

HIGHLIGHTS ON HEALTH IN KAZAKHSTAN



Country Highlights give an overview of the health and health-related situation in a given country and compare, where possible, its position in relation with other countries in the region. The Highlights have been developed in collaboration with Member States for operational purposes and do not constitute a formal statistical publication. They are based on information provided by Member States and other sources as listed.

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TECHNICAL NOTES

Highlights on Health provide an overview of the health of a country's population and the main factors related to it. When possible, comparisons are made with other countries in WHO's European Region, as one means of assessing the country's comparative strength and weaknesses. As a rule, data have been taken for this purpose from one common international source; nevertheless, even under these circumstances the comparability of data may be limited owing to differences in national definitions, registration systems, etc. Unless otherwise mentioned, the main source of all data is the "Health for All" (HFA) database of the WHO Regional Office for Europe (June 1999 version).

Where necessary, specific data from national sources are cited in the Highlights.

Two main types of graphical presentation are used in the Highlights to illustrate comparisons between countries:

- line charts, showing the trend in a particular indicator in the country in question (thicker line) compared with reference countries (thin lines);
- bar charts, showing a particular country's ranking compared with reference countries. The latest available data are used (i.e. the last year for which data are available may differ from one country to another). This type of chart is sensitive to small differences in the value of an indicator and should accordingly be interpreted with a certain amount of caution. For instance, a given country's position relative to other countries may change sharply one way or another when more recent data are included.

There are 51 Member States in WHO's European Region. It is not always appropriate to include all these countries in comparisons. For that reason, the charts mentioned above show a limited number of (usually geographically neighbouring) countries, which have certain similarities caused by their historical developments. In this case, comparisons are made with the other 14 countries that were formerly republics of the Soviet Union, with the average for all 15 newly independent states (NIS) formed following the break-up of the USSR, with the average for the five central Asian republics (CAR), and with the average for the 15 countries that are members of the European Union (EU).

Mortality data are the most complete and comparable, and they therefore constitute the main component of international comparisons. However, even in this case there is often some doubt about the completeness of the recording of deaths, especially at very young and old ages, and regarding the accuracy of coding of causes of death.

Unless otherwise stated, the charts are based on mortality rates standardized for the European standard population structure (for further details, see any issue of the *World Health Statistics Annual*). In most cases, so-called "premature mortality" in the age group 0–64 years is used.

In order to ensure comparability, the majority of indicators have been calculated at the WHO Regional Office for Europe (WHO/EURO), using a uniform methodology and software. For that reason, the values of some indicators in the HFA database may differ somewhat from national assessments based on other methods. This is true in particular for indicators such as life expectancy and maternal mortality.

Only a relatively small amount of the data contained in the HFA database is used in the Highlights. If further data are needed, readers are recommended to make use of the database itself, which can be downloaded from WHO/EURO's web site (www.who.dk.Country Information).

A list of references and a glossary are given at the end of this document.

OVERVIEW

The birth rate in Kazakhstan is the lowest of the central Asian republics (CAR), although it is relatively high compared to the majority of countries in the European Region.

The trend in life expectancy is similar to that in the Russian Federation and most other newly independent states (NIS): it rose in 1986 as a result of President Gorbachev's anti-alcohol campaign, but fell sharply as from 1992. It was only in 1997 that some improvement was seen, a two-year lag compared with other NIS. According to the latest data, Kazakhstan has the second lowest figure for life expectancy in the European Region.

The infant mortality rate has remained virtually unchanged since the end of the 1980s and, like that of other CAR, is among the highest in the Region.

The maternal mortality rate in Kazakhstan is also one of the highest in the Region. Moreover, this indicator has continued to rise in recent years.

The trend in mortality due to cardiovascular diseases, like those in most other NIS, is characterized by a sharp increase as from 1992, although there has been some reduction in mortality due to these diseases in 1997. According to the latest data, Kazakhstan has the second highest rate in the European Region for premature mortality (0–64 years) due to diseases of the circulatory system.

Despite a fall in the past few years, the rate of premature mortality due to cancer in Kazakhstan is one of the highest in the European Region. A similar situation is also seen for mortality due to lung cancer.

Female mortality due to breast cancer is still relatively low compared with most other European countries, although it has increased steadily and showed a more rapid rise in the period 1995–1997.

Mortality due to external causes of injuries and poisonings has risen steadily since the mid-1980s. In 1997 the rate stabilized somewhat, at

a level close to the highest in the European Region.

The increase in mortality due to suicides that was apparent from the start of the 1990s levelled off around 1997.

In terms of the homicide rate, Kazakhstan is in second place in Europe (after the Russian Federation), although this indicator began to fall slightly in 1996–1997.

The rate of mortality due to infectious and parasitic diseases has more than doubled since 1990 and is currently one of the highest in the European Region (after Tajikistan and Turkmenistan).

The tuberculosis incidence rate rose sharply as from 1995 and, according to the latest data, is one of the highest in the European Region.

The hepatitis incidence rate, after falling slightly in the period 1991–1994, returned to a figure close to the average for the CAR and remains one of the highest in the European Region. Syphilis incidence in Kazakhstan has taken on the proportions of an epidemic since 1993. According to the latest data, the syphilis incidence rate is now the second highest (after the Russian Federation) in the European Region.

The number of hospital beds began to be substantially reduced in 1993, and the bed stock in Kazakhstan is currently close to the average figure for the European Region as a whole.

The physician to population ratio has also fallen from the early 1990s and is now close to the European average.

The level of hospitalisation and number of outpatient consultations have fallen significantly since the end of the 1980s. At the same time, the average length of stay in hospital has remained virtually unchanged (compared with a steady reduction in the length of hospital stay in western Europe).

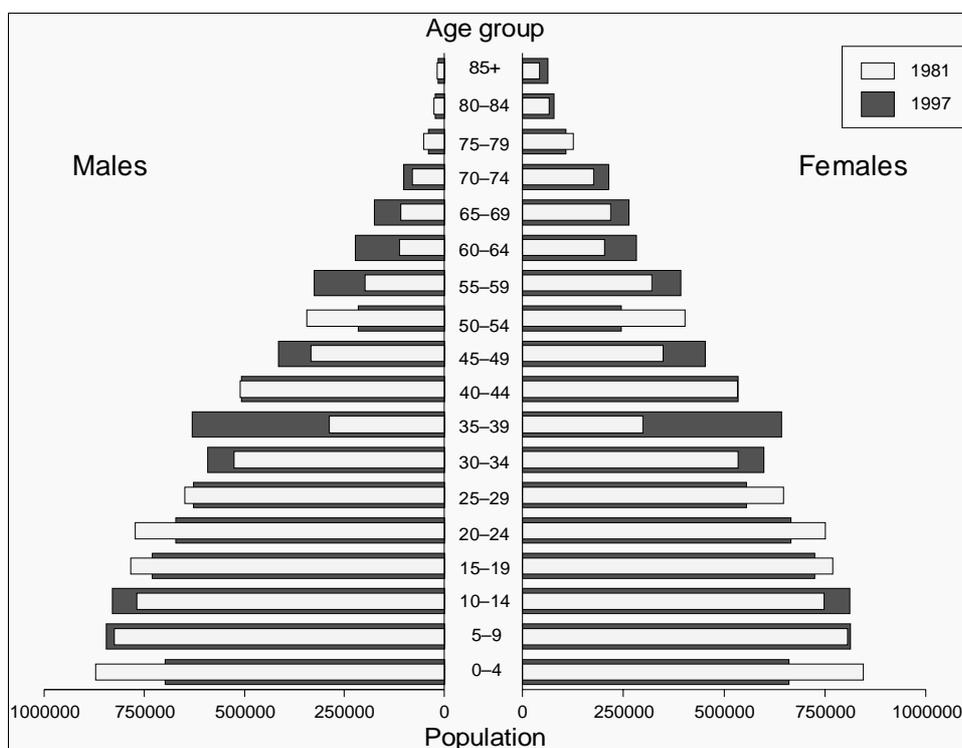
According to the latest data, the level of expenditure on health care in Kazakhstan is one of the lowest in the European Region.

THE COUNTRY AND ITS PEOPLE

Kazakhstan became an independent state following the break-up of the Soviet Union in 1991. It is the largest country in central Asia. Desert and semi-desert areas account for 67% of the country area. In terms of deposits of valuable minerals and other natural resources, Kazakhstan is one of the richest countries in the central Asian region. The country is a republic with a bicameral parliament. The President, who is elected every seven years, is the Head of State and appoints the government. The capital of Kazakhstan is Astana.

Basic data on Kazakhstan and the WHO European Region		
	Kazakhstan (1998*)	Europe (1996)
Population (millions)	15.5	
Population aged	29.5	20,4
• 0–14 years, %		
• 15–64 years, %	63.6	66,2
• ≥ 65 years, %	6.9	13,4
Area, km ²	2 724 900	
Population density per km ²	5.7	31
Urban population (%)	55.1	71,6 ^a
Births per 1000 population	14.2	11,34
Deaths per 1000 population	9.8	11,15
Natural growth rate per 1000 population	4.4	0,19
Gross domestic product (GDP) per person in US\$, PPP	3037^a	11940 ^a
^a – 1995		
* – Preliminary data		
PPP – purchasing power parity		

Age pyramid, 1981 and 1997



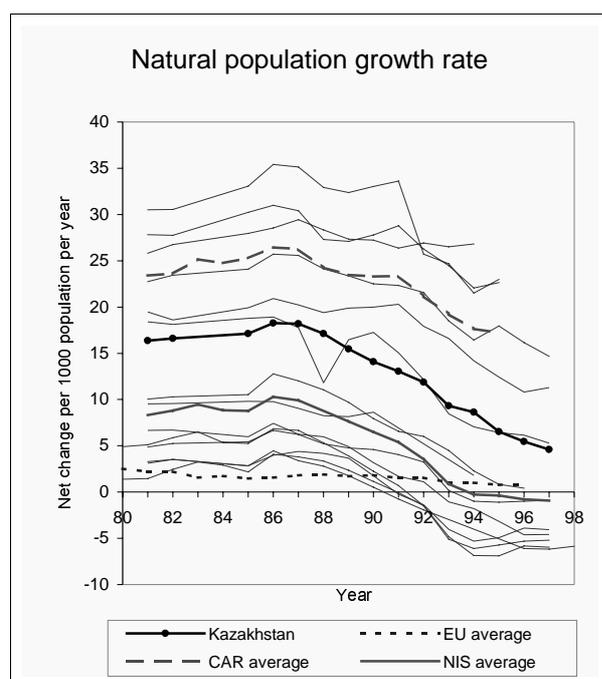
Demography

In 1998 the Republic of Kazakhstan had a total population of 15 507 000 people, 55.1% of whom were living in cities and urban settlements. The population density in Kazakhstan is the lowest in WHO's European Region (with the exception of Iceland).

Like in other CAR, the birth rate in Kazakhstan has fallen steadily since the end of the 1980s, although it still ensures a positive natural population growth rate. The mortality rate is significantly higher than in other CAR. However, this indicator, having reached a maximum in 1995–1996, has levelled off and even begun to fall in recent years. The natural population growth rate has fallen threefold compared with 1990, and in a number of regions a population decline is being seen.

When combined with a significant negative migratory process, this has resulted in Kazakhstan's population falling by 671 800 people or approximately 4% in the past eight years.

The population is tending to become older. Between 1990 and 1997, the proportion of young people (0–14 years) fell from 31.5% to 29.5%, while the proportion of those aged 65 years and above increased from 5.9% to 6.9%.



Family structure

In 1998, the number of registered marriages per 1000 population was 30% lower than in 1990, while there were 11% fewer divorces. The ratio of marriages to divorces is 2.7 : 1. While the marriage rate in the Republic of Kazakhstan (6.1 per 1000 population) is close to that of other CAR, the divorce rate (2.3 per 1000 population) is two to three times higher. An increasing number of children in the Republic are born out of wedlock. In 1997, the proportion of such children (21%) was almost twice as high as in 1990. Particularly high figures were found in the regions of Qostanay (28.8%), Pavlodar (28.7%) and Aqmola (27.9%), where inhabitants of non-indigenous nationality predominate.

Migrant population and ethnic profile

Migratory processes have strengthened in the Republic in recent years.

Population outflows tripled between 1991 and 1997, to 16.5 per 1000 population, or some 3.5 times more than natural growth. The largest negative migratory balance was in 1994 (-26.5 per 1000 population).

Migration has led to a substantial change in the ethnic profile of the population. The proportion of people of indigenous nationality has increased. In 1997, the ethnic profile was as follows: Kazakhs, 50.6%; Russians, 32.2%; Ukrainians, 4.5%; Uzbeks, 3.2%; Germans, 1.9%; others, 6.7%. In 1991, the corresponding figures were: Kazakhs, 41.9%; Russians, 37.0%; Ukrainians, 5.3%; Uzbeks, 2.1%; Germans, 4.6%; others, 9.1%.

