

HIGHLIGHTS ON HEALTH IN ARMENIA



Country Highlights give an overview of the health and health-related situation in a particular country and compare, where possible, its position in relation with other countries in WHO's European 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 the country itself and obtained from other sources.

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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 2000 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 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 (<http://www.who.dk/> – Country Information).

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

OVERVIEW

In contrast to most newly independent states (NIS), Armenia's falling birth rate since 1990 has not led to a natural decline in population, because mortality in the Republic continues to remain at a fairly low level. The greatest impact on population trends has come from the major earthquake in 1998 and the displacement of hundreds of thousands of refugees as a result of the conflict with Azerbaijan.

Life expectancy in Armenia, as in other trans-Caucasian countries, has traditionally been and still remains very high, although possible inflation of the figure as a result of under-reporting of deaths cannot be ruled out. Furthermore, Armenia did not experience as sharp a drop in life expectancy as a number of other NIS in 1992–1994. According to the latest available data, life expectancy in Armenia in 1999 was above the average for WHO European Region and the highest among the NIS.

Infant mortality in Armenia has declined considerably since the late 1980s and is currently one of the lowest in the NIS.

Maternal mortality remains below the average for the NIS, but has been showing an upward trend since 1992. The number of abortions per 1000 live births in Armenia is substantially below the average for the NIS and somewhat lower than the average for the countries of the European Region.

Premature mortality (in the age group 0–64 years) from cardiovascular disease is lower than in other NIS, but is significantly above the average for western European countries.

Premature mortality from cancer is close to the average for the countries of the European Union. However, premature mortality from breast cancer is tending to rise. Armenia heads the rest of the NIS for this indicator and belongs to the group of countries in the Region with the highest rates.

Mortality from external causes of injury and poisoning has been relatively low, except in 1988 when there was a major earthquake. According to the latest available figures, mortality from external causes of injury and poisoning in Armenia is one of the lowest in WHO European Region.

Registered mortality from diabetes has been rising steadily in Armenia since the mid-1980s and is currently at one of the highest levels in WHO European Region.

In recent years morbidity from tuberculosis in the Republic has been increasing, although not as dramatically as in other NIS. A rise has been seen in morbidity from malaria, but not to the extent experienced in neighbouring Azerbaijan.

The number of doctors, nurses and hospital beds per 100 000 population has fallen since 1990.

The number of hospital admissions and the number of outpatient consultations per head of population have fallen during the same period and are now among the lowest in the WHO European Region.

The latest available figures on health care expenditure (as a % of GDP) show Armenia, like other trans-Caucasian countries, to be among the lowest spenders in Europe.

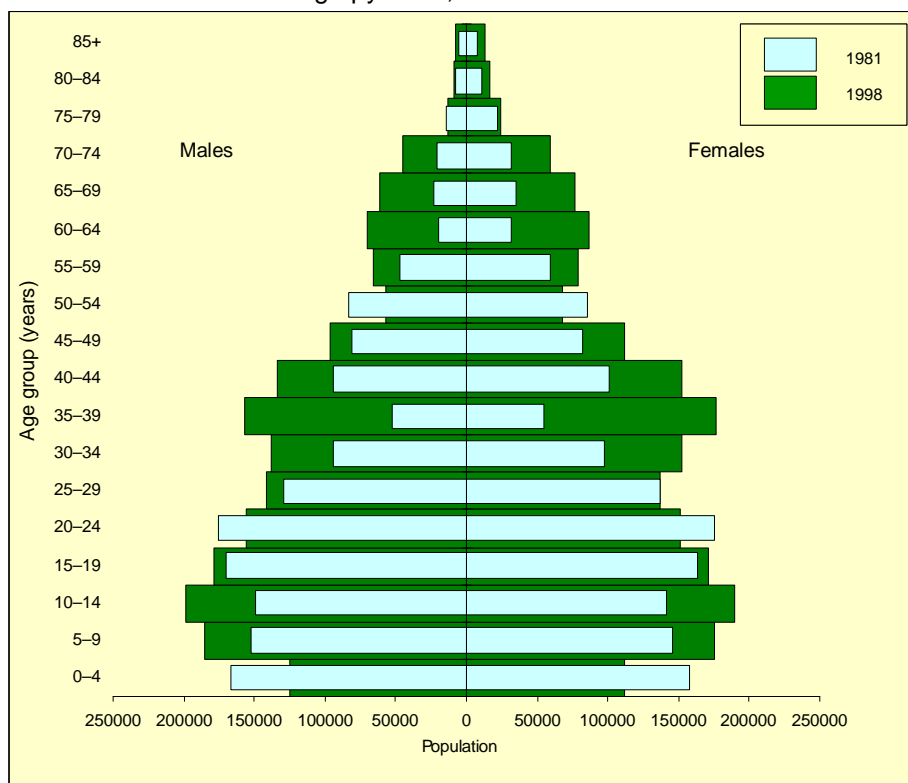
THE COUNTRY AND ITS PEOPLE

Armenia gained its independence in 1991, in the wake of a nation-wide referendum. The state is a republic headed by a President and has a 190-member National Assembly

The country is divided into ten administrative regions (*marz*) and the capital is Yerevan, with a population of 1.2 million. The administrative regions are in turn subdivided into 931 districts, of which 47 are cities, 12 are urban settlements and 871 are rural districts.

Basic data on Armenia and the WHO European Region		
	Armenia (1999)	Europe (1998)
Population (millions)	3.8	
Population aged		
• 0–14 years. %	24.8	19.8
• 15–64 years. %	66.4	66.5
• ≥ 65 years. %	8.8	13.7
Area. km ²	29 743	
Population density per km ²	126.7	31
Urban population (%)	70.0	72.6
Births per 1000 population	9.6	10.95
Deaths per 1000 population	6.3	10.85
Natural growth rate per 1000 population	3.3	0.1
Gross domestic product (GDP) per person in US\$. PPP*	2072 ^a	13 585
^a 1998		
* PPP– purchasing power parity		

Age pyramid, 1981 and 1998



Demography

As in most other European countries, fertility in Armenia has been falling steadily, particularly during the past decade. This was foreshadowed by a substantial drop in the total fertility rate, which stood at 4.7 per 1000 population in 1959, 2.3 in 1980 and 1.2 in 1999. Nevertheless, in contrast to most other NIS in the European part of the former USSR, the Republic has continued to show a fairly high natural growth of population. At the same time, general mortality is fairly low and the population is relatively young. The mid-year population of Armenia in 1999 was 3.8 million.

Two factors have had a notable effect on population figures for Armenia, one being the destructive earthquake of 1988 and the other the displacement of hundreds of thousands of refugees in the wake of the conflict with Azerbaijan.

The earthquake, in the region centred on the town of Spitak, caused 25 000 deaths and led some hundreds of thousands of people to leave the earthquake area, moving mainly to Yerevan.

As a result of the conflict in Nagorno-Karabakh, some 320 000 refugees entered Armenia, mainly from urban areas in Azerbaijan. At the same time there was a mass

exodus of ethnic Azerbaijanis, chiefly from rural areas in Armenia. It is notable that the Armenian refugees were made up of families of smaller size and with fewer family members of reproductive age than the Azerbaijani families. Since most of the refugees had little hope of returning to their former homes, the Armenian Government made it official policy to integrate them into the Armenian population (*UNDP Armenia, 2000*).

Family structure

The number of registered marriages per 1000 population in Armenia has fallen sharply in recent years (from 8.0 in 1990 to 3.0 in 1998). The number of divorces per 1000 population, which traditionally was low, has also gone down (1.2 in 1990 and 0.4 in 1998). The proportion of births out of wedlock increased between 1990 and 1998 from 9.3% to 12.8% of total births. In this case, the increase is a reflection of the marked drop in the general birth rate, since the absolute number of children born, as children born outside wedlock has barely changed (*Council of Europe, 1999*).

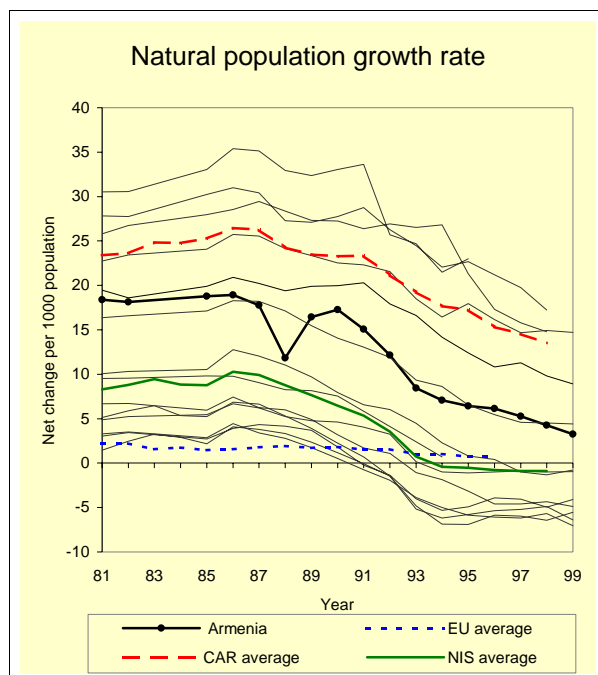
Migrant population and ethnic profile

According to official data, net migration figures for Armenia since 1980 have been consistently negative (i.e. more emigrants than immigrants). In 1992–1996, 85% of emigrants went to other NIS (70% leaving for the Russian Federation and 12% for Ukraine). The remainder generally went to the United States of America (8.6%), Germany (3.1%) or Israel (1%).

Armenia is a country that is ethnically homogenous, with national minorities accounting for less than 3% of the population. These are Kurds, Russians, Ukrainians, Azeris and Greeks (*UNDP Armenia, 2000*).

Education, language, religion

The literacy rate among the adult population of Armenia was 98.8% in 1997. Nearly 60% of the population over 16 years of age has completed at least secondary education. The



official language of the country is Armenian. Armenia was converted to Christianity in 301 A.D. and was the first Christian country in the world. The majority of the population belong to the Armenian Apostolic Church, which is headed by a Catholicos.

Economy

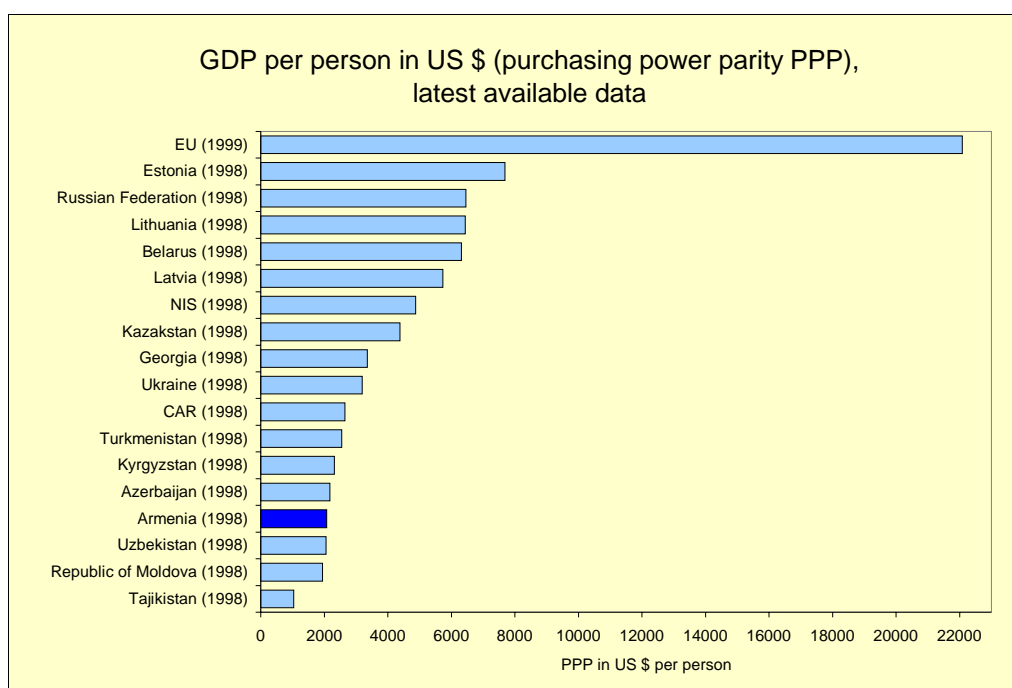
The Armenian economy was in steep decline during the period 1991–1993, with hyperinflation, soaring prices and falling production. By 1993 gross domestic product (GDP) had fallen to 60% of the 1989 figure.

