

HIGHLIGHTS ON HEALTH IN TURKMENISTAN



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 (issue January 2000).

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 Highlight.

OVERVIEW

Owing to a high birth rate, Turkmenistan has one of the highest rates of natural growth of the population in the European Region of WHO, although in recent years this has decreased (like in other central Asian republics – CAR). The population is accordingly very young.

For a number of years, life expectancy was the lowest in the Region. During the period 1993–1994, the situation deteriorated further, like in other countries that were formerly republics of the Soviet Union. However, in Turkmenistan this deterioration was due to a sharp increase in female mortality, especially at 65 years and above, while in other countries male mortality had a greater effect. Since 1995 life expectancy has been increasing slightly and, according to the latest available data, it was 66.1 years in 1998. This is one of the lowest figures in WHO's European Region.

The infant mortality rate remains one of the highest in the Region, despite the fact that it has decreased significantly since 1996. The maternal mortality rate also continues to be one of the highest in the Region.

Diseases of the circulatory system are the principal cause of death in the country. Premature mortality from these diseases is the highest in the Region.

On the other hand, mortality from cancer in Turkmenistan, like in other CAR except for Kazakhstan, declined steadily during the period 1981–1997 and is one of the lowest in the Region.

Mortality from cancer of specific locations (lung, trachea, bronchus, uterus and breast) in Turkmenistan is also among the lowest in the Region.

Mortality from external causes (accidents, homicides and suicides) is lower than the average for the CAR.

Mortality rates from infectious diseases are among the highest in the European Region, despite the fact that they decreased significantly in 1994.

The incidence of tuberculosis and sexually transmitted infections has been rising.

The incidence of viral hepatitis in Turkmenistan, like in other CAR, is among the highest in the European Region.

Mortality from respiratory disease, after rising somewhat during the period 1992–1994, recently began to decrease but remains one of the highest in the Region.

Over the past two decades, mortality from diseases of the digestive system has consistently remained among the highest in the Region. Mortality from chronic liver diseases and cirrhosis in Turkmenistan is also among the highest in the Region.

Like in other CAR, the number of hospital beds in Turkmenistan has fallen sharply as a result of health system reforms, and in 1997 it reached the average for western Europe. The number of doctors per 100 000 population has also decreased significantly.

Spending on health in Turkmenistan amounted to 3.5% of the gross domestic product (GDP) in 1996. This is higher than the average for CAR and NIS.

THE COUNTRY AND ITS PEOPLE

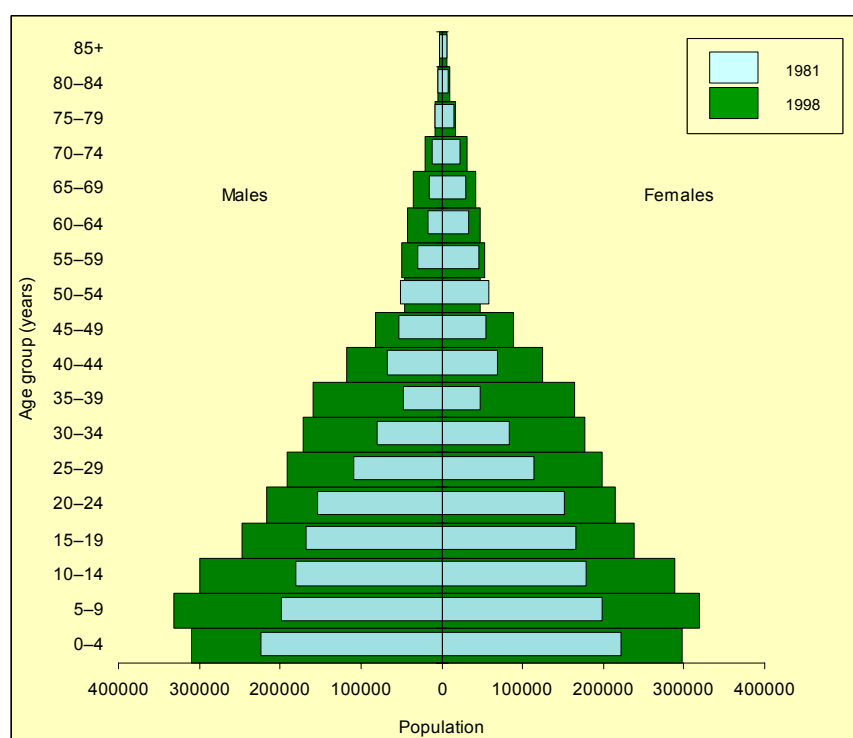
Turkmenistan became an independent state after the break-up of the USSR in 1991. In terms of size, Turkmenistan is the second largest central Asian republic (after Kazakhstan). The Karakum desert occupies some 80% of its territory. Turkmenistan is bordered on the north by Kazakhstan, on the east and north-east by Uzbekistan, on the south by Iran and on the south-east by Afghanistan.

Ashgabat, the capital of Turkmenistan, has a population of some 557 600 people (permanent population as of 1 January 2000).

Under the new Constitution adopted on 18 May 1992, the President is both head of state and prime minister. At the country's first elections on 21 June 1992, S.A. Nijazov was elected as president. In 1994, as a result of a referendum, his term in office was extended to 2002. In December 1999 the *Khalk Maslakhaty*, Turkmenistan's supreme legislative body, took the decision to grant the first president of Turkmenistan, S.A. Nijazov, the sole right to carry out presidential duties for an indefinite period of time.

Basic data on Turkmenistan and the WHO European Region		
	Turkmenistan (1998)	Europe (1997)
Population (millions)	4.7	
Population aged		
• 0–14 years, %	39.2	20.1
• 15–64 years, %	57.0	66.3
• ≥ 65 years, %	3.8	13.6
Area, km ²	491 200	
Population density per km ²	9.58	31
Urban population (%)	43.7	72.7
Births per 1000 population	21.1	11.11
Deaths per 1000 population	6.3	10.94
Natural growth rate per 1000 population	14.8	0.17
Gross domestic product (GDP) per person in US\$, PPP*	2109	12 500
* PPP - purchasing power parity		

Age pyramid, 1981 and 1998



Turkmenistan was accepted as a member of the United Nations in 1995.

The country is divided into five administrative economic regions (*velajaty*): Akhal, Balkan, Tashauz, Lebap and Mary, which are made up of 46 regions (*etrapy*) and 20 towns.

Demography

The natural population growth rate in Turkmenistan is one of the highest in the European Region. However, a decline in the birth rate has been seen since 1995, partly owing to the social, political and economic circumstances in the country. Nevertheless, the relatively high birth rate ensures a “young” age structure. Almost 40% of people in Turkmenistan are under 15 years of age. The population is predominantly rural.

Family structure

Turkmenistan is typified by a relatively high number of marriages and a low number of divorces: there were 8.1 marriages and 1.4 divorces per 1000 population in 1994. The average size of a family in Turkmenistan is one of the highest in the European Region. According to the 1989 census, the average

family in Turkmenistan consisted of 5.6 people. Families with more than 7 people constituted more than 32% of the total number of families in the Republic.

Migrant population and ethnic profile

During the period 1991–1995, approximately 43 500 people left Turkmenistan. The majority of these (72.2% in 1995) were ethnic Russians. The principal reason for this emigration was a reduction in the size of the army, entailing the return of a significant proportion of military personnel to the Russian Federation and other NIS (*UNDP Office in Turkmenistan, 1997*).

Turkmens made up 81% of the population of the country in 1998. The other largest ethnic groups are Uzbeks (9.7%), Russians (4.3%) and Kazakhs (1.7%) (*WHO Liaison Office in Turkmenistan, 1999*).

Education, language, religion

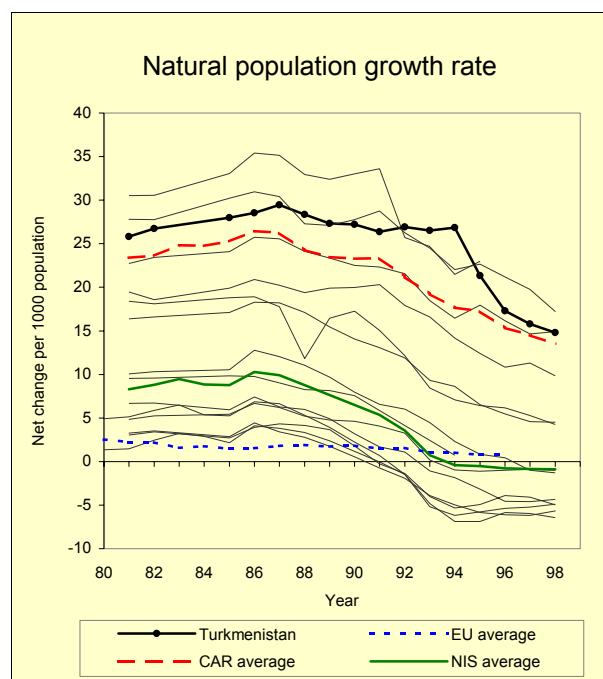
Literacy levels are close to the average for the CAR (98%). In 1995, 92 out of every 1000 people over the age of 15 had received a higher education.

The official language is Turkmen, although Russian is also widely used.

The majority of the population are Sunni Muslims. However, some people are members of the Russian Orthodox and Armenian Apostolic churches.

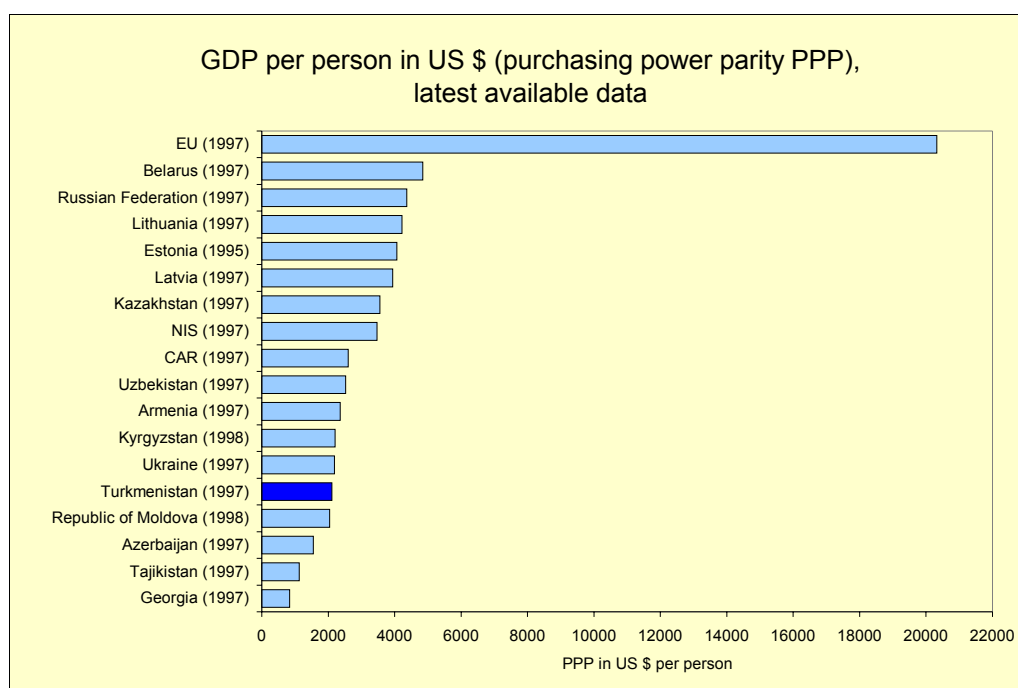
Economy

Turkmenistan has a predominantly agrarian economy and is one of the ten largest cotton producers in the world. It also has extensive energy resources (the fifth largest natural gas reserves in the world, and large oil reserves). There has been a substantial increase in the trade of goods. However, gas exports have been limited for two reasons: there has been a lack of development in the network of pipelines for transporting gas; and some of the main importers of Turkmen gas, who are from a number of former Soviet republics, are facing financial constraints.



In recent years, inflation in Turkmenistan has been falling and is being brought under control. The prices of almost all goods have been freed, although those of some basic food products are still controlled by the State. In 1996, expenditure on the social sector accounted for 60% of total government

spending. For a number of years, people have been receiving free natural gas, water, electricity and salt. Per capita gross national product (GNP) in Turkmenistan is close to the average for NIS but significantly lower than in European countries (*WHO Liaison Office in Turkmenistan, 1999*).



