004). Educational differences in male mortality in the Russian Federation and northern Europe. *Demographic Research*, 10, Article 1 (<http://www.demographic-research.org/>, accessed 13 October 2005).
- UNESCO Institute for Statistics (2005). Country/Regional profiles [web site]. Montreal (http://www.uis.unesco.org/profiles/selectCountry_en.aspx, accessed 2 December 2005).
- United Nations (2005). World population prospects: the 2004 revision population database [database online]. New York, United Nations (<http://esa.un.org/unpp/index.asp?panel=1>, accessed 28 September 2005).
- WHO (2002). *The world health report 2002 – reducing risks, promoting healthy life*. Geneva, World Health Organization (http://www.who.int/whr/2002/en/whr02_en.pdf, accessed 28 September 2005).
- WHO (2005). *The world health report 2005 – make every mother and child count*. Geneva, World Health Organization (<http://www.who.int/whr/2005/en>, accessed 11 October 2005).
- WHO (2003a). *Managing newborn problems: a guide for doctors, nurses and midwives*. Geneva, World Health Organization (Integrated Management of Pregnancy and Childbirth), <http://www.who.int/reproductive-health/publications/mnp/mnp.pdf>, accessed 13 October 2005).
- WHO (2003b). *The WHO reproductive health library, version 6*. Geneva, World Health Organization (<http://www.who.int/reproductive-health/rhl/index.html>, accessed 11 October 2005).
- WHO (2003c). *The world health report 2003 – shaping the future*. Geneva, World Health Organization (<http://www.who.int/whr/2003/en>, accessed 11 October 2005).
- WHO (2004). *The world health report 2004 – changing history*. Geneva, World Health Organization (<http://www.who.int/whr/2004/en>, accessed 11 October 2005).
-

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 11 October 2005).

WHO Regional Office for Europe (2004a). *A strategy to prevent chronic disease in Europe: a focus on public health action: the CINDI vision*. Copenhagen, WHO Regional Office for Europe (<http://www.euro.who.int/document/e83057.pdf>, accessed 11 October 2005).

WHO Regional Office for Europe (2004b). *Towards a European strategy on noncommunicable diseases*. Copenhagen, WHO Regional Office for Europe (<http://www.euro.who.int/document/rc54/edoc08.pdf>, accessed 11 October 2005).

WHO Regional Office for Europe (2005). European health for all database (HFA-DB) [online database]. Copenhagen, WHO Regional Office for Europe (<http://www.euro.who.int/hfadb>, accessed 20 January 2005).