Education, language, religion

The literacy level among the population over 15 years of age is 98%.

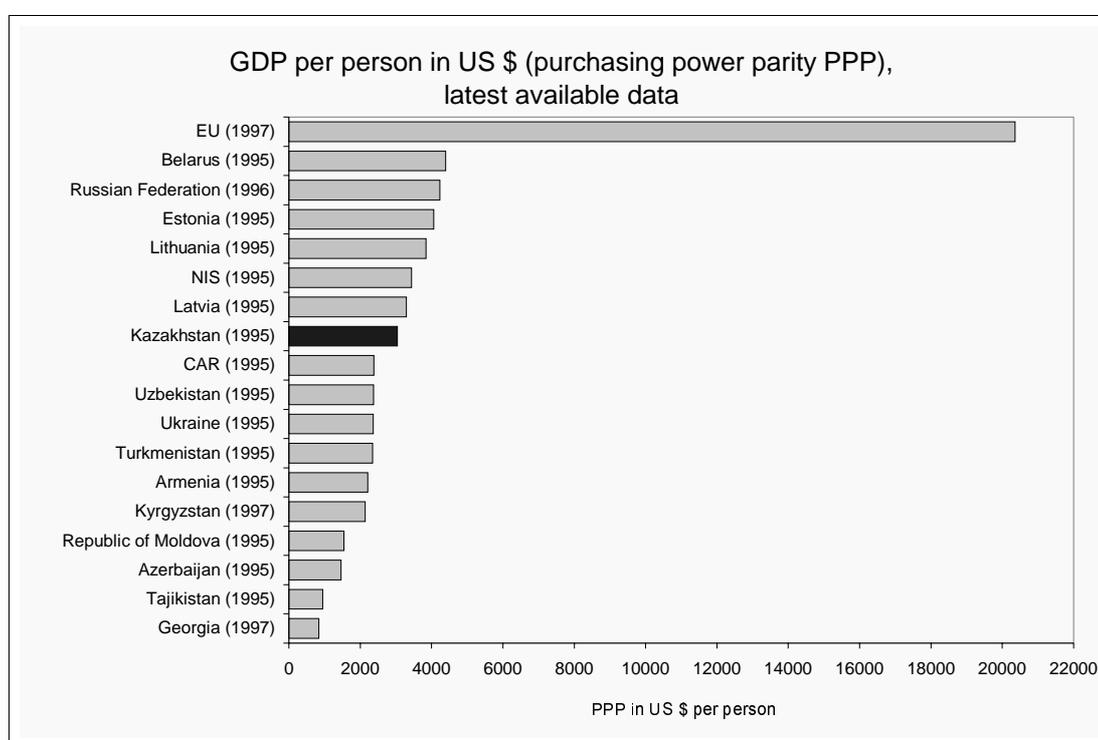
The official language is Kazakh, while the language of international communication is Russian. The main religions are Islam and Russian Orthodoxy, although the majority of the population are atheist (*WHO Liaison Office in Kazakhstan, 1999*).

Economy

The break-up of the Soviet Union has had severe repercussions on Kazakhstan's economy, and especially on its heavy industry: production fell sharply, reaching its lowest point in 1994. Subsequently, however, the process of economic reform and privatization gained pace in 1995–1997. Exploitation of the Tengiz oil field promises to turn Kazakhstan into one of the largest oil exporters in the years to come. According to data from the World Bank, gross national product increased by

1.3% in 1996–1997. In terms of income per capita, Kazakhstan outstrips the other CAR, although it is far from attaining the European average (*The World Bank, 1999*).

The inflation rate in 1997 was 12%. The official unemployment rate is 3.8%, a relatively low figure for the European Region. However, real unemployment is probably far higher. In 1993, 18.3% of the working population were classified as “working at home” compared with 9.1% in 1991.



HEALTH STATUS

As in most of the other former republics of the Soviet Union, the trends in mortality and hence also in average life expectancy in Kazakhstan show a characteristic pattern: an improvement in the period 1985–1986 as a result of President Gorbachev's anti-alcohol campaign, followed by a sharp deterioration in 1992–1995, owing partly to a return to former patterns of alcohol consumption and partly to the difficult socioeconomic conditions during the transitional period, and finally a certain degree of stabilization (although lagging somewhat behind the other NIS) as from 1997.

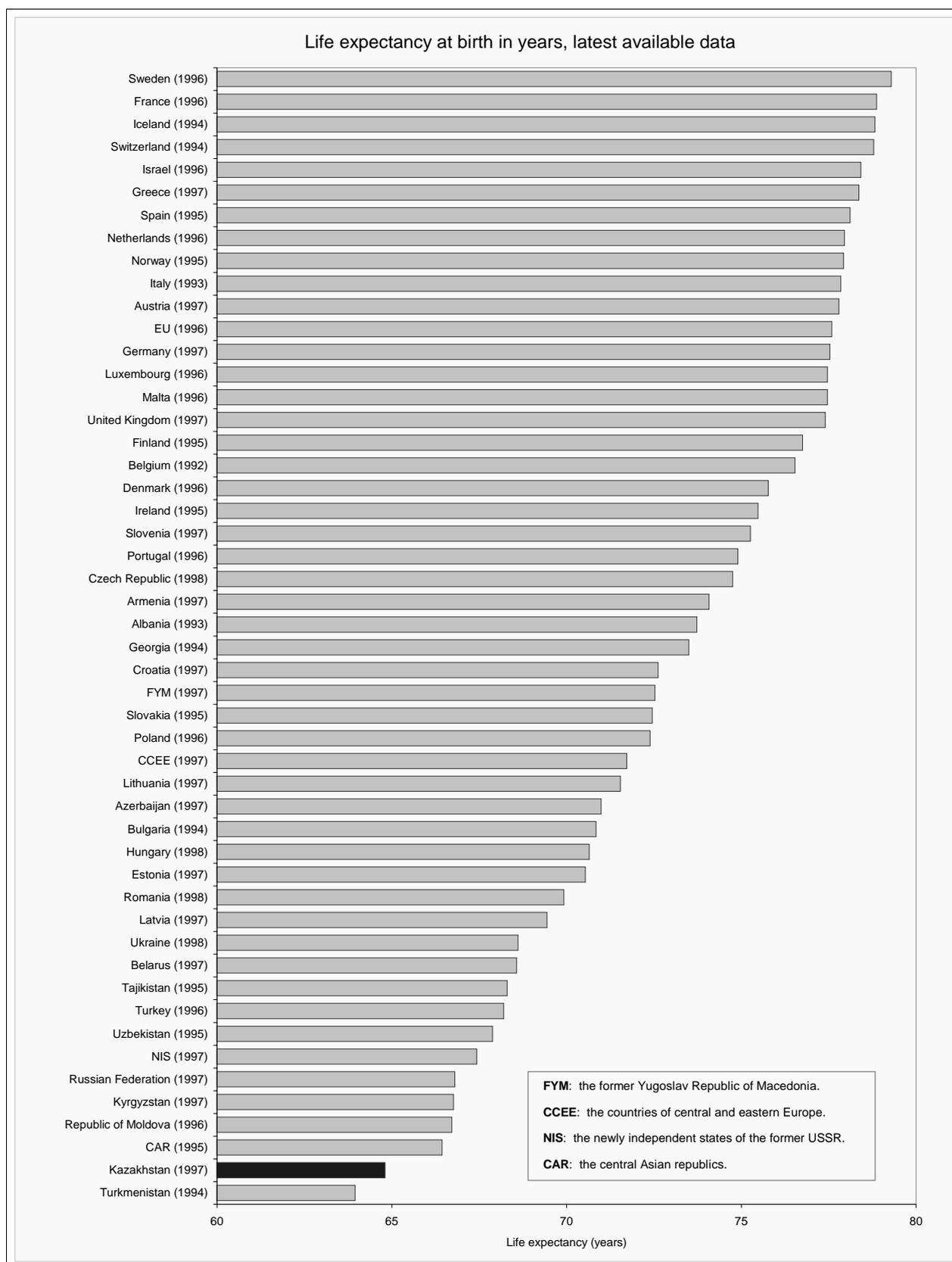
During the period 1992–1995, a marked deterioration was also seen in a number of other indicators of health status. Rates of infant and maternal mortality and mortality due to a number of other causes remain high, while incidence rates for tuberculosis, sexually transmitted infections, etc., are increasing.

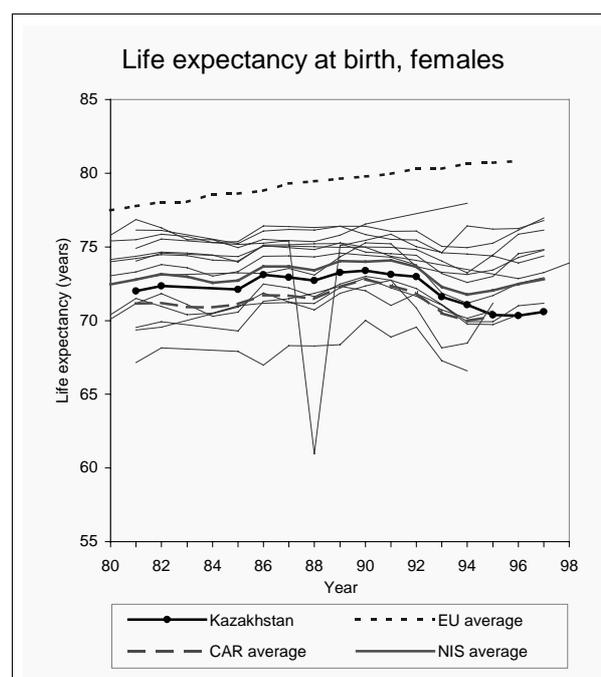
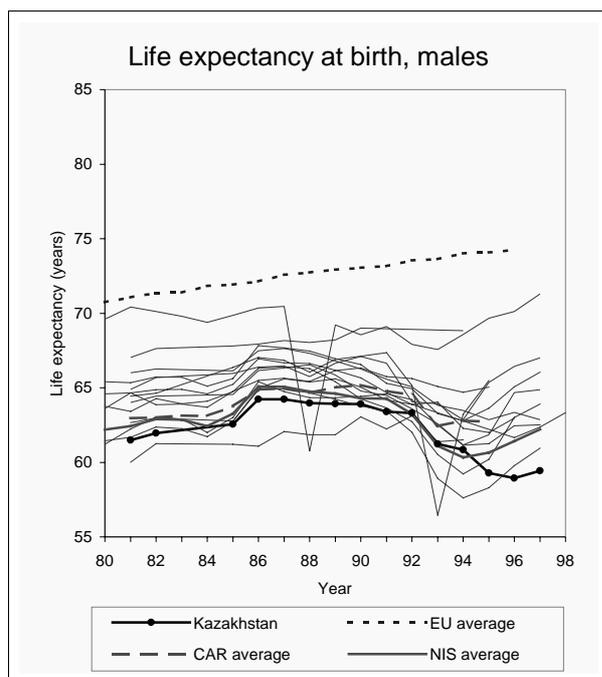
Life expectancy

In 1997 life expectancy in Kazakhstan was 64.8 years. This is lower than the average for the CAR, and one of the lowest figures in WHO's European Region.

During the period 1981–1997, average life expectancy among men was lower than the average for the CAR. The gap increased in the 1990s, and in 1997 this figure was the lowest in the European Region. On the other hand, life expectancy among women in Kazakhstan during the same period was higher than the average for the CAR. According to the latest data, life expectancy among women is 11 or more years greater than among men.

Selected health indicators in Kazakhstan and European Region		
	Kazakhstan (1997)	Europe (1996)
Life expectancy	64.8	72.8
• Men	59.4	68.6
• Women	70.6	77.1
Infant mortality per 1000 live birth	25.3	12.6
Maternal mortality per 100 000 live birth	59.0	19.8
Standardized death rate (SDR) for all causes of death per 100 000 population	1493.2	1013.7
SDR for cardiovascular diseases per 100 000 population	786.7	497.9
SDR for malignant neoplasms per 100 000 population	197.0	188.3
SDR for injuries and poisoning per 100 000 population	156.3	93.1
SDR for diseases of the respiratory organs per 100 000 population	115.0	65.8
SDR for diseases of the digestive system per 100 000 population	54.1	40.3
SDR for infectious and parasitic diseases per 100 000 population	57.3	13.7
New cases of tuberculosis per 100 000 population	118.8^b	40.8 ^a
New cases of syphilis per 100 000 population	231.4^b	86.5 ^a
New cases of AIDS per 100 000 population	0.06^b	2.0 ^a
^a 1997		
^b 1998, preliminary data		





Main causes of death and disease

As in most other countries, cardiovascular diseases are the most frequent cause of death, both in the age group up to 65 years and at older ages. In the former, the proportion of mortality due to cardiovascular diseases, diseases of the respiratory system and infectious and parasitic diseases is higher in

Kazakhstan than the European average, while that due to cancers, is lower. Compared with the average figures for western European countries alone, these differences are even more marked. The proportion of mortality due to injuries and poisonings is also significantly higher in Kazakhstan.