The introduction of a new national currency unit, the *dram*, in 1993 allowed the economic situation to be brought under control and

provided the basis for the economic reforms initiated in 1994 with the backing of the international financial institutions and the support of donors.

During the subsequent two years, owing to the high fiscal and tax policies, hyperinflation and the decline in real income have been halted.

GDP in Armenia has been rising since 1994, but the economic crisis in Russia in 1998 and a declining rate of growth in the agricultural sector has resulted in an economic slowdown in 1999 (*UNDP Armenia, 2000*).



HEALTH STATUS

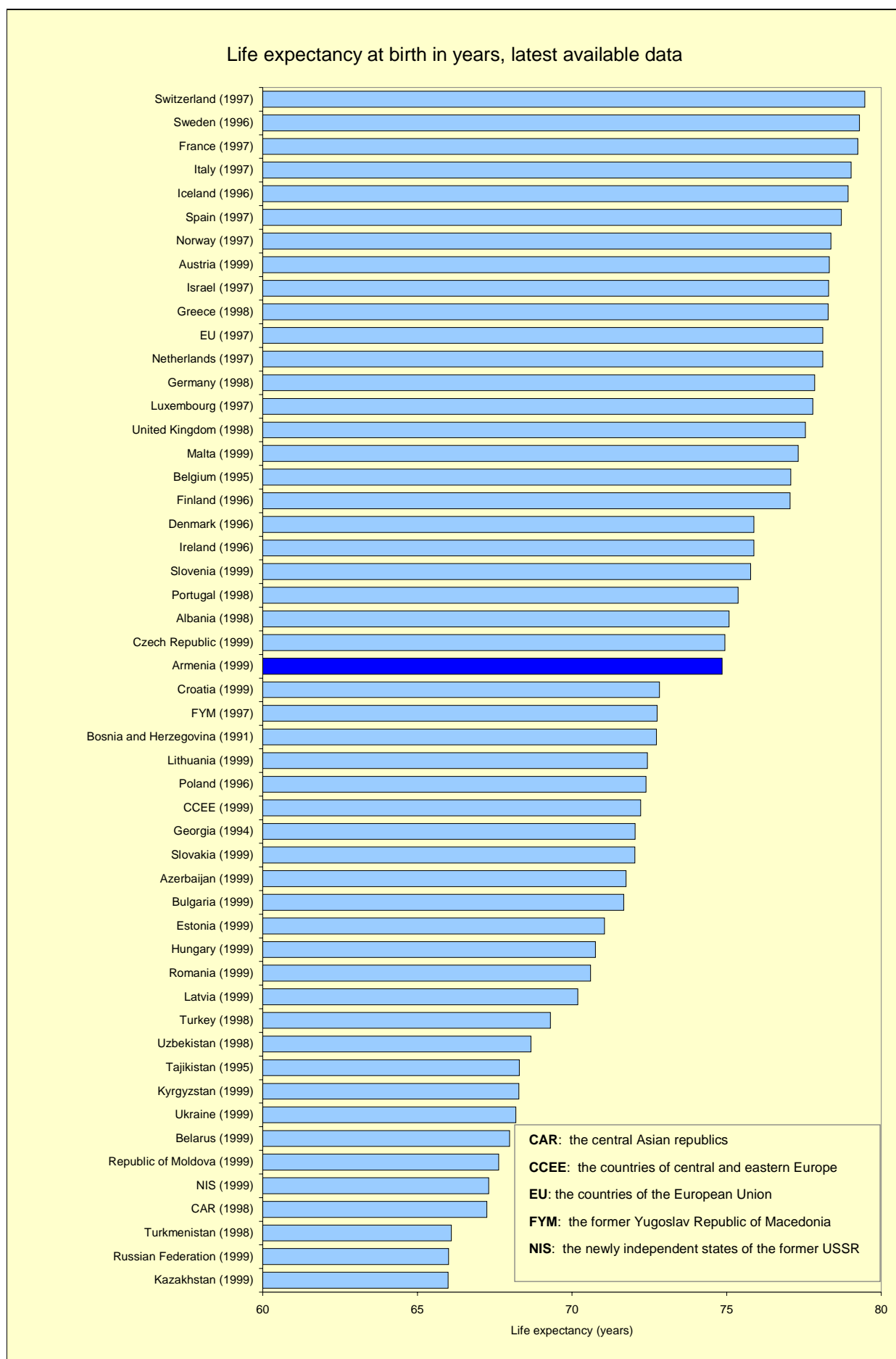
Life expectancy

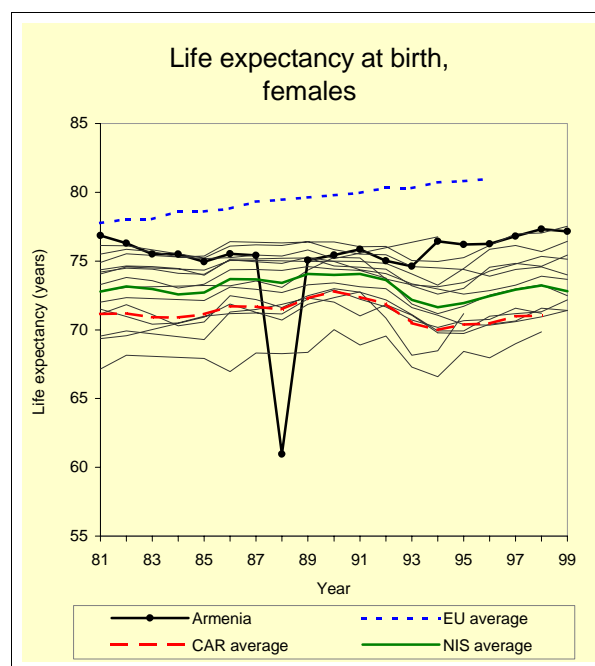
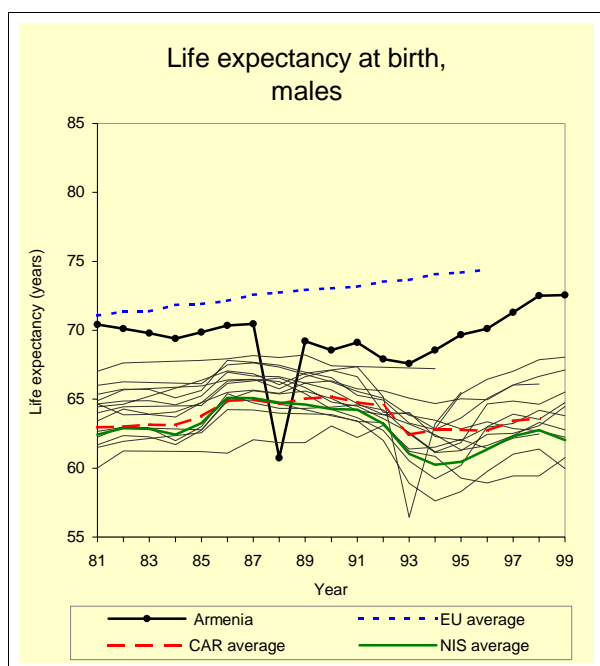
Life expectancy at birth in Armenia, as in other trans-Caucasian countries, has traditionally been, and remains, very high. However, the real figure for life expectancy in Armenia could well be somewhat lower as deaths may have been under-recorded, especially in the rural areas of the country. Life expectancy curves for Armenia show a sharp dip in 1988 as a result of the severe earthquake. However, the Republic did not experience as marked a drop in life expectancy during 1992–1994 as was the case in a number of other NIS.

According to the latest available data, life expectancy at birth in Armenia is above the average for WHO European Region. Along with Georgia, Armenia heads the NIS for life expectancy at birth.

It is notable that, in Armenia, the difference in life expectancy at birth between males and females is one of the smallest of all the countries in the European Region. In 1999, the figure was 4.6 years, chiefly owing to the comparatively long lives of males.

Selected health indicators in Armenia and the European Region		
	Armenia (1999)	Europe (1998)
Life expectancy	74.9	73.6
• Men	72.6	69.6
• Women	77.2	77.6
Infant mortality per 1000 live birth	15.7	11.1
Maternal mortality per 100 000 live birth	32.9	19.0
Standardized death rate (SDR) for all causes of death per 100 000 population	857	961
SDR for cardiovascular diseases per 100 000 population	479	476
SDR for malignant neoplasms per 100 000 population	133	183
SDR for injuries and poisoning per 100 000 population	32.4	84.7
SDR for diseases of the respiratory organs per 100 000 population	51.6	60.6
SDR for diseases of the digestive system per 100 000 population	26.6	38.0
SDR for infectious and parasitic diseases per 100 000 population	10.3	13.2
New cases of tuberculosis per 100 000 population	37.7	40.4 ^a
New cases of syphilis per 100 000 population	11.6	57.5 ^a
New cases of AIDS per 100 000 population	0.21	1.4 ^a
^a 1999		





Main causes of death and disease

According to most of the mortality indicators, Armenia is below the average for the European Region. Premature mortality in Armenia has been falling steadily during the period 1994–1998. The main contributory factor has been the decline in male mortality, whereas female mortality for the same period has barely fallen.

From the structure of premature mortality in the Republic, the leading causes of death are diseases of the cardiovascular system, followed by malignant neoplasms.

In the structure of mortality, the relatively high proportion of deaths from ill-defined conditions in the older age groups (65 years and above) is noteworthy. This could indicate certain peculiarities in national practice of coding causes of death.

Structure of mortality (in %) by main cause of death and age group in Armenia (1999) compared with the average for the European Region (1998)				
Cause of death	0–64 years		65 years and above	
	Armenia	Europe	Armenia	Europe
Cardiovascular diseases	34.8	30.8	66.2	60.0
Malignant neoplasms	25.0	23.0	10.4	16.6
Accidents, injury and poisoning	10.8	19.7	1.3	2.6
Diseases of the respiratory system	5.2	5.4	5.3	6.9
Infectious and parasitic diseases	2.9	2.9	0.3	0.6
Diseases of the digestive system	4.5	5.6	2.7	3.0
Ill-defined conditions	1.0	2.6	7.1	4.0
Other diseases	15.8	10.0	6.7	6.3

The pattern of hospital admissions is somewhat different from the European average, in that in Armenia a substantially higher proportion of patients are hospitalized for infectious and parasitic diseases.

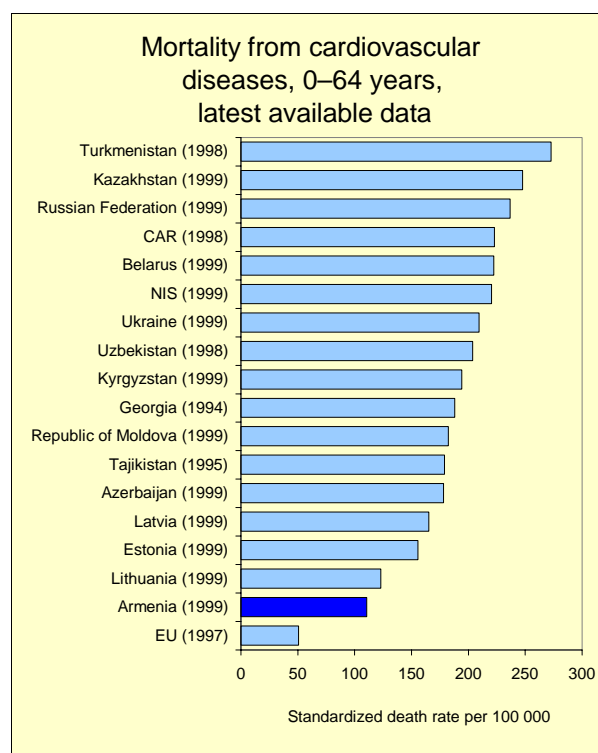
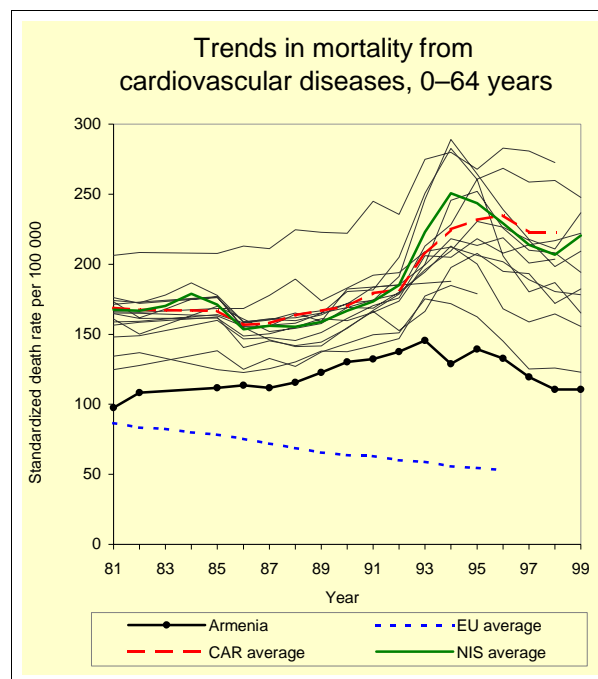
Inpatients by disease category (% of all patients hospitalized)		
Disease category	Armenia (1999)	Europe (1998)
Infectious and parasitic diseases	6.6	3.4
Malignant neoplasms	5.0	6.7
Cardiovascular diseases	10.1	12.5
Diseases of the respiratory system	10.7	10.1
Diseases of the digestive system	10.6	10.0
Injury and poisoning	7.4	8.4
Other diseases	49.6	48.7