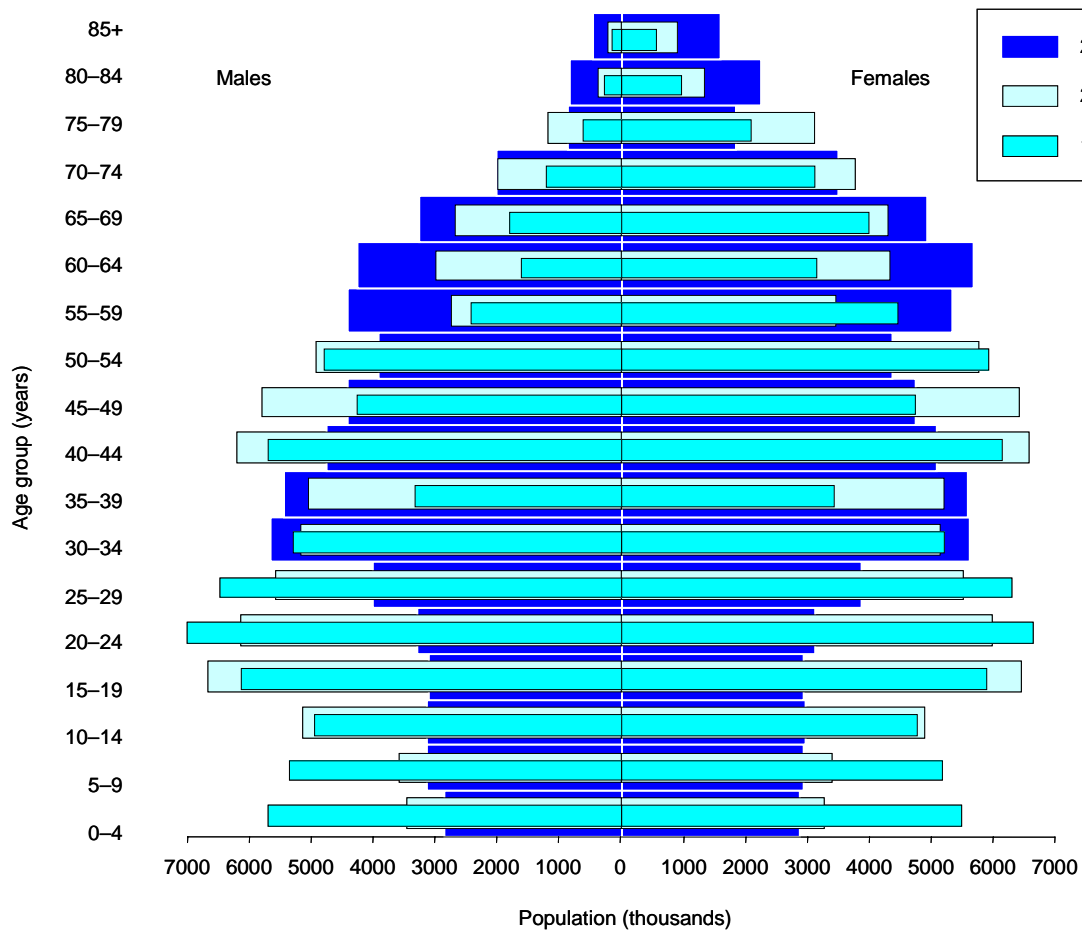
World Bank (2004). *The Millennium Development Goals in Europe and Central Asia*. Washington, DC, World Bank.

World Bank (2005). *World development indicators 2005*. Washington, DC, World Bank (<http://devdata.worldbank.org/wdi2005/home.htm>, accessed 28 September 2005).

