

HIGHLIGHTS ON HEALTH IN SLOVAKIA



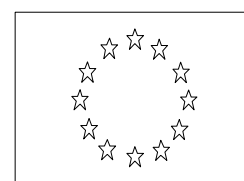
Country Highlights give an overview of the health and health-related situation in a given country and compare, where possible, its position in relation with other countries in the region. The Highlights have been developed in collaboration with Member States for operational purposes and do not constitute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

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WHO Regional Office for Europe



European Commission

This project to develop Highlights for ten of the European candidate countries for accession to the European Union received financial support from the European Commission and the Ministry of Health of Finland.

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Keywords:

HEALTH STATUS, LIFESTYLE, ENVIRONMENTAL HEALTH, DELIVERY OF HEALTH CARE, COMPARATIVE STUDY, SLOVAKIA.

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AN OVERVIEW

The crude birth rate per 1000 population has decreased in Slovakia and, although the crude natural growth rate is still positive, the fertility rate has fallen below the replacement level.

After a decline in the late 1980s, life expectancy at birth has varied between 71 and 73 years. In 1999, life expectancy declined by almost ten months compared to the previous year, mainly due to increasing mortality among men. This led to a deterioration in the position of Slovakia compared to the average of the reference countries¹.

The SDR (standardized death rate) for cardiovascular diseases in males aged 0–64 years fell below the reference countries in the 1990s, whereas the SDR for women in the same age group is at the average for the reference countries.

The SDR for cancer in the age group 0–64 is one of the highest for men among the reference countries, while the SDR for women in the same age group has remained below the average of the reference countries.

The SDR for diseases of respiratory system has been high, but decreased substantially since the mid 1980s. The SDR for diseases of the digestive system is above the average of reference countries. In contrast, the SDR for infectious and parasitic diseases for all ages is one of the lowest among the reference countries.

The SDR for external causes for all ages is among the lowest in the reference countries. The SDRs for homicides and suicides are low

compared to other reference countries. However, these rates remain above the EU averages. While the SDR for suicides has decreased by a quarter, the SDR for homicides has increased by 80% since the mid-1980s.

The incidence of AIDS, tuberculosis, viral hepatitis and syphilis are among the lowest in the reference countries, though syphilis has become much more common in the 1990s, with an incidence five times higher than the EU average.

The maternal mortality rate is one of the lowest in the reference countries, and comparable to the EU average.

The prevalence of smokers (18%) is the lowest among the reference countries.

The consumption of alcohol per person has fallen by more than two litres to 7.9 litres per capita since 1985. The SDR for liver diseases and cirrhosis decreased until the mid-1990s, increasing subsequently. Cannabis use by young people seems relatively common, but the use of other illicit drugs less so.

An insurance-based health care system was introduced in Slovakia in 1995.

The number of hospital beds per 100 000 population is above the average of the reference countries and the EU average. The number of physicians per 100 000 population in Slovakia remains between the high EU average and the relatively low average among the reference countries.

¹ The following ten candidate countries for the accession to the European Union were used as reference countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

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, international comparisons are used as one means of assessing the country's comparative strengths and weaknesses and to provide a summary assessment of what has been achieved so far and what could be improved in the future. The country groups used for comparison are called reference countries and are chosen based on:

- similar health and socioeconomic trends or development; and/or
- geopolitical groups such as the European Union (EU), the newly independent states, the central Asian republics or the candidate countries for EU accession.

For Slovakia, the reference countries are ten central and eastern European candidate countries for accession to the EU (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia).

To make comparisons between countries as valid as possible, data for each indicator have, whenever possible, been taken from one common international source (such as WHO, EUROSTAT, the Organisation for Economic Co-operation and Development or the International Labour Office). This is done to ensure that they have been harmonised in a reasonably consistent way. It should also be noted, however, that other factors such as recording and classification practices and cultural differences can influence the comparability of the data. Unless otherwise mentioned, the source of all data is the health for all statistical database of the WHO Regional Office for Europe (*WHO Regional Office for Europe, 2001*). Information on national policies has been obtained from health for all evaluation reports from national authorities and by personal communication with them and from *Health in Europe 1997 (WHO Regional Office for Europe, 1998)*.

A special case of comparison is when each country is given a rank order. Although useful as a summary measure, ranking can be misleading and should be interpreted with caution, especially if used alone, as the rank is sensitive to small differences in the value of an indicator. Also, when used to assess trends (such as the table at the start of the section on health status), ranking can hide important absolute changes in the level of an individual country. Mostly bar charts (to indicate a country's position versus the reference countries according to the latest data) or line charts (usually to show time trends from 1970 onwards) have been used. Line charts present the trends for all the reference countries and for the EU, as appropriate. Only the country in focus and the appropriate group average are highlighted in bold and identified in the legend. This enables the country's trends to be followed in relation to those of all the reference countries, and performance in relation to observable clusters and/or the main trend or average can be recognized more easily. To smooth out fluctuations in annual rates caused by small numbers, 3-year averages have been used, as appropriate. For example, this is the case for maternal mortality for all reference countries.

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

THE COUNTRY AND ITS PEOPLE²

The dissolution of Czechoslovakia came into effect at midnight on 31 December 1992.

Slovak citizenship belongs to all citizens of the former federal Slovak Republic. Other residents of five years standing may apply for citizenship.

The Slovak Parliament is the National Council, which has 150 members elected by proportional representation for a four-year term. There are direct elections for the Presidency.

The country is divided into eight administrative regions, of which one is the capital Bratislava. The local authorities are the district bureaux with the power to raise local taxes and responsibility for roads, schools, utilities and public health. Both mayors and municipal councillors are elected.

The Slovak Republic is a member of the United Nations, the Organisation for Economic Co-operation and Development, the Central European Free Trade Area, the Council of Europe, the Central European Initiative and the NATO Partnership for Peace, and it is an associate member of the European Union and an associate partner of the Western European Union. An application to join the European Union was made in June 1995, and in December 1999 Slovakia, along with five other countries, was invited to begin negotiations for full membership of the EU.

Table 1. Slovakia and the reference countries (1999)

	Slovakia	Reference countries		
		Average/total	Minimum	Maximum
Capital	Bratislava			
Population	5 395 300	104 705 300	1 442 400	38 741 000
Population 0–14 years (%)	21.2	18.8	16.1	21.2
Population 15–64 years (%)	66.3	68.4	66.3	74.2
Population ≥ 65 years (%)	12.5	12.8	9.6	16.0
Area in km ²	49 000	1 078 066	20 000	313 000
Density per km ²	110	97	32	130
Urban population (%)	57	64	50	75
Births per 1000 population	10.5	9.7	8.0	10.5
Deaths per 1000 population	9.7	11.2	9.6	14.2
Natural growth rate per 1000 population	0.8	-1.5	-5.5	0.8
GDP per person in US \$ PPP	10 591	8369	5071	15 977
GDP: gross domestic product; PPP: purchasing power parity				

² These introductory paragraphs are based on the material from *The statesman's yearbook* (Turner, 2000).