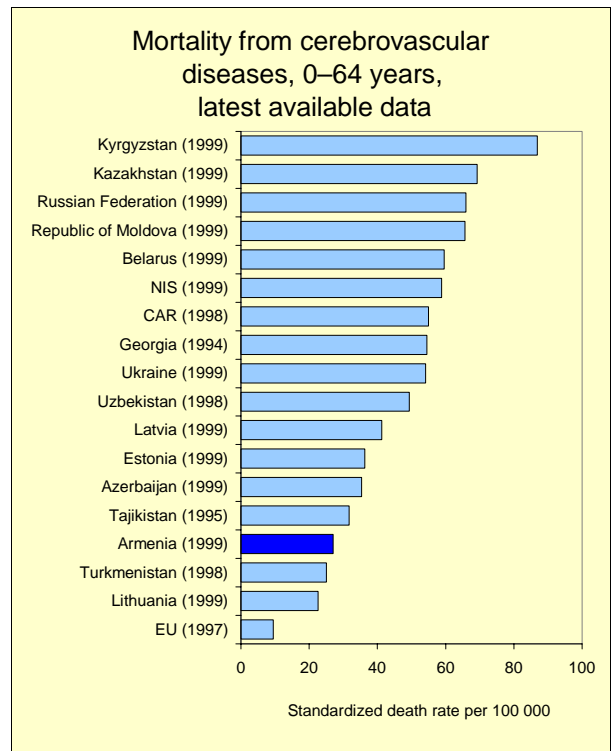
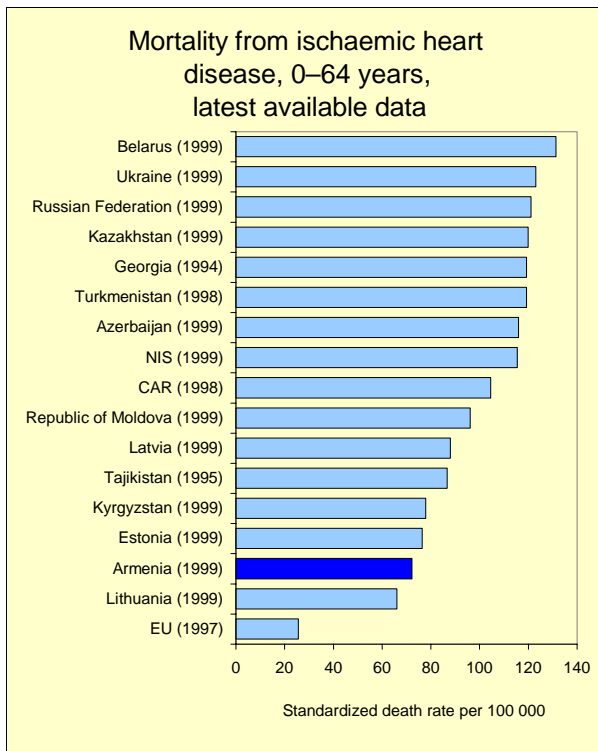
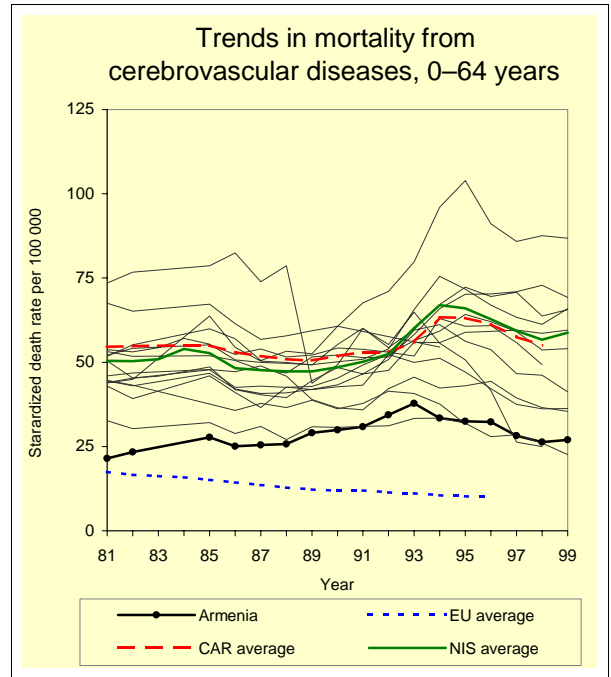
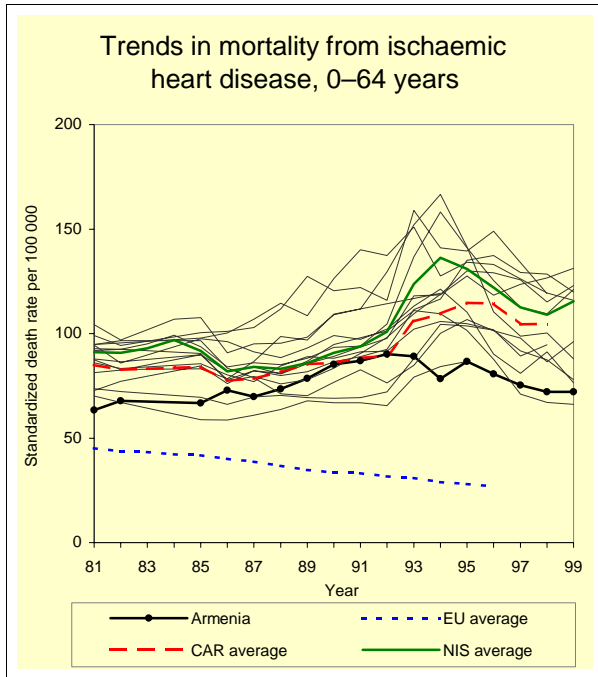
Cardiovascular diseases

Premature mortality from cardiovascular diseases in Armenia has varied with time: an initial protracted rise in mortality in 1981–1993 was followed by a downturn from 1994. During the latter period, there was a small rise in mortality in 1995. According to the latest available data, premature mortality from cardiovascular diseases in Armenia in 1999 was the lowest in the NIS, but remains substantially above the average for the countries of the European Union.

A similar picture is observed for mortality from ischaemic heart disease. According to the latest available data, the level of this cause of mortality in Armenia is one of the lowest in the NIS.

Mortality from cerebrovascular diseases is also below the average for the countries of the European Region and one of the lowest in the NIS.

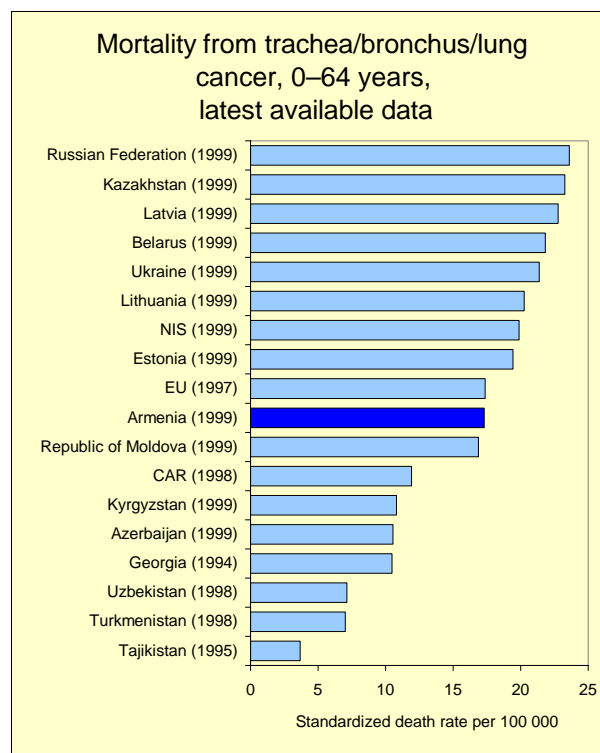
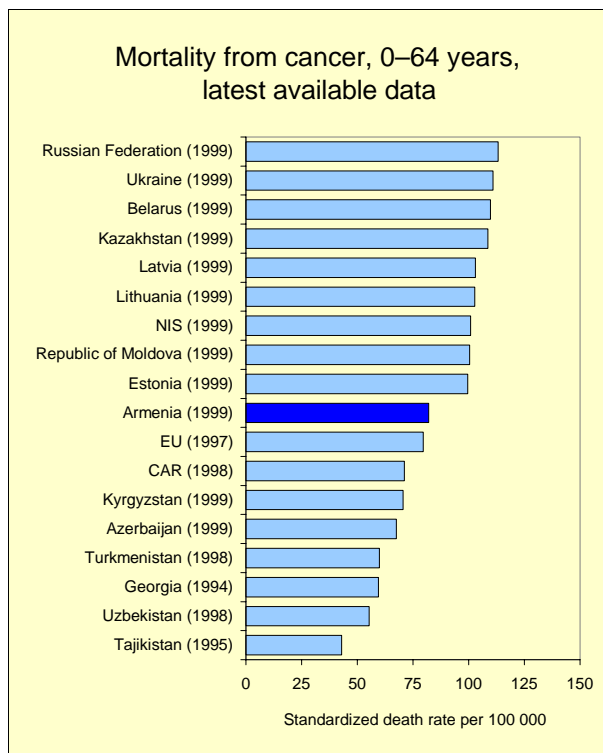
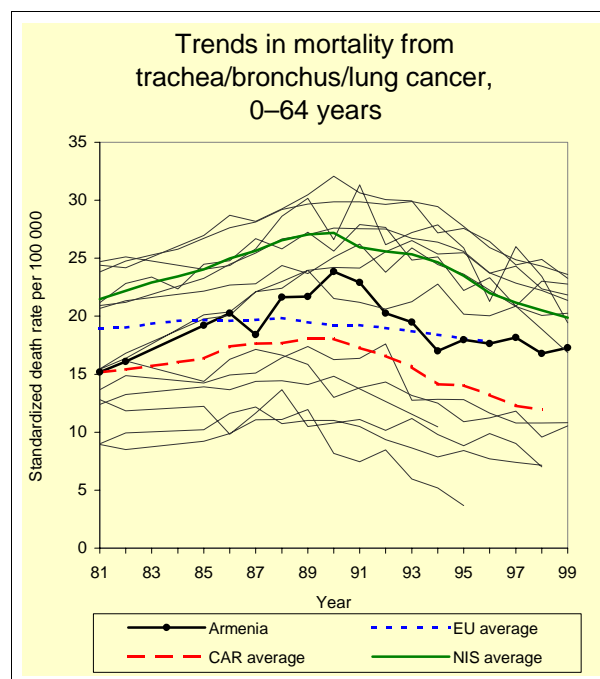
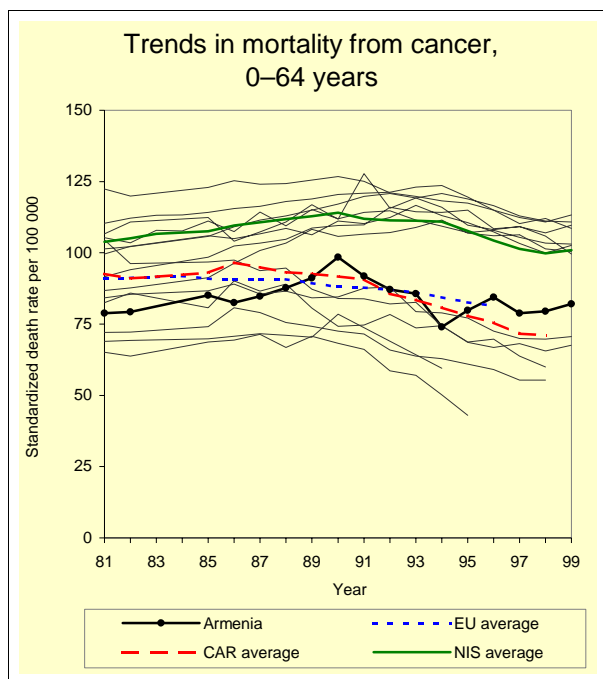




Malignant neoplasms

Trends in premature mortality from malignant neoplasms in Armenia are similar to those in most of the NIS. Rising mortality in the 1980s was followed by a decline in the 1990s. However, mortality from malignant neoplasms in Armenia is considerably below the average for the NIS and close to the average for the countries of the European Union.