HEALTH STATUS

For historical reasons, the health status of the population in Turkmenistan was one of the lowest in the former USSR. Broadly speaking, the structure of mortality and morbidity is similar to that in other CAR such as Tajikistan and Uzbekistan.

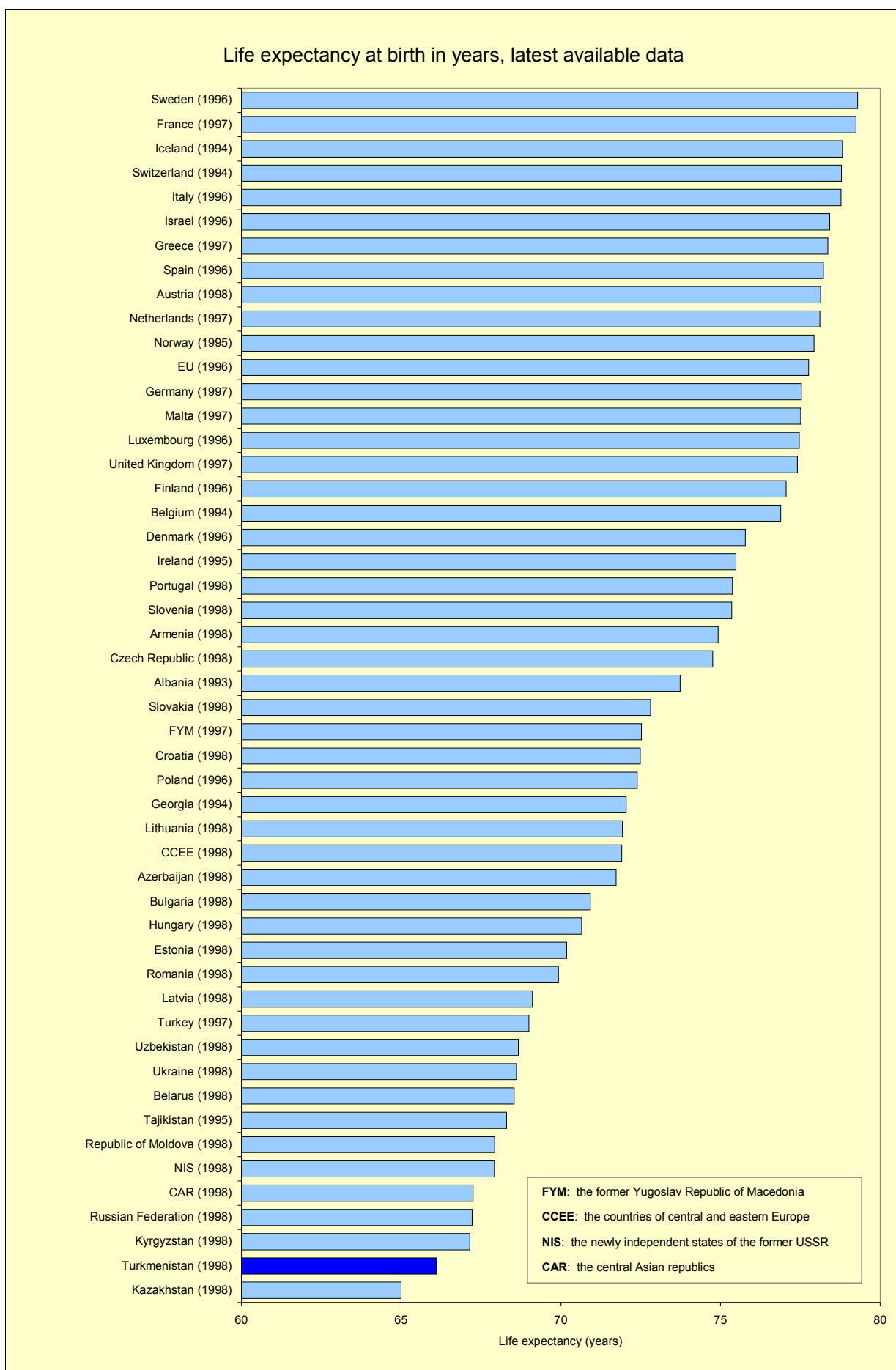
Life expectancy

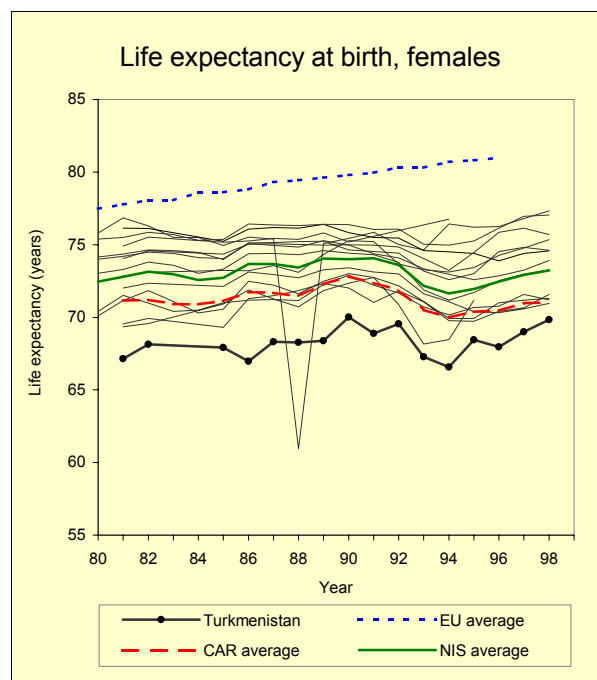
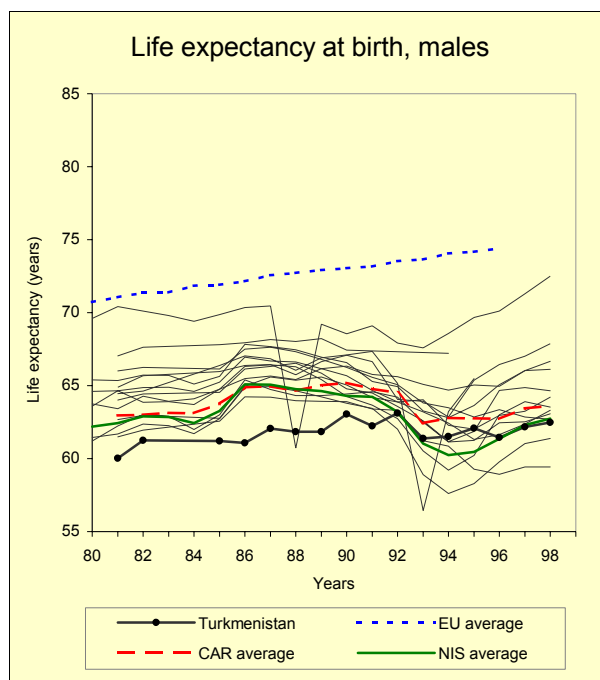
Life expectancy in Turkmenistan rose until 1992 and fell slightly in 1993–1994. Some of the variations in this period may be related to the difficulties involved in collecting mortality statistics in Turkmenistan after the break-up of the Soviet Union. At the start of the 1990s, a deterioration in the situation was seen in practically all other NIS, but in Turkmenistan it was less noticeable. In the majority of NIS,

the deterioration occurred predominantly in mortality rates among middle-aged males, while in Turkmenistan it was mainly the result of a sharp increase in mortality among elderly women.

According to the latest available data, average life expectancy in Turkmenistan in 1998 was one of the lowest in the European Region of WHO. The figure has fallen much less sharply among males than among females. The situation for men is better in Turkmenistan than in the Russian Federation and Kazakhstan, but average life expectancy for women is the lowest in the European Region. Life expectancy in Turkmenistan in 1998 was approximately seven years below the average for the European Region.

Selected health indicators in Turkmenistan and the European Region		
	Turkmenistan (1998)	Europe (1997)
Life expectancy	66.1	73.3
• Men	62.5	69.2
• Women	69.8	77.4
Infant mortality per 1000 live birth	32.8	12.0
Maternal mortality per 100 000 live birth*	44.0^a	19.4
Standardized death rate (SDR) for all causes of death per 100 000 population	1331.0	980.1
SDR for cardiovascular diseases per 100 000 population	844.4	482.7
SDR for malignant neoplasms per 100 000 population	97.9	184.6
SDR for injuries and poisoning per 100 000 population	63.2	86.4
SDR for diseases of the respiratory organs per 100 000 population	111.8	63.5
SDR for diseases of the digestive system per 100 000 population	64.8	39.1
SDR for infectious and parasitic diseases per 100 000 population	50.8	13.8
New cases of tuberculosis per 100 000 population	72.3^b	39.8 ^c
New cases of syphilis per 100 000 population	54.0^b	74.0 ^c
New cases of AIDS per 100 000 population	0.00^b	1.94 ^c
^a 1996; ^b 1997; ^c 1998		
* General mortality registration data. According to clinical data this indicator is higher.		





Main causes of death and disease

As in most other countries, cardiovascular diseases are the most common cause of death, both in the age group up to 65 years and especially at older ages. It is possible that the latter is related to the particular features of national practice in coding the principal cause of death (the percentage of deaths where a post-mortem examination is carried out is one of the lowest in the European Region).

It is noteworthy that the share of premature (age 0–64 years) mortality due to cancer, injury and poisoning is half the average for the European Region. On the other hand, the proportion of premature deaths attributable to respiratory, infectious and parasitic diseases is about 2.5 times higher than the regional average.

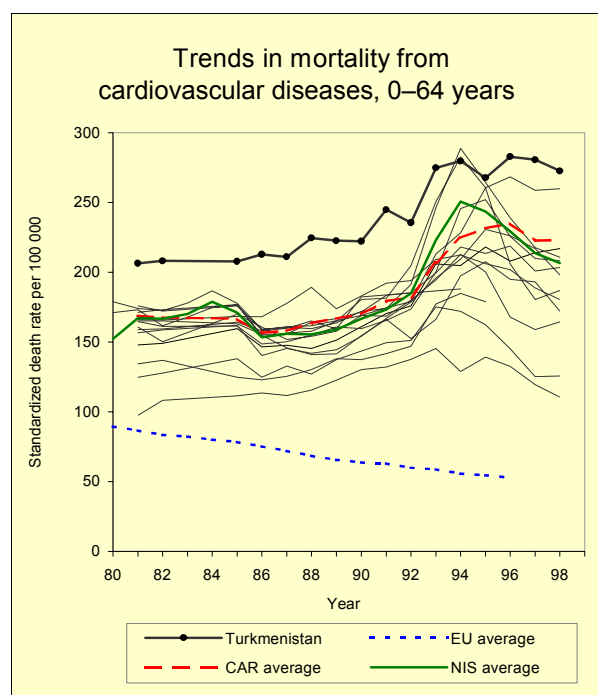
In Turkmenistan, like in Tajikistan and Uzbekistan, premature mortality from respiratory disease ranks in second place after

cardiovascular disease. By all accounts, this is predominantly mortality from acute diseases, since the share of mortality from respiratory disease for people over the age of 64 years is lower than the European average.

The prevalence of chronic lung disease in Turkmenistan is the lowest among CAR (*WHO Information Centre for CAR, 1998*). A notable feature is the substantial difference from the European average in the structure of hospital admissions: cardiovascular diseases are only in fourth place in this regard, rather than first place (the average for the European Region). The differences between Turkmenistan and the European average in terms of hospital admissions for infectious diseases, cancer and respiratory diseases are wholly in line with the differences in mortality rates.