Demography

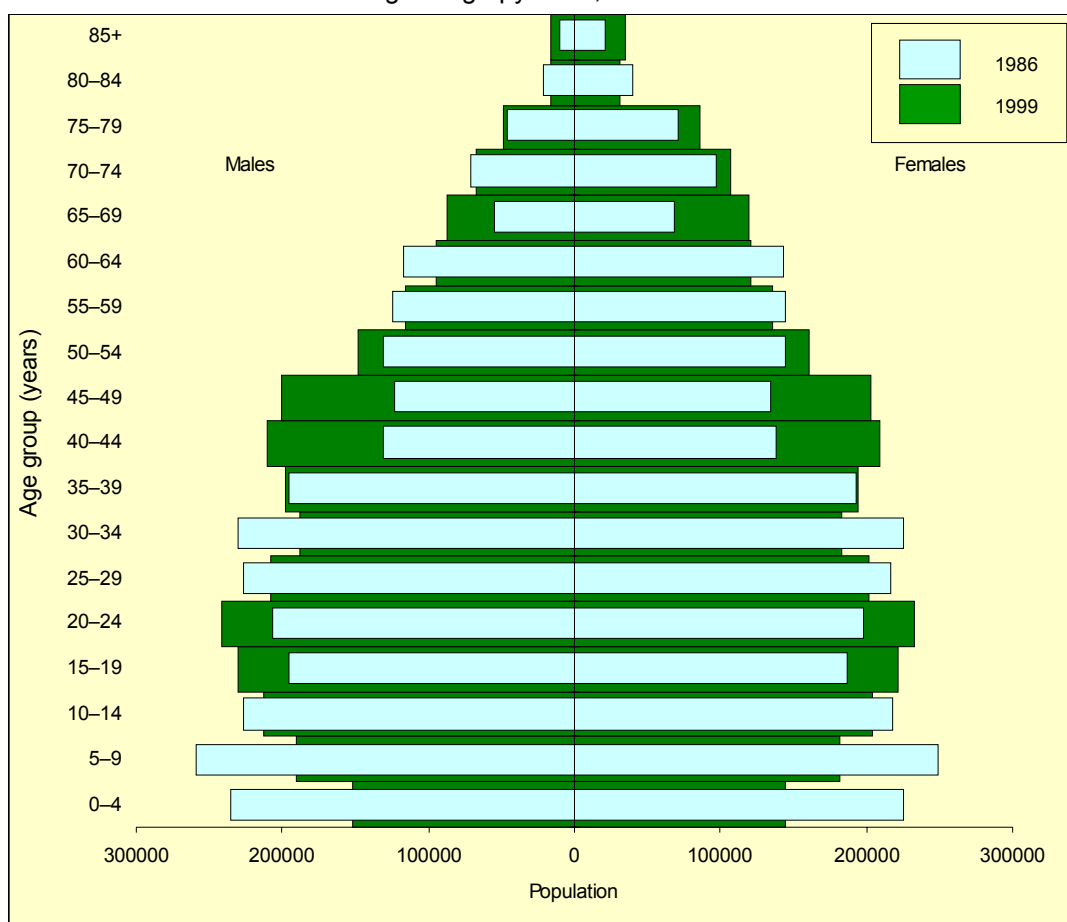
The shape of an age pyramid shows the stage of the demographic transition of a population. The overall changes in population structure, caused by changes in fertility, mortality and migration, can be easily seen when the age pyramids for two different years are compared (Fig. 1). The countries of the EU have generally reached an advanced stage of demographic transition, with the younger age groups becoming smaller in relation to the middle and, at times, older age groups. The reference countries are, in general, developing a similar population structure.

In 1999 the age groups below 45 years – except the age group of 25–29 years – were slightly larger, but the age groups from 45 years up to 84 years were smaller in Slovakia than in the reference countries in general.

The Slovak natural growth rate was the highest among the reference countries in the late 1980s. However, the rate decreased, first slowly from 6.6 per 1000 population in 1986 to 3.9 per 1000 in 1993, and then more rapidly to 1.3 per 1000 in 1997 and 0.8 per 1000 in 1999. This was, however, the highest among the reference countries along with Poland, and near the EU average (0.9/1000 in 1998) (Fig. 2).

The fertility rate has fallen below replacement level in Slovakia (1.3 in 1999) like in all other reference countries (average 1.3, variation from 1.1 to 1.4).

Fig. 1. Age pyramid, 1986 and 1999

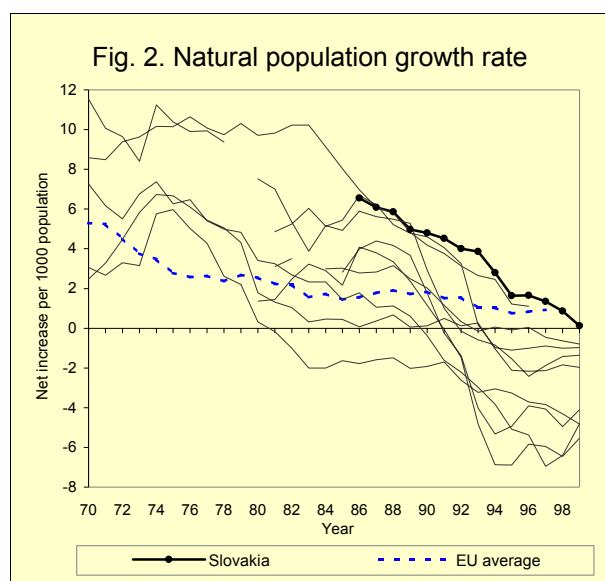


Migrant population and ethnic profile

Immigrants and ethnic minorities can have specific patterns of disease and health needs because of cultural, socioeconomic and behavioural factors and exposure to a different environment in their country of origin. Obtaining access to health care that can meet such specific needs and that is culturally and linguistically acceptable can also be difficult. Moreover, many such people have a higher risk of living in relative poverty and being marginalized, which can result in reduced health status compared with other minority groups. Illegal immigrants, in particular, can find it difficult to obtain health care, and following up any care given can be problematic.

In 1996, 10.6% of the population belonged to the Hungarian minority (Turner, 2000). According to census data from the early 1990s, the number of Roma was estimated to be 76 000, but a survey estimated their number to be 254 000 and Roma organizations have given estimates of between 560 000 and 640 000 (Council of Europe, 1998).

Slovakia had a positive net migration in the mid-1990s, varying between 1300 and 4800 between 1993 and 1997, mainly from the Czech Republic (Council of Europe, 1997 and 1999).



Social conditions and economy

The relevance of educational attainment to health is well documented. The literacy rate among the adult population (aged 15 or older) has often been used as an indicator, but the uniformly high adult literacy rates in Europe (all reference countries report a literacy rate of 96% or more) limit its value for comparison. As all the reference countries have universal primary education with almost all children participating, the enrolment ratio³ for primary education is also an insensitive indicator for detecting differences in educational levels.

Comparable data on enrolment ratios in secondary education (such as middle school, high school and vocational and technical schools) are more useful. In Slovakia, enrolment in secondary education fell in the 1980s, but has since returned to the level of 1980, when comparable figures became available. The ratios of the mid-1990s were above the average of reference countries (UNESCO, 1999).

The Slovak gross domestic product (GDP), adjusted for purchasing power parity (PPP), was US \$6690 in 1991. By 1999, it had increased to US \$10 591. This was greater than the average of the reference countries, but 47% of the EU average. National statistics show that the real wages in Slovakia declined in the early 1990s by almost one third, but in 1996 they had reached 82% of the level in 1989. In the late 1980s, the distribution of earnings in Slovakia was one of the most equal among the reference countries, but there is no more recent data (United Nations Economic Commission for Europe, 1999).

Slovakia has already moved to a post-industrial economic phase with services as the most important sector of the economy. In 1993, 57% of workers were working in services, 31% in industry and 12% in agriculture

³ The net enrolment ratio is the number of enrolled students in the official age group, divided by the population of the same age group which corresponds to a specific level of education. National regulations are used to define the level of education and, therefore, the official age group (UNESCO, 1999).

services (*Turner, 2000*). According to preliminary figures for 1997, 62% of GDP came from services, 32% from industry and 6% from agriculture (*United Nations Economic Commission for Europe, 1999*).

The official unemployment rate in Slovakia increased from 1.5% in 1990 to 14.6% in 1994. After a minor decrease, the rate peaked at 16.2% in 1999. This was the highest rate among the reference countries, much above the EU average (10.3% in 1999).

Unemployment in most countries in central and eastern Europe may even be higher than these official rates.

Inflation has caused severe problems for some countries in central and eastern Europe. In Slovakia, inflation peaked at 61% in 1991, but had declined by the following year to 10%. In 1999, Slovakia reported an inflation rate of 10.6%, lower than in the reference countries in general.

HEALTH STATUS

A summary of recent changes in Slovakia's health position compared to the reference countries (Fig. 3) shows:

- The position of the Slovak Republic in relation to the reference countries is very varied. Unfortunately, the position has deteriorated in more cases than it has improved, though these changes have not been dramatic.
- Cancer (lung cancer in particular) is the only disease area where health indicators for the Slovak republic are poor in relation to the reference countries.