Premature mortality from trachea/bronchus/lung cancer in Armenia lies midway between the levels for NIS with high mortality (republics in the European part of the former USSR and Kazakhstan) and those with low mortality (the remaining central Asian republics (CAR), Azerbaijan and Georgia).

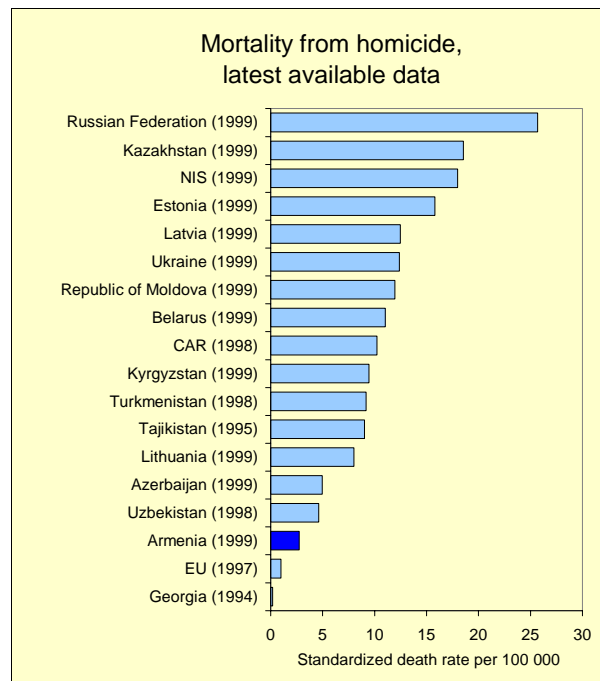
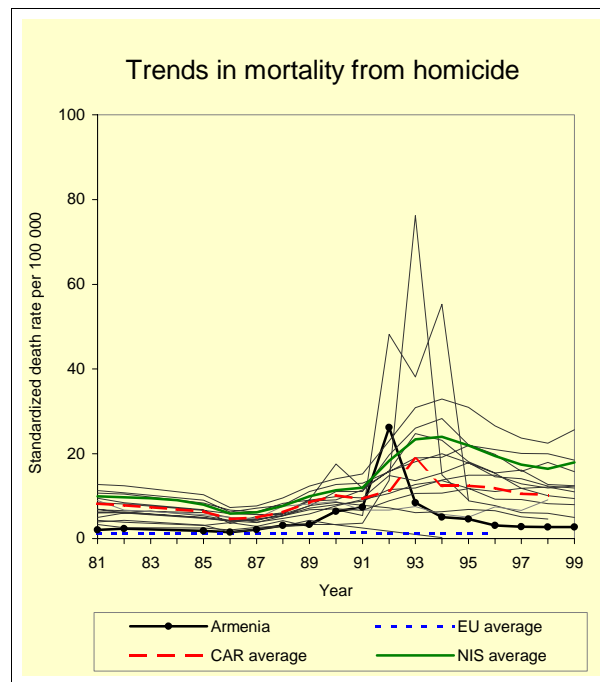
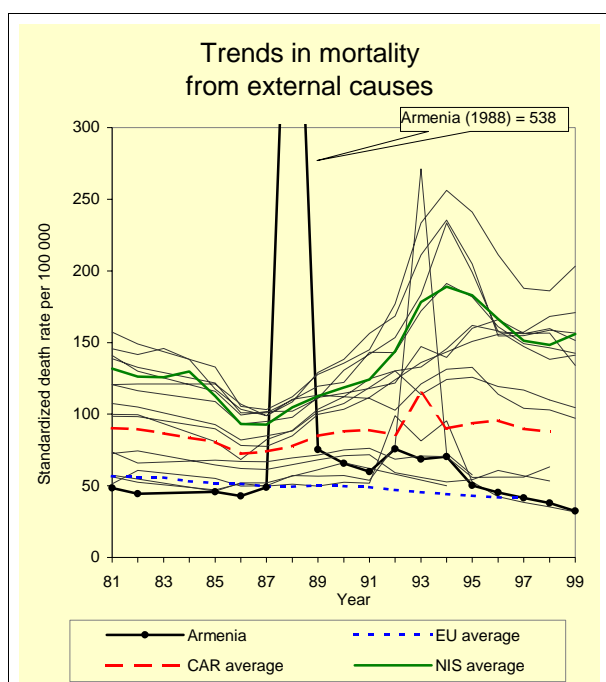


External causes of injury and poisoning

The trend in mortality rates for external causes of injury and poisoning in Armenia is quite different from that in most other NIS, mainly because of the steep increase in such causes of death in 1988 as a result of the severe earthquake. On the other hand, the typical picture of the rest of the NIS (a fall in mortality as a result of the anti-alcohol campaign in 1986–1987, followed by a sharp rise in 1992–1994) was little apparent in Armenia.

According to the latest available data, mortality from external causes of injury and poisoning in Armenia is one of the lowest in WHO European Region.

The increase in the number of homicides in Armenia in 1992 is associated with the armed conflict with Azerbaijan in Nagorno-Karabakh.



During the period 1991–1994, mortality from road traffic accidents fell by a factor of approximately four in Armenia, reaching one of the lowest levels for any country in the European Region.

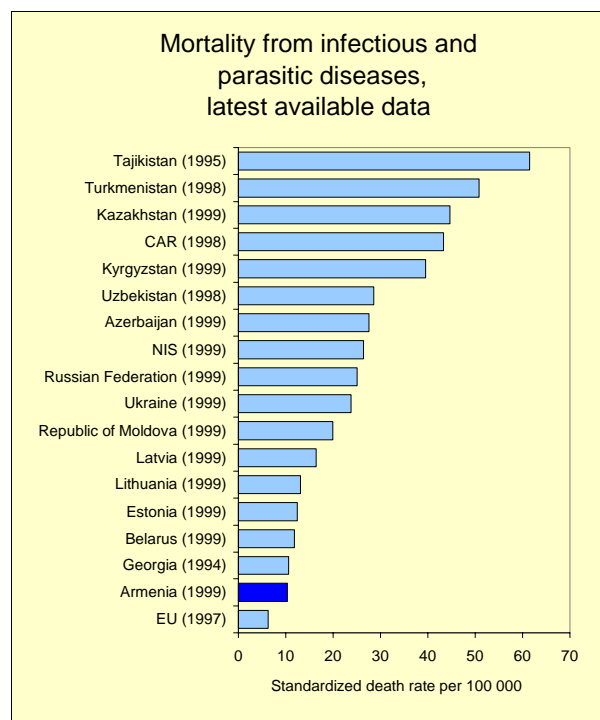
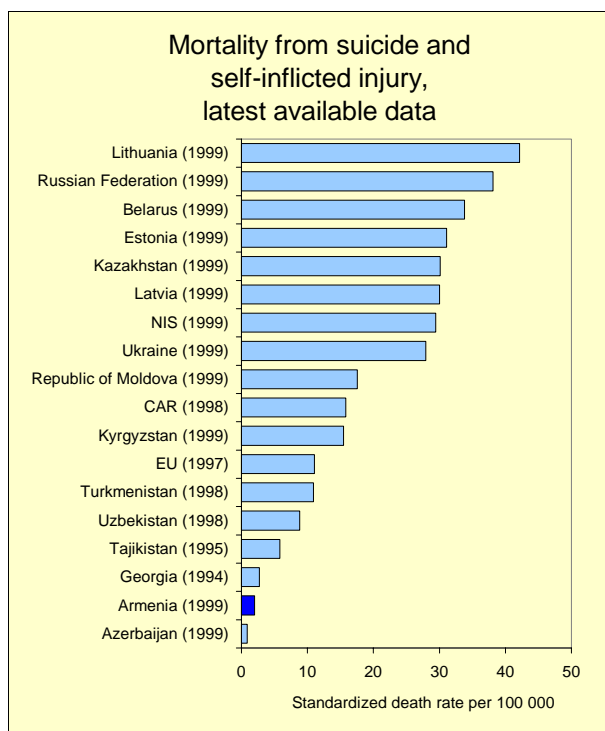
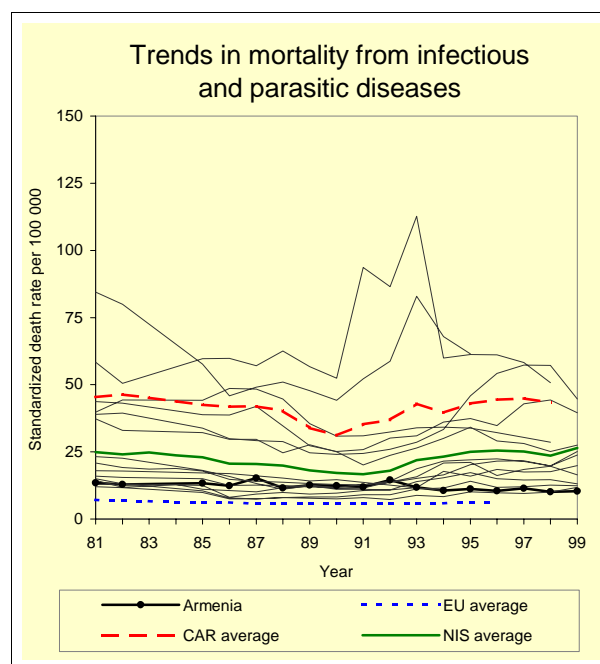
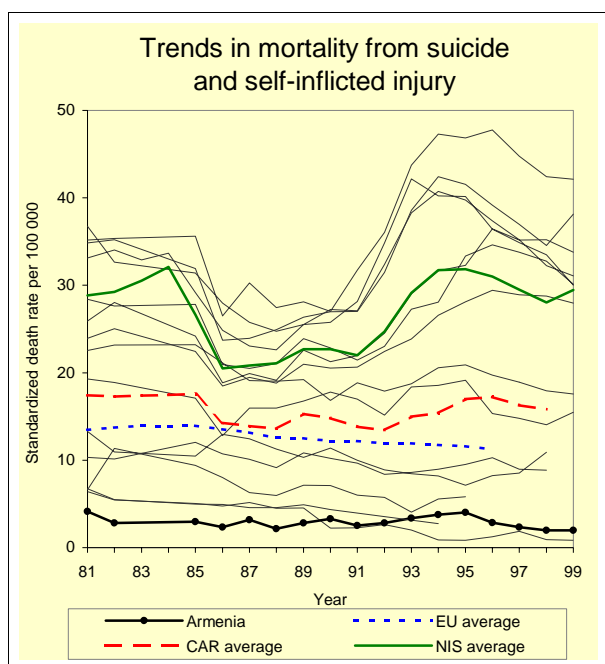
Mental health

Mortality from suicide and self-inflicted injury in Armenia, as in Azerbaijan, has remained steady at one of the lowest rates in WHO European Region.

Similarly, morbidity rates from mental disorders in general and from alcoholic psychosis in particular are among the lowest in the Region.