Annexes

Annex. Age pyramid

Age pyramid for the Russian Federation



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

Annex. Selected mortality

Selected mortality in the Russian Federation compared with Eur-B+C averages

Condition	SDR per 100 000		Excess mortality in Russian Federation (%)	Total deaths in Russian Federation (%)	Total deaths in Eur-B+C (%)	Eur-A average	Excess Russian Federation to Eur-A (%)	Total deaths in Eur-A (%)
	Russian Federation (2003)	Eur-B+C average (2003)						
Selected non-communicable conditions	1194.9	1044.9	14.4	76.2	79.6	533.8	123.8	82.4
<i>Cardiovascular diseases</i>	870.9	741.8	17.4	55.5	56.5	243.4	257.8	37.6
Ischaemic heart disease	414.6	362.7	14.3	26.4	27.6	95.9	332.3	14.8
Cerebrovascular diseases	316.5	221.7	42.8	20.2	16.9	61.1	418.0	9.4
Diseases of pulmonary circulation and other heart disease	71.0	68.9	3.0	4.5	5.3	56.6	25.4	8.7
<i>Malignant neoplasms</i>	185.4	172.0	7.8	11.8	13.1	181.5	2.1	28.0
Trachea/bronchus/lung cancer	35.0	33.9	3.2	2.2	2.6	37.1	-5.7	5.7
Female breast cancer	24.5	22.1	10.9	1.6	1.7	27.0	-9.3	4.2
Colon/rectal/anal cancer	22.6	19.0	18.9	1.4	1.4	20.7	9.2	3.2
Prostate	14.5	14.3	1.4	0.9	1.1	25.1	-42.2	3.9
<i>Respiratory diseases</i>	67.2	63.1	6.5	4.3	4.8	47.8	40.6	7.4
Chronic lower respiratory diseases	30.7	31.2	-1.6	2.0	2.4	20.2	52.0	3.1
Pneumonia	30.9	23.6	30.9	2.0	1.8	16.2	90.7	2.5
<i>Digestive diseases</i>	54.2	52.3	3.6	3.5	4.0	30.8	76.0	4.8
Chronic liver disease and cirrhosis						12.6		1.9
<i>Neuropsychiatric disorders</i>	17.2	15.7	9.6	1.1	1.2	30.3	-43.2	4.7
Communicable conditions	25.4	20.8	22.1	1.6	1.6	8.4	202.4	1.3
AIDS/HIV	0.4	0.8	-50.0	0.0	0.1	1.1	-63.6	0.2
External causes	225.8	139.6	61.7	14.4	10.6	40.3	460.3	6.2
<i>Unintentional</i>	164.1	102.2	60.6	10.5	7.8	28.7	471.8	4.4
Road traffic injuries	19.7	14.7	34.0	1.3	1.1	9.9	99.0	1.5
Falls	9.6	7.5	28.0	0.6	0.6	6.1	57.4	0.9
<i>Intentional</i>	61.8	37.4	65.2	3.9	2.9	11.6	432.8	1.8
Self-inflicted (suicide)	33.8	23.2	45.7	2.2	1.8	10.6	218.9	1.6
Violence (homicide)	27.9	14.2	96.5	1.8	1.1	1.0	2690.0	0.2
Ill-defined conditions	83.8	64.0	30.9	5.3	4.9	20.9	301.0	3.2
All causes	1568.1	1312.2	19.5	100.0	100.0	647.8	142.1	100.0

Annex. Mortality data

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

Causes of death	Sex	Russian Federation (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	145.0	-3.3	49.4	-2.4	151.7	-3.8
	M	166.4	-3.4	55.3	-2.5	170.5	-3.9
	F	122.5	-3.2	43.3	-2.4	131.9	-3.8
<i>Infectious and parasitic diseases</i>	M	7.4	-6.2	1.4	-1.1	10.9	-7.0
	F	6.2	-5.5	1.1	-3.0	9.5	-6.6
Intestinal infectious diseases	M	2.3	-7.0	0.2	-0.7	5.1	-8.2
	F	1.8	-7.2	0.1	-7.3	4.7	-7.9
<i>Malignant neoplasms</i>	M	5.0	-3.3	3.3	-1.8	5.1	-1.9
	F	4.4	-2.4	2.6	-1.8	4.2	-1.9
<i>Cardiovascular diseases</i>	M	1.9	-0.2	1.4	-3.1	3.3	1.1
	F	1.5	-2.4	1.3	-2.5	2.6	0.1
<i>Respiratory diseases</i>	M	13.3	-5.9	1.4	-4.3	35.9	-5.0
	F	10.8	-6.2	1.0	-4.2	30.7	-5.0
Pneumonia	M	8.8	-5.6	0.5	-6.0	20.9	-4.9
	F	7.3	-5.6	0.4	-5.1	17.9	-4.7
<i>Certain conditions originating in perinatal period</i>	M	694.8	-3.0	255.3	-2.1	607.6	-2.7
	F	479.6	-3.1	202.3	-1.6	427.5	-2.7
Congenital malformations & chromosomal abnormalities	M	29.8	-3.1	11.6	-2.9	24.2	-2.8
	F	26.8	-2.2	10.0	-3.3	21.0	-2.6
<i>Ill-defined causes</i>	M	7.7	3.6	5.0	-3.9	5.6	-0.6
	F	6.1	3.7	3.4	-4.2	4.6	-1.0
<i>External causes of injury & poisoning</i>	M	39.5	-3.0	7.0	-4.0	29.0	-3.4
	F	23.5	-2.6	4.6	-3.2	18.1	-3.1
Road traffic injuries	M	6.4	-5.7	2.5	-4.5	4.7	-2.6
	F	4.3	-3.2	1.7	-4.8	3.0	-1.6