Fig. 3. Slovakia relative to reference countries in 1985 ● and latest available year (1999 ^e) ☺																	
BEST										WORST							
POSITION	1	2	3	4	5	6	7	8	9	10	Slovakia	Reference country average	Minimum ^a	Maximum ^b			
Life expectancy at birth (years)			☺	●							73.2	72.4	70.2	75.8			
Male versus female difference in life expectancy at birth (years)				●	☺						8.3	8.1	6.8	10.9			
Infant mortality rate per 1000 live births			☺			●					8.3	10.9	4.6	18.6			
Maternal mortality rate from all causes per 100 000 live births ^c	●	☺									8.1	17.6	6.3	44.1			
SDR ^d from cardiovascular diseases, age 0–64 years				☺	●						119.5	129.9	61.1	167.3			
SDR from ischaemic heart disease, age 0–64 years				●	☺						58.5	57.5	25.3	88.0			
SDR from cerebrovascular disease, age 0–64 years			☺								17.0	32.6	14.3	51.1			
SDR from cancer, age 0–64 years								●	☺		115.2	107.3	92.7	145.3			
SDR from trachea/bronchus/lung cancer, age 0–64 years							☺				23.5	26.8	19.4	42.0			
SDR from cancer of the cervix among females aged 0–64 years				☺							5.6	7.4	3.3	11.9			
SDR from breast cancer among females aged 0–64 years						●	☺				17.3	15.7	13.7	20.6			
SDR from external causes of injury and poisoning		☺	●								58.0	74.0	52.2	156.6			
SDR from motor vehicle traffic accidents				●	☺						13.5	14.5	10.2	26.0			
SDR from suicide and self-inflicted injury		☺		●							12.9	17.3	12.0	42.1			
☺	Position improved		5 (indicators)											^a Lowest value observed among ten reference countries			
☺	Position unchanged		3 (indicators)											^b Highest value observed among ten reference countries			
☺	Position deteriorated		6 (indicators)											^c Three-year averages			
														^d SDR: standardized death rate			
														^e Maternal mortality 1997–1999 (Poland 1994–1996)			

Life expectancy

Slovak life expectancy at birth for males was above the average of the reference countries in the mid-1980s, but has deteriorated in the early 1990s to below the average. After that, the Slovak life expectancy started to increase again, remaining above the average of reference countries until 1998, but declined below the average of reference countries in 1999. The difference from the EU average has increased from five years to 7.5 years since the mid-1980s (Fig. 4).

A similar pattern was found for females. Life expectancy was the highest among the reference countries in 1987, but it fell in the late 1980s towards the average of reference countries. Life expectancy subsequently increased to 77 years, but has been static since the early 1990s. Female life expectancy in the EU has been more than four years longer than in Slovakia in the late 1990s (Fig. 5).

The combined effect of these changes have been that, in the late 1990s, life expectancy at

birth in Slovakia has fallen from the mean of the EU to below the average of the reference countries (Fig. 6).

The gender difference in life expectancy has increased in almost all of the reference countries. In 1999, the difference had increased to 9.5 years in Slovakia. This is above the average of the reference countries (8.1 years) and the EU average (6.4 years in 1997).

Large regional differences in life expectancy at birth are reported: the variation between the areas with longest and shortest life expectancy is approximately three years for women but up to ten years for men (*Ministry of Health, 1997a*). There is a clear connection between life expectancy, education and employment, with those districts with high unemployment rates or with high proportions of inhabitants having only elementary education having the lowest life expectancy (*Rusnak et al., 1998*).

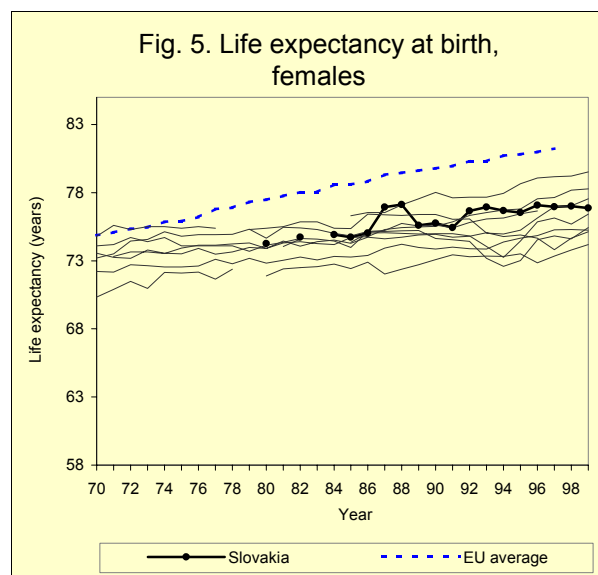
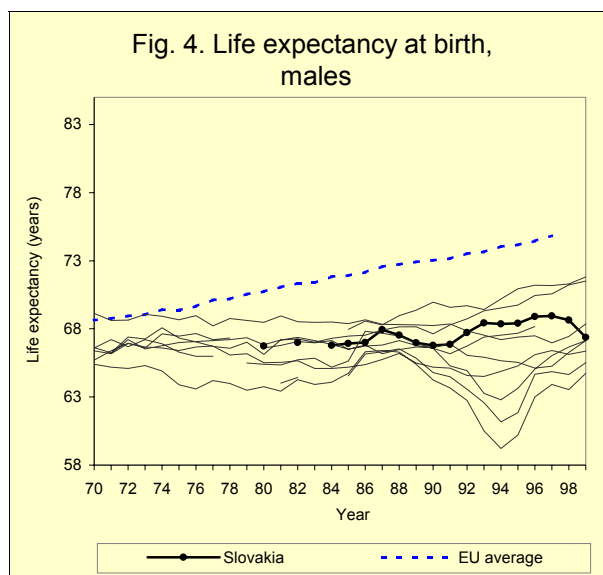
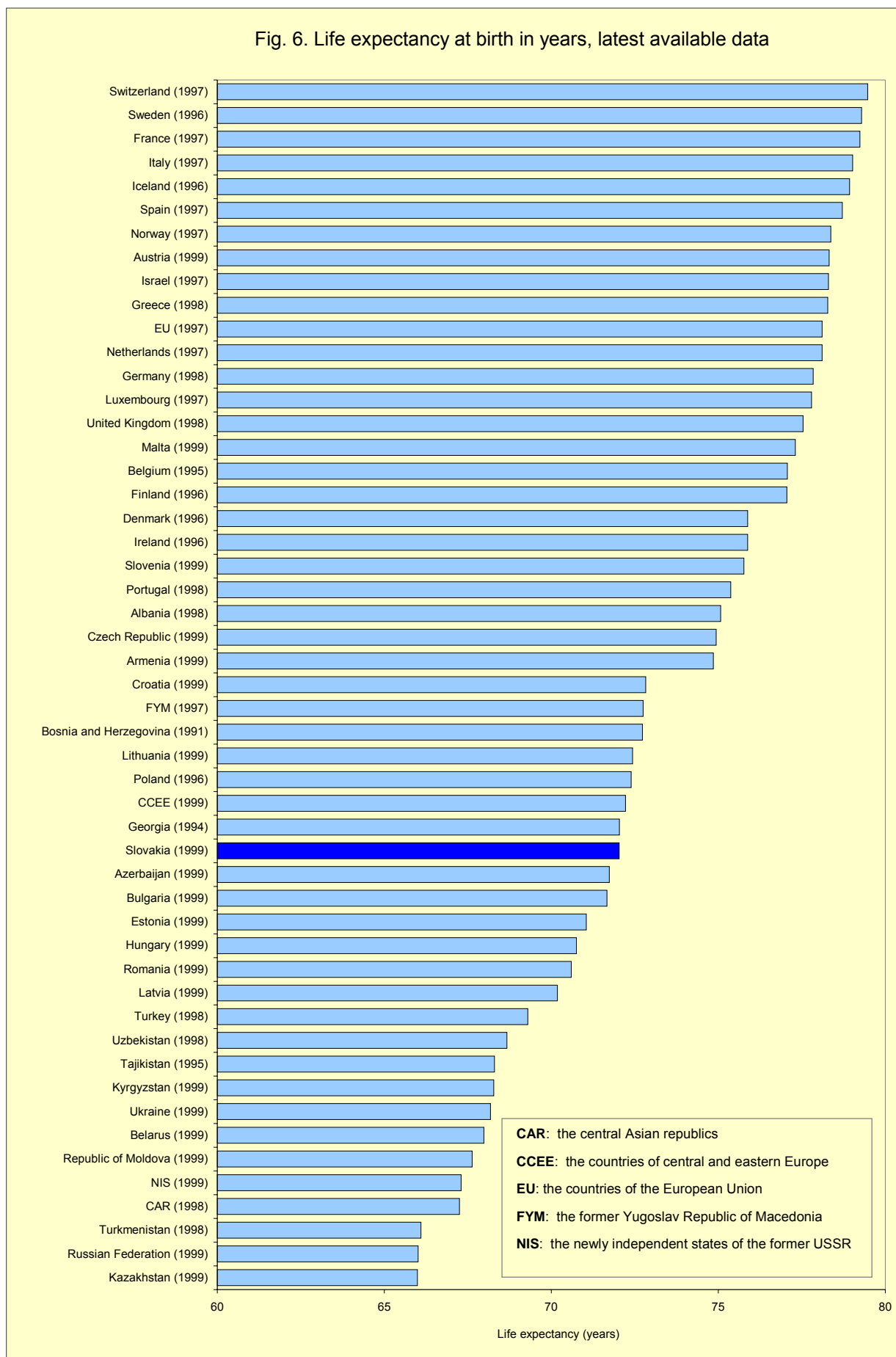