Structure of mortality (in %) by main cause of death and age group in Kazakhstan (1997), compared with the average for the European Region (1996)				
Cause of death	0–64 years		65 years and above	
	Kazakhstan	Europe	Kazakhstan	Europe
Cardiovascular diseases	33.9	30.6	68.3	60.0
Malignant neoplasms	14.4	22.6	12.1	16.3
Accidents, injury and poisoning	20.2	20.5	2.3	2.7
Diseases of the respiratory system	7.6	5.7	7.3	7.0
Infectious and parasitic diseases	8.2	2.7	0.7	0.5
Diseases of the digestive system	5.0	5.7	2.5	3.0
Ill-defined conditions	1.9	2.6	0.6	4.1
Other diseases	8.8	9.6	6.1	6.4

Inpatients by disease category (% of all patients hospitalized)		
Disease category	Kazakhstan	Europe
Infectious and parasitic diseases	10.8	3.5
Malignant neoplasms	3.0	6.5
Cardiovascular diseases	7.6	11.7
Diseases of the respiratory system	14.0	10.0
Diseases of the digestive system	9.0	9.7
Injury and poisoning	9.0	8.3
Other diseases	46.6	50.3

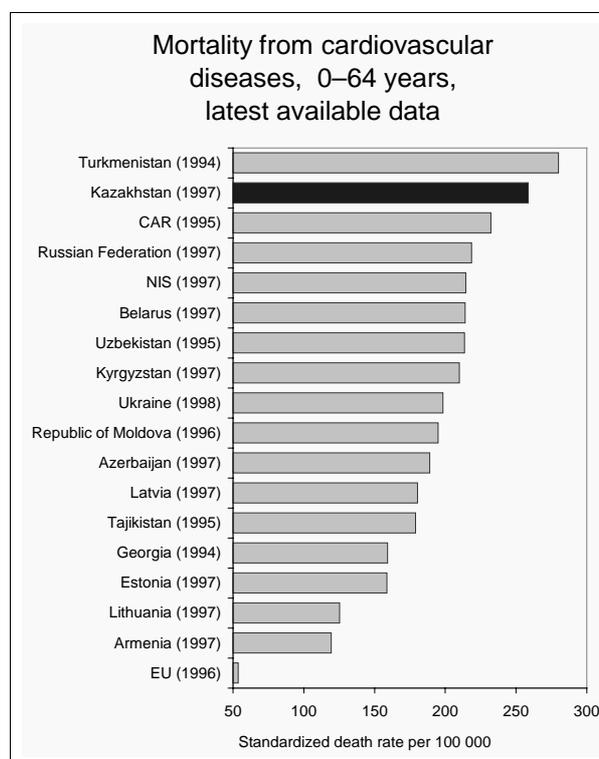
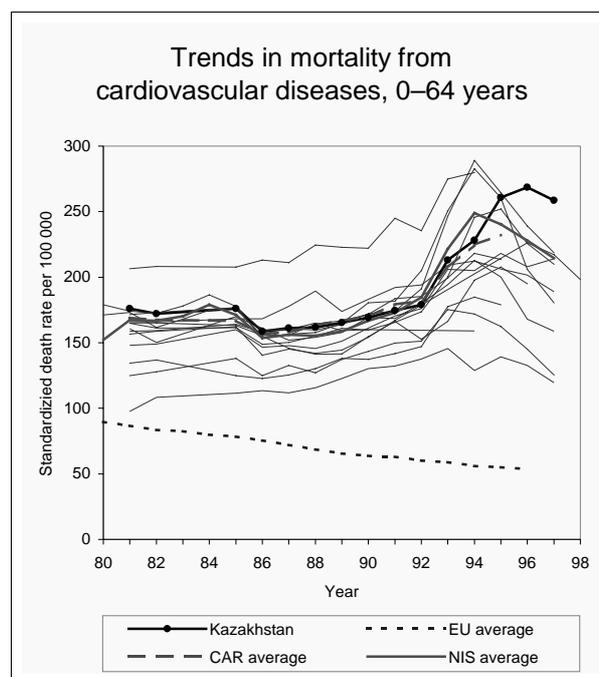
The main causes of hospitalization are diseases of the respiratory system and infectious and parasitic diseases, unlike in other European countries, where diseases of the circulatory system are in first place. These categories are followed by injury and poisoning, diseases of the digestive system and cardiovascular diseases.

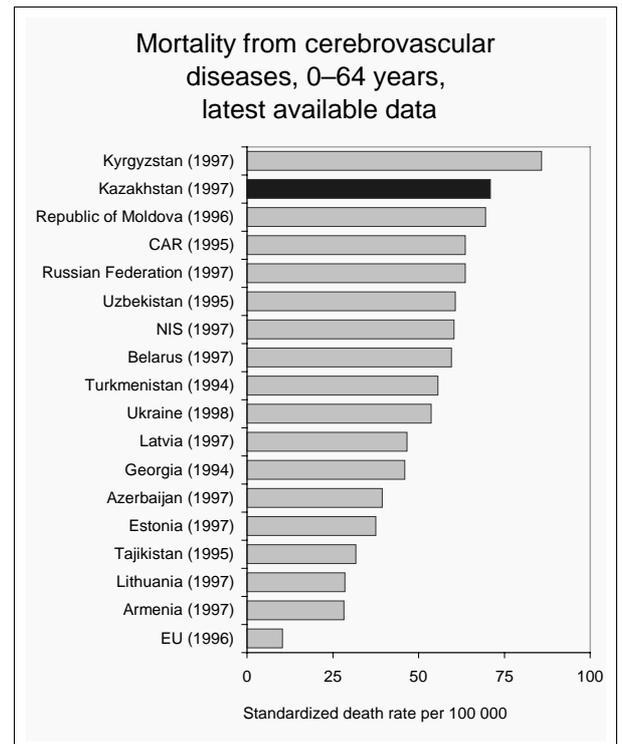
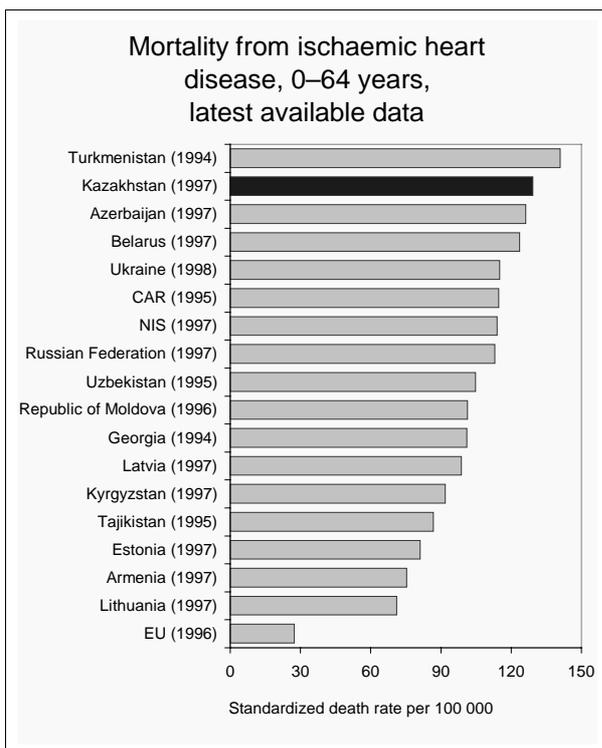
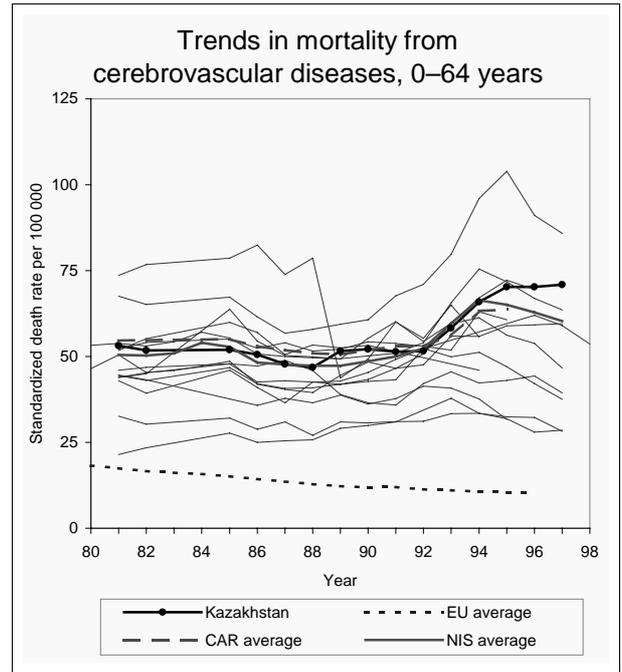
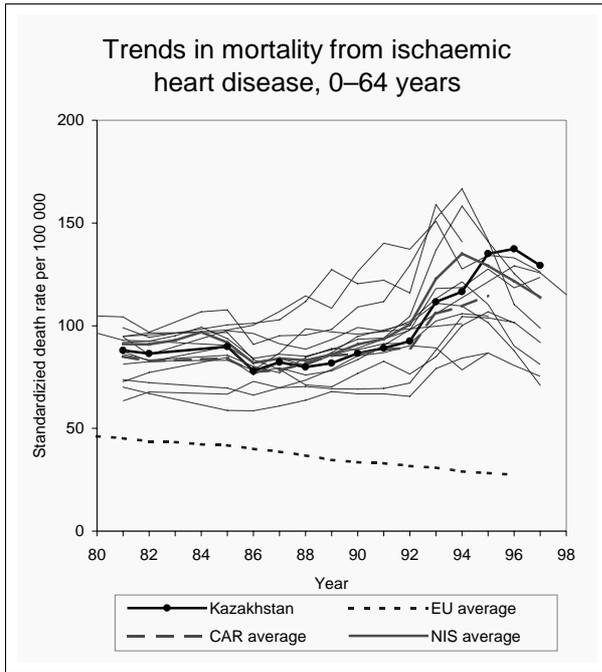
Cardiovascular diseases

Trends in mortality due to cardiovascular diseases are the same as in most other NIS, i.e. they have risen sharply since 1992. Some reduction in mortality due to this category of causes has been recorded as from 1997.

According to the latest available data, the rate of premature mortality due to diseases of the circulatory system (in the age group 0–64 years) is the second highest in the European Region, almost five times higher than the average for western European countries (259 and 54 per 100 000 population, respectively).

A similar situation is seen for ischaemic heart disease and cerebrovascular diseases. Mortality rates due to these diseases in Kazakhstan are among the highest in the Region.