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

Causes of death	Sex	Russian Federation (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	245.6	-0.7	56.0	-2.3	161.0	-0.9
	M	381.4	-0.7	82.0	-2.3	241.7	-1.0
	F	108.1	0.3	29.3	-2.2	79.0	-0.6
<i>Infectious and parasitic diseases</i>	M	15.4	5.2	1.2	1.5	12.3	3.0
	F	5.3	7.1	0.8	1.9	5.1	2.5
Malignant neoplasms	M	8.9	-1.9	6.2	-1.0	8.8	-1.9
	F	8.4	-1.4	4.7	-1.4	7.7	-1.9
<i>Cardiovascular diseases</i>	M	26.2	1.6	4.1	-2.4	17.6	0.0
	F	8.4	1.9	2.3	-2.0	7.3	-0.9
<i>Respiratory diseases</i>	M	8.9	2.4	1.4	-3.6	6.9	0.2
	F	3.8	2.4	0.9	-2.7	3.8	-1.1
<i>Digestive diseases</i>	M	10.5	5.4	0.9	-3.5	8.0	3.0
	F	4.4	9.8	0.5	-3.8	3.7	3.1
Ill-defined causes	M	21.1	10.1	4.0	-3.1	11.6	7.1
	F	5.6	11.0	1.4	-1.3	3.3	5.8
<i>External causes</i>	M	277.4	-1.5	58.3	-1.4	162.4	-1.6
	F	62.2	0.0	14.4	-1.6	36.9	-0.2
Road traffic injuries	M	41.0	-4.0	28.5	-1.3	27.8	-1.5
Accidental drowning	F	13.0	1.4	7.3	-1.4	8.0	0.3
	M	17.5	-4.0	1.3	-2.2	10.8	-3.9
Accidental poisoning	F	2.9	-3.0	0.2	-2.1	1.9	-2.2
	M	36.6	4.7	2.8	0.0	19.1	3.3
Self-inflicted (suicide)	F	7.6	3.2	0.7	0.8	4.4	2.5
	M	60.8	-0.6	12.7	-1.8	36.8	0.0
	F	8.8	-1.7	3.1	-2.2	5.8	-1.3

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

Causes of death	Sex	Russian Federation (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	669.8	0.2	120.3	-2.5	453.8	-0.7
	M	1060.8	0.1	161.6	-2.6	700.0	-0.8
	F	293.4	1.0	78.5	-2.1	215.6	-0.2
<i>Malignant neoplasms</i>	M	42.4	-2.7	27.6	-2.3	40.2	-2.8
	F	45.2	-1.3	31.3	-2.0	43.8	-1.4
Trachea/bronchus/lung cancer	M	7.5	-4.4	5.0	-3.4	7.3	-4.2
Female breast cancer	F	1.9	-0.6	2.8	-0.6	2.2	-1.0
<i>Cardiovascular diseases</i>	F	10.3	-2.3	10.0	-2.6	10.0	-2.3
	M	243.8	1.4	26.1	-2.5	158.6	-0.4
	F	64.0	2.3	10.4	-2.1	45.3	0.0
Ischaemic heart disease	M	111.0	-1.2	11.8	-3.1	73.7	-2.2
	F	20.3	0.0	2.4	-2.7	14.4	-1.3
Cerebrovascular diseases	M	34.2	1.6	4.4	-3.2	24.6	-0.4
	F	13.7	1.0	3.6	-2.5	10.6	-1.3
<i>Respiratory diseases</i>	M	55.9	3.3	3.9	-3.5	34.3	0.9
	F	13.6	4.4	2.2	-2.0	9.8	0.8
<i>Digestive diseases</i>	M	62.1	3.7	12.6	-2.4	50.2	1.4
	F	25.3	9.0	5.4	-1.7	19.4	4.1
<i>External causes</i>	M	492.8	-1.3	58.8	-1.2	299.5	-1.9
	F	98.7	-0.4	15.1	-1.8	58.9	-1.0
Road traffic injuries	M	42.7	-3.4	16.0	-0.5	31.4	-1.7
	F	10.0	-0.9	3.9	-2.0	7.1	-0.5
Self-inflicted (suicide)	M	80.9	-2.8	21.2	-1.5	54.9	-2.4
	F	10.9	-2.7	5.8	-2.2	7.9	-2.5