Fig. 6. Life expectancy at birth in years, latest available data



Main causes of death

Comparing the death rates from main causes between countries can indicate how far the observed mortality might be reduced. As almost all the causes underlying the deaths attributed to cardiovascular diseases, cancer and accidents are influenced by collective and individual habits and behaviour, a wide variety of health promotion and prevention measures can bring about changes to reduce health risks and thus disease and premature deaths.

Mortality rates are generally low by the standards of the reference countries, but the contribution of excess male mortality due to cancers and cardiovascular disease to the excess compared to the EU is evident (Fig. 7).

Cardiovascular diseases

The SDR for cardiovascular diseases for males aged 0–64 years in Slovakia increased in the late 1980s, but fell below the average of the reference countries in the 1990s. Despite this improving position, the Slovak rate is more than double the EU rate, which has been declining since the 1970s (Fig. 8, 9). For females aged 0–64 years the Slovak rate followed the average of reference countries in the 1980s, but the decline in Slovakia has been more

rapid than that of the reference countries since 1990. As for males, the female SDR is still more than double the EU rate (Fig. 10, 11).

There are systematic regional differences in the mortality rates for cardiovascular diseases: the highest rates are observed in the southern districts. Lifestyle factors seem to be the main contributor to these differences (*Ministry of Health, 1997b*).

The EU average for the SDR for ischaemic heart disease among the population aged 0–64 years has declined since the 1970s, but the decline started much later or the trend has been increasing in the reference countries.

In Slovakia, the SDR increased in the late 1980s, but fell in the early 1990s. The most recent Slovak rates were near the average of the reference countries, but more than double the EU average (Fig. 12).

The SDR for cerebrovascular diseases in the age group 0–64 in Slovakia was also at least double the EU average until the late 1990s.

The rapid decrease in the early 1990s improved the country's position noticeably, and the Slovak SDR was clearly lower than the average of the reference countries by the mid-1990s (Fig. 13).

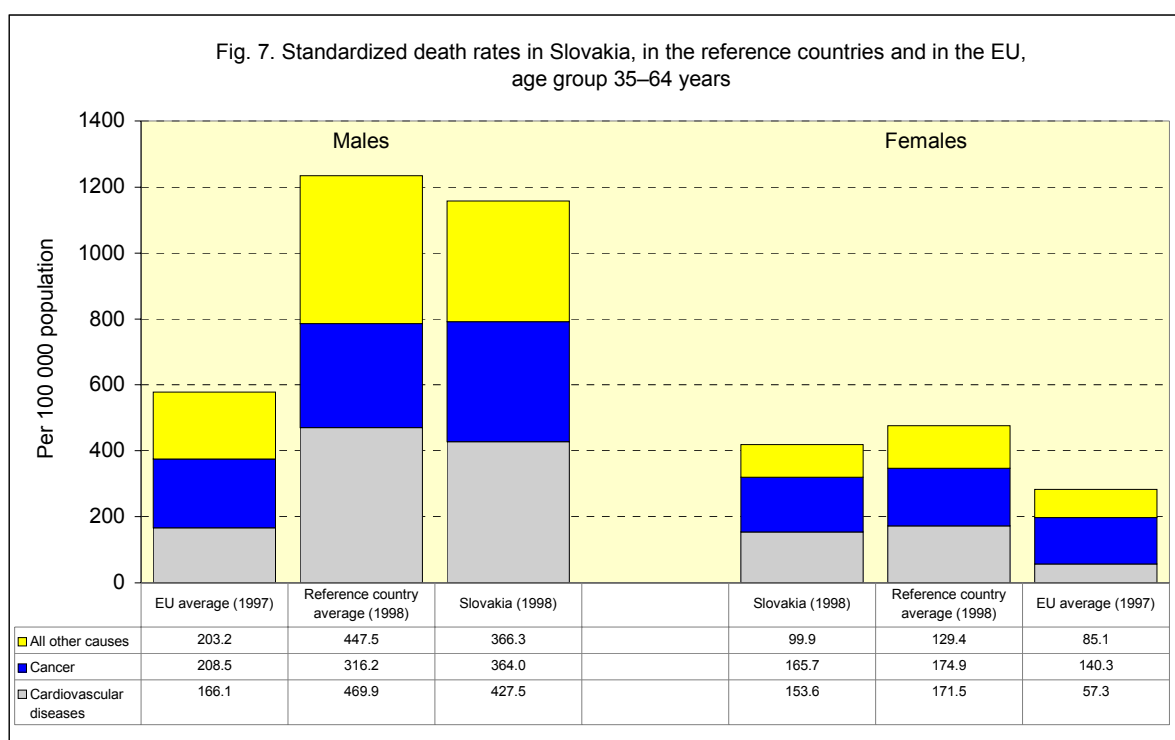


Fig. 8. Trends in mortality from cardiovascular diseases among males aged 0–64 years

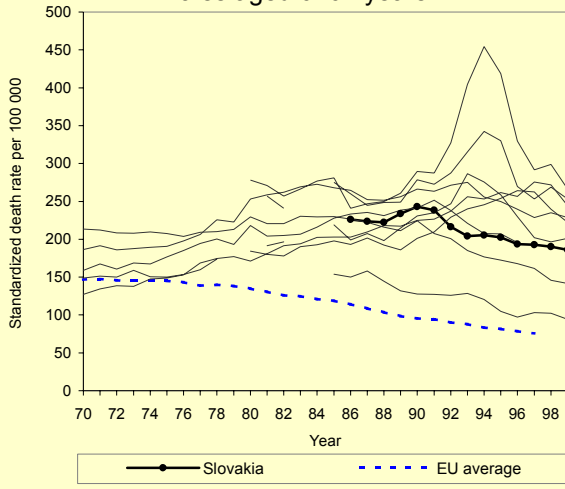


Fig. 10. Trends in mortality from cardiovascular diseases among females aged 0–64 years

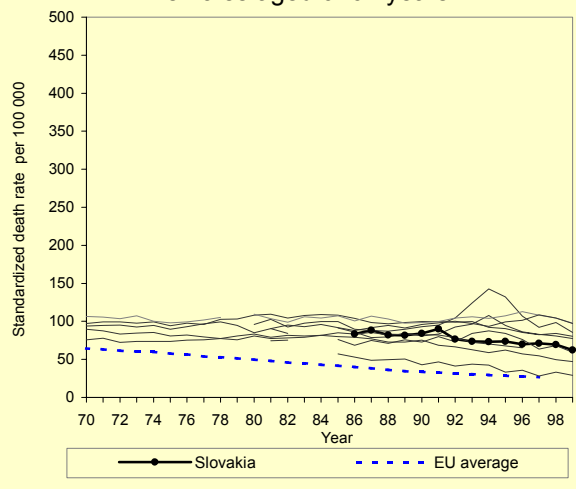


Fig. 9. Mortality from cardiovascular diseases among males aged 0–64 years, latest available data

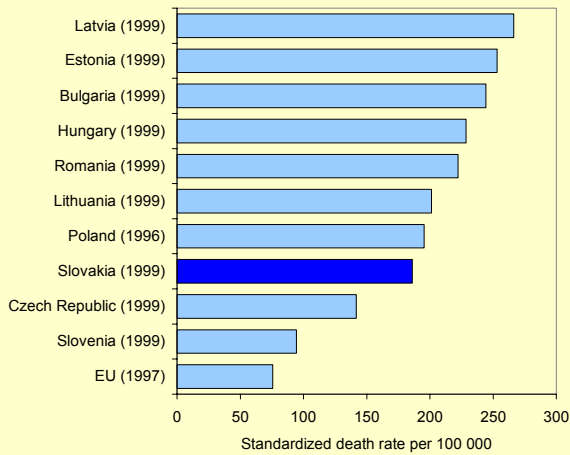


Fig. 11. Mortality from cardiovascular diseases among females aged 0–64 years, latest available data