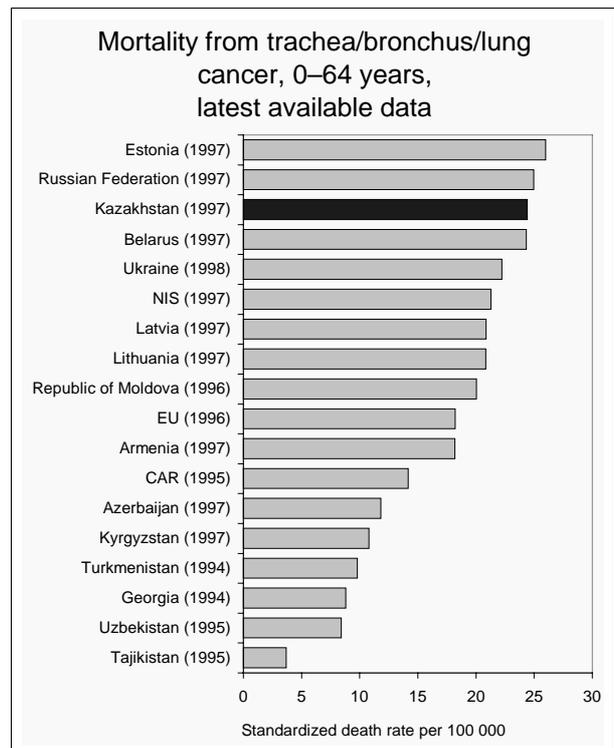
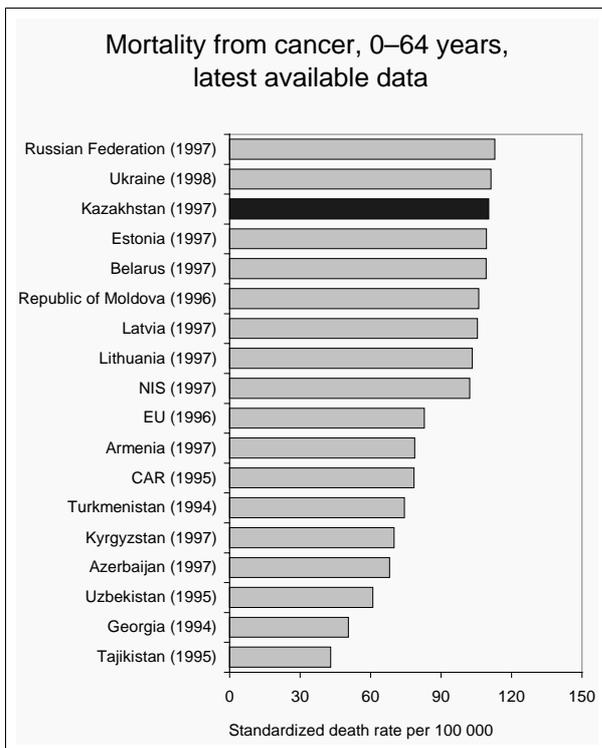
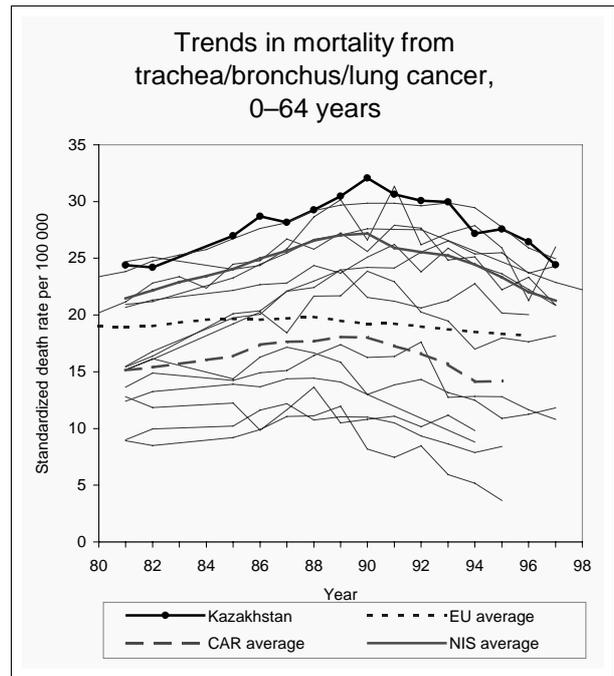
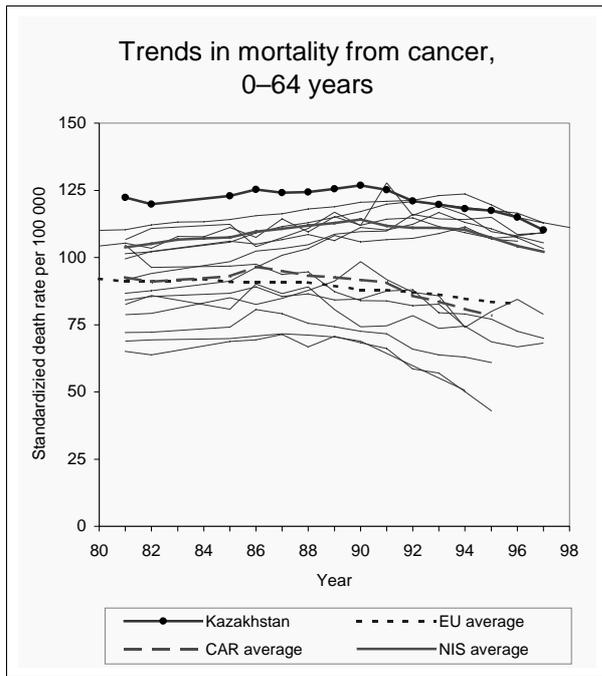




Cancer

Although it has fallen in recent years, the rate of premature mortality due to cancer in Kazakhstan is one of the highest in the European Region and substantially higher than in other CAR. Mortality due to cancer in Kazakhstan is comparable to that in the Russian Federation and to average values in countries of central and eastern Europe

(CCEE). However, the mortality rate is not uniform throughout the various regions of the country: cancer mortality in the South Kazakhstan region in 1997 was 76 per 100 000 population, compared with 184 per 100 000 in Almaty. A similar situation is seen for mortality due to lung cancer.



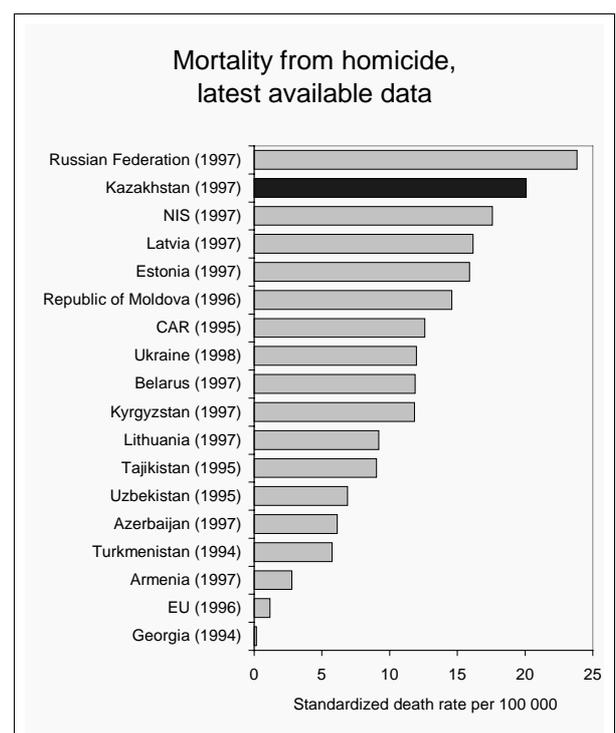
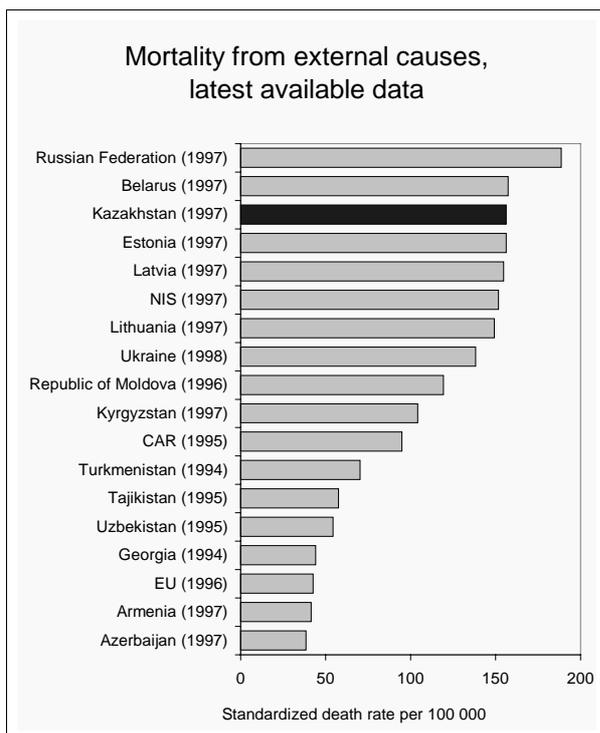
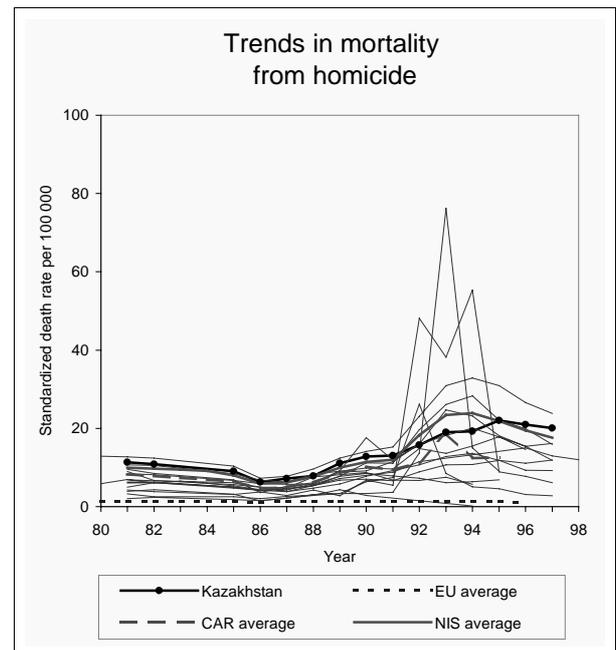
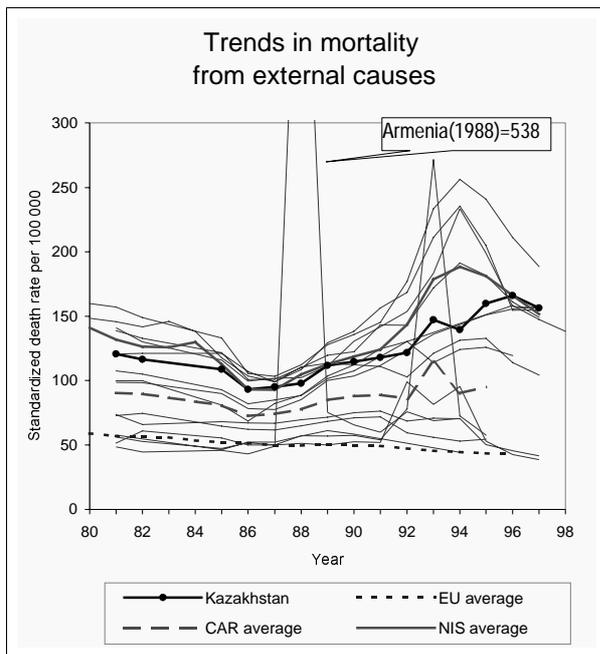
External causes of injury and poisoning

Mortality from external causes of injury and poisoning has increased steadily in Kazakhstan from the mid-1980s. As from 1997, some stabilization has been seen (albeit at one of the highest levels in the European Region). This indicator is significantly higher in industrially developed regions of the country.

The homicide rate is the second highest in Europe (after the Russian Federation), but it

has begun to fall somewhat as from 1996–1997.

Mortality from road traffic accidents is close to average for the European Region a shows a trend that is characteristic of all CAR: an increase at the end of 1980s, followed by a fall in the first half of the 1990s and stabilization as from 1994. Similar processes are also seen in other NIS.



Mental health

The increase in the number of suicides seen from the beginning of the 1990s slowed down in 1997. According to the latest available data, the mortality rate from suicides in Kazakhstan is the sixth in the European Region. The prevalence and incidence of mental disorders have fallen somewhat in Kazakhstan in recent years, but they remain higher than in other CAR (so far as can be judged from available data, whose comparability between countries is limited).

Infectious diseases

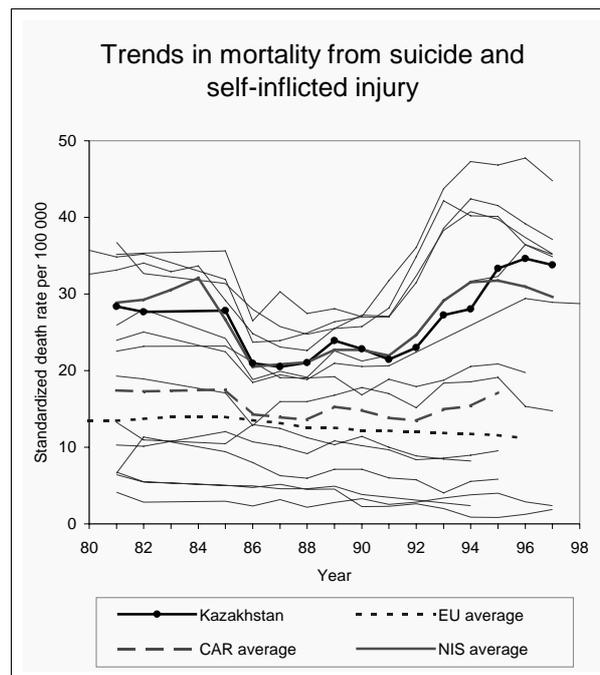
Mortality from infectious and parasitic diseases has more than doubled since 1990 and is now the third highest in the European Region (after Tajikistan and Turkmenistan).