Infectious diseases

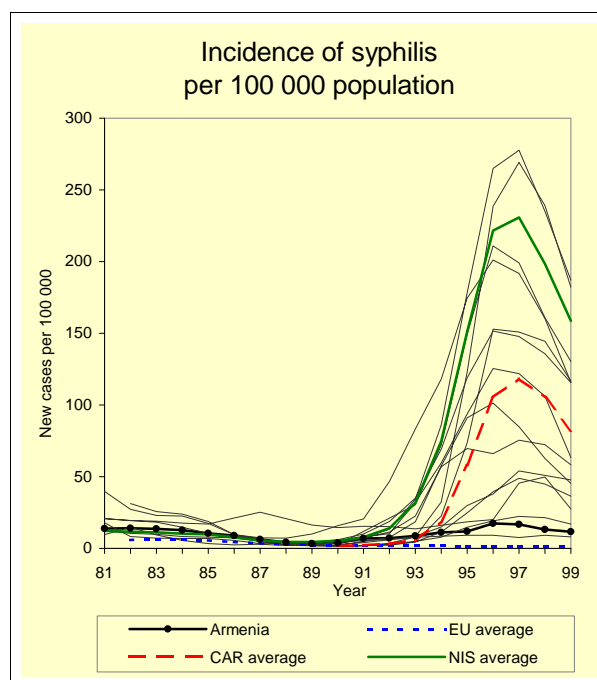
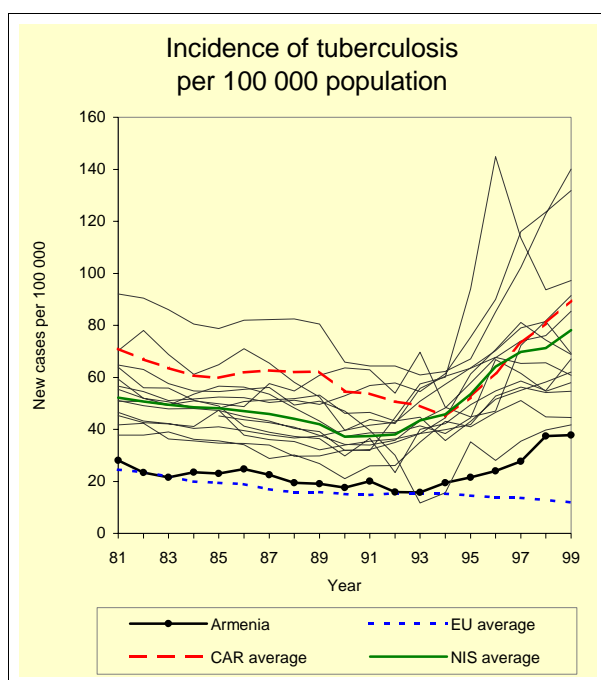
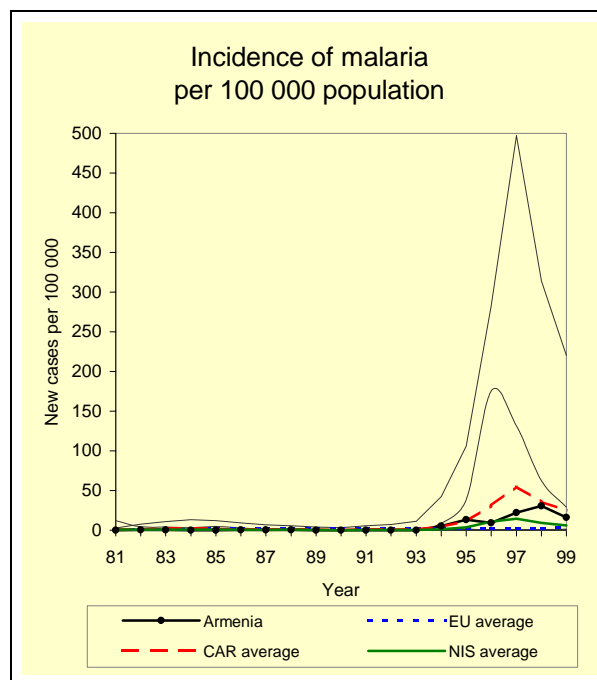
Mortality from infectious and parasitic diseases in Armenia has long been one of the lowest in the NIS.



In 1994–1998 an increase in morbidity from tuberculosis was observed, but not on the same scale as in most other NIS. Morbidity from syphilis in Armenia also barely increased in 1991–1996, and thereafter began to fall.

In the late 1990s, an increase was recorded in morbidity from malaria (30.8 per 100 000 population in 1998). In 1999, this figure fell to 16 per 100 000 population.

Armenia is one of the countries with a low level of HIV infection. Between 1979 and 1995 only three cases of AIDS were recorded. According to the latest available data from the National AIDS Control Centre, 84 cases of HIV-infection and 15 clinically diagnosed cases of AIDS had been recorded by mid-1999 (*UNDP Armenia, 2000*).

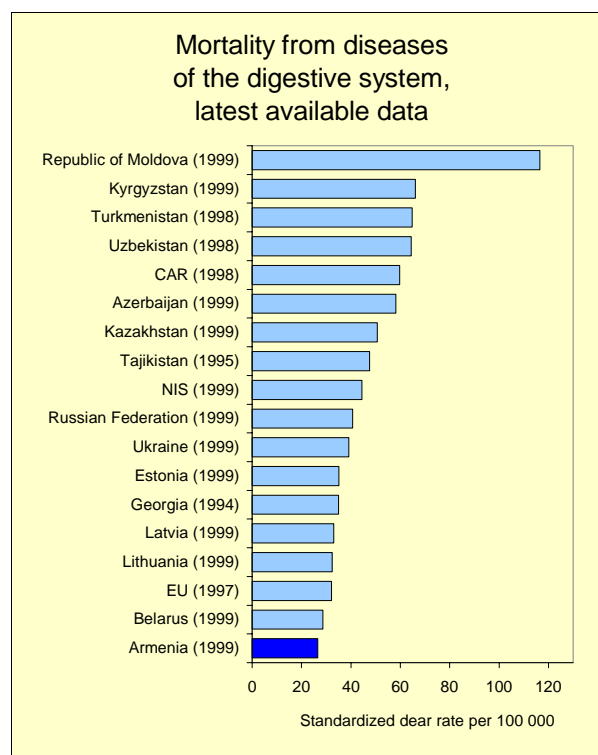
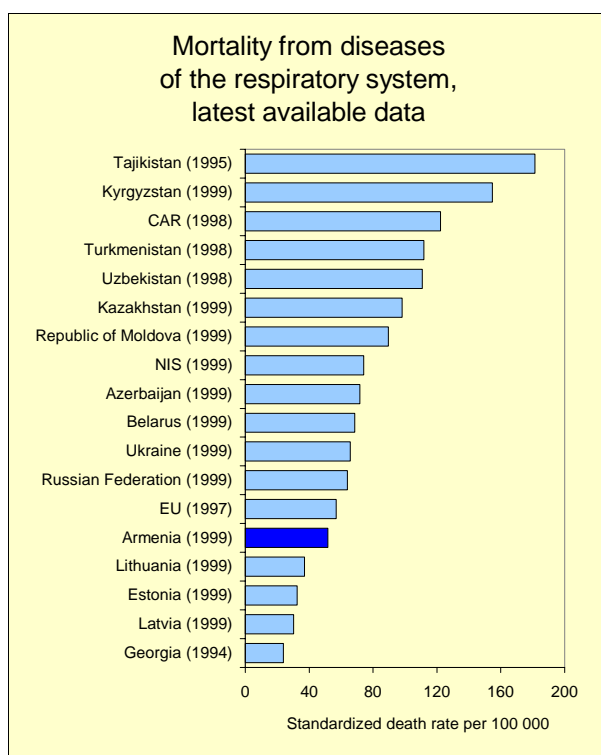
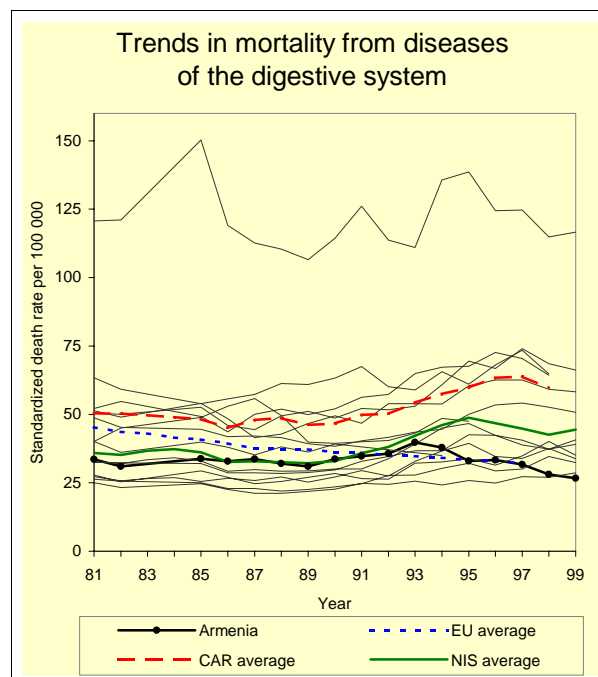
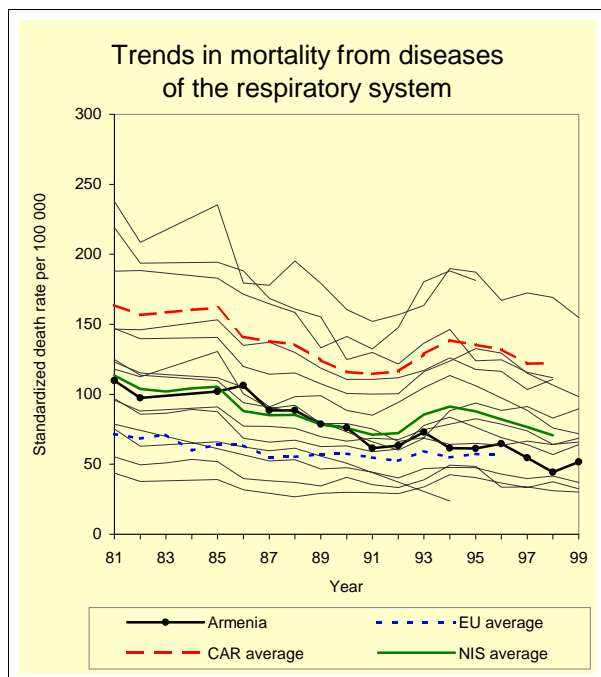


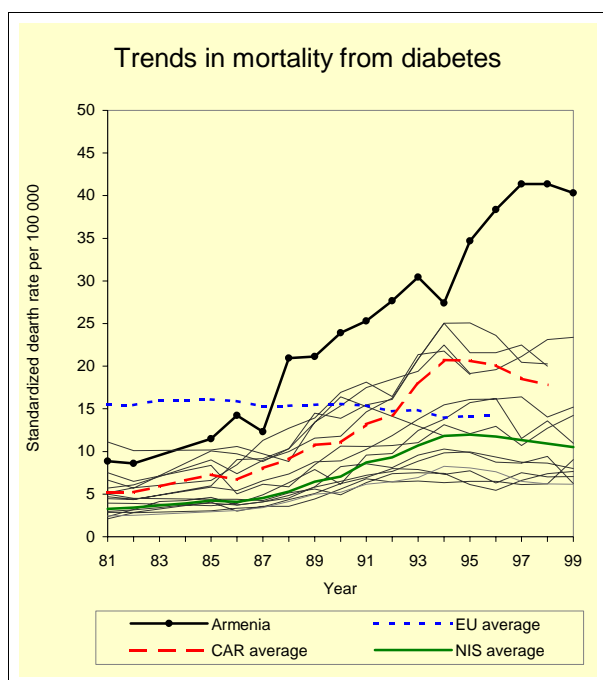
Other diseases

Mortality from respiratory diseases has been slowly declining in Armenia since 1982, and in 1998 the country had one of the lowest rates among the NIS and was below the average for the countries of the European Union.

Mortality from diseases of the digestive system has, for a number of years, remained among the lowest in the NIS and in WHO European Region as a whole.

Armenia is one of the group of countries in the European Region with the highest mortality rates from diabetes. The figure for Armenia increased by a factor of almost four in 1981–1998, during which period the incidence and prevalence recorded for diabetes was comparatively low. This contradiction could reflect errors in coding causes of death, as well as a genuinely high level of mortality among diabetes patients.





Disability

The incidence of disability in Armenia in 1998 was 350 per 100 000 population, which is below the average for the NIS.