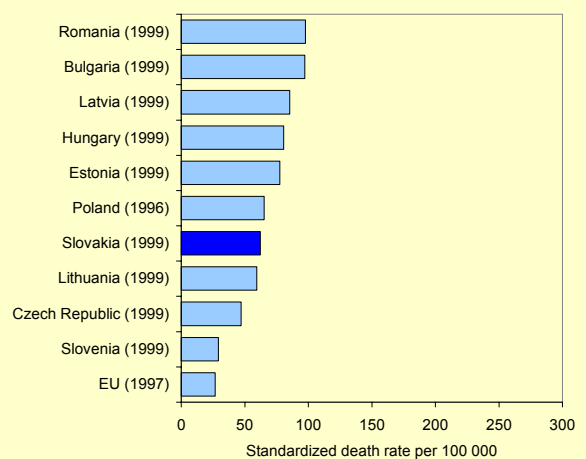


Fig. 12. Trends in mortality from ischaemic heart disease, age 0–64 years

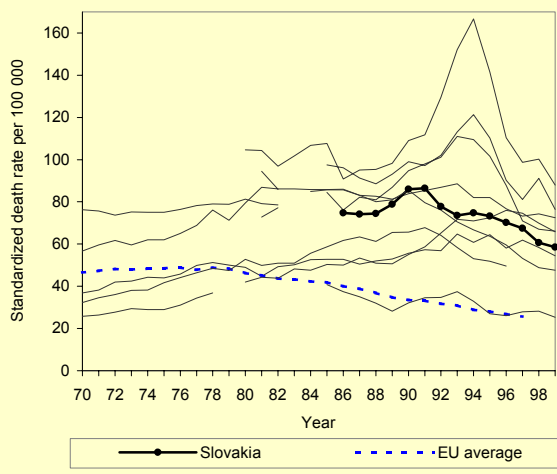
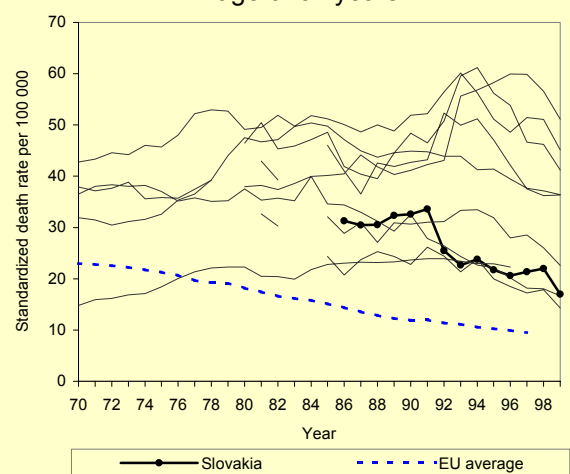


Fig. 13. Trends in mortality from cerebrovascular diseases, age 0–64 years



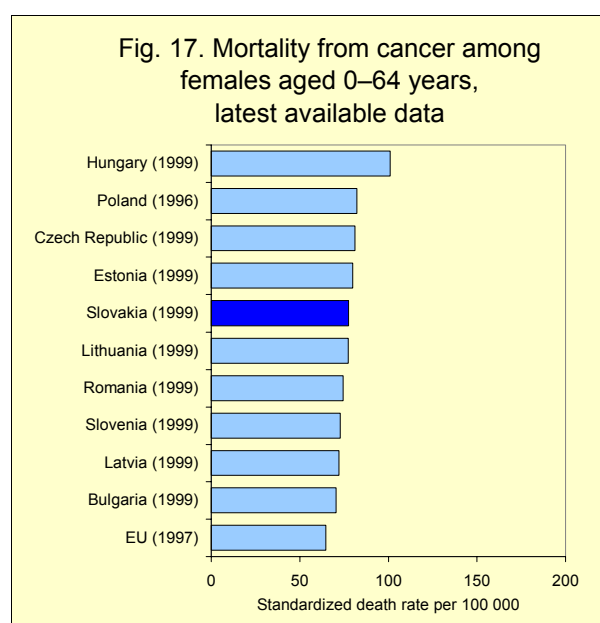
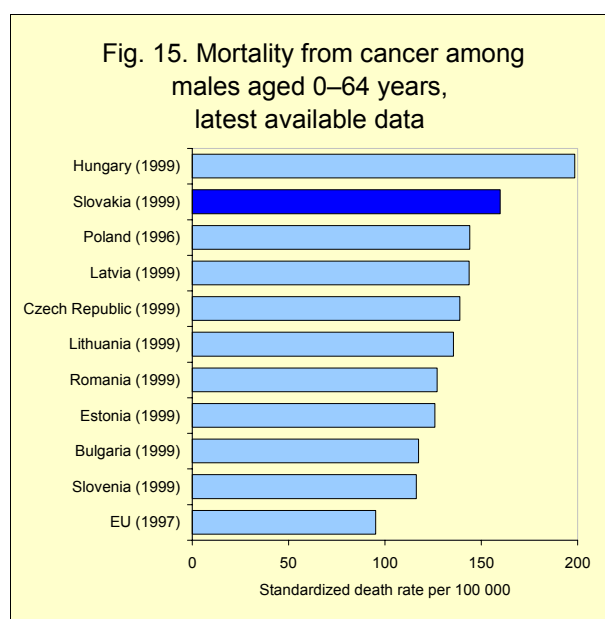
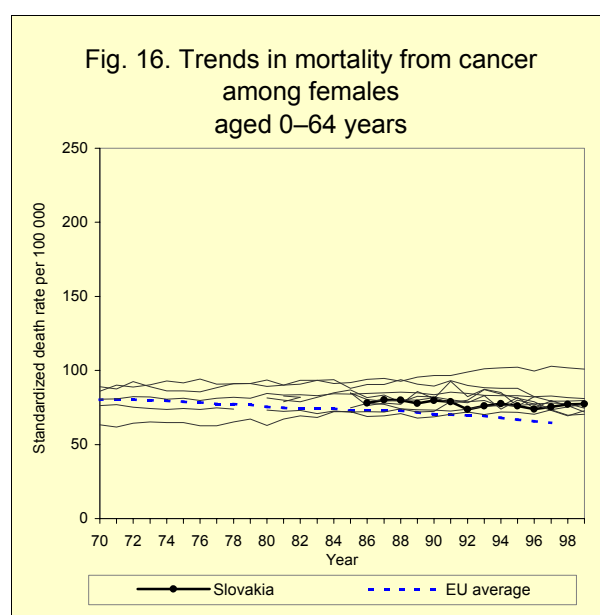
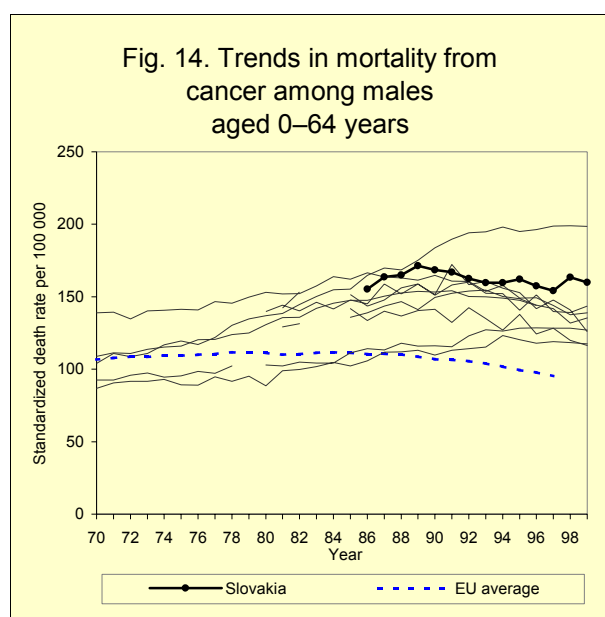
Cancer

This section provides comparative data on total cancer mortality. More detailed data on breast cancer and cervical cancer among women are presented in the section on women's health, whereas that on cancer of the trachea, bronchus and lung is presented in the section on smoking.