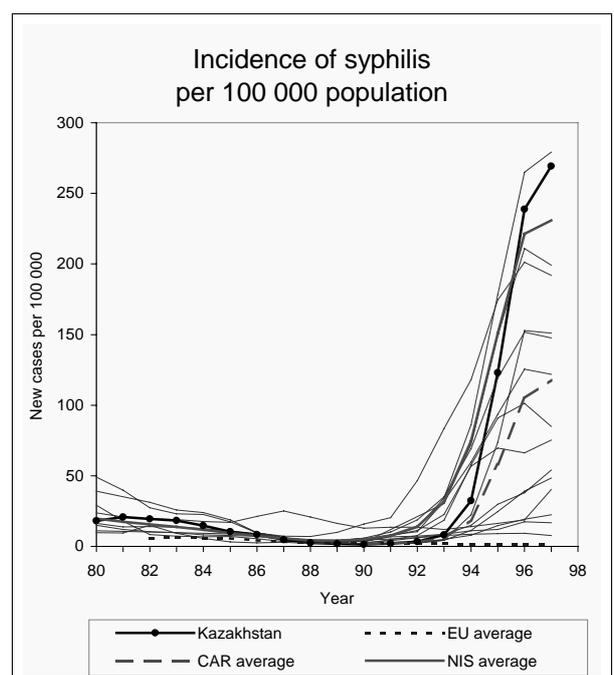
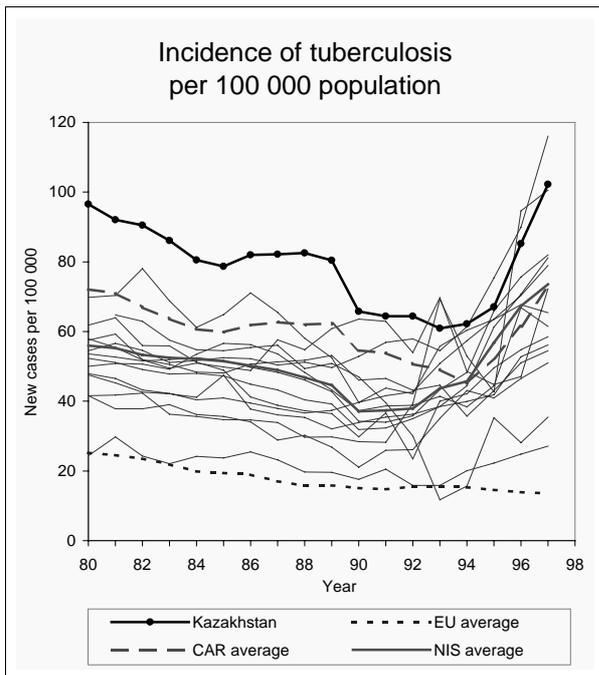
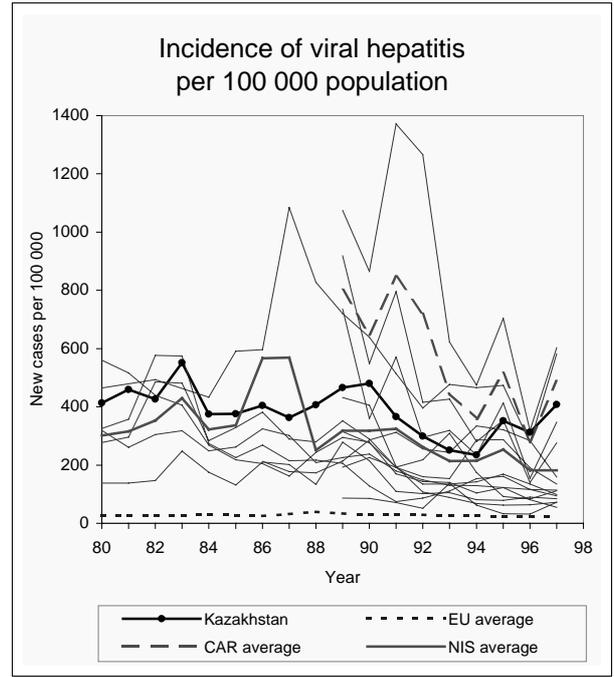
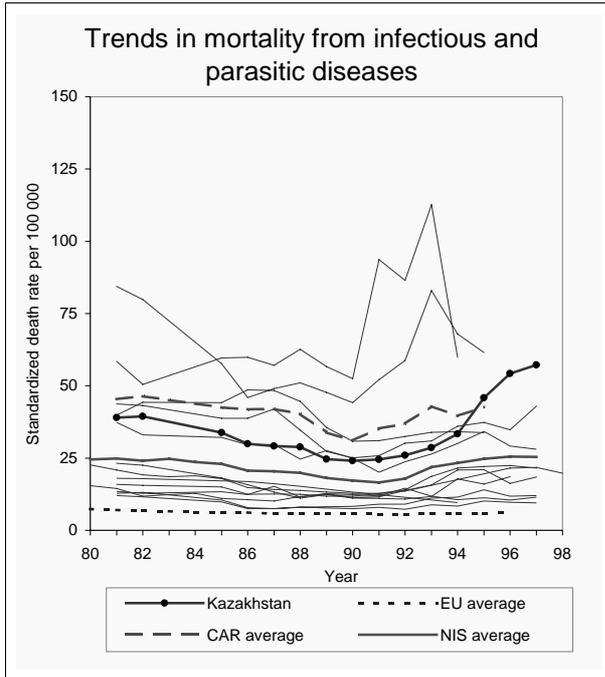
Tuberculosis incidence has increased sharply since 1995 and, according to the latest available data, is one of the highest in the European Region (118 per 100 000 population in 1998). In the Qyzylorda region on the shores of the Aral Sea, tuberculosis incidence is approximately twice as high as in the country as a whole.

Hepatitis incidence, after falling somewhat in 1991–1994, has returned to a level close to the average for the CAR and remains among the highest in the Region. The increase in incidence is seen mainly in the southern regions of the country, which are characterized by major problems in ensuring supplies of good-quality drinking water.

In 1997, six new cases of AIDS were registered in Kazakhstan. The incidence of AIDS in Kazakhstan is far lower than the European average.

The incidence of syphilis in Kazakhstan has reached epidemic proportions since 1993. Between 1990 and 1997, this indicator increased almost 200-fold. According to the latest available data, the country has the second highest syphilis rate incidence in the Region (after the Russian Federation). The highest figures have been recorded in the central and eastern parts of the country.





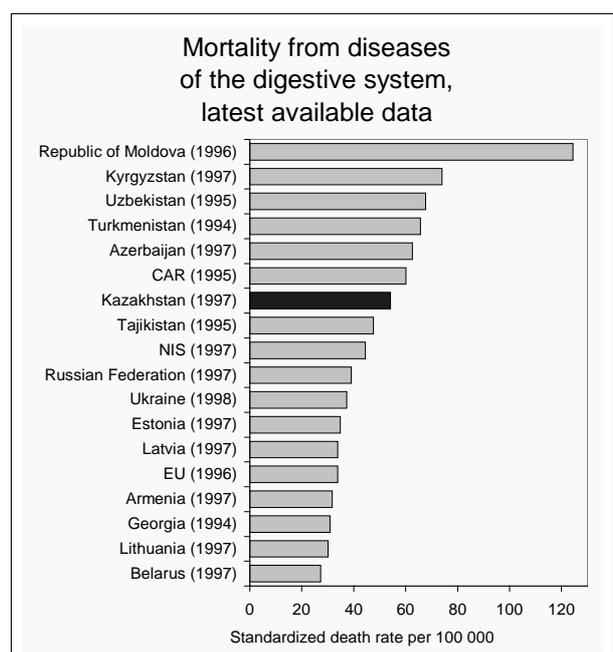
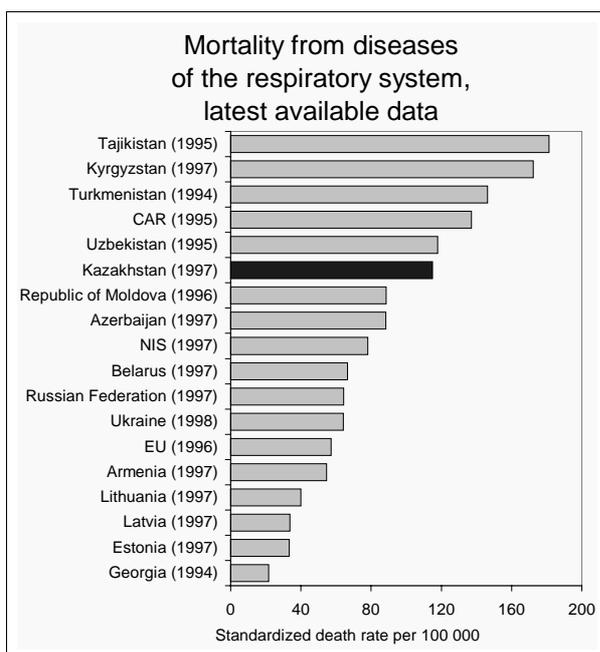
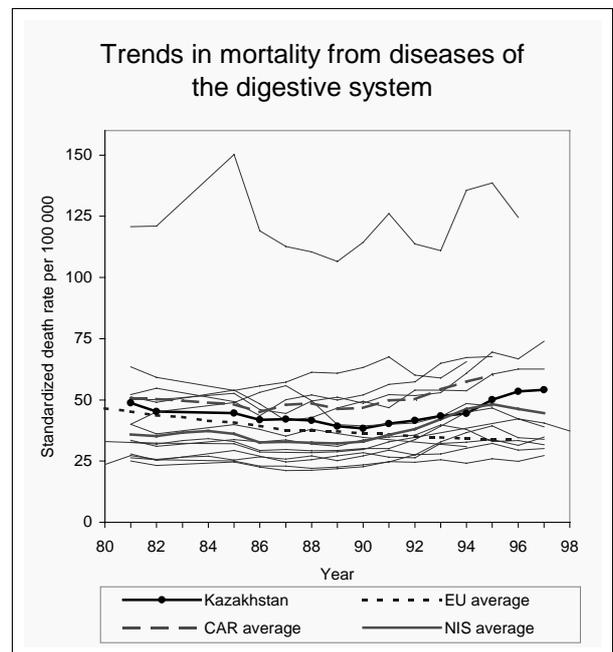
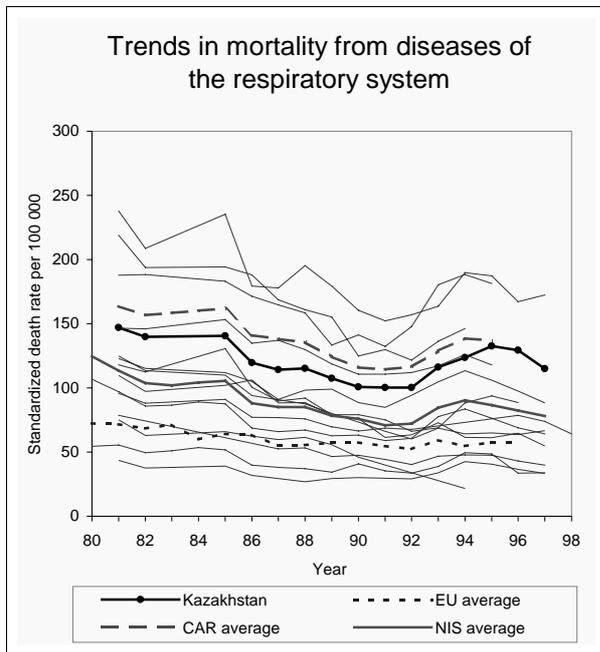
Other diseases

Mortality from diseases of the respiratory system fell in Kazakhstan in the period 1995–1997 and has remained somewhat lower than in other CAR. At the same time, it is substantially higher than the levels seen in the majority of European countries. Mortality due to chronic obstructive lung disease is particularly high.

Premature mortality from diseases of the digestive system increased steadily up to 1996 – mainly owing to chronic liver diseases and cirrhosis.

In 1997 the trend levelled off at a value close to the highest figures in Europe, although lower than the average for the CAR.

In recent years there has been an increase in the incidence in diabetes mellitus (from 36 per 100 000 population in 1994 to 65.6 per 100 000 in 1998). As in other CAR, a steady increase in diabetes mortality has been evident from the mid 1980s, but this has slowed down somewhat in recent years.



Disability

The indicator of new registered cases of disability has remained at practically the same level in Kazakhstan for the past 20 years and is one of the lowest among the countries of the European Region for which data are available (113.7 per 100 000 population).

The indicator of new cases of disability among the working population was 411 per 100 000 workers (*Ministry of Education, Culture and Health, 1997b*).

The main causes of new cases of disability among workers are: diseases of the circulatory system, 24.8%; cancer, 16%; injuries, all sites, 15%; diseases of the nervous system and sense organs, 12.6%; diseases of the musculoskeletal system, < 9%; diseases of the respiratory system, 5%; diseases of the digestive system, 3%; mental disorders, 3%; occupational diseases, 1%; and others, 7.6%.

Health of children and adolescents

The infant mortality rate has remained almost unchanged since the end of the 1980s and (together with other CAR) is among the highest in the European Region.

Characteristic features of Kazakhstan include high perinatal mortality and mortality among children up to five years of age. The four main causes of death among infants up to one year of age are conditions arising in the perinatal period (32.3%), diseases of the respiratory system (29.8%), infectious and parasitic diseases (15.7%) and congenital disorders (14.8%).