Health of children and adolescents

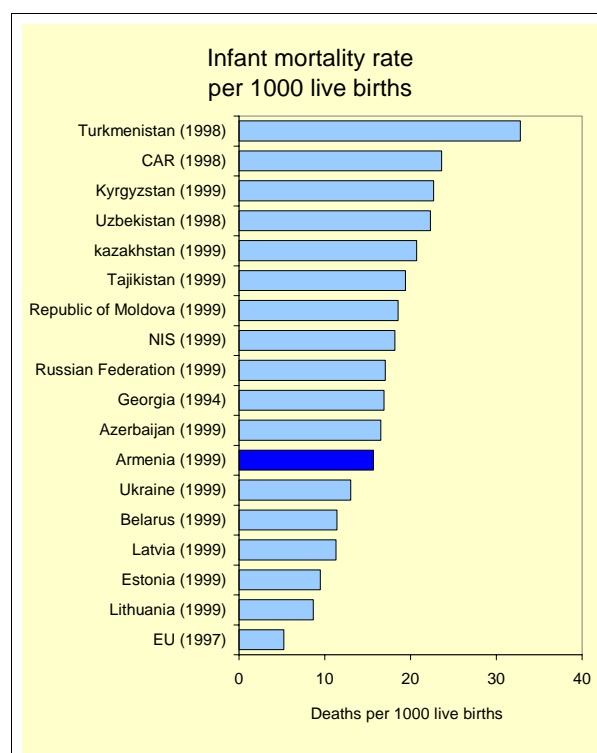
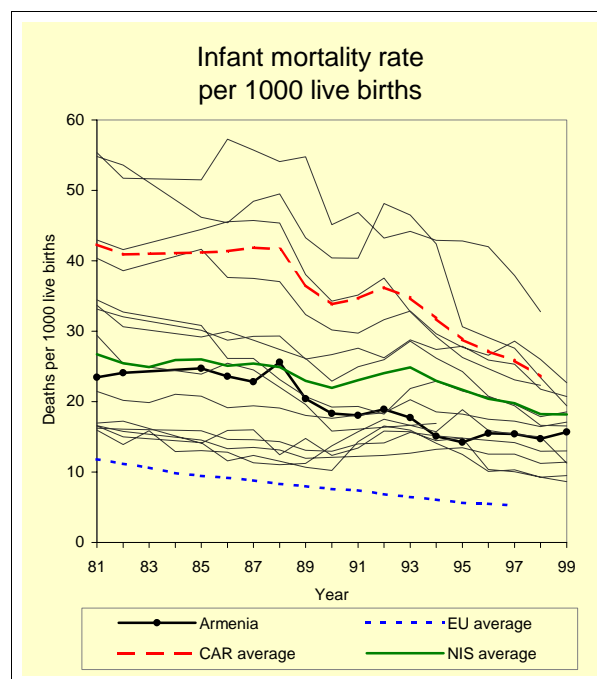
Infant mortality in Armenia is low in comparison with other NIS. In 1999, it was 15.7 per 1000 live births. A halt in the decline in infant mortality occurred in 1996, principally as a result of a steep rise in early neonatal (0–6 days after birth) deaths in this period, which could have been associated with a change during this period in practices for registering births and deaths among the newborns.

The fall in infant mortality has been largely owing to programmes for the control of acute respiratory and diarrhoeal diseases. From 1991 to 1997, infant mortality from these causes went down by 21% and 45%, respectively (*UNDP Armenia, 2000*).

In 1998, immunization coverage of children under one year of age against diphtheria and tetanus was 90.3%, against measles 93.5%, against tuberculosis 95%, against pertussis 82.4% and against poliomyelitis 96.4%.

Mortality among children under the age of five is also below the average for the NIS.

Mortality from external causes of injury and poisoning in the age group 5–19 years, which is one of the principal causes of death among adolescents, decreased substantially during the 1990s. In 1999, the rate was 8 per 100 000, below the average for the countries of the European Union.



According to national data, the prevalence of poor physical development among children under five years of age, which is an indication of malnutrition and vitamin deficiency, varied between 9.1% in urban areas and 15% in rural areas in 1998. Moderate anaemia was found in 26% of children in the age group 12–23 months and in 25% of children aged 24–59 months (UNDP Armenia, 2000).

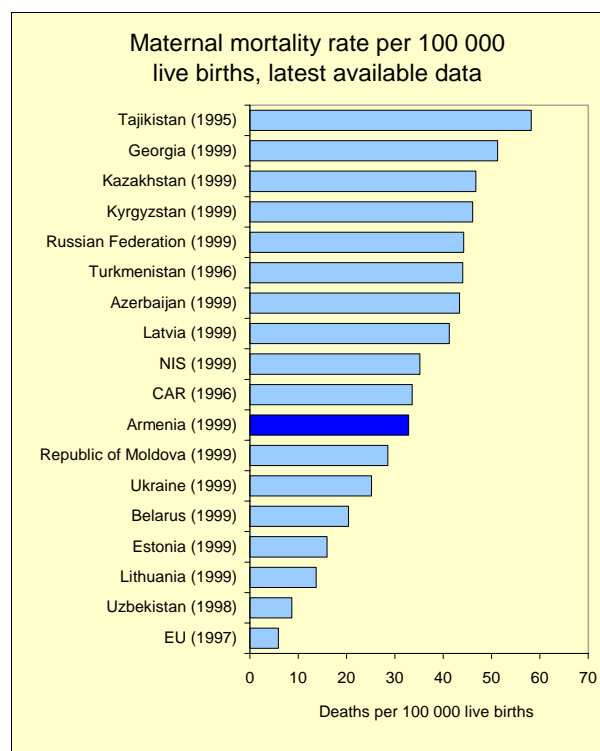
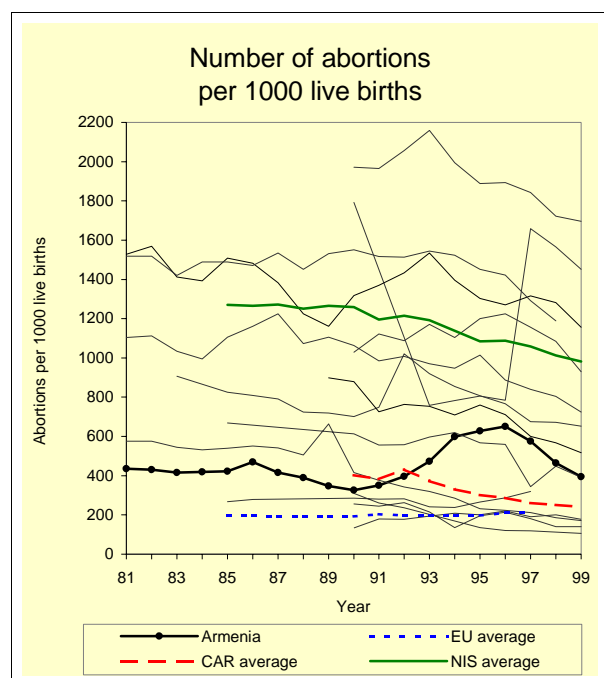
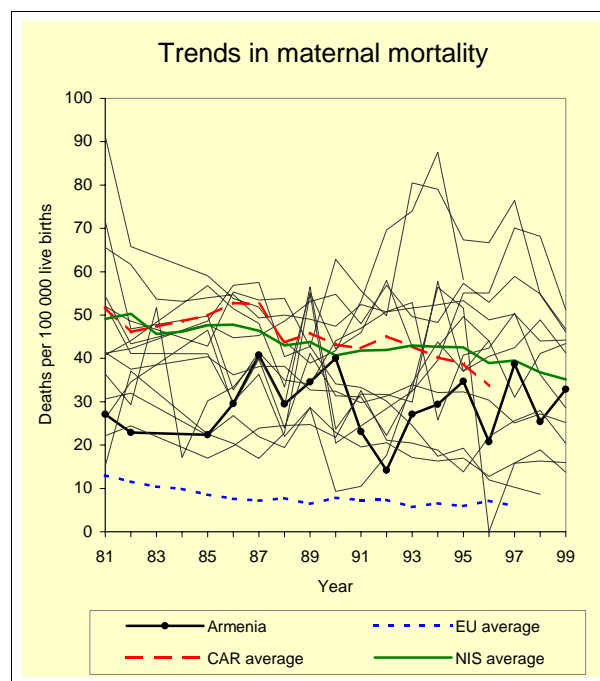
Women’s health

Maternal mortality in Armenia (32.9 per 100 000 live births in 1999) remains somewhat below the average for the NIS, but since 1993 it has shown an upward trend. The majority of cases of maternal death occur in the age group 20–29 years. The most frequent cause is haemorrhage, hypertensive disorders and complications associated with abortion.

On the other hand, the number of registered abortions has been falling since 1997, after showing an upward trend in 1991–1996, and in 1999 was 395 per 1000 live births.

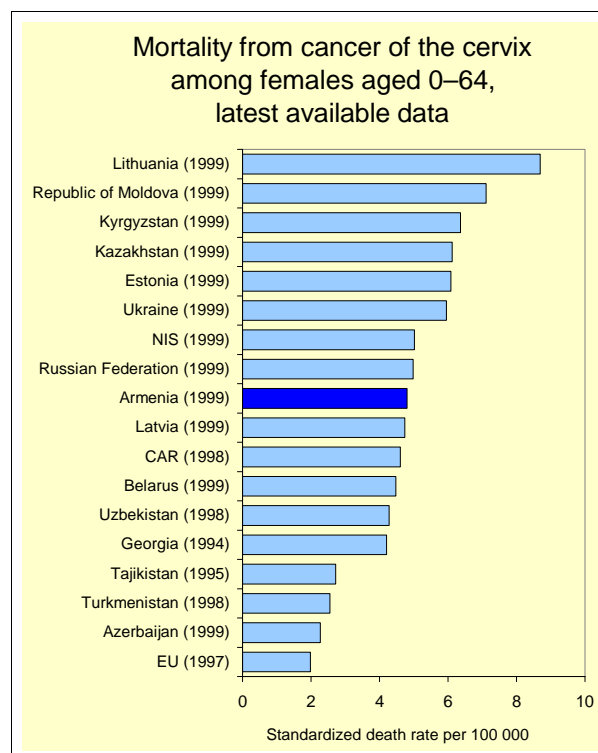
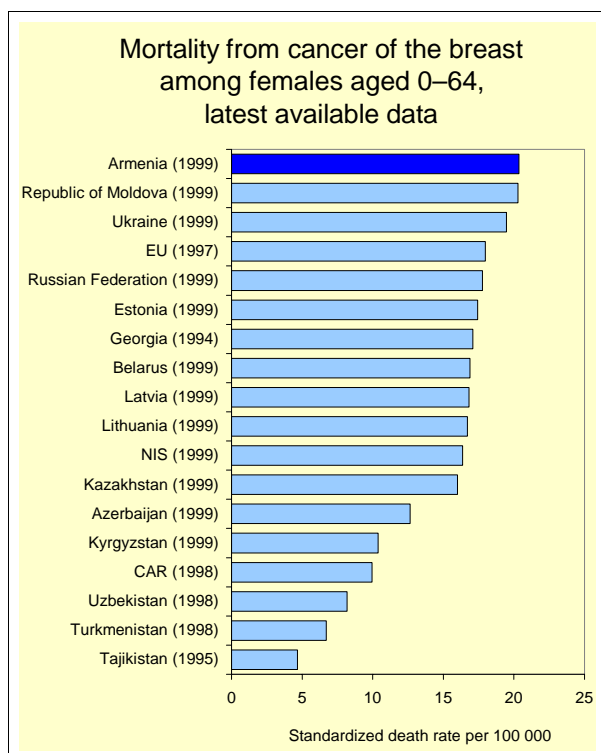
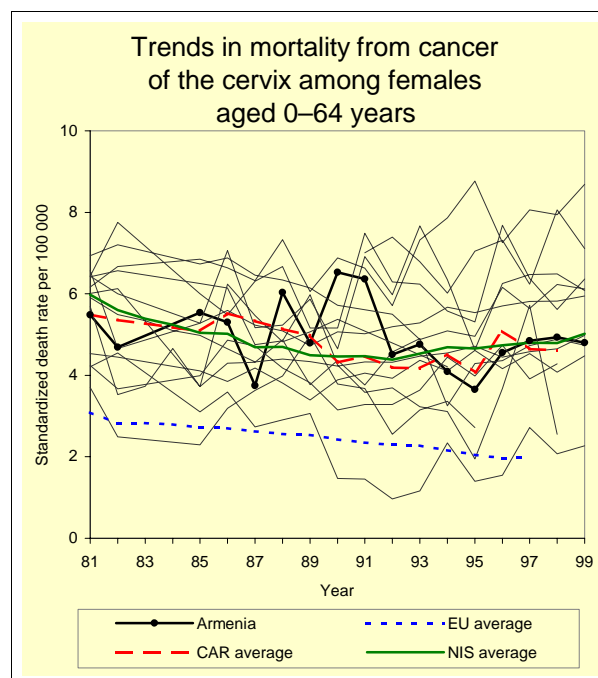
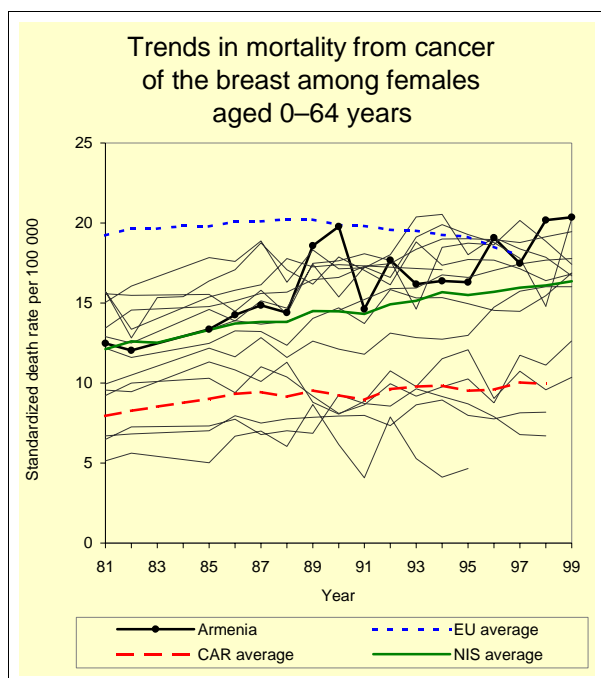
The figure for Armenia is considerably lower than the average for the NIS and somewhat lower than the average for the countries of the European Region.