The SDR for cancer among the Slovak male population aged 0–64 years has been one of the highest among the reference countries, and has been static since the mid-1980s. Although

the difference from the EU average is smaller than for diseases of the circulatory system, the Slovak rate has been almost 70% higher than the EU rate in the late 1990s (Fig. 14, 15).

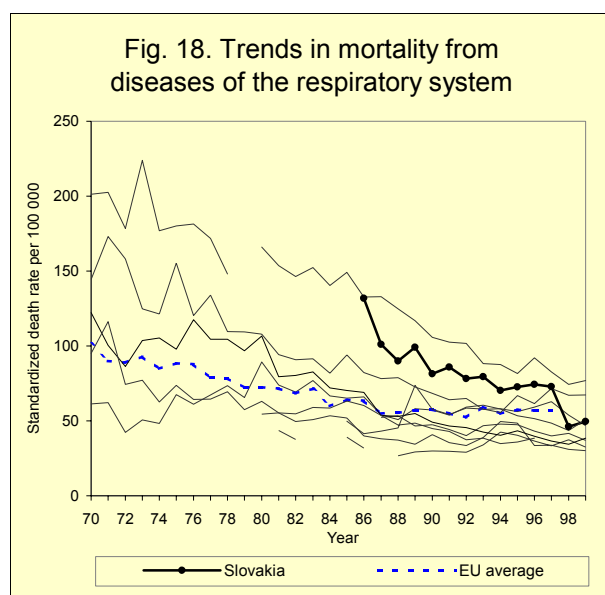
For women in the same age group, the Slovak SDR equalled the average of reference countries in the late 1980s, falling below it in the 1990s, but increasing again in the late 1990s, reaching the average of the reference countries. The Slovak rate is some 20% higher than the EU rate (Fig. 16, 17).



Other natural causes of death

The SDR for infectious and parasitic diseases dropped very sharply in the reference countries and in the EU during the 1970s and early 1980s. In several countries the SDR then started to increase, but the SDR in Slovakia remained low. The most recent rate is among the lowest in the reference countries, even lower than the EU average.

In contrast, the Slovak SDR for diseases of respiratory system has been one of the highest among the reference countries. This rate has, however, fallen significantly since the mid-1980s. In 1985, the Slovak rate was double the EU rate, but the rate is now below the EU average (Fig. 18).



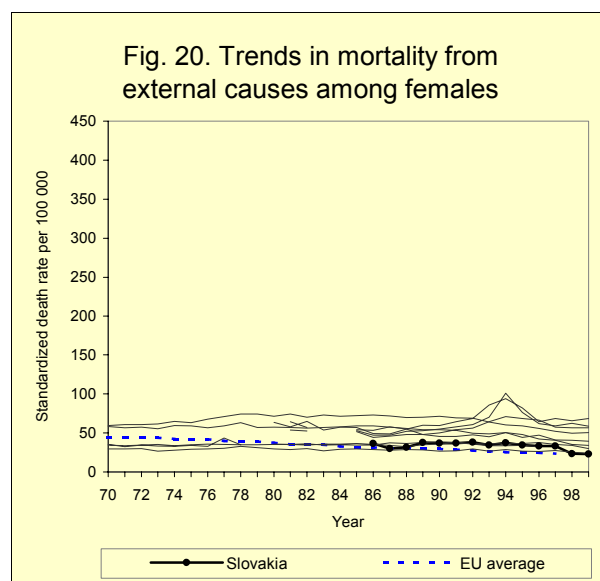
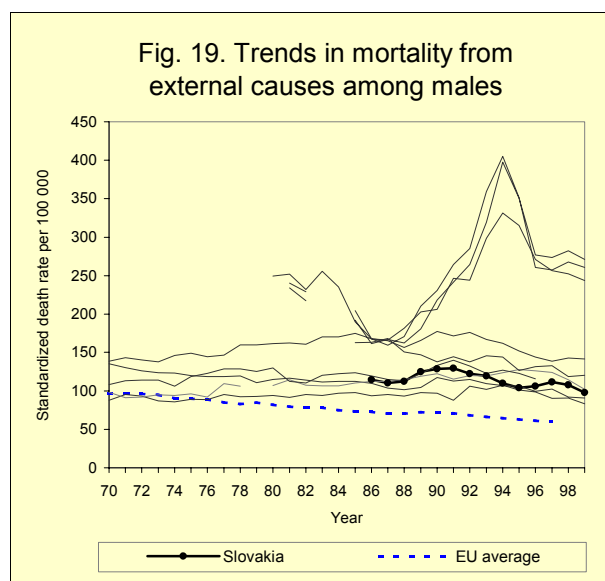
The Slovak SDR for diseases of digestive system was higher than the average of the reference countries and the EU average in the mid-1980s. Since 1990 the Slovak rate has decreased, remaining below the average of the reference countries during the 1990s. The most recent rate was, however, above the average of the reference countries, and almost 70% higher than the EU rate.

External causes of death and injuries

External causes of death and injuries covers all deaths caused by accidents, injuries, poisoning and other environmental circumstances or events such as violent acts (homicide) and suicide.

The SDR for external causes, injuries and poisoning for men in Slovakia equalled the average of reference countries in the 1980s, declining below it in the 1990s. The difference from the EU decreased during the 1990s, when the Slovak rate declined more rapidly than the EU rate. The EU rate was, however, still more than 40% lower than the Slovak rate in the late 1990s (Fig. 19).

Women have notably lower SDRs for external causes in general. In 1999, Slovak males had a SDR for external causes, which was more than four times the female rate. The SDR for Slovak women has also decreased, reaching the EU average, now the lowest among the reference countries (Fig. 20).



The Slovak SDR for homicide and purposeful injuries has remained below the average of the reference countries. There was a clear increase in the late 1980s, with a fall in the 1990s. According to the latest figures, the Slovak rate was one of the lowest among the reference countries, but still more than double the EU rate.

The SDR for motor vehicle traffic accidents in Slovakia was below the EU rate in the late 1980s, but it has increased above the EU rate since then, especially among men. After a couple of years with decreasing death rates, the SDR started to increase again. According to national statistics, the number of deaths from motor vehicle traffic accidents increased from 584 to 660 and the number of injured persons from 11 400 to 11 600 between 1993 and 1995. A noticeable decline in 1999 brought the Slovak rate below the average of the reference countries. (*Ministry of Health, 1997b*).

Mental health

Although mental and psychosocial wellbeing are important aspects of health-related quality of life, too little information is usually available to allow these important dimensions of the population's health to be described reliably. Suicide rates can be used as a surrogate indicator of the overall level of mental health.

The Slovak SDR for suicide and self-inflicted injury for men equalled the average of the

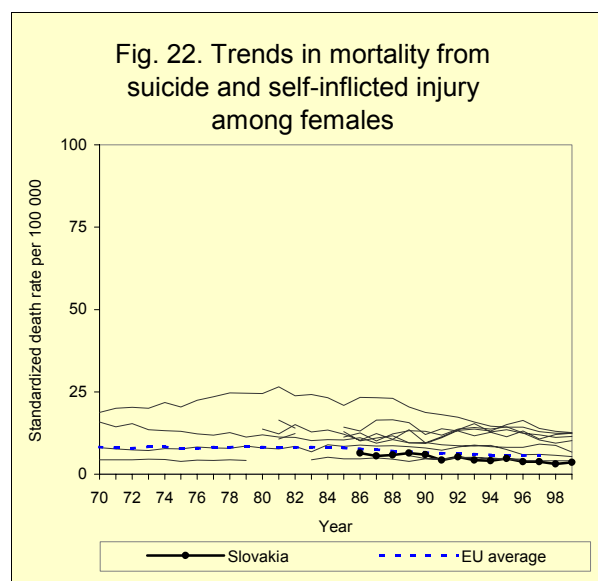
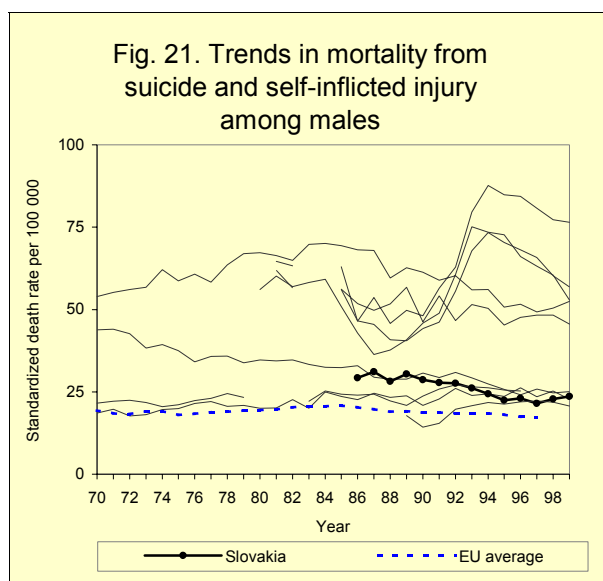
reference countries in the mid-1980s. This rate has descended since then, and the decrease has been one of the largest among the reference countries. The Slovak rate is still, however, clearly above the EU rate (Fig. 21).