Structure of mortality (in %) by main cause of death and age group in Turkmenistan (1998), compared with the average for the European Region (1997)				
	0–64 years		65 years and above	
	Turkmenistan	Europe	Turkmenistan	Europe
Cardiovascular diseases	43.3	30.7	78.1	59.9
Malignant neoplasms	9.5	22.8	5.8	16.5
Accidents, injury and poisoning	9.6	19.5	1.2	2.6
Diseases of the respiratory system	12.7	5.6	5.3	7.0
Infectious and parasitic diseases	7.9	3.0	0.9	0.5
Diseases of the digestive system	7.1	5.7	3.3	3.0
Ill-defined conditions	2.2	2.7	2.8	4.3
Other diseases	7.8	10.0	2.7	6.1

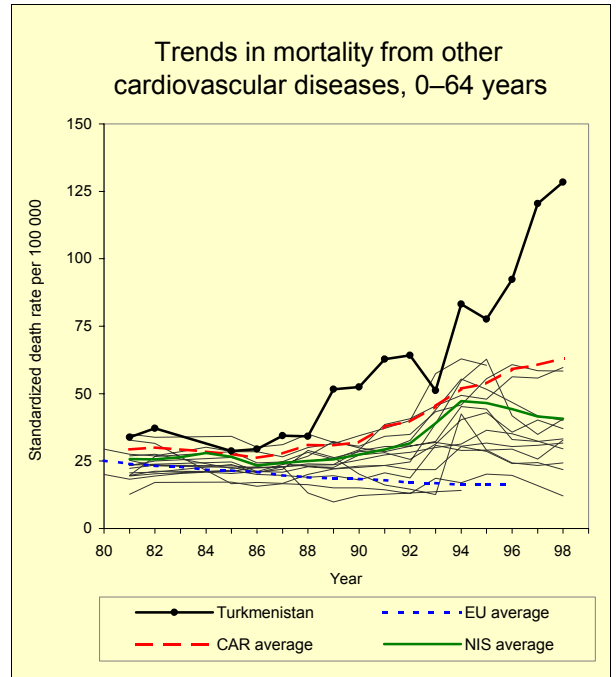
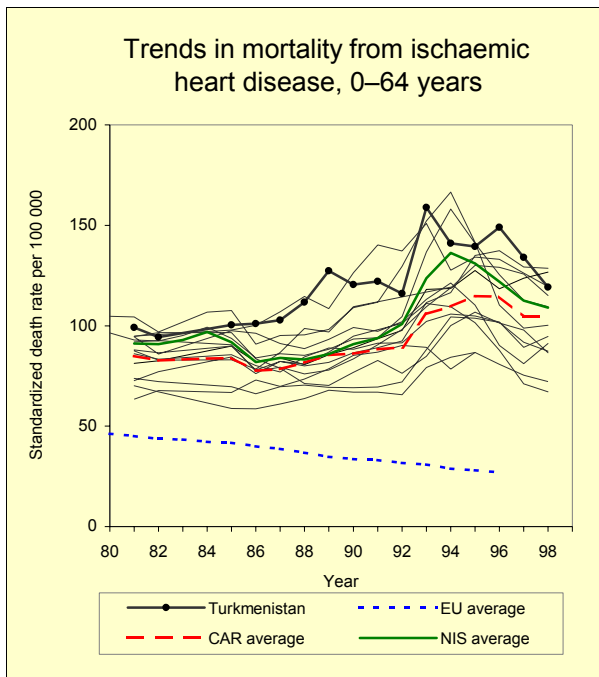
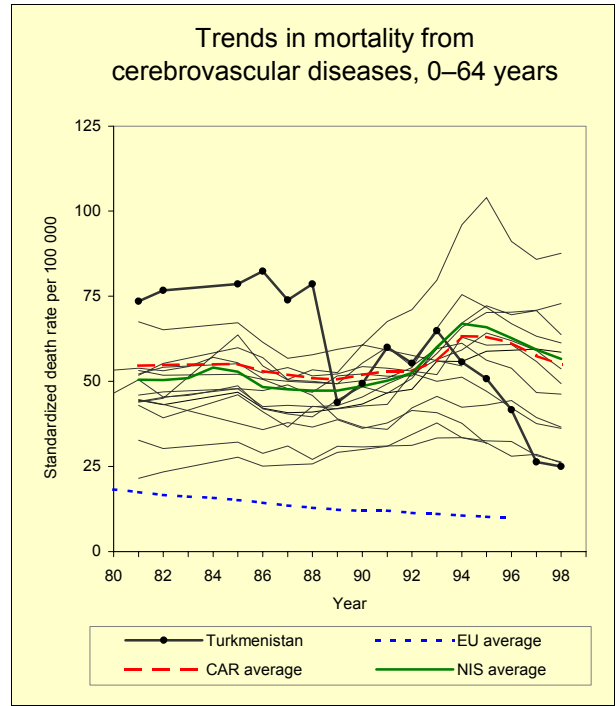
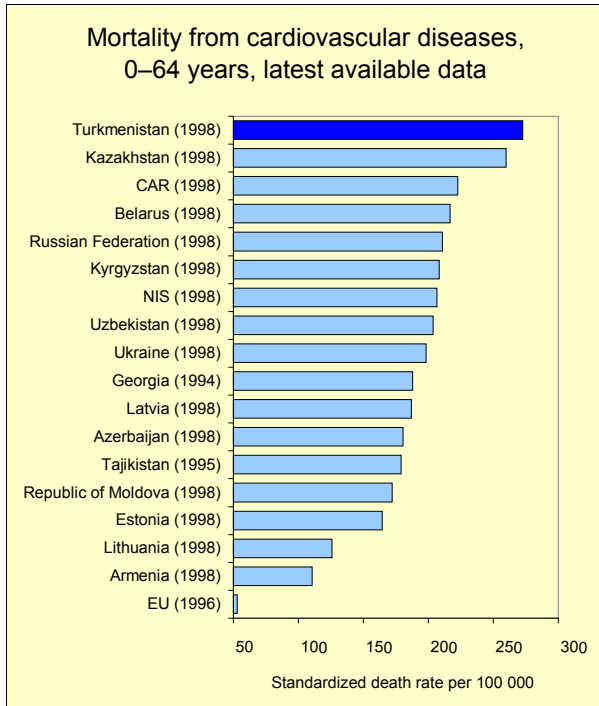
Inpatients by disease category (% of all patients hospitalized)		
Disease category	Turkmenistan (1998)	Europe (1997)
Infectious and parasitic diseases	10.5	3.5
Malignant neoplasms	1.5	6.3
Cardiovascular diseases	6.7	11.7
Diseases of the respiratory system	15.0	10.1
Diseases of the digestive system	9.3	9.7
Injury and poisoning	5.6	8.3
Other diseases	51.4	50.4



Cardiovascular diseases

There was an upward trend in premature mortality from cardiovascular diseases in Turkmenistan at the end of the 1980s, and it stabilized at the highest level in the European Region during the 1990s.

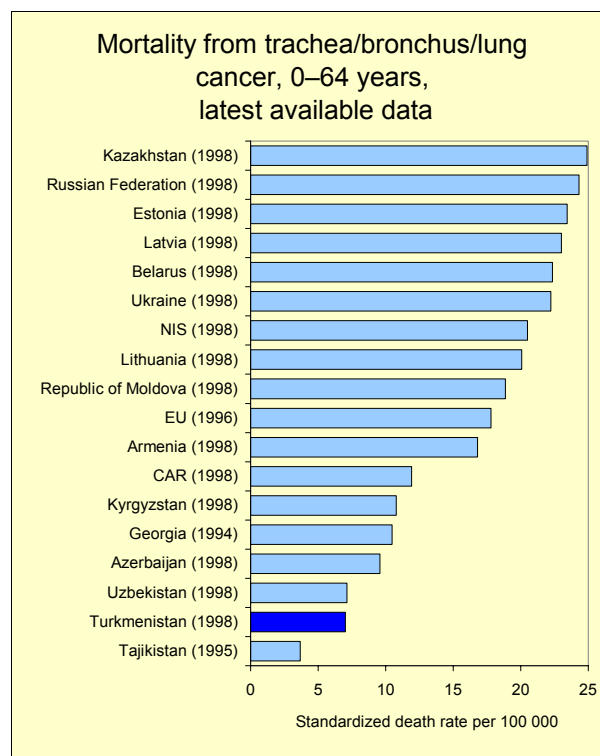
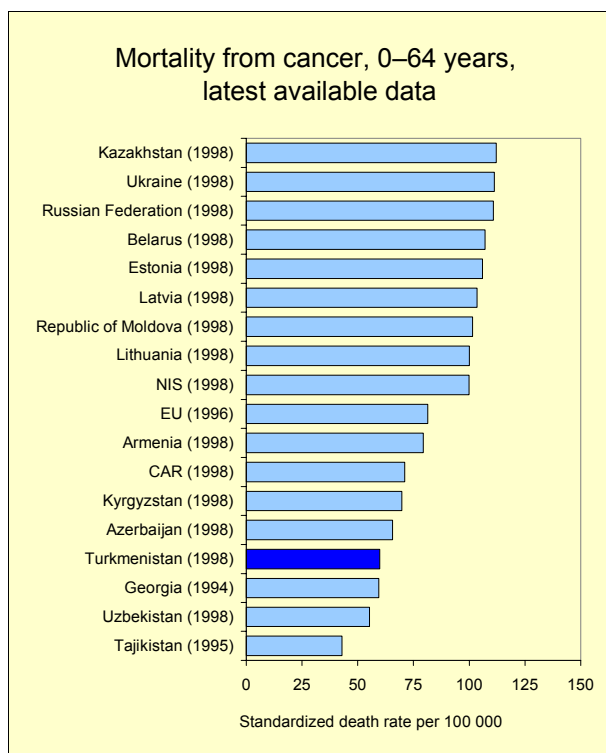
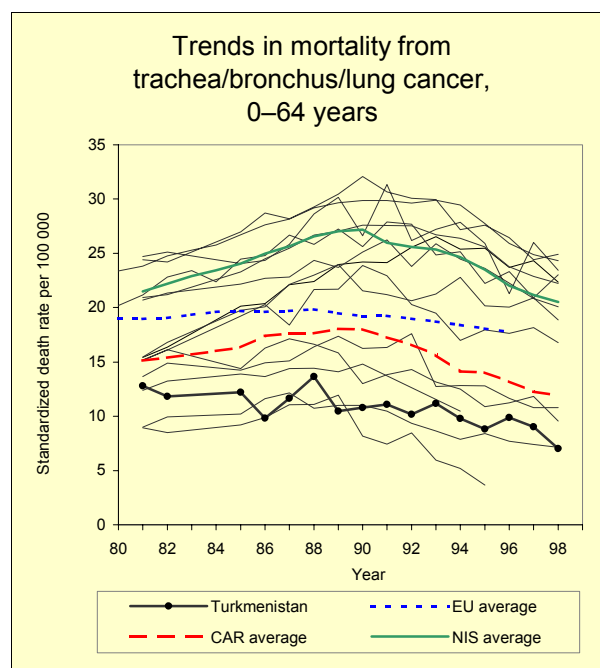
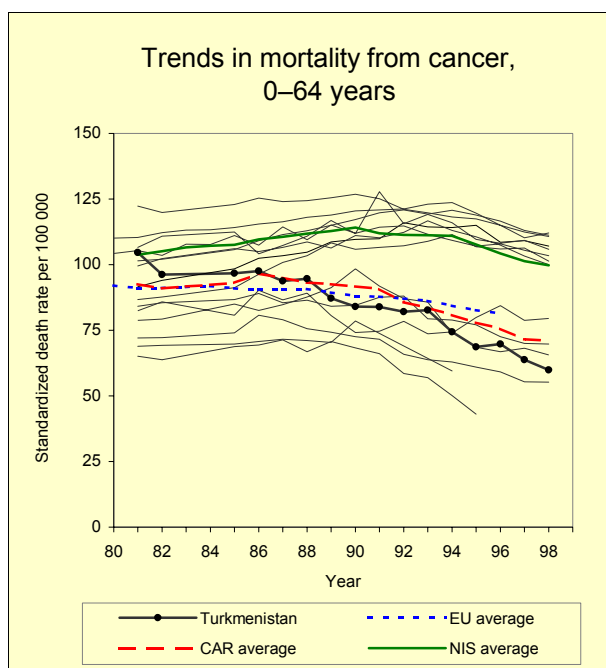
Against this background, it is most likely that the reason for the reduction in premature mortality from ischaemic heart disease and cerebrovascular diseases since 1993, as well as for the corresponding rise in mortality from other cardiovascular diseases, was changing national practices in coding causes of death within this disease category.



Cancer

Cancer mortality has been declining steadily in Turkmenistan, like in other CAR with the exception of Kazakhstan. In 1998, it was lower than in most other countries in the European Region.

Mortality from cancer of specific locations (lungs, trachea, bronchus, uterus and breast) is also one of the lowest in the European Region. A similar picture can be seen for morbidity. Registered cancer morbidity is seven to eight times lower than in western Europe.