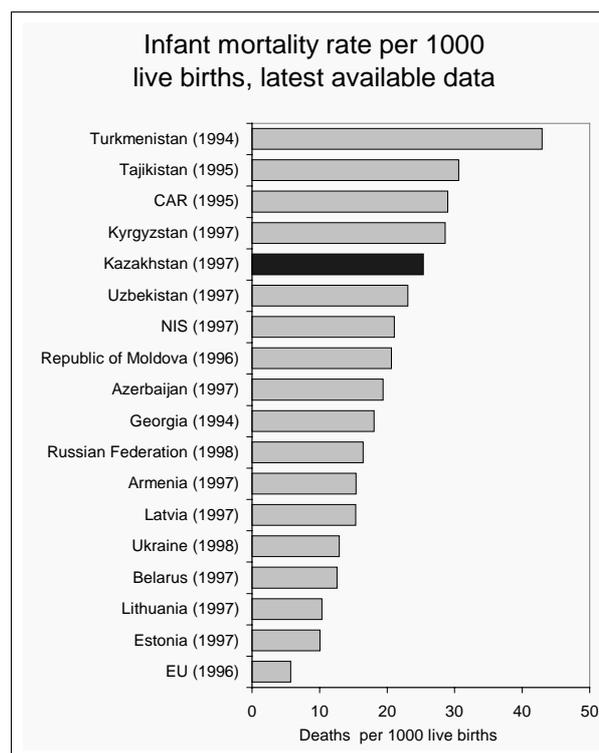
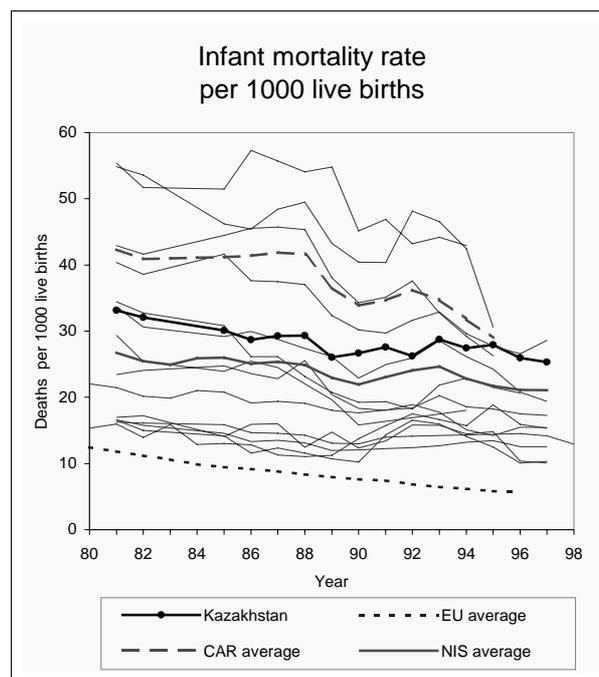
According to available data, almost complete vaccination coverage of children was achieved in Kazakhstan in 1997.

In the structure of morbidity (first-ever diagnosis) of children aged 0–14 years, the categories most frequently found are diseases of the respiratory system (56.2%), diseases of the skin and subcutaneous tissue (7.1%), infectious and parasitic diseases (6.7%), diseases of the digestive system (6.3%), injury and poisoning (4.8%) and eye diseases (3.5%). A steady increase is being seen in the number of congenital anomalies.

Women's health

Women in Kazakhstan live on average 11 years more than men. However, the level of women's mortality is among the highest in the European Region (together with other CAR).

More than one third of deaths in the age group 0–64 years are due to diseases of the circulatory system, which is somewhat higher than the European average.



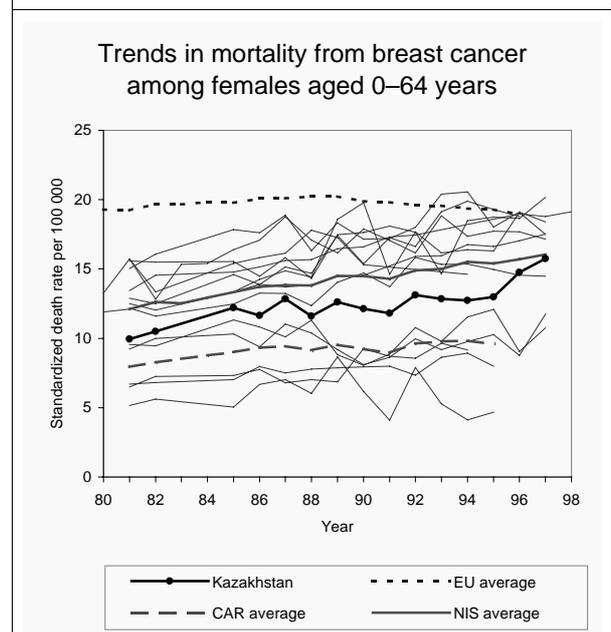
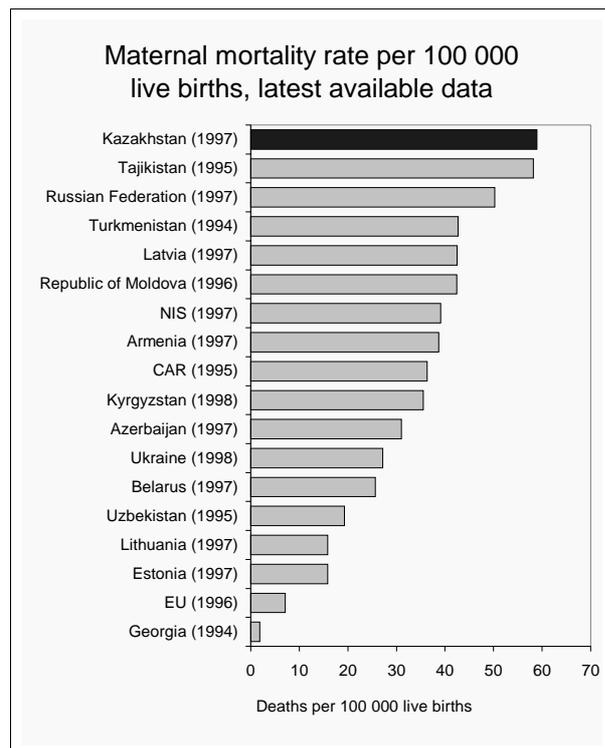
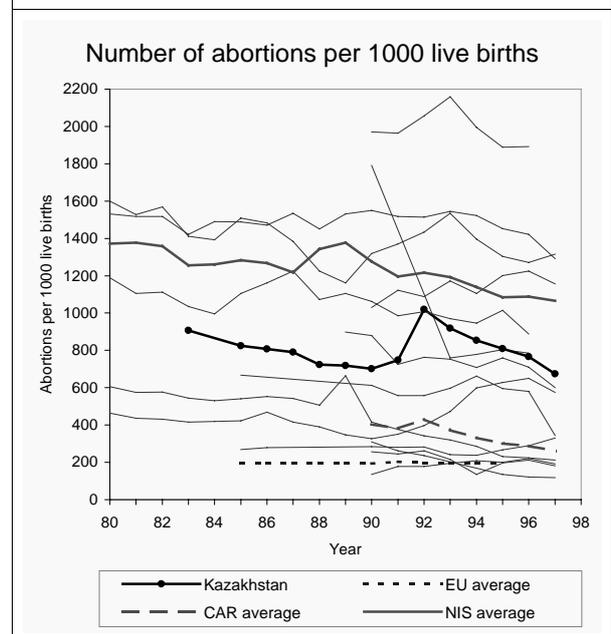
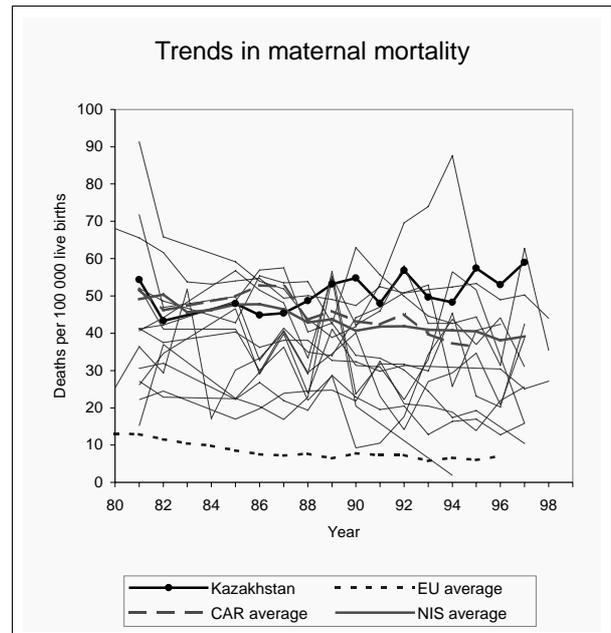
Cancers are the cause of 18% of premature mortality among women in Kazakhstan, compared with an average of 28% for Europe as a whole.

Maternal mortality in Kazakhstan is one of the highest among countries in the European Region. In addition, this indicator has continued to rise slowly in the past few years. It should be noted that, according to national assessments of maternal mortality based on clinical data, the rate is even higher, at 77 per 100 000 live births.

The main causes of maternal mortality are abortion (32.4%), hypertension (22.3%), toxicosis (12.3%), sepsis (9.5%) and ectopic pregnancy (3.9%).

After a sharp increase in 1992, the number of abortions in the country has been falling each year. By 1997, the number of abortions had fallen 1.5-fold (from 1020 to 675 per 1000 live births). The reduction in this indicator may be the result of the family planning policy being carried out in the country.

Female mortality due to breast cancer is the highest of the CAR, but still relatively low compared with the majority of European countries. However, it has been rising steadily, and this increase accelerated in 1995–1997.



LIFESTYLES

Tobacco consumption

According to available data, tobacco consumption is increasing in Kazakhstan and is higher than in the other CAR, NIS and the average for EU countries.

Data obtained by the Countrywide Integrated Noncommunicable Disease Intervention (CINDI) programme in Kazakhstan show smoking prevalence in the Almaty region to be 61.5% among men and 9.2% among women. According to data from a national survey of nutritional status, smoking prevalence in Kazakhstan in 1996 was 60% among men and 7% among women. Smoking prevalence among men is one of the highest in Europe. Eight per cent of male smokers smoke more than 20 cigarettes a day.

Although lung cancer mortality has fallen in recent years, it remains comparatively high.

Alcohol consumption

A national survey of nutritional status shows that 51% of men and 23% of women consume alcohol regularly (not less than once a month).

Data from the National Statistics Agency show that the manufacture and importation of

alcoholic beverages are increasing. An estimate of alcohol consumption based on these data covering the production, import and export of alcoholic beverages yields annual per capita consumption figures of 2.4 litres in 1995, 2.7 litres in 1996 and 4.3 litres in 1998.

The incidence of disorders related to substance abuse increased 1.9-fold between 1994 and 1996, reaching 114.1 per 100 000 population, a level that is substantially higher than in other CAR (*WHO Information Centre for the CAR, 1998*). In this context, alcoholic psychoses increased 2.1-fold, chronic alcoholism 1.6-fold, and drug abuse 3.2-fold (*Ministry of Education, Culture and Health, 1997b*). In 1997, more than 37 000 people were registered for the first time as suffering from behavioural changes and mental disorders related to alcohol abuse.

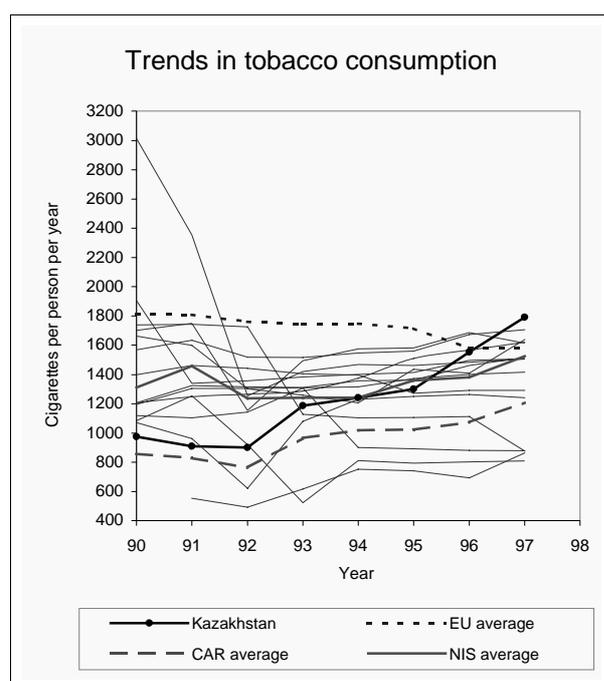
The sharp increase in the number of registered cases of alcoholic psychoses in 1997 is linked to the transition to ICD-10 (Code F10 includes not only alcoholic psychoses (Code 291 in ICD-9) but also non-dependent alcohol abuse (Code 305, ICD-9)).