In general, women have lower suicide rates than men, and this is also the case in Slovakia. Since the mid-1980s, the Slovak suicide rate for women has almost halved, which has been one of the largest decreases among the reference countries. The rate in 1999 was significantly below the EU rate (Fig. 22).

Infectious diseases

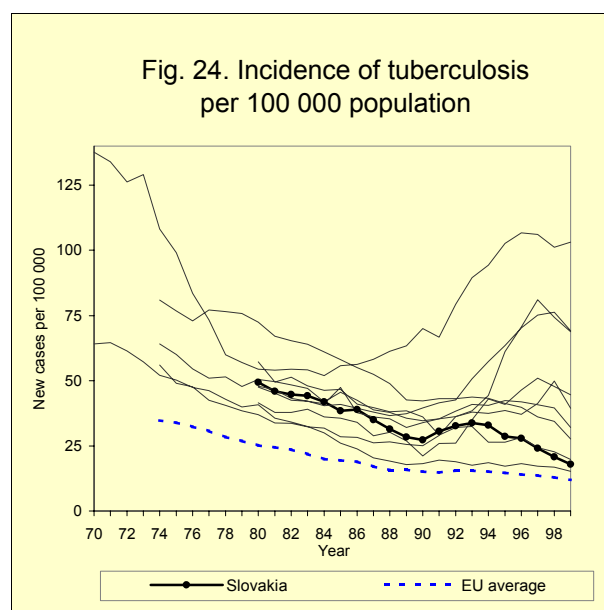
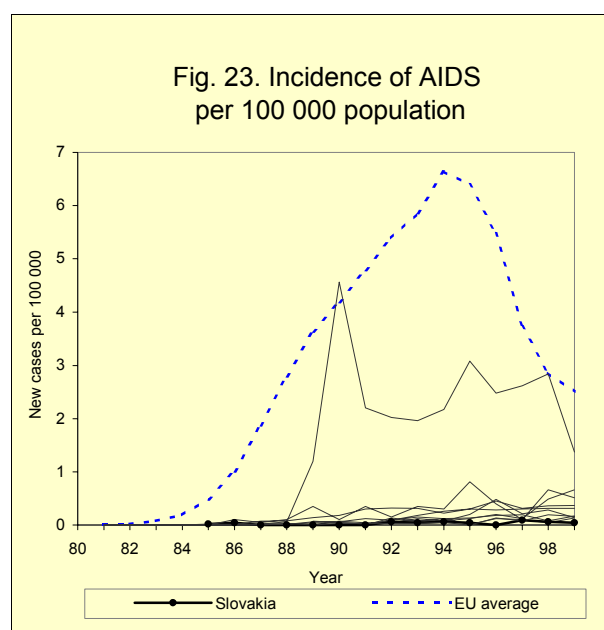
The acquired immune deficiency syndrome (AIDS) is caused by the human immunodeficiency virus (HIV), which can be transmitted in three ways: sexual transmission; transfusing infected blood or blood products or using non-sterile injection equipment; or from mother to child. The incubation period between initial HIV infection and developing AIDS is about 10 years or more. The number of notified cases of AIDS is rising in central and eastern Europe, although more people have been diagnosed with AIDS in western and northern Europe.

In Slovakia the incidence of AIDS (below 0.1/100 000 population in 1999) has been one of the lowest in the whole of Europe, much lower than in the EU (2.5/100 000) (Fig. 23). The largest transmission groups in Slovakia are homosexual or bisexual contacts



(65%), and heterosexual contacts (30%). No transmissions from injected drugs or mother-child transmissions have been reported (*European Centre for the Epidemiological Monitoring of AIDS, 2000*). Almost half of the HIV-infected persons are foreigners (*Ministry of Health, 1997b*).

The Slovak incidence of tuberculosis has decreased since the late 1980s, excluding a three-year increase in 1991–1993. In 1999, the Slovak rate was one of the lowest among the reference countries, but still above the EU rate (Fig. 24). National figures suggest that notification rates have not changed in 2000.



The incidence of viral hepatitis per 100 000 population in Slovakia has declined, and the most recent figure from 1998 was among the lowest in the reference countries, near the EU level. There are regional differences in the incidence of viral hepatitis, being more common in the eastern parts of the country (*Ministry of Health, 1997a*).

Even though the incidence of syphilis has been one of the lowest among the reference countries, the Slovak rate in 1999 was eight times the rate in 1990 and more than five times the EU rate. There has been no epidemic of diphtheria in Slovakia.

Long-term illness and disability

The prevalence of long-term illness and disability is an important indicator of a population's health status and health-related quality of life. Those countries which do provide data are difficult to compare because of differences in definitions, data collection methods and in national legislation on disease-related social benefits (where disability statistics are based upon those receiving such benefits).

New legislation has been passed to support disabled people in Slovakia. In addition, new non-governmental organizations and self-help groups working for people with disabilities have been introduced. The local level has been involved in solving the problems of disabled people, and campaigns to promote positive attitudes in society towards people with disabilities have been intensified in order to improve the situation of disabled citizens.

According to national data, the percentage of disabled persons of working age engaged in regular occupational activities has increased slightly. At the same time, the proportion of newly granted pensions for disabled persons per 100 000 old-age pensions has increased from 818 to 886 between 1991 and 1995, suggesting an increase in retirements related to ill-health (*Ministry of Health, 1997b*).

Self-assessed health

Data are also not routinely available on the proportion of the population assessing their own health positively. Among the reference

countries, seven of the countries had some national level data with Bulgaria having the largest proportion of adult respondents assessing their health as being good (62%) and Latvia the least (26%), while the proportion was 45% in Slovakia. The large observed variation may be caused by the differences in study settings, in data collection or by cultural differences.

In all countries, men assessed their health as being good more often than women did.

The Institute of Health Education has performed two large health interview studies to monitor self-assessed health in Slovakia in the 1990s. Due to methodological differences, these results were not comparable to the results of other reference countries. The percentage of respondents answering that they are completely healthy fell from 16% in 1992 to 12% in 1995. At the same time, the proportion of respondents with minimal health problems increased from 28% to 35%, but the proportion of respondents having more serious health problems decreased from 13% to 10% (*Ministry of Health, 1997b*).