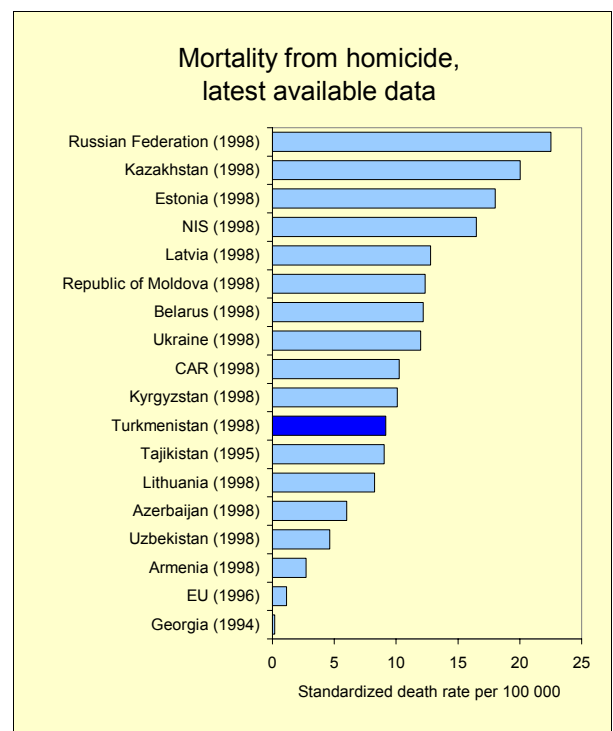
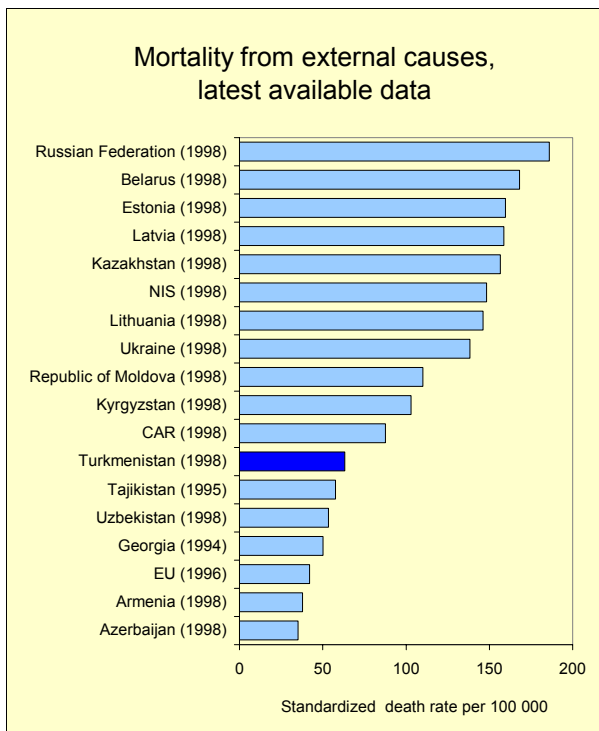
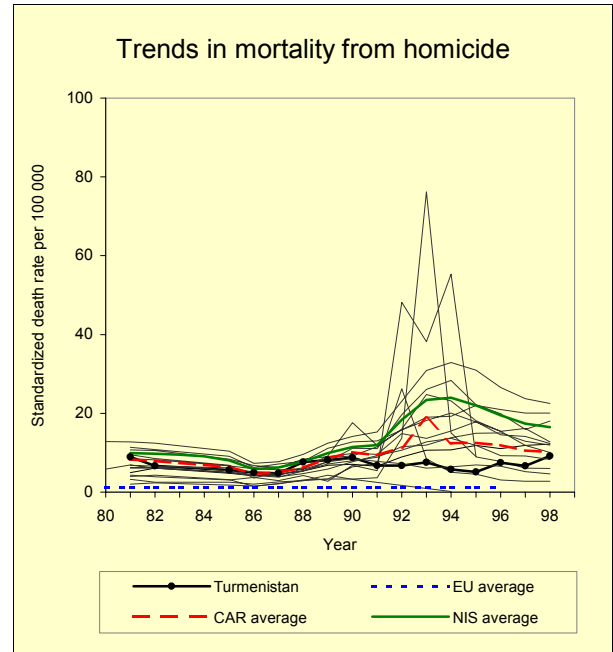
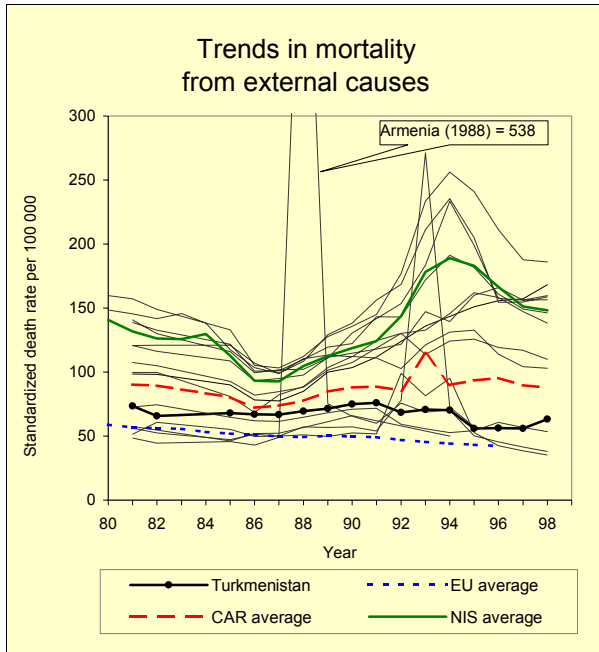


Injury and poisoning

The mortality rate from external causes of injury and poisoning in Turkmenistan has remained almost the same for a number of years, and is still lower than the average for CAR. This is markedly different from the situation in most NIS, where it increased sharply at the end of the 1980s and the first

half of the 1990s. Mortality from these causes is close to the level in the neighbouring countries of Uzbekistan and Tajikistan.

Mortality from homicide in Turkmenistan is close to the average for CAR. Mortality from road traffic accidents is slightly lower than the European average.



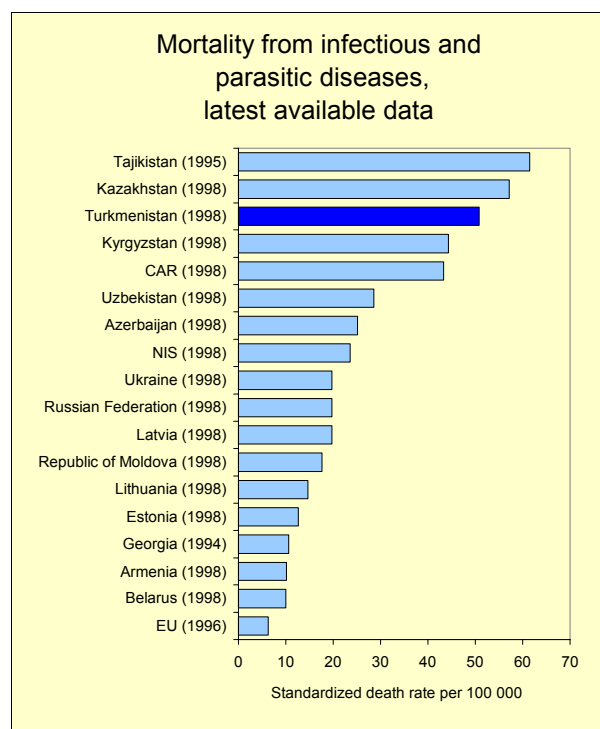
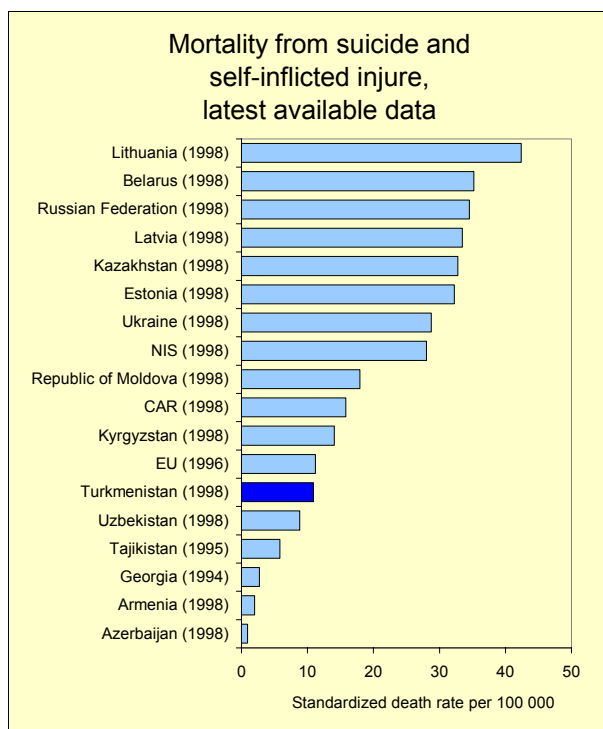
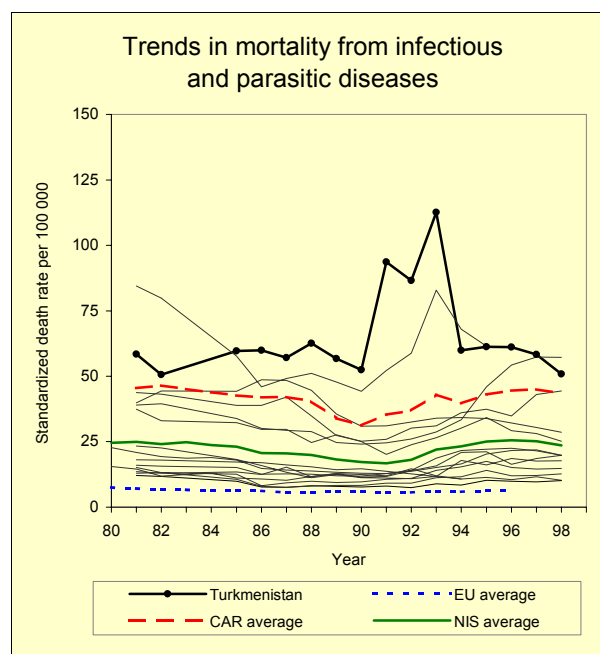
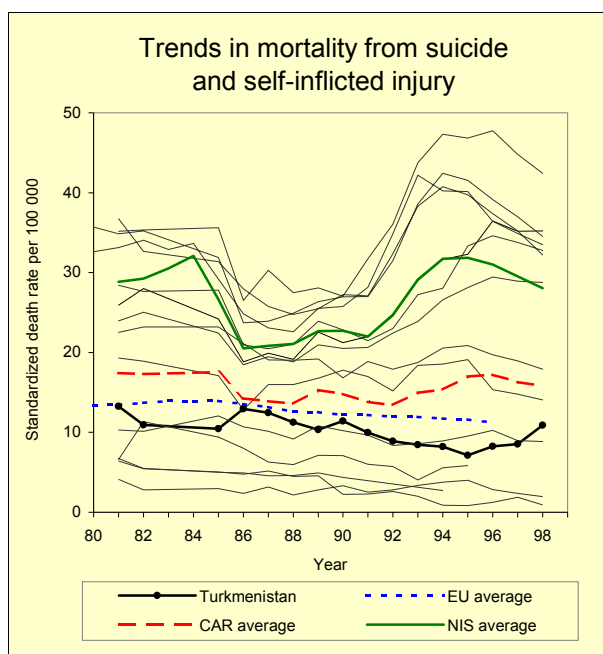
Mental health