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

Causes of death	Sex	Russian Federation (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	1703.0	0.2	435.6	-1.3	1294.9	-0.6
	M	2702.4	0.3	580.1	-1.4	1981.7	-0.6
	F	864.8	0.3	293.3	-1.0	698.9	-0.5
<i>Malignant neoplasms</i>	M	343.4	-2.4	218.2	-1.2	323.2	-1.9
	F	187.3	-0.8	155.0	-1.0	186.1	-0.5
Trachea/bronchus/lung cancer	M	104.7	-3.6	65.9	-1.5	101.4	-2.9
Female breast cancer	F	10.5	-1.1	21.8	3.4	15.4	1.0
<i>Cardiovascular diseases</i>	F	48.7	0.7	44.0	-2.2	45.3	0.1
	M	1112.8	1.3	156.4	-2.6	793.1	-0.1
	F	350.8	0.9	50.9	-2.5	271.7	-0.6
Ischaemic heart disease	M	623.8	0.4	86.2	-3.3	435.3	-0.7
	F	144.0	0.7	17.8	-3.4	111.1	-0.6
Cerebrovascular diseases	M	233.2	0.5	23.7	-2.6	168.6	-0.9
	F	113.9	-0.2	14.5	-2.1	88.4	-1.4
<i>Respiratory diseases</i>	M	169.3	0.1	20.3	-1.7	108.7	-1.4
	F	32.8	1.9	10.2	-1.3	24.5	-0.7
<i>Digestive diseases</i>	M	139.9	1.9	49.6	-0.8	129.7	0.7
	F	67.9	4.4	20.3	-0.7	57.3	1.9
<i>External causes</i>	M	644.9	-0.6	62.8	-1.0	409.2	-0.9
	F	141.0	-0.9	20.9	-0.9	89.1	-1.1
Road traffic injuries	M	33.9	-4.8	13.0	-1.3	28.5	-1.8
	F	9.9	-3.3	4.1	-2.1	7.5	-1.4
Self-inflicted (suicide)	M	92.1	-2.9	23.1	-1.1	68.1	-2.4
	F	12.0	-4.3	8.5	-1.2	10.2	-3.4