Illicit drug use

According to available data, the incidence of drug use increased 6-fold between 1990 and 1996, reaching a level of 22.2 per 100 000 population in that year (*WHO Information Centre for the CAR, 1998*). The number of children and adolescents using drugs increases each year. Of those using drugs for the first time in 1996, children (aged 0–14 years) accounted for 0.5% in 1996 and 0.9% in 1998, while corresponding figures for adolescents (aged 15–17 years) were 13.3% and 15.3%, respectively.

Nutrition

According to data from the Food and Agriculture Organization of the United Nations, average calorie consumption per head has fallen slightly since 1990 and in 1996 was higher than the average for the CAR.



Imbalances in people's diet have been found in terms of its composition and its vitamin and microelement content. These imbalances are reflected in insufficient consumption of animal protein and a predominance of saturated fatty acids among fats, which is a risk factor for the development of cardiovascular disease.

Annual consumption of vitamin A amounts to some 70% of the European standard, while that of vitamin C is 50% lower than the standards adopted in the Russian Federation. Annual consumption of iron covers the population's requirements, except those of women aged 30–49 years (*Institute of Nutrition of the Academy of Sciences of Kazakhstan, UNDP, 1998*).

Insufficient levels of iodine in water and food products are found in most areas of the country. This leads to a high level of prevalence of thyroid deficiencies, especially in the southern and eastern regions of the country.

Physical activity

Only 8% of the adult population of Kazakhstan regularly engage in physical exercise and sport. Among children and adolescents, only a 5% have the chance to take part in sports classes at school. The provision of sporting facilities meets 20–40% of requirements in terms of population size.

The number of hours set aside for sports activities in the curricula of schools and educational establishments is 3–4 times lower than research-based norms.

Overweight

Anthropometrical surveys among the population of the Republic of Kazakhstan have shown that the average body mass of men is

70 kg for a height of 169 cm (BMI - body mass index = 24.2), with corresponding figures for women of 64.1 kg and 156.9 cm (BMI = 25.8). In total, 5% of the population suffer from chronic energy shortages (BMI <18.5), while 15% are overweight (BMI >30).

Hypertension

Data from a national survey show that hypertension (more than 94/159 mm Hg) was seen in 20.2% of the adult population surveyed, with roughly the same frequency for men and women (21.5% and 19.1%, respectively). The incidence of hypertension is tending to increase among people of both sexes aged over 40 years (*National Centre for Healthy Lifestyles, 1998a*).

Promotion of healthy lifestyles

The main activities in this field are being carried out under the CINDI programme. By 1999, a project management structure had been designed and recommendations introduced. Data have been obtained on the incidence of diseases of the circulatory system, the genitourinary system, the digestive system, etc. An assessment has been made of risk factors for the main chronic noncommunicable diseases, and priorities have been set for drawing up preventive programme aimed at controlling smoking, alcohol consumption and hypertension. A comprehensive noncommunicable disease prevention programme has been drawn up, which will be implemented in pilot districts (*WHO Liaison Office in Kazakhstan, 1999*).

ENVIRONMENT AND HEALTH

The environmental situation in Kazakhstan remains a complicated one, despite falls in production levels and the reduction of emissions from industrial plants.

Radioactive pollution, soil contamination, desertification and air pollution are serious problems. The environmental situation in the area surrounding the Aral Sea is continuing to deteriorate.

Air quality

It is calculated that some 3 million tonnes of hazardous substances are discharged from stationary sources into the atmosphere above Kazakhstan each year. Approximately 40% of this pollution is attributable to enterprises in the energy sector, 30% to ferrous and non-ferrous metallurgy, and 20% to the chemical and oil refining industry and industry engaged in the production of mineral fertilizers.

In the Republic as a whole, some 200 kg of various chemical compounds are discharged into the atmosphere per inhabitant per year.

In 1995, per capita CO² emissions in Kazakhstan amounted to more than 70 kg, one of the highest rates in the European Region according to available data (*WHO Information Centre for the CAR, 1998*).

The products of combustion of casing head gas from oil wells are a major source of air pollution. Each year 700 million m³ of casing head gas are burnt off.

As a result of the socioeconomic transformations which Kazakhstan has experienced during the transitional period, the priority ranking of problems in the area of environmental health, including those related to the air, have changed. Whereas industrial plants used to be the main source of air pollution in the country, and especially in cities, the majority of such enterprises are now standing idle or working below full capacity. At the same time, there has been a steady and rapid increase in automobile transport, which is becoming the main source of environmental

pollution, not only in cities but also in practically all populated areas.

Together with exhaust gases, automobile transport releases dozens of pollutants in annual amounts exceeding 2 million tonnes. In most large cities, the contribution of automobile transport to air pollution exceeds 60%, and in Almaty 90%.

Air concentrations of benzo(a)pyrene – a class one carcinogen – exceed maximum permissible concentrations 2.5-fold on average, and 3–7-fold in Almaty, 16-fold in Taraz and 11-fold in Ust'-Kamenogorsk (*National Environmental Health Action Plan, 1997*).

Water and sanitation

For Kazakhstan, like other CAR, water supply is one of the key environmental health problems.

In the country as a whole, 81% of the population have access to a piped water supply, 12% to decentralized sources, more than 250 000 people (1.6%) drink water from open sources and almost half a million use water delivered by vehicles. The sanitary and technical conditions of most water supply systems remain unsatisfactory. Many of them need to be repaired or completely rebuilt, but this is not being done owing to a lack of resources.

The unsatisfactory sanitary and technical conditions of water supply equipment and networks, combined with a shortage of chlorine – containing reagents and coagulants, is having an adverse effect on the quality of piped water. This is one cause of the high level of morbidity from acute intestinal infections and viral hepatitis.

In 1996 4.7% of all samples of piped water failed to meet hygiene standards in terms of microbiological indicators. In the same year, 7.4% of samples taken from surface water sources (at water extraction sites) had higher than maximum permissible concentrations of chemical substances, while the a

corresponding figure for bacteriological indicators was 9.3%.

Some 5.0 km³ of sewage are discharged into the country's catchment areas. The catchment basins of the rivers Irtysh and Ural are the most polluted.

Waste

The storage, utilization, neutralization and burial of industrial waste are serious problems for Kazakhstan.

The amounts of solid domestic and toxic wastes that have accumulated are reaching significant proportions. Only 6-7% of waste (1000 million tonnes of which are produced each year) are used as a secondary raw material. The corresponding figure for developed European countries is 40–50%. Only 12% of all waste is transported to specially equipped sites. The remainder is stored in improvised dumps, which leads to pollution of the soil and underground water in the areas around cities.

Only one third of urban settlements are equipped with systems for planned, regular garbage disposal; in the rest of the country, and especially in rural populated areas, garbage collection is carried out on request.

Nuclear testing at the Semipalatinsk (Semey) site has had serious repercussions. In regions adjacent to the site (Pavlodar, Qaraghandy, Eastern Kazakhstan), radioactive deposits fell on an area of more than 300 000 km² with a population of some 1.7 million people, during the period from 1949 to 1989. The government has declared this area the Semipalatinsk environmental disaster zone (*National Environmental Health Action Plan, 1977*).

The activity of the military/industrial complex also has considerable negative repercussions. An extensive area of central Kazakhstan is polluted with rockets fragments and toxic fuel.

Housing

According to available data, the average size of dwellings in Kazakhstan is one of the

lowest in the Region (54 m²), while the average number of inhabitants per household is one of the highest. Kazakhstan has one of the highest home ownership rates (93%) in the European Region (*UN ECE, 1999*).

In Kazakhstan there is a significant difference between urban and rural areas in terms of the supplying houses with piped water, main drains and centralized sources of power. This is explained by the fact that individual dwellings, predominantly in rural areas, are substantially worse supplied. In the Qyzylorda region, fewer than 10% of private houses have a piped water supply, and fewer than 5% are connected to the main drains system.

Occupational health and safety

The level of work-related injury in Kazakhstan, as in the other CAR, is low compared with other countries in the European Region. However, mortality linked to accidents at work is higher than the averages in the EU countries and CCEE. This may point to incomplete registration of cases of injury at the workplace.

The working conditions of people in industry and agriculture remain unsatisfactory. Annual monitoring of selected workplaces has shown that health standards for air pollution at the workplace are exceeded in 40% of the enterprises investigated. For the country as a whole, one in every five manufacturing plants does not meet health and hygiene standards with regard to noise, lighting and microclimate, while one in every ten does not do so for vibration.

A total of 320 000 people or 15% of the total workforce in the main sectors of the national economy are working under harmful or unfavourable conditions.

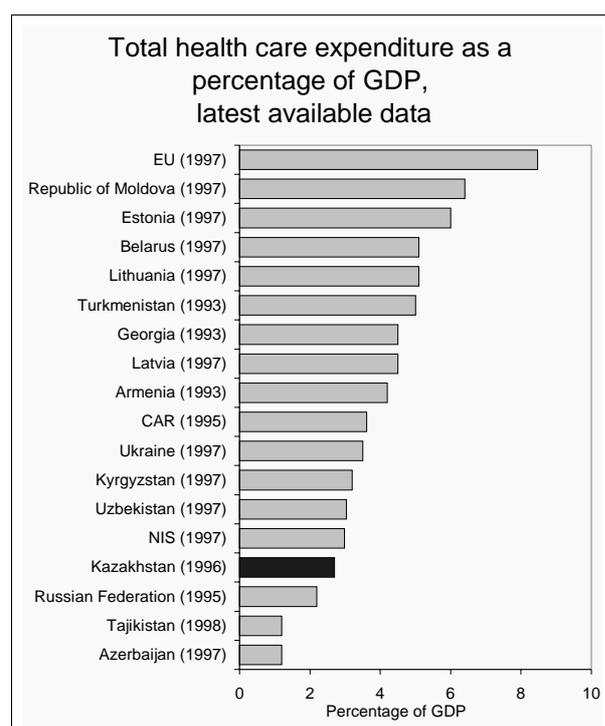
Among new cases of occupational diseases and poisoning, 66.6% were recorded as being unable to continue working in the same occupation. On average, up to 10% of occupational diseases are found in working women.

HEALTH CARE SYSTEM

The health care system in Kazakhstan, like in other republics of the former Soviet Union, had an extensive network of establishments and a large number of hospital beds, which ensured general access to health care, but such care was of low quality and inefficient use was made of existing resources. The system was mainly focused on the hospital service, with not enough use made of primary health care networks.

	Kazakhstan (1998)*	Europe (1996)
Hospital beds per 100 000 population	796.0	828.0
Physicians per 100 000 population	343.0	352.0
Hospital admissions per 100 population	15.1	18.5
Average hospital stay, days	16.9	12.9
Health care expenditure as a percentage of GDP (1997)	2.7	6.0

* Preliminary data



The number of hospital establishments fell from 1778 in 1990 to 991 in 1998. There was a corresponding reduction in the number of beds, from 227 810 to 123 493, i.e. almost 50%.

Health system reform

Work is currently being done on reforming the health care system: the sector has moved to combined budgetary/insurance-based funding, and the issue of making the transition to per capita funding has been resolved. The compulsory insurance system that had been introduced earlier was abandoned in 1998. In 1999, a new centre was established for the payment of medical services from budgetary allocations. A mechanism of targeted, programme-based funding is being developed.

Work is continuing on setting up a nongovernmental system for the delivery of medical care, and the first private clinics major centres for diagnosis, rehabilitation and health promotion have appeared.

The ultimate aim of these measures is to develop primary health care as much as possible and to bring it close to the population – ensuring accessibility and a guaranteed range of health care.

In order to develop general practice/family medicine, outpatient/polyclinic establishments have begun to be reorganized, and an extensive network of outpatient facilities in family medicine is being set up. In 1997–1998, 815 such facilities were established.

Health care expenditure and health system funding

According to the latest available data, health care expenditure in Kazakhstan (at 2.75% of GDP) is one of the lowest in the European Region.

According to data from the National Statistics Agency, the increase in the costs of medical supplies and services in 1997 was substantially lower than the general rate of inflation.

The measures taken to optimize the network of health care establishments and rationalize their activities have released a total of more than 2000 million *tenge* in budgetary allocations (or 5.4% of total health care expenditure), which will be channelled towards increasing the pay of health care personnel.

Under the Programme for privatization of health care facilities in the Republic of Kazakhstan for 1996–1998, therapeutic and preventive care establishments subject to privatization has been identified. These include stomatology polyclinics, self-financing polyclinics, “marriage and family” outpatient units, nursing homes and cosmetic surgery clinics.