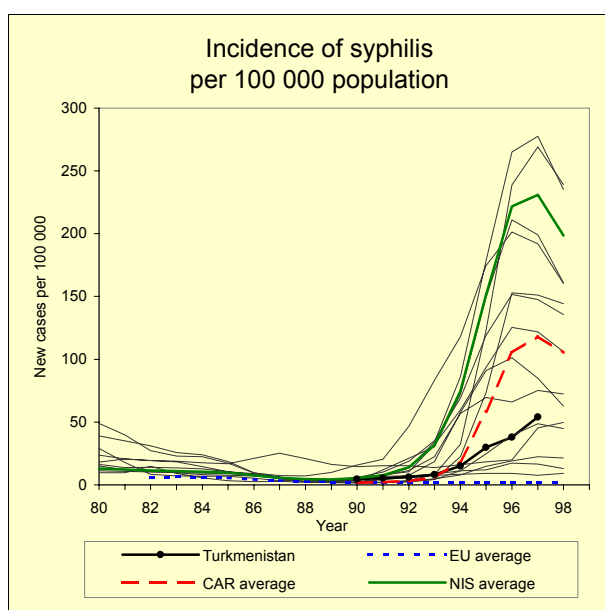
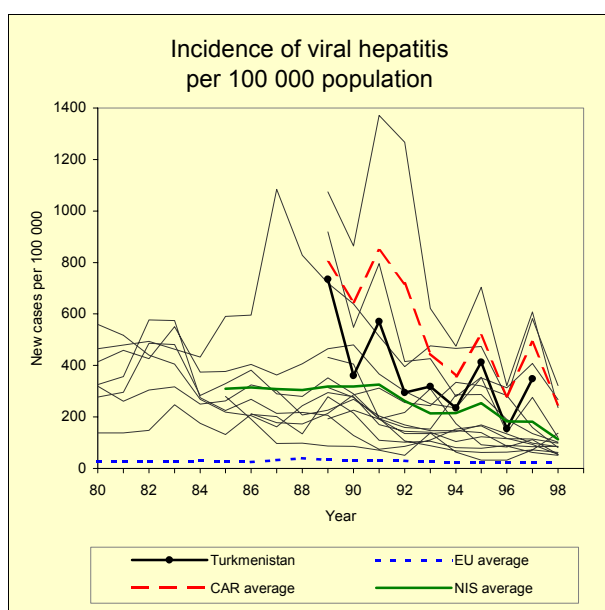
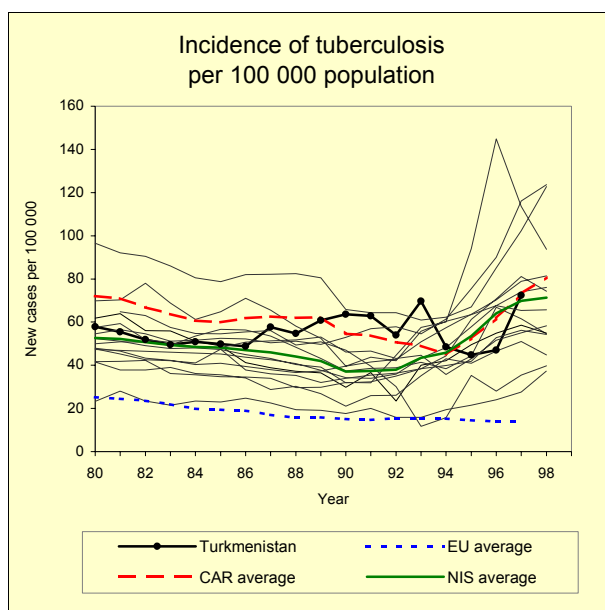
According to available data, the registered incidence of mental disorders decreased from 72 per 100 000 population in 1991 to 44 per 100 000 in 1997. This is one of the lowest rates among the countries of central and eastern Europe that submit such data to WHO. Mortality from suicide in Turkmenistan is substantially lower than in most other NIS and is close to the average for western Europe.

Infectious diseases

Mortality from infectious diseases in Turkmenistan, like in other CAR, is among the highest in the Region. It rose sharply in the beginning of the 1990s but fell in 1994.

According to available data, the incidence of tuberculosis rose sharply in 1997 and was comparable to the averages for CAR and NIS.





Turkmenistan is currently reorganizing its tuberculosis control system to meet international standards. It may be assumed, however, that a certain number of cases of tuberculosis will remain undetected (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

As in other CAR, morbidity from viral hepatitis is a serious problem in Turkmenistan. Although it shows a downward trend, the incidence rate remains one of the highest in the European Region.

Until recently AIDS was not a problem in Turkmenistan. In 1997 one carrier of HIV infection was recorded in the Republic.

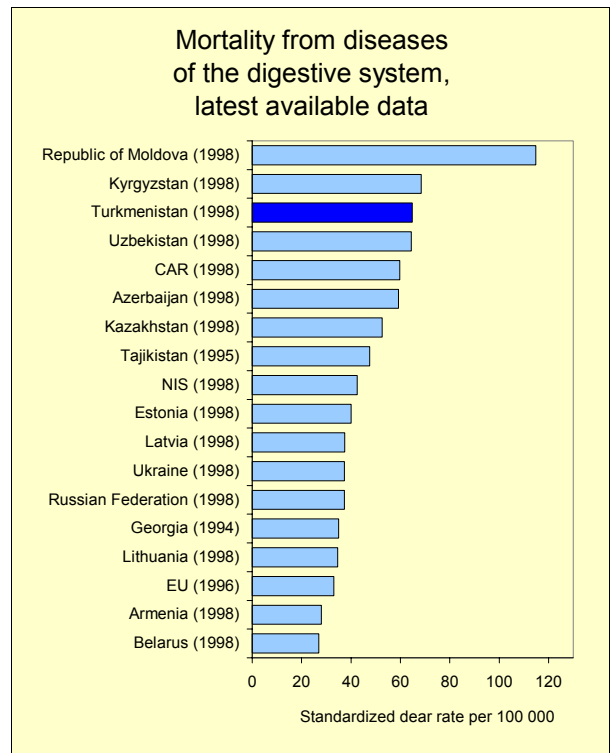
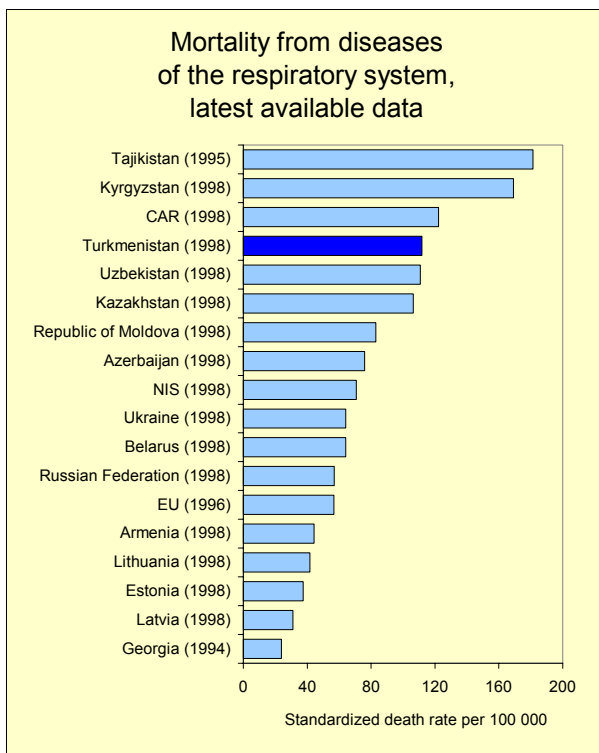
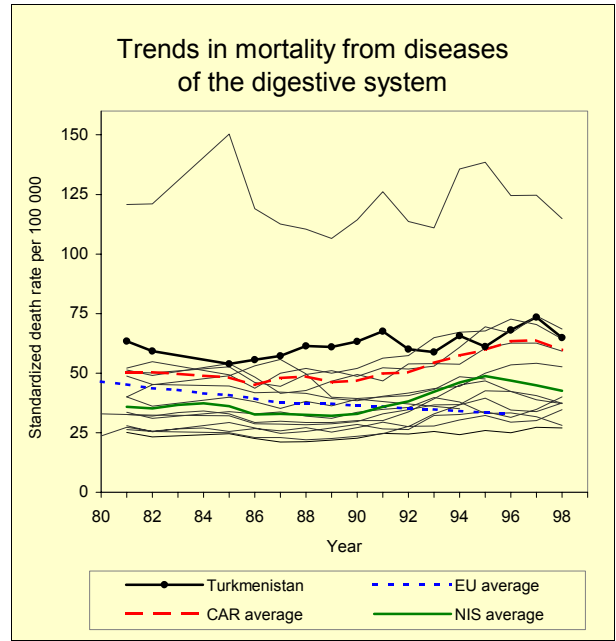
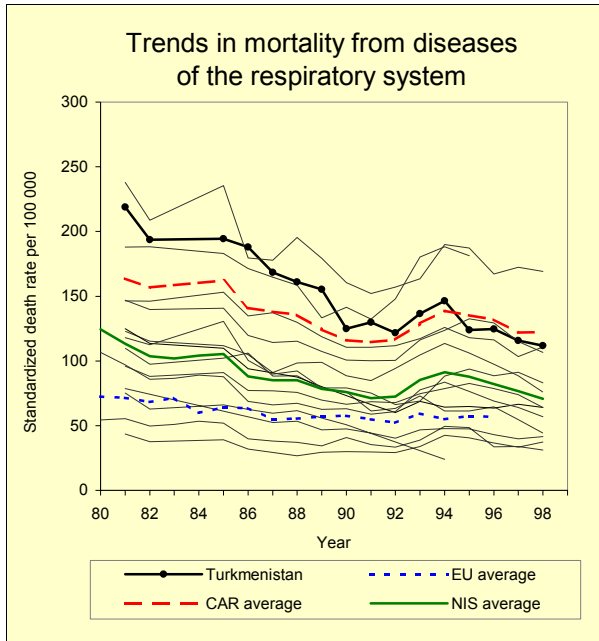
The incidence of syphilis is rising, albeit more slowly than in the majority of other NIS. However, from 1990 to 1997, it increased more than tenfold.

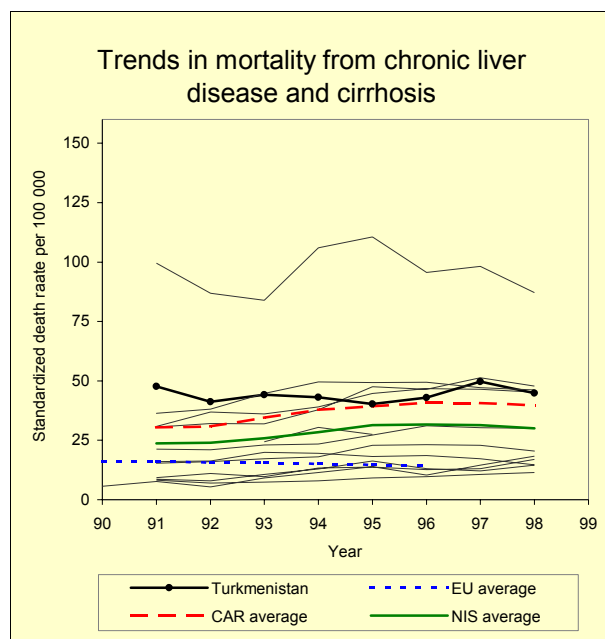
Other diseases

The mortality rate from respiratory diseases declined steadily during the 1980s. This trend has continued, although mortality did rise for a short period during 1993–1994. However, the level of mortality from respiratory diseases in Turkmenistan, like in other CAR, is still one of the highest in the European Region.

Mortality from diseases of the digestive organs has remained high over the past 20 years and, along with other CAR, is one of the highest in the European Region. There is a high level of mortality from cirrhosis and chronic liver diseases, which are often complications of viral hepatitis.

Mortality from diabetes in Turkmenistan rose fourfold from 1981 to 1994 and is among the highest in the European Region. There is a similar situation in the majority of other NIS. At the same time, the prevalence of diabetes (as measured by the number of registered patients) has barely changed and is relatively low.