An increase in premature mortality from breast cancer is of concern. Armenia has the highest rate for this cause of death in the NIS and is one of the group of countries with the highest rates in the Region.



In 1999, premature mortality among women in Armenia from cervical cancer was close to the average for the NIS.

During the past decade, there has been a substantial increase in the prevalence of anaemia among pregnant women.



LIFESTYLES

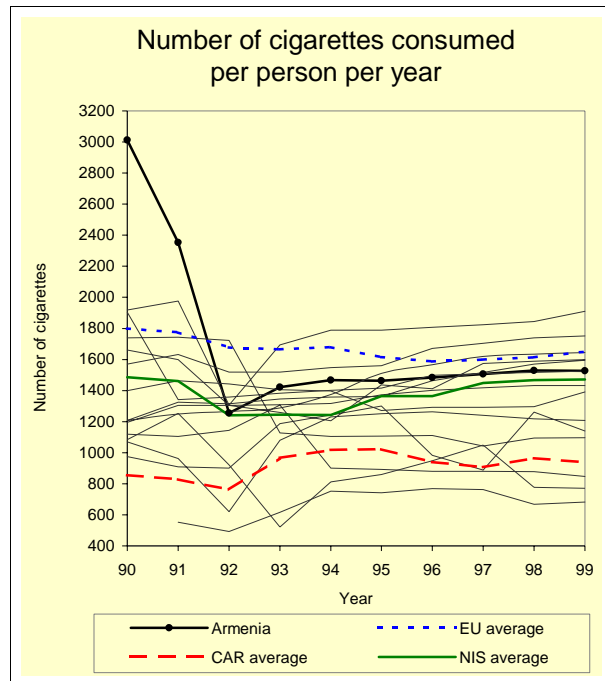
Tobacco consumption

According to the latest available data, the prevalence of smoking in Armenia is very high, with 69% of men and 6.2% of women smoking in 1998 (*UNDP Armenia, 2000*).

According to data from a survey carried out in 1993 among senior school children in the age group 14–16 years, 57.5% of boys and 21% of girls were regular smokers (*WHO Regional Office for Europe, 1997*).

Annual cigarette consumption per head of population in Armenia has been regularly above the average for the NIS.

Mortality from lung cancer, an indirect indicator of the level of smoking, was below the average for the NIS in 1999. After a brief decline during the first half of the 1990s, it has remained practically at the same level since 1996, and in the older age groups (above 65 years) has even begun to increase.



Alcohol consumption

Armenia is among the countries with a relatively low level of alcohol consumption per head of population (2.6 litres of absolute alcohol in 1998) (*UNDP Armenia, 2000*).

The low incidence of alcoholic psychosis (0.89 per 100 000 of population in 1999) and of cases of alcohol dependency is associated with local traditions regarding alcohol consumption.

Illicit use of narcotics

The narcotics in most frequent use in Armenia are marijuana and opium derivatives (*WHO Regional Office for Europe, 1997*). According to data from the Toxicology Centre, the number of registered drug abusers has increased from 610 in 1996 to 1438 in 1998. However, according to data from the Ministry of Internal Affairs, the real number of drug abusers is 15–20 times this figure (*UNDP Armenia, 2000*).

Nutrition

The average daily calorie consumption per head in Armenia (2352 kcal per person per day in 1998) is below the average for the NIS and below the standard set by the Ministry of Health (2412 kcal). As in most other NIS, average calorie consumption went down during the first half of the 1990s, but has since begun to rise once more. Corresponding trends have also been observed in consumption of fats and proteins, although the consumption of proteins remains comparatively low, most probably reflecting a drop in the consumption of meat. According to data from the Ministry of Statistics, actual consumption of bread, vegetables and fruits, and vegetable oil is close to biological standards. The consumption of potatoes is above the norm, while consumption of meat and milk is substantially below it (*UNDP Armenia, 2000*).

ENVIRONMENT AND HEALTH¹

Air pollution

Because of a drop in industrial production, the volume of air pollution has fallen in Armenia in recent years, as in many other NIS. In addition, the Armenian nuclear power station was shut down in 1989, which led to an energy crisis in the Republic and brought heavy industry virtually to a standstill, with the exception of power stations in the cities of Yerevan and Hrazdan. Since then, a drop has been observed in total emissions of pollutants into the air from stationary sources, and an increase in the proportion of total air pollution attributable to emissions from motor vehicles.

Emission of harmful substances into the air in Armenia is largely attributable to the chemical industry, the power supply industry and the building industry. These are all generally located in the five urban areas of Yerevan, Vanadzor, Hrazdan, Ararat and Alaverdi.

The figures recorded for these urban areas are two to six times higher than the maximum permissible concentrations for such major pollutants as dust, sulphur dioxide, carbon monoxide and nitrogen dioxide. Note that air quality is generally monitored on the basis of the above components. The presence and content in the air of many other substances with a marked harmful effect on human health, such as benzo[a]pyrene, lead, ammonia and chlorine are generally not determined or only determined at irregular intervals.

Water management and sanitation

A feature of Armenia is that 95.5% of water supplies come from groundwater sources that provide water of constant quality. Water quality in places with a direct water supply generally meets national standards for organoleptic, toxicological and microbiological indicators, as well as WHO recommended standards. In almost all urban areas and in most rural settlements, water is

supplied according to a timetable, people receiving water for 2–6 hours a day, despite adequate supplies of water at source. This is because of the unsatisfactory state of the piped network. Almost half the water supply pipes in the Republic are pressure conduits in intermittent operation and frequently cut off because of the high cost of electric power. In addition, because the pipes are worn out a large amount of water is lost in the distribution network.

Because of the above, water supplied through the centralized network frequently does not comply with microbiological standards, which leads to problems in delivery of water from the source to the consumer, i.e. from what is termed secondary pollution of water. The increased risk to health is reflected not as an increase in general morbidity from intestinal infections but as an increase in the number of outbreaks of water-borne infections, which may affect a large number of people. In 1998, for example, 11 outbreaks of intestinal infection were recorded, principally dysentery.

The Republic has some 56 open bodies of water, including 50 rivers and 6 lakes. The major rivers are the frontier rivers Araks and Akhuryan, and the largest body of water is Lake Sevan. The total yield of water from surface water sources is 6.5–7 million m³.

In the Republic, all urban areas and district centres are served by sewer systems, as are some 20% of rural settlements. The total amount of waste water discharged into bodies of water in 1988 was some 760 million m³. All waste water from population centres with sewer systems is discharged into open bodies of water, with the exception of the town of Artashat, which has biological ponds. Apart from a number of small, primitive and relatively ineffective waste water treatment plants, the Republic has 20 large urban treatment installations carrying out a series of

¹ Unless otherwise stated the data given have been taken from Armenia's National Environmental Health Action Plan. (*Ministry of Health and Ministry of the Environment of Armenia, 1999*).

processes for treatment and disinfection of waste water. However, all without exception fail to provide an adequate level of treatment and disinfection of waste water, principally because of insufficient design capacity and ineffective operation as a result of poor maintenance.

The treatment installations at Yerevan are thus able to treat only 40% of the waste water produced, those at Vanadzor only 48% and those at Oktemberyan some 75%.

Waste and soil

Some 12 700 m³ of domestic waste is produced each day in the Republic, 10 200 m³ a day in urban areas and 2 500 m³ in rural areas. To date, the only means of dealing with solid domestic waste has been to transport it to dumps.

According to the statistics, Armenia has 54 managed solid waste dumps in use, which are operated by enterprises specializing in municipal waste management. They cover an area of 196.0 hectares. These dumps annually receive some 1.5 million tonnes of domestic waste from the towns and cities and five rural districts. Most dumps in Armenia do not meet health and environmental requirements.

Analysis of the soil in the cities of Armenia is carried out only in small areas and as part of individual research projects. However, results have shown the soil, in at least two cities, Yerevan and Vanadzor, to be polluted with heavy metals, chiefly lead and mercury, in quantities above permissible levels.

Pesticides pose a major problem in Armenia. Up to 1990, a centralized system existed for the purchase and distribution of pesticides by a single State organization. At present, the import and use of pesticides is virtually uncontrolled, with standards and regulations flouted and no account being taken of concentrations or permissible loads per hectare.

Occupational health

The volume of industrial production in the country has fallen sharply and the number of jobs has gone down. There has been an increase in the number of small, chiefly artisanal, production plants that operate in a semi-legal fashion, without registration or permits. Such production plant also operate without occupational health services, trade unions or insurance schemes. Observance of elementary workplace safety requirements is quite unsatisfactory, with no individual protective equipment or first aid equipment being provided. It is clear that under such conditions the statutory procedures for evaluation of the occupational health of workplaces are inoperative. This is partly a result of the low level of awareness of health-related issues on the part of both workers and legislators, and partly of the absence of any mechanism to make employers liable for failing to apply the appropriate health measures or for damage to the health of their workers.

As a result, occupational diseases in Armenia are diagnosed very late, when the workers are already unfit for work and unable to return to their jobs. Because of the shortage of doctors and specialized medical diagnostic equipment, only 5–7% of cases of suspected occupational disease are identified by regular preventive medical examinations at production plant.

The principal occupational diseases are lung disorders, followed by neurological disorders (vibration disorders make up 40% of all cases, while acoustic neuritis account for some 30%) and skin disorders. Disorders of the musculoskeletal system and cancer of occupational origin are generally not diagnosed.

HEALTH CARE SYSTEM

Reform of the health system

In 1995, the Government of Armenia adopted a *Programme for development and reform of the Armenian health system during the period 1996–2000*. The basic areas where reform was required were identified as management, infrastructure/system of health care establishments, finance and medical training. Since late 1995, the health care system has been completely decentralized. The system of health care establishments has been restructured to strengthen primary health care and optimize hospital care.

March 1996 saw the adoption of the Medical Care Act, which legalized funding from a variety of sources (such as the State budget, municipal budgets, medical insurance and direct payment by the patient). In 1998, all State health care establishments were turned into State-owned joint-stock companies (*WHO Liaison Office in Armenia, 1999*).