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

Causes of death	Sex	Russian Federation (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	3942.6	0.6	1570.9	-1.9	3411.7	-0.1
	M	6131.6	0.7	2156.9	-2.1	4996.4	0.1
	F	2601.9	0.0	1069.2	-1.9	2339.0	-0.6
<i>Malignant neoplasms</i>	M	1112.6	-1.3	851.3	-1.4	1002.5	-0.8
	F	457.6	-0.8	439.8	-1.1	438.9	-0.7
Trachea/bronchus/lung cancer	M	354.5	-2.3	261.8	-1.9	321.7	-1.5
	F	29.7	-3.4	59.0	0.2	37.1	-1.4
Female breast cancer	F	72.9	2.2	79.7	-1.6	68.7	1.3
<i>Cardiovascular diseases</i>	M	3661.1	1.7	744.9	-3.6	2903.0	0.6
	F	1728.1	0.6	335.7	-3.9	1507.8	-0.3
Ischaemic heart disease	M	1960.9	1.6	381.3	-4.2	1582.2	1.2
	F	791.7	0.9	133.5	-4.6	731.4	0.5
Cerebrovascular diseases	M	1218.0	1.5	143.3	-3.7	833.7	0.2
	F	712.3	0.3	86.7	-4.1	528.9	-0.8
<i>Respiratory diseases</i>	M	383.4	-2.0	144.0	-3.5	303.0	-2.4
	F	65.7	-3.6	62.5	-2.4	68.6	-3.6
<i>Digestive diseases</i>	M	193.3	0.3	111.6	-1.6	193.0	0.1
	F	94.0	0.7	54.1	-1.7	94.2	0.2
<i>External causes</i>	M	490.4	1.6	79.3	-1.4	320.0	1.0
	F	127.5	0.1	32.1	-2.1	88.7	-0.5
Road traffic injuries	M	26.8	-4.4	14.8	-3.0	24.3	-1.5
	F	11.5	-2.0	5.9	-3.4	9.5	-1.0
Self-inflicted (suicide)	M	83.1	-1.1	24.5	-1.6	60.5	-0.8
	F	15.1	-3.7	8.7	-2.6	12.7	-3.1

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

Causes of death	Sex	Russian Federation (2003)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	13257.3	0.7	8059.6	-1.0	12338.8	0.0
	M	17258.3	0.8	9832.0	-1.1	14838.0	0.1
	F	12137.2	0.6	7112.5	-0.9	11421.7	0.0
<i>Malignant neoplasms</i>	M	1576.1	0.9	2231.1	-0.4	1489.3	1.2
	F	732.4	0.6	1136.2	-0.4	721.7	0.8
Trachea/bronchus/lung cancer	M	361.1	0.2	457.1	-0.7	323.5	1.0
	F	51.3	-0.6	102.7	1.5	55.6	0.5
Female breast cancer	F	93.0	4.6	159.6	-0.4	92.0	3.1
<i>Cardiovascular diseases</i>	M	11617.8	1.2	4356.2	-2.1	10221.2	0.4
	F	9510.1	0.8	3577.9	-1.9	8805.6	0.4
Ischaemic heart disease	M	5674.0	1.6	1708.0	-2.2	4925.6	1.4
	F	4136.3	1.2	1150.0	-2.2	4028.6	1.2
Cerebrovascular diseases	M	4465.8	1.6	1119.8	-2.5	3004.4	0.7
	F	4135.0	1.5	1026.9	-2.4	2967.6	0.5
<i>Respiratory diseases</i>	M	842.6	-2.1	1156.5	-2.4	824.1	-2.1
	F	235.4	-3.7	591.9	-2.1	302.3	-3.2
<i>Digestive diseases</i>	M	271.8	-0.1	340.3	-1.1	270.4	0.3
	F	156.7	0.4	279.8	-0.4	175.0	1.1
<i>External causes</i>	M	1173.1	0.8	275.0	-0.6	604.2	0.1
	F	199.0	-0.7	187.8	-1.2	172.4	-1.2
Road traffic injuries	M	45.5	-10.7	28.1	-2.2	34.6	-3.1
	F	19.2	-1.2	10.0	-3.1	14.7	-1.7
Self-inflicted (suicide)	M	133.5	-0.5	49.5	-1.6	86.6	-1.1
	F	29.2	-2.2	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

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.

Disease coding

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

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

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

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

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

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

Limitations of national-level data

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

Reference groups for comparison

When possible, international comparisons are used as one means of assessing a country's comparative strengths and weaknesses and to provide a summary assessment of what has been achieved so far and

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

what could be improved in the future. Differences between countries and average values allow the formulation of hypotheses of causation or imply links or remedies that encourage further investigation.

The country groups¹ 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, Turkey, Turkmenistan, Ukraine, and Uzbekistan. Unless otherwise indicated, Eur-B+C and averages for Eur-B+C refer to these countries.

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

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

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

Glossary

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

Technical terminology

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

¹WHO 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).