Disability

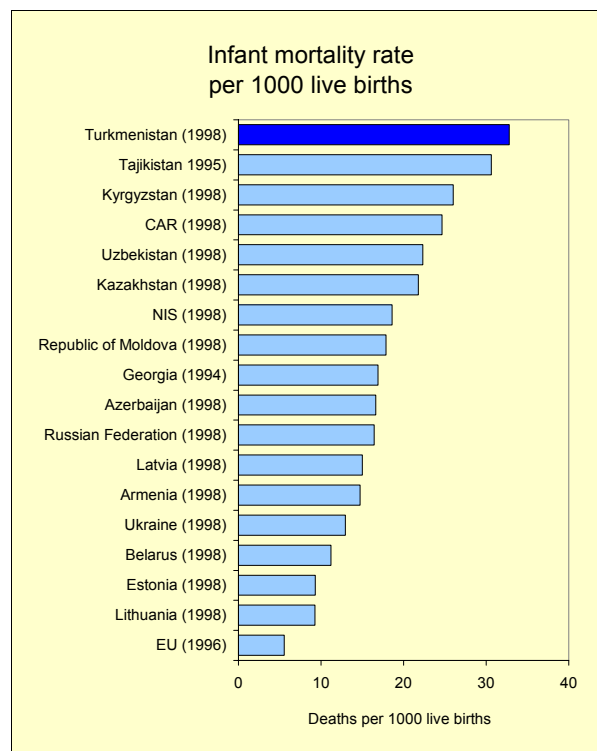
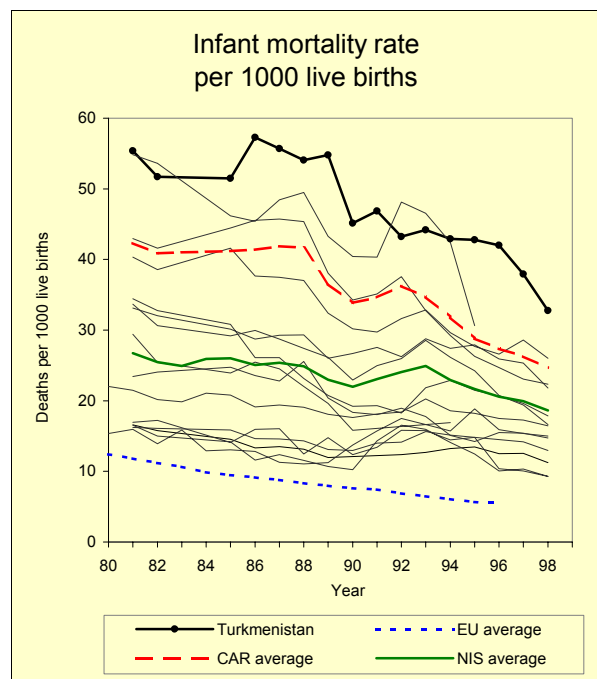
According to available data, the incidence of disability is lower in Turkmenistan than in most of the CAR and NIS. In 1997 there were 159 registered disabled people per 100 000 population.

Health of children and adolescents

The infant mortality rate has been falling steadily since the end of the 1980s but, like in other CAR, it continues to be one of the highest in the European Region. It should also be noted that Turkmenistan uses the old definition of “live birth”, which substantially underestimates levels of infant mortality. The principal causes of infant mortality in 1996 were acute respiratory infections (46%), diarrhoeal diseases (20.5%), perinatal conditions (13.5%) and congenital disorders (3.5%).

From 1992 there has been a rise in the number of cases of anaemia among children. This is related to a lack of proper breastfeeding. Nursing mothers have insufficient diets, and this is related to the economic situation and several other factors. The average lactation period is 4–6 months, but 38% of mothers breastfeed for less than three months (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

In 1997, immunization coverage of infants against diphtheria, pertussis and tetanus was 98%, against measles nearly 100%, against tuberculosis 96.6%, and against poliomyelitis 99.2%.

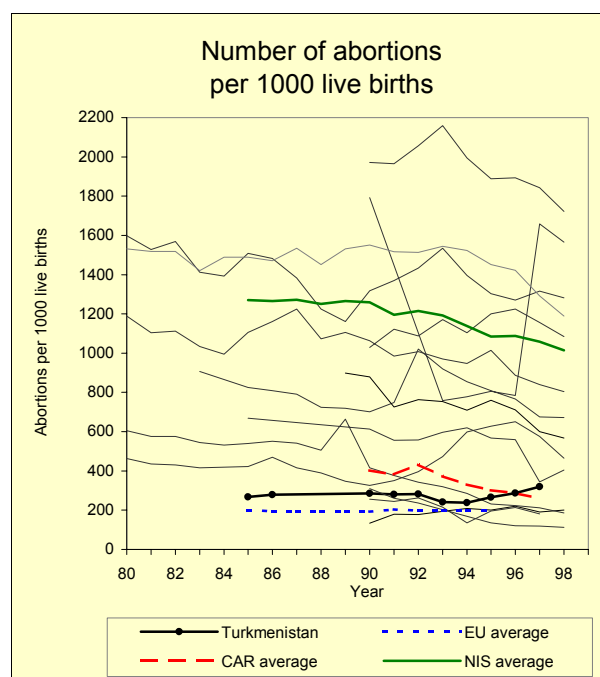
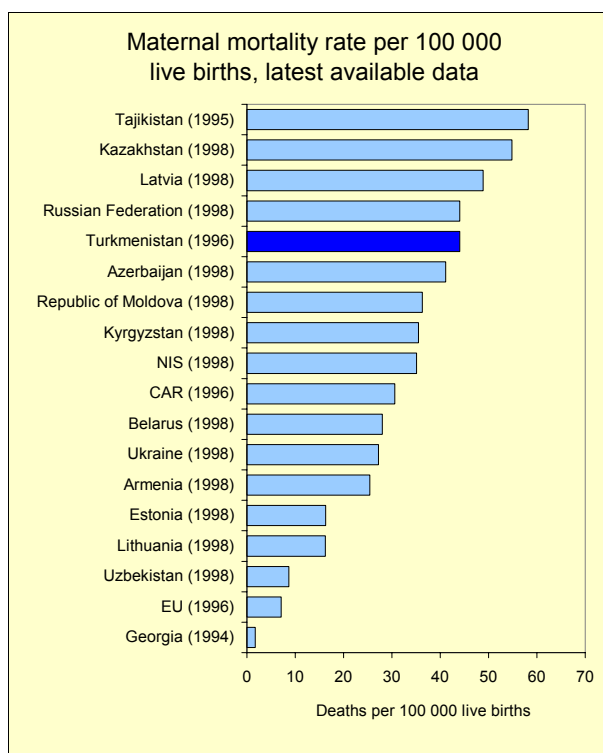
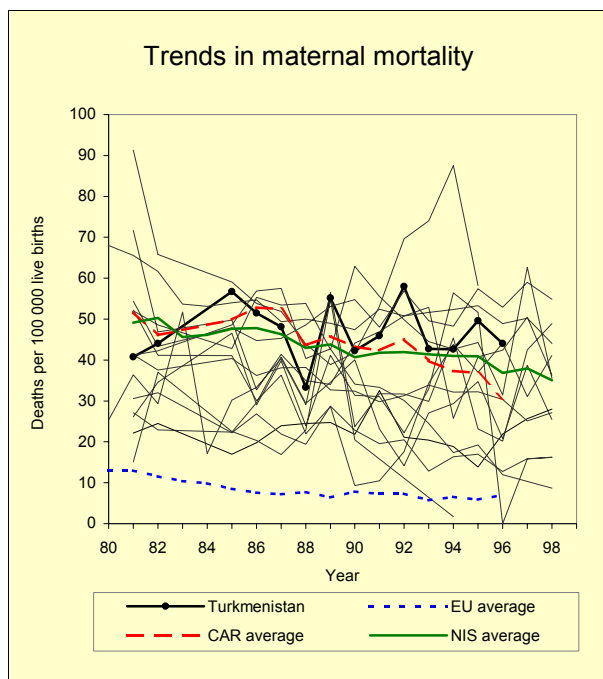


Women's health

Female life expectancy in Turkmenistan continues to be greater than for males, although in the early 1990s the gap narrowed from seven to five years. It is noteworthy that mortality among elderly women increased by more than 60% between 1990 and 1994. In the same period, mortality in the age group up to 65 years increased by only 15% for women and 10% for men.

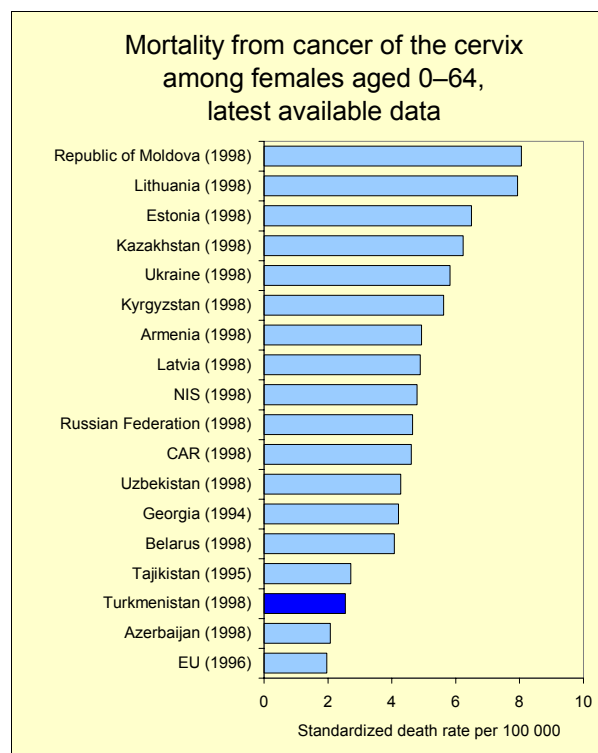
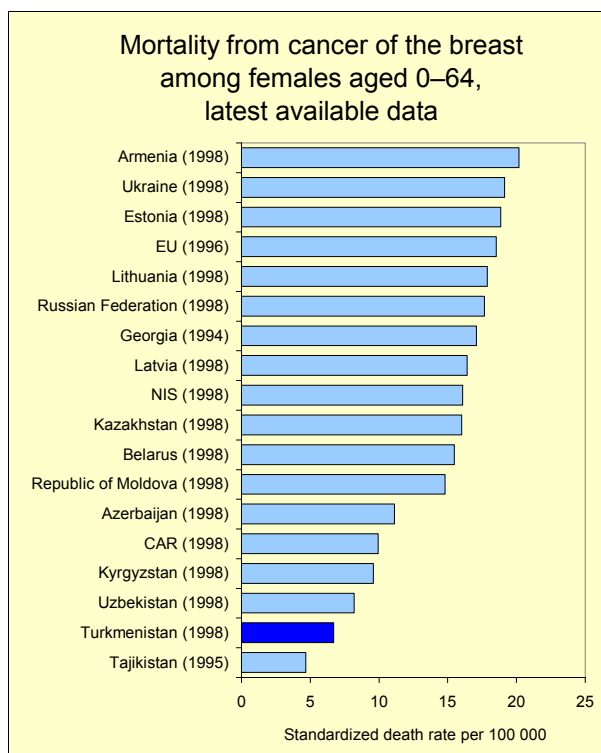
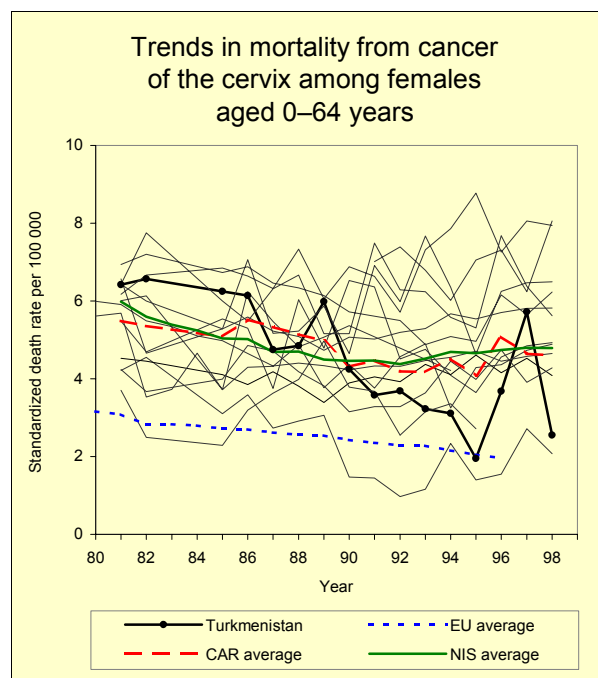
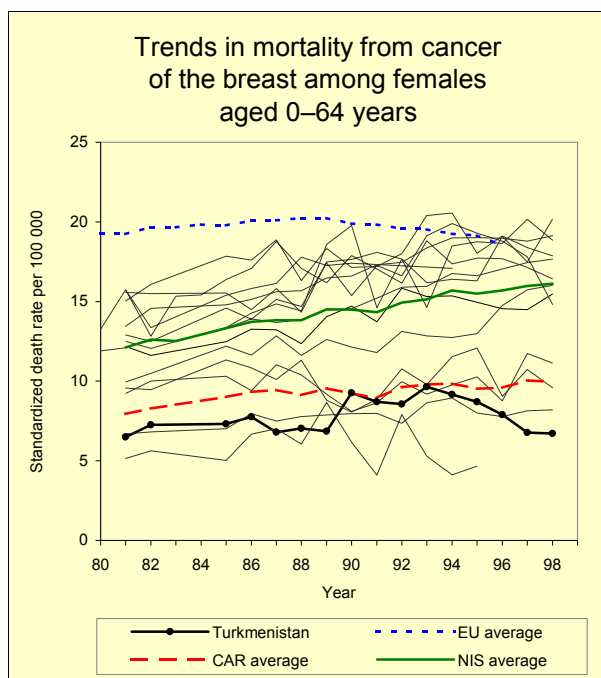
Subsequently, between 1995 and 1998, the mortality rate for women decreased and average female life expectancy returned to the 1990 level.