Health of children and adolescents

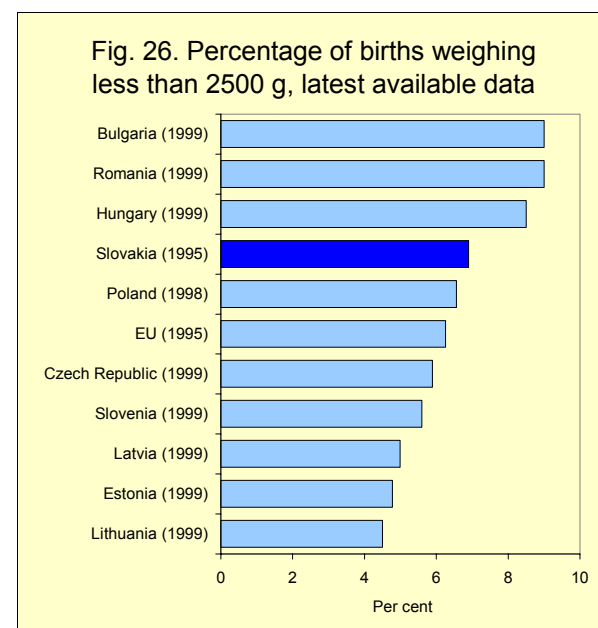
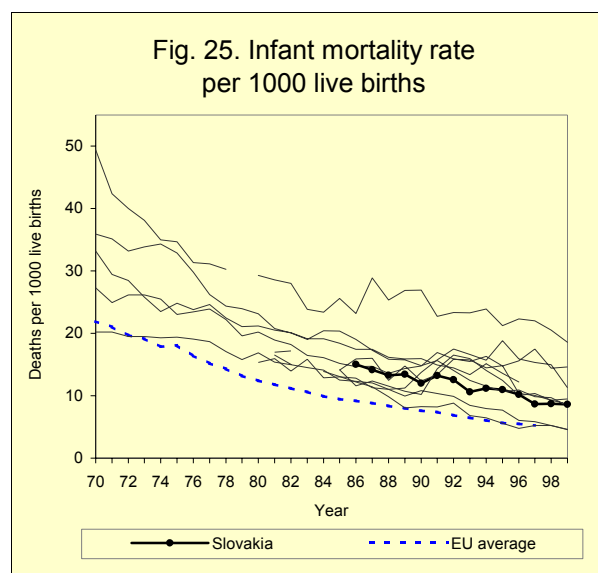
The infant mortality rate decreased in almost all reference countries between 1985 and 1999. The Slovak infant mortality rate has almost halved from 15.0 to 8.6 per 1000 live births during this period, and the most recent rate was below the average of the reference countries (Fig. 25).

The geographic differences in infant mortality have slowly decreased, but there is still a two-fold difference between the district with the lowest and the highest mortality. The highest rates are found in the eastern part of the country, where the proportion of Roma is the highest (*Ministry of Health, 1997a and 1997b*).

The main causes of infant mortality in Slovakia generally follow the pattern in western Europe, with the most frequent cause being malformations and perinatal conditions, which cause 82% of all infant deaths in the EU. The third most common cause is sudden infant death syndrome (11%), whereas external causes, infectious and parasitic diseases and diseases of the respiratory system are respon-

sible for 2–3% of death. Slovakia follows the western European pattern, with a high proportion of perinatal conditions and malformations (87%). However, the proportion of deaths due to sudden infant death syndrome is considerably smaller (2%) than in the EU, and these cases may be classified under respiratory diseases (10% in Slovakia compared to 2% in the EU).

The proportion of children that weighed less than 2500 grams has often been used as an indicator for newborn health and perinatal care. The proportion of low-birth weight children is 6.9% in Slovakia in 1995, which is higher than



in the EU (6.3% in 1995), but lower than in the reference countries in general (7.3% in 1999) (Fig. 26).

The proportion of breast-fed infants has stabilized: in the mid-1990s some 72% of infants were breast-fed at the age of six weeks, 46% at three months and 24% at six months (*Ministry of Health, 1997b*).

Children in most of the reference countries have good immunisation coverage. This is particularly true for Slovakia, which reports high coverage rates of between 98% and 99% for all immunisation programmes, with tuberculosis being the only exception (96% in 1999). These were among the highest coverage percentages in the reference countries. Even though the situation is positive in general, financial constraints may postpone the introduction of new vaccination programmes. For example, immunisation against hepatitis B was introduced only for high-risk groups, such as health workers, in 1997, but not for all children (*Ministry of Health, 1997b*).

In general, children's oral health has improved in the reference countries in the 1990s, as in the EU. In 1989, the Slovak DMFT-index (the number of decayed, missing or filled teeth) of 3.5 was one of the lowest among the reference countries. No data are available on the recent situation.

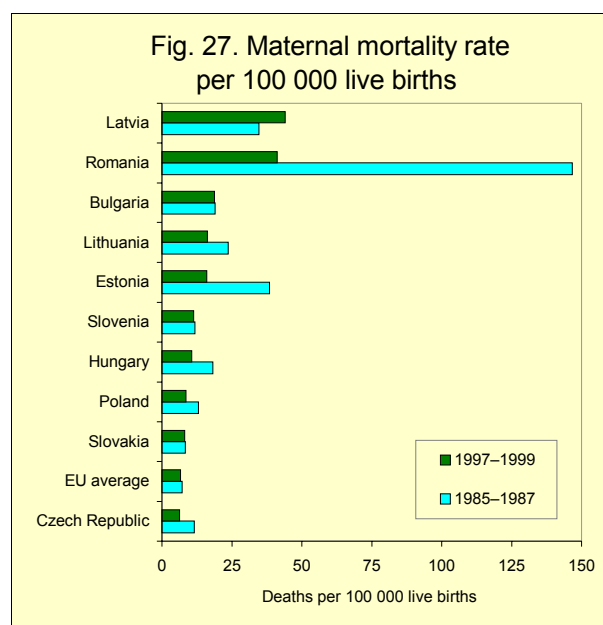
Children with disabilities and others who experience difficulty in learning are often marginalized within or even excluded from school systems. In the countries of central and eastern Europe, the dominance of a traditional medicalized approach resulted in such children being educated in separate special institutions. In the 1990s, most of the ten reference countries had moved towards integrating these children in the normal school system, even though progress was slowed by economic problems (*Ainscow & Haile-Giorgis, 1998*).

One of the few routinely available indicators for adolescents' sexual health and behaviour is the rate of teenage childbirth, which can reflect social factors as well as access to and use of contraception. In 1999, the birth rate per 1000 women aged 15–19 years was 25 in Slovakia, which equalled the average of the reference countries, but which was still higher than the

EU average of 8 per 1000 (*Council of Europe, 2000*). The birth rate in this age group has been declining in all the reference countries since 1980. In Slovakia this decrease was 48%.

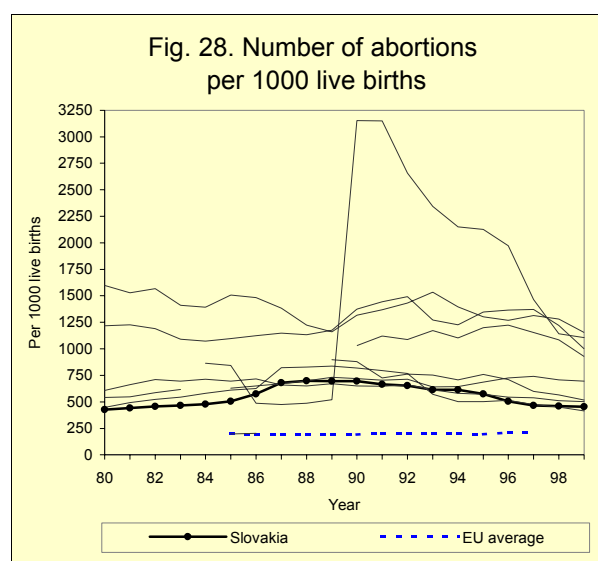
Women's health

Women as a group live longer than men and have lower mortality rates for all the main causes of death. For example in Slovakia, the SDR for cancer for women in the age group 0–64 years was 52% lower compared to the rate for men in 1999. The gender difference was even larger for the SDR for diseases of the



Data for Poland is 1985-1987 and 1994-1996.

Data for EU average is 1985-1987 and 1995-1997.



circulatory system, since the female rate was 67% lower than the male rate. However, women have higher reported rates of morbidity and utilization of health care services (especially around childbirth), and they can be more affected by social welfare policies than men.

Since the 1980s the maternal mortality rate has declined noticeably in all reference countries. In Slovakia, the maternal mortality rate declined from 8.3 per 100 000 live births in the mid-1980s to 7.5 in the mid-1990s. This is one of the lowest rates among the reference countries, and near the EU rate of 6.6 per 100 000 live births (Fig. 27).

In the countries of central and eastern Europe and in the newly independent states induced abortion was commonly used as a contraceptive method due to a lack of modern contraceptives. In Slovakia in 1996, only 5% of women aged 15–49 years reported using the IUD and 8% oral contraceptives (*WHO Regional Office for Europe, 2000a*). As a consequence, the number of induced abortions was usually much higher than in the western European countries. The annual number of abortions in Slovakia more than halved from 56 200 in 1990 to 25 600 in 1999. The proportional decline in the number of live births was smaller (30%), so the number of induced abortions per 1000 live births has declined significantly, now one of the lowest among the reference countries. Despite this improvement, the Slovak figure is still more than double the EU rate (Fig. 28).