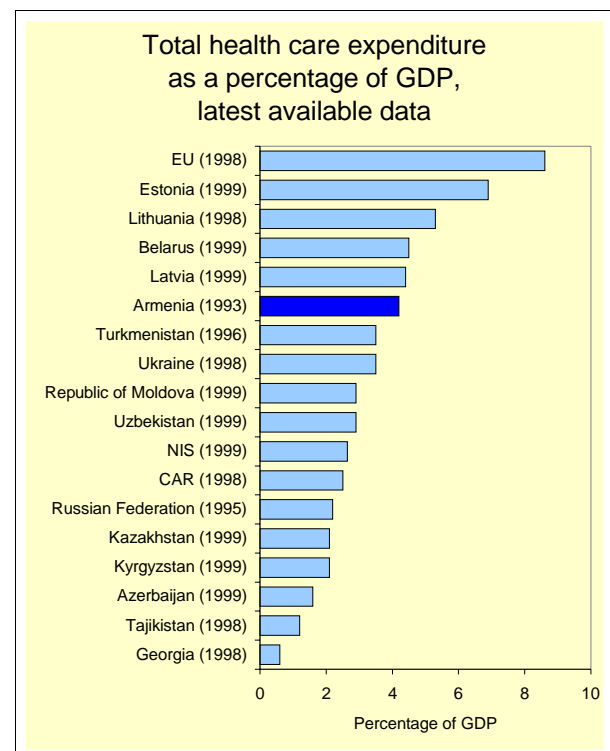
Health care expenditure and health system funding

In Armenia, health care expenditure in 1997 came to 1.3% of GDP, which is below the NIS average (*WHO Liaison Office in Armenia, 1999*). The steep drop in Armenia's GDP in the 1990s is still having a very adverse effect. The resources allocated to health care by the State are only sufficient to provide care for the most vulnerable population groups. In Armenia these include the disabled; war veterans; children below the age of 18 with a single parent; disabled children under the age of 16; families with four or more children; the families of war victims; prisoners; children of disabled parents; Chernobyl clean-up workers; and rescue workers (*WHO Regional Office for Europe, 2001*).

In accordance with the new financial arrangements (July 1997), funding of primary health care is calculated per head of population and funding for hospitals by the amount of

Health care resources and their utilization in Armenia compared with European averages		
	Armenia (1999)	Europe (1999)
Hospital beds per 100 000 population	620	778
Physicians per 100 000 population	305	362
Hospital admissions per 100 population	5.8	18,1 ^b
Average hospital stay, days	12.8	12,2 ^b
Health care expenditure as a percentage of GDP	1.3 ^a	6,1 ^b

^a1997 (Source: *Country health Report for Armenia, 1999*)
^b1998



care delivered. Repayment of expenditure by health care establishments is handled by the State Health Agency, established in 1998.

According to the latest available data, health insurance in Armenia is now at the stage where the requisite legislation is in preparation.

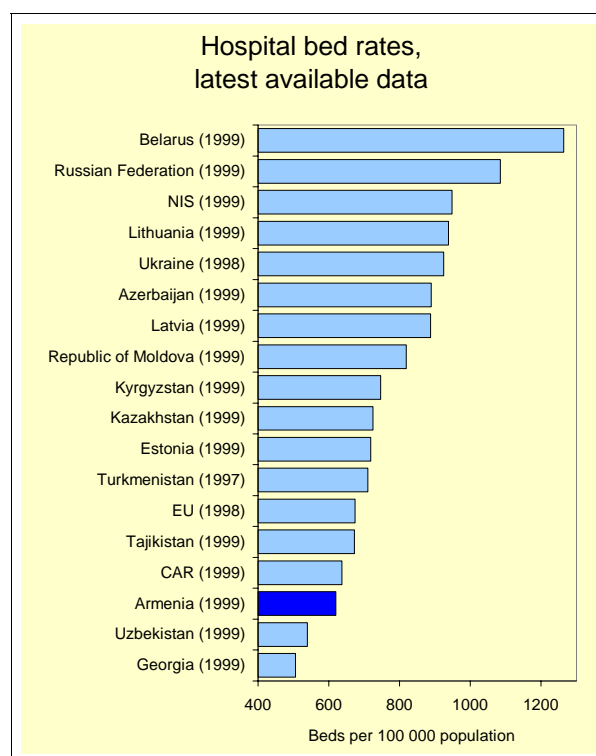
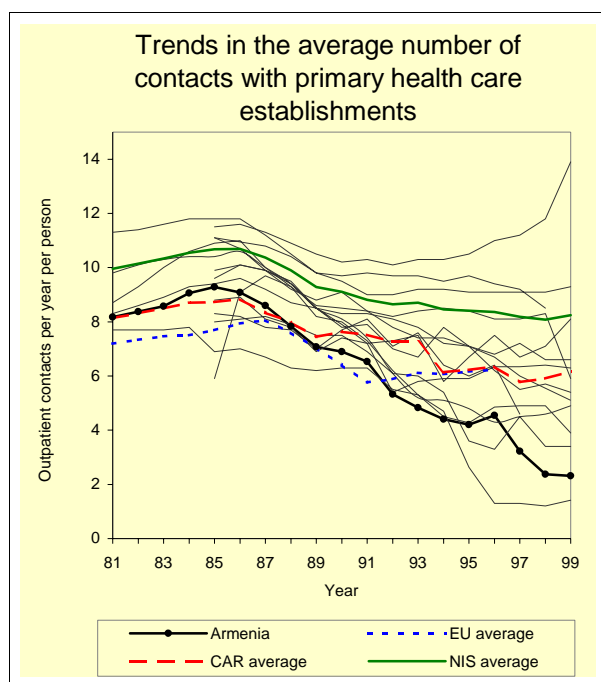
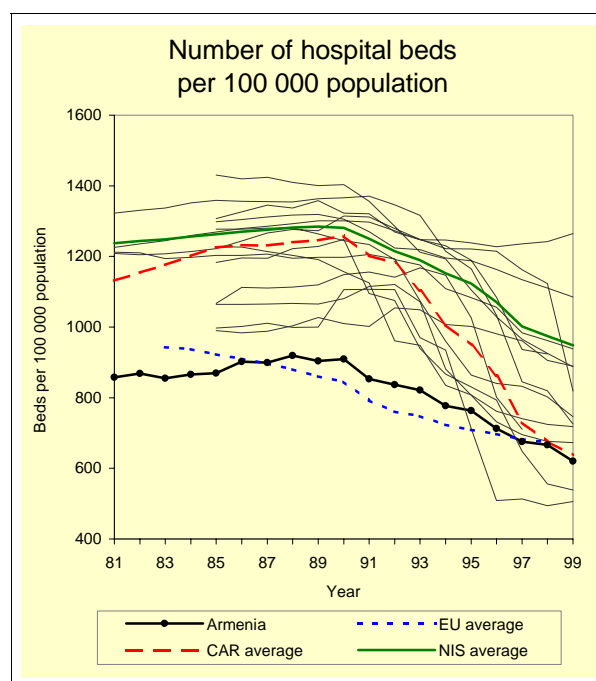
It should be noted that most patients in Armenia (91% in 1999) are obliged to make “informal” payments either in cash or in the form of food, especially in rural areas (*World Bank, 2000*).

Outpatient services

Primary health care in Armenia is provided in regional polyclinics or in rural *feldsher* posts or stations, with a standard staffing structure of 1 doctor per 1000–2000 persons and 1 paediatrician for every 700–800 children. There are 500 rural *feldsher* posts, one for each village. These posts are staffed by middle-level medical personnel and provide basic care for children and adults, care for pregnant women and emergency care, and assess the physical development of children. A group of villages can have an outpatient centre with a general practitioner, who will provide basic curative and preventive care.

Inpatient services

In 1999, hospital care in Armenia was provided by 174 hospitals. Highly qualified care is given by the Republic Hospital and specialized institutes in Yerevan. In addition, the capital has special hospitals providing paediatric and obstetrical care.



The number of hospital beds in Armenia, as in most other NIS, went down considerably in the 1990s (620 per 100 000 population in 1999). This is lower than the NIS average and close to the average for countries in the European Union.

During the same period, the bed occupancy rate fell from 70% to 30%. This was caused by a shortage of resources for the hospital treatment of chronic patients (*WHO Liaison Office in Armenia, 1999*).

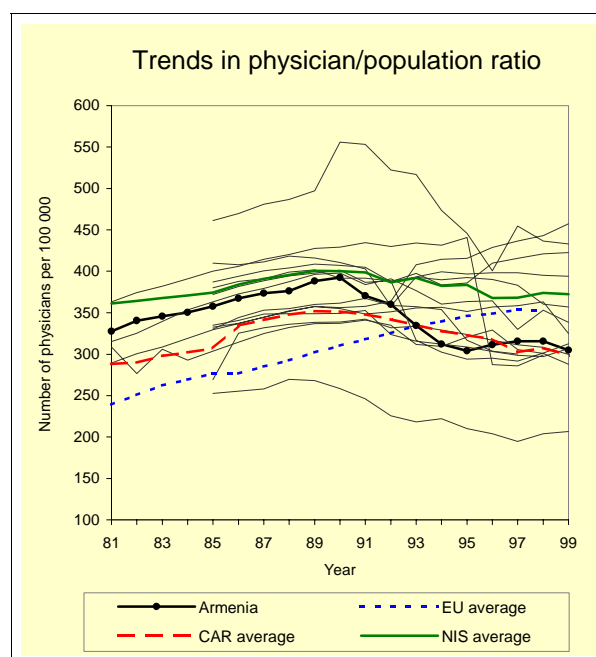
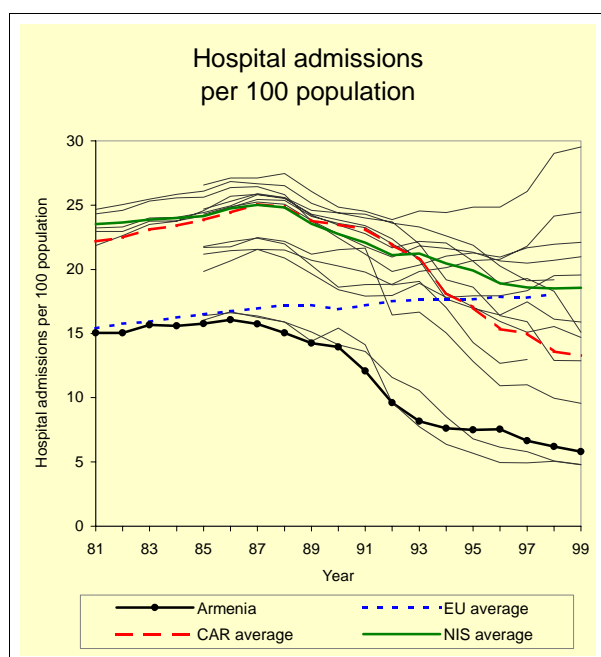
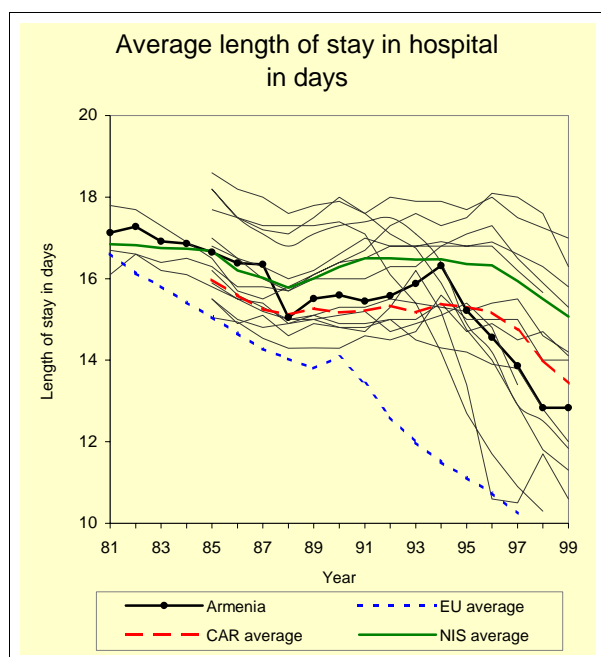
The number of hospital admissions has fallen considerably since the mid-1980s (5.8 per 100 population in 1999) and is one of the lowest in the Region.

There has been a noticeable drop in the average length of stay in hospital since 1995. In 1999 it was 12.8 days, which is below the NIS average and close to the average for WHO European Region.

Medical personnel

In the 1980s the physician/population ratio in Armenia increased steadily. During the first half of the 1990s the number of physicians fell by about 25%. Thereafter the figure has remained relatively stable, at 305 per 100 000 population in 1999, which is below the NIS average and below the average for the countries of WHO European Region as a whole.

The number of middle-level medical personnel in Armenia during the past decade has been falling at a much faster rate than the number of physicians. This has led to a nurse/physician ratio in Armenia that is the lowest of all the countries in the European Region.



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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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