Maternal mortality in Turkmenistan, like in other CAR, is one of the highest in the European Region. According to data submitted to the WHO Regional Office for Europe, it amounted to 44 per 100 000 live births in 1996. However, according to estimates based on clinical data, the actual figure was more than twice as high: 105 per 100 000 live births (71.6 and 63.5, respectively, in 1997 and 1998). Obstetrical haemorrhage is the most common cause of death, accounting for 26.7% of all maternal deaths in 1996. It is followed by late-stage toxicosis, extragenital pathology and sepsis. Abortions were the cause of 18.4% of maternal deaths (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*). The abortion rate in the Republic is much lower than in most NIS: in 1997, it was 330.3 per 1000 live births.



According to available data, mortality from breast cancer is the lowest in the Region. Mortality from cervical cancer was higher than the averages for CAR and NIS at the beginning of the 1980s. It has since been

falling steadily, except for a short period in 1996–1997 when it rose. In 1998, it was one of the lowest among NIS and slightly higher than the average for EU countries.



LIFESTYLES

Tobacco consumption

In 1998 lung cancer mortality, a proxy indicator of smoking prevalence, was substantially lower in Turkmenistan than in most countries in the European Region.

Surveys of different population groups have shown that at least 30% of men and 2% of women smoke. On average, 20% of adolescents aged 14–16 years smoke cigarettes more or less frequently. Tobacco consumption in Turkmenistan has its own specific features. As well as smoking tobacco, people use *nas* (specially prepared tobacco that is placed under the tongue or behind the cheek). *Nas* consumption is most widespread in rural areas and is the cause of increased incidence of cancer of the mouth and larynx (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

Alcohol consumption

Turkmenistan is one of the countries with low per capita alcohol consumption: for a number of years, it has been some two litres per annum. However, considering the very young population structure, there are large differences in alcohol consumption patterns

between rural and urban areas, as well as between men and women. Alcohol consumption by men in towns is actually significantly higher than the estimated average given above. The range of problems related to alcohol consumption is therefore also growing. In Ashgabat, the prevalence of alcoholism is about 2%. An increase is being seen in the number of injuries caused by drunkenness. Moreover, in recent years there have been substantial increases in the number of cases of chronic liver disease, cirrhosis and liver cancer, and these are undoubtedly related to alcohol abuse (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

Illicit drug use

In recent years there has been an increase in the incidence of drug abuse: it rose from 8.9 per 100 000 population in 1992 to 20.1 per 100 000 in 1996 (*WHO Information Centre for the CAR, 1998*).

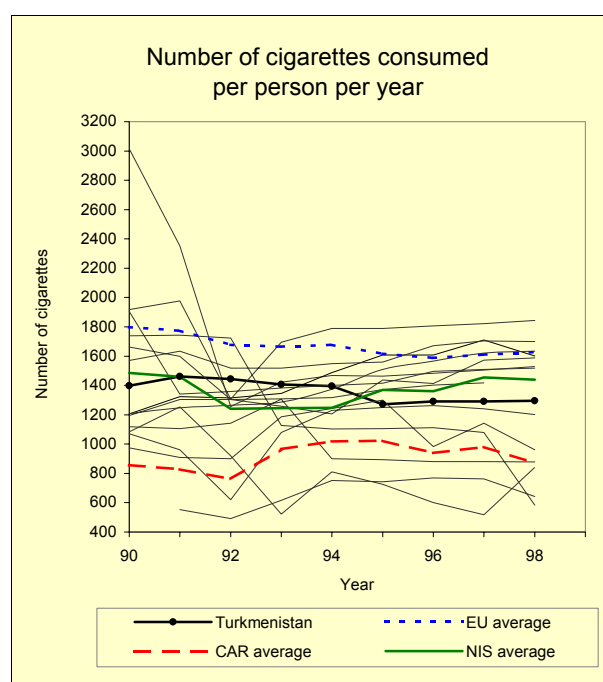
One specific feature of the use of narcotic substances in Turkmenistan is the predominance of opiates (raw opium, *koknar*, heroin) and hemp preparations (hashish, *anasha*).

There is recent evidence that the range of narcotics used has expanded to include synthetic stimulants and cocaine. Injection use of morphine, including its use by women, is becoming more common in urban areas (*WHO Regional Office for Europe, 1997*).

Nutrition

Average per capita calorie consumption has decreased slightly in Turkmenistan since 1990, and in 1996 it was close to the average for CAR.

Due to difficulties experienced during the transitional period, there has been no recent research into people's diet. For this reason, data from 1990 have been used, according to which the typical daily diet has the following features:



- excessive consumption of bread and farinaceous products;
- insufficient consumption of animal products and seasonal consumption of vegetables and fruit;
- an imbalance of basic dietary components.

In particular, there was a deficiency in protein and fat. Fats contained in foods consumed daily were mainly derived from animal products such as mutton, beef fat, and butter. Vegetable fat made up 25.3% of all fat and consisted mainly of cottonseed oil.

To a large extent the diet depends on the availability of food products. In recent years, the country has experienced certain difficulties in this area owing to the transition to a market economy. Nevertheless, Turkmenistan has taken social welfare measures to provide for deprived sectors of the population.

It should also be pointed out that Turkmenistan is an iodine-deficient area. In 1994 a rapid assessment of the problem of iodine deficiency disorders was carried out among children aged eight and nine years in Ashgabat and Tashauz. In Ashgabat there was a mild degree of iodine deficiency. In Tashauz, intermediate and serious iodine deficiency was detected in 64% of the children, 23% of whom had pronounced thyroid enlargement. An analysis of food products has shown that iodine levels are 2–4 times lower than the recommended norms.

Iodized salt was produced from 1976 to 1991, after which production was halted. Iodization of table salt was restarted in 1995.

Anaemia is another important problem related to the health and diet of children and women of childbearing age (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

Overweight

The epidemiology of obesity has not been extensively studied in Turkmenistan. Isolated sample surveys have shown that 3.2% of the male population of Ashgabat are overweight. In rural areas, the proportion of males with obesity varies from 8.5% in Tashauz region to 25.8% in Akhalsk. These figures are lower than similar indicators in European countries. Nevertheless, differences in the methods of assessing obesity prevent reliable comparison between data from different countries, as well as between different regions within a given country (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

Healthy lifestyles

Health education work on promoting healthy lifestyles used to be carried out by a Health Centre service within the Ministry of Health. However, in the interest of efficiency, health centres have been abolished as structural subdivisions at urban and regional levels, with the exception of Ashgabat, and their functions have been handed over to the primary health care network. The main task of the Ashgabat Health Centre is to monitor and coordinate the work carried out by treatment/preventive care establishments on health education, disease prevention and the promotion of healthy lifestyles.

Medical personnel have on many occasions talked on the radio and appeared on television programmes discussing issues such as the prevention of infectious diseases and the use of alcohol, drugs and tobacco.

All newspapers have special sections on health care issues. They regularly publish information about progress being made in carrying out the President of Turkmenistan's "Health" programme, as well as other material.

Since 1996, health lessons have been included in the school curriculum for classes 1 to 4.

ENVIRONMENT AND HEALTH

The problems of the Aral Sea are of particular concern in Turkmenistan, since they pose a real ecological threat to the population. Tashauz *velayat* is in the Aral region, where cases of hepatitis and intestinal diseases are widespread owing to the existence of open and infected water sources.

Air quality

In recent years, there has been an increase in air pollution from both stationary and mobile sources. The largest amounts of pollutants emitted are from motor traffic, oil and gas refineries, and the construction industry.

There has been an increase in the number of cases of allergic diseases, including bronchial asthma and allergic rhinitis (*Ministry of Health and Medical Industry of Turkmenistan, 1998a*).

In 1996, more than 40% of air samples exceeded the maximum permissible concentration for carbon monoxide, while the corresponding figure for nitrogen oxide was 14.8%. These are the highest average yearly indicators for CAR (*WHO Information Centre for the CAR, 1998*).

Water management and sanitation

For Turkmenistan, as for other CAR, water supply is a key environmental health problem. Piped water is supplied to 49.6% of the population (86% in cities and 14% in rural areas).

The majority of the rural population (85%) use open water sources for drinking purposes, many of which do not meet health and hygiene standards. This leads to outbreaks of infections such as typhoid and viral hepatitis.

In 1997, 41.7% of samples of piped water did not meet hygiene standards for sanitary/chemical indicators, while 33.9% were sub-standard in terms of microbiological indicators (*Ministry of Health and Medical Industry of Turkmenistan, 1998a*).

In 1996, 45% of the population had access to centralized sewage facilities (70% of the urban and 12% of the rural populations). This is more than the average for CAR (*WHO Information Centre for the CAR, 1998*).

Waste and soil

The disposal of urban waste is one of the most serious waste management problems in Turkmenistan, and it is thus the main prerequisite for municipal sanitation.

Many problems are related to funding shortages and the lack of incentives to recycle waste. The situation is further complicated by the fact that the technical equipment available to the waste disposal service is inadequate. Soil pollution can cause serious problems. The number of registered cases of helminth infections (per 100 000 population) increased from 484.3 in 1995 to 522.5 in 1996.

Pesticides and mineral and organic fertilizers are the most widespread soil pollutants in rural areas. Weedkillers are also a source of pollution in agriculture: in 1997, 236 400 hectares were treated using 574 tonnes of chemical weedkillers. In the country's cattle breeding areas, the rise in morbidity from zoonoses, caused by poor veterinary supervision, is of particular concern. This in turn is related to an increase in soil pollution by the excreta of sick animals and the uncontrolled burial of dead animals, both of which further aggravate the problem (*Ministry of Health and Medical Industry of Turkmenistan, 1998a*).

Food quality

Morbidity caused by consuming poor quality food products has increased significantly over the past few years, and in some cases it has reached epidemic levels. The infections are caused mainly by *Salmonella* and *Campylobacter* strains. Only a small proportion of acute gastrointestinal infections are registered; their actual number is at least

ten times higher (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

According to data from the Sanitary and Epidemiological Surveillance Service, 10% of samples of raw foodstuffs and food products did not meet hygiene standards in 1997. More specifically, 4% of such samples did not meet hygiene standards for nitrates and 0.15% did not meet standards for pesticides.

Housing

In Turkmenistan, like in other countries, there has recently been migration of the rural population to large towns.

Unfortunately, no overall assessment of the indoor home environment is made in Turkmenistan. There is a lack of statistical data, and intra- and interdepartmental reporting forms have not been drawn up. Levels of radon in the air of domestic and public buildings have not been determined either (*Ministry of Health and Medical Industry of Turkmenistan, 1998a*).

Occupational health and safety

Many enterprises in Turkmenistan have old equipment and are using outdated processes. Because of financial difficulties, the system of providing medical and health care for workers in major plants is not operating effectively enough, and there are also shortcomings in monitoring occupational safety techniques.

Concentrations of dust and chemical substances in the air of industrial plants, and levels of vibration and noise, are all higher than the standards laid down or the permissible figures.

Newly established small enterprises and private firms frequently fail to enforce the laws on occupational health and safety and on the epidemiological wellbeing of the population (*Ministry of Health and Medical Industry of Turkmenistan, 1998a*).

HEALTH CARE SYSTEM

The health care system in Turkmenistan, having inherited the characteristics of the former Soviet system, has experienced substantial difficulties related to the political and economic changes that have occurred in recent years. The resources available to the health sector are insufficient to support the existing infrastructure and meet the traditionally high level of demand for medical services. This has been apparent in shortages of drugs and equipment, and a deterioration in the quality of medical care. All this, when accompanied by outdated and ineffective treatment methods, has resulted in a need to reform the health care system to bring it into line with the new realities in the country.