Outpatient services

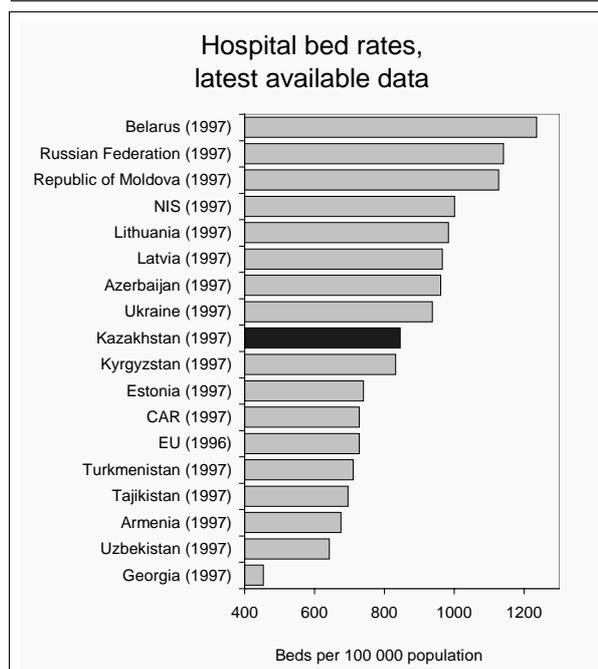
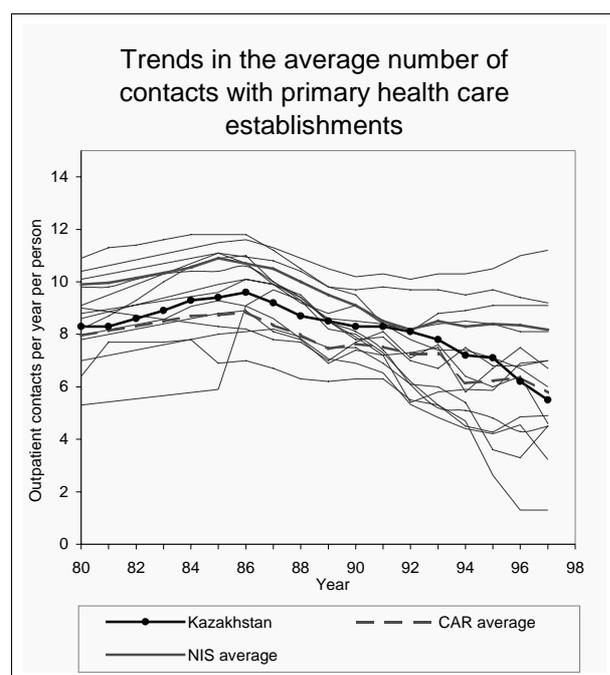
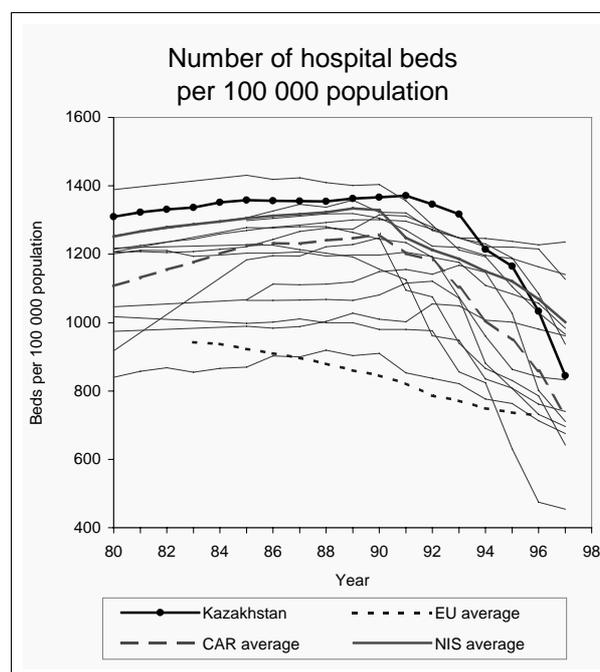
The number of outpatient visits has fallen steadily since the mid 1980s, with a particularly marked reduction in recent years. There were 62 visits per person per year in 1997, which is approximately the average figure for the CAR.

Inpatient services

In order to cut costs, establishments and their subdivisions with overlapping functions have been reprofiled and/or combined, numbers of

beds and posts have been reduced, and the practice of holding more than one post has been abolished. In the period from 1990 to 1998, 797 hospital establishments were reorganized or closed, 58 of which were central district hospitals and 636 of which were local rural hospitals.

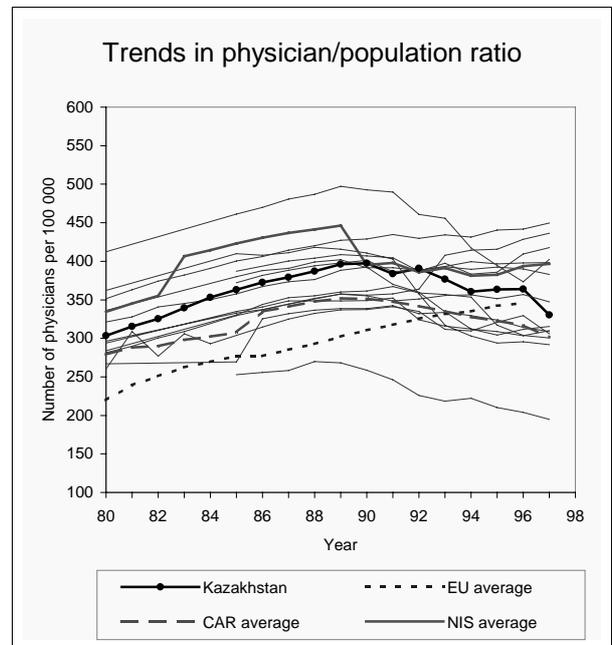
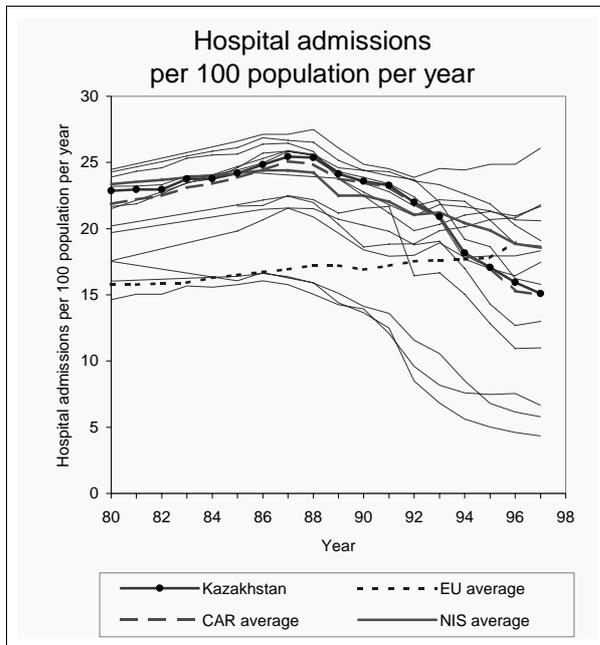
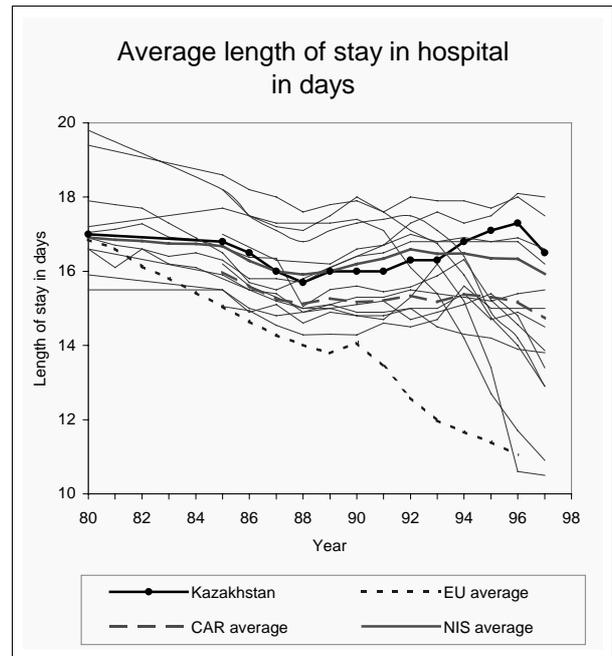
The hospital admission rate has fallen significantly since the end of the 1980s. The average length of stay in hospital has remained roughly unchanged (in comparison to a steady fall in western Europe).



Health care personnel

The physician/population ratio has fallen since the beginning of the 1990s, and is now close to the European average.

However, owing to the extremely low population density in Kazakhstan, there must be a higher physician/population ratio than in the densely populated countries of western Europe. Differences are seen in the distribution of health care personnel between the various regions of the country. There is a shortage of personnel in rural areas (*Ministry of Education, Culture and Health, 1997a*).



REFERENCES

- WHO INFORMATION CENTRE FOR THE CAR, 1998. *Zdorov'e naselenija, sluzhba zdravookhranjenja i gijiena okruzhajushchej sredy v respublikakh Srednej Azii, sbornik statisticheskikh materialiov stran-uchastmits proekta CARINFONET, Vypusk no2 [Health status, health care services and environmental health in the Central Asian Republics, compilation of statistical material from countries participating in the CARINFONET project, Vol 2]*, Bishkek.
- INSTITUTE OF NUTRITION OF THE ACADEMY OF SCIENCES OF KAZAKHSTAN, UNDP, 1998. *Obshchenatsional'noe obsledovanie potreblenija pishchevykh produktov i sostajaniya pitaniya [National food and nutrition survey]*.
- MINISTRY OF EDUCATION, CULTURE AND HEALTH, 1998. *Statisticheskie sborniki "Zdorov'e naselenija respubliki Kazakhstan i dejatel'nost' uchrezhdenij zdravookhranjenja", 1990-1998 [Compilations of statistics on "The health of the population of the Republic of Kazakhstan and the work of health care establishments", 1990–1998]*.
- MINISTRY OF EDUCATION, CULTURE AND HEALTH, 1997a. *Pasport zdravookhranjenja Respubliki Kazakhstan [Overview of health care in the Republic of Kazakhstan]*, Almaty.
- MINISTRY OF EDUCATION, CULTURE AND HEALTH, 1997b. *Pasport zdorov'ja naselenija Respubliki Kazakhstan [Overview of the health of the population of the Republic of Kazakhstan]*, Almaty.
- NATSIONAL'NIJ PLAN DEJSTVIJ PO GIGIENE OKRUZHAJUSHCHEJ SREDY KAZAKHSTANA, PROEKT [KAZAKHSTAN'S NATIONAL ENVIRONMENT AND HEALTH ACTION PLAN, DRAFT] 1997.
- NATIONAL CENTRE FOR HEALTHY LIFESTYLES, 1998a. *Otchety programmy "CINDI-Kazakhstan" [Reports on the "CINDI-Kazakhstan" programme]*, Almaty.
- NATIONAL CENTRE FOR HEALTHY LIFESTYLES, 1998b. *Natsional'naja programma "Zdorovyj obraz zhizni" [National "Healthy Lifestyles programme]*, Almaty.
- WORLD BANK, 1999, *World Development Report 1998/99*, Oxford, Oxford University Press.
- UN ECE, 1999, *Trends in Europe and North America 1998/1999*, The Statistical Yearbook of the Economic Commission for Europe, New York and Geneva, United Nations.
- UNDP, 1998, *Kazakhstan Human Development Report*, Almaty.
- WHO LIAISON OFFICE IN KAZAKHSTAN, 1999. *Kazakhstan Country Health Report*, Almaty.
- WHO REGIONAL OFFICE FOR EUROPE, 1999, *Health care systems in transition Kazakhstan*, Copenhagen (document CARE 04 01 03, available from the European Observatory on Health Care Systems).

GLOSSARY

Incidence rate: the number of new cases of a disease occurring in a population per 100 000 people during a specified period (usually 1 year).

Infant mortality rate: the yearly number of deaths of children aged less than 1 year per 1000 live births.

Life expectancy at birth: an estimate of the average number of years a newborn child can expect to live provided that the prevailing age-specific patterns of mortality at the time of birth were to stay the same throughout the child's life.

Prevalence rate: the total number of people in a population who have a disease or any other attribute at a given time or during a specified period per 100 000 of that population.

Purchasing power parity (PPP): a standardized measure of the purchasing power of a country's currency, based on a comparison of the number of units of that currency required to purchase the same representative basket of goods and services in a reference country and its currency (usually US dollars) The EU uses the purchasing power standard to measure this.

Standardized death rate (SDR): a death rate (usually per 100 000 population) adjusted to the age structure of a standard European population.

Total fertility rate: the average number of children that would be born alive per woman during her lifetime if she were to bear children at each age in accordance with prevailing age-specific birth rates.

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