Health system reform

Between July 1995 and 1999, Turkmenistan implemented the President's State programme on "Health". Its main objectives were:

- to improve the management of health care;
- to finance health care in a sustainable way;
- to strengthen the primary health care system;
- to increase the efficiency of inpatient services;
- to develop the human resource potential in a sustainable way;
- to encourage medical research;
- to enact supporting legislation.

(Ministry of Health and Medical Industry of Turkmenistan, 1998b).

In January 1996, family medicine was introduced throughout the country and a government system of voluntary medical insurance was started. From 1 March 1996, a system of contractual work has been in operation in all medical institutions. On 17 February 1996, the Ministry of Health and Medical Industry issued a decree on government licensing of medical and

pharmaceutical activity in the country. Under this decree, all legal entities and individuals engaged in the provision of medical and pharmaceutical services must be licensed (*WHO Liaison Office in Turkmenistan, 1999*). The second stage of reform of the health care system came into effect on 1 January 2000. Its main thrusts are set out in the comprehensive programme "Turkmenistan's socioeconomic reform strategy up to 2010".

This programme provides for further improvements in the health care system, better medical care, the introduction of compulsory medical insurance in 2006, and continued development of the Turkmen pharmaceutical industry.

Health care expenditure and health system funding

Health care expenditure decreased from 5% of GDP in 1991 to 1.4% in 1994, when GDP as a whole had fallen by 19%. In line with the improving economic situation, the health sector's share increased from 2.8% in 1995 to 3.5% in 1996 (*WHO Liaison Office in Turkmenistan, 1999*).

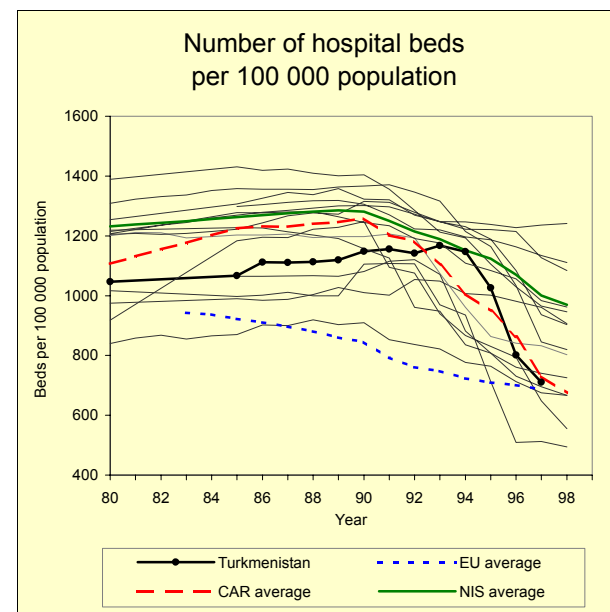
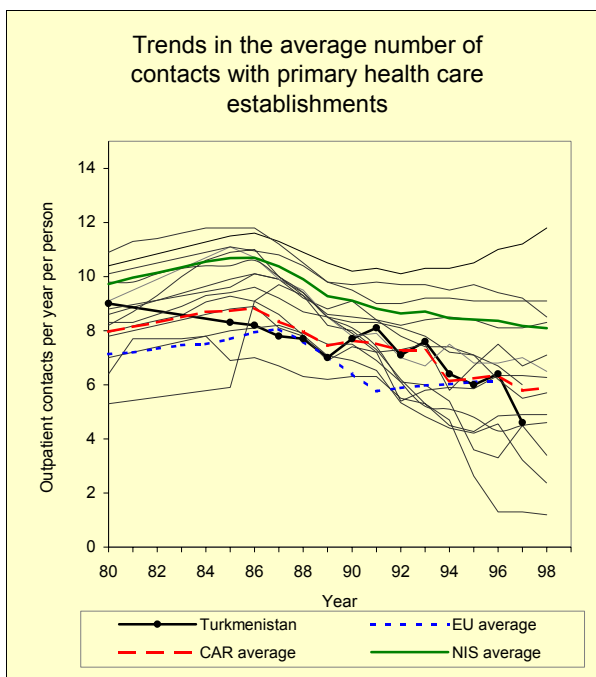
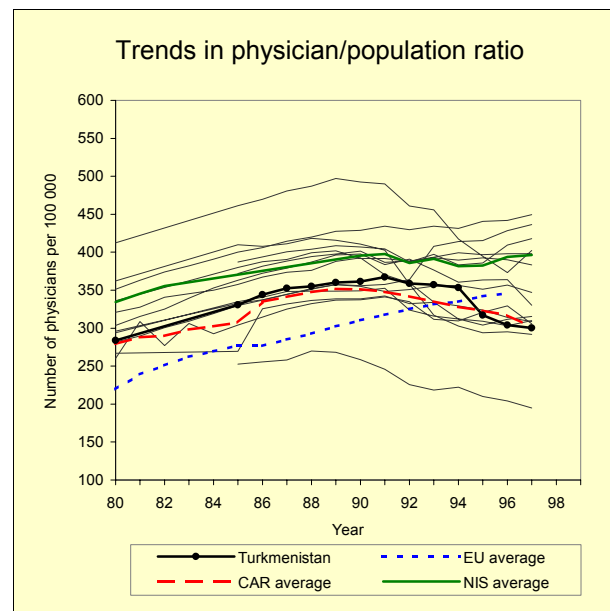
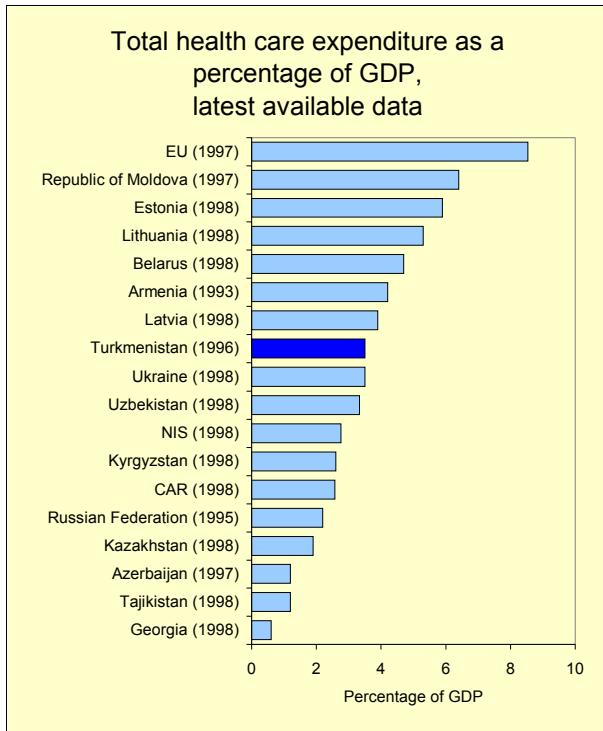
Health care resources and their utilization in Turkmenistan, compared with European averages		
	Turkmenistan (1997)	Europe (1997)
Hospital beds per 100 000 population	710.7	812.0
Physicians per 100 000 population	300.3	343.4
Hospital admissions per 100 population	13.0	18.7
Average hospital stay, days	13.4	12.7
Health care expenditure as a percentage of GDP	3.5 ^a	6.0
^a 1996		

The proportion of GDP allocated to health care in Turkmenistan is slightly higher than the average for CAR. It is, however, substantially lower than in developed European countries, where on average 8–9% of GDP per annum is spent on health care.

State funding accounts for 91% of the health budget, with voluntary medical insurance responsible for approximately 6%. The latter,

introduced on 1 January 1996, currently covers 77% of the population. The package of services includes a 90% discount on the cost of drugs from an approved list, a 25% discount on false teeth (excluding prostheses made from precious metals), guaranteed inpatient care for seven days, and a free choice of family doctor at a registered polyclinic.

Officially, payments for medication are received from patients who do not have an insurance policy. Charges have also been introduced for services for patients with repeat appointments, as well as for other types of services. Defined categories of people, including war veterans and people with chronic diseases, are exempt from charges.



Unofficially, however, charges are widespread, but it is hard to determine their levels. A survey of the population in 1997 showed that more than 50% of those interviewed paid additional charges for medical services.

Outpatient services

In 1998, there were 3015 family doctors. This covered 75.7% of the requirement. The shortage of family doctors was felt particularly sharply in certain rural areas. For this reason, 833 family clinics have been set up, staffed by auxiliary medical personnel (feldshers).

Primary health care institutions have been rationalized. Adult and paediatric polyclinics have been merged, doing away with a certain amount of duplication. Thirty-five rural hospitals have been turned into rural medical outpatient facilities and 325 feldsher/midwife units have been closed, as have 37 rural maternity hospitals. Forty-six rural outpatient centres and 125 family outpatient facilities have been reorganized.

As in other CAR, there has been a reduction in the average number of outpatient consultations, to 4.6 per person in 1997 (*Ministry of Health and Medical Industry of Turkmenistan, 1998b*).

Inpatient services

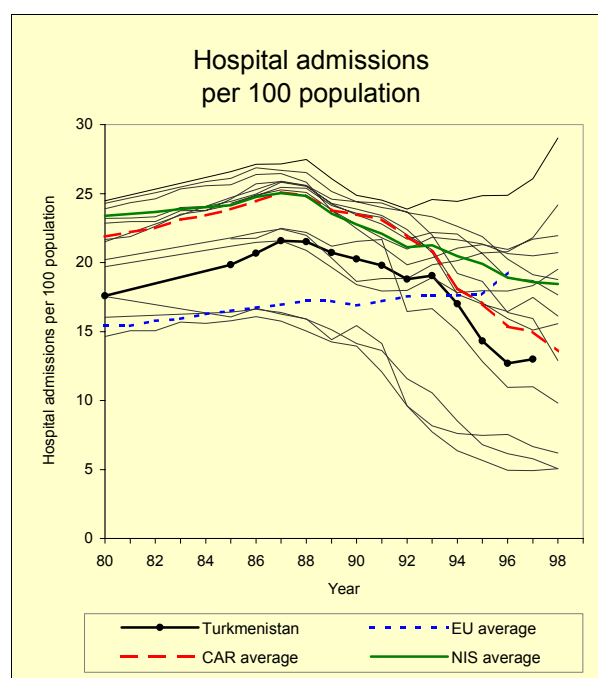
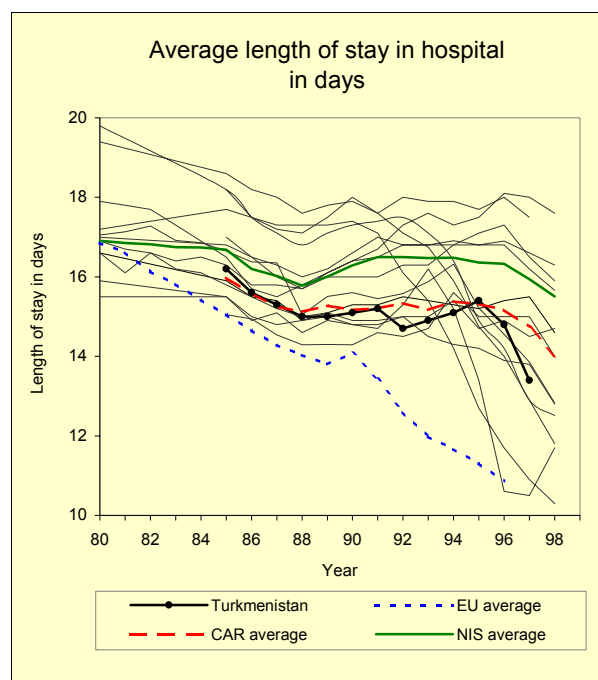
In 1996 there were 324 inpatient facilities in the system operated by the Ministry of Health and Medical Industry. The network of hospitals and the bed stock are being rationalized in accordance with the programme of health system reform. Between 1995 and 1997, the bed stock was reduced by 31%.

In 1997, the provision of hospital beds in Turkmenistan was lower than the European average. The number of hospital admissions has fallen substantially since 1993, owing to restrictions on referrals for inpatient care; in 1997, this figure was lower than the average for CAR and NIS.

As a result of shorter stays in hospital, bed occupancy levels increased from 70% in 1995 to 82.9% in 1998 (*WHO Liaison Office in Turkmenistan, 1999*).

Medical personnel

After a period with some growth in the 1980s, the physician/population ratio in Turkmenistan has been declining steadily in recent years. By 1997, the figure for doctors working in the health care system had reached 300 per 100 000 population. This is close to the average for CAR, but somewhat lower than the average for NIS and western European countries.



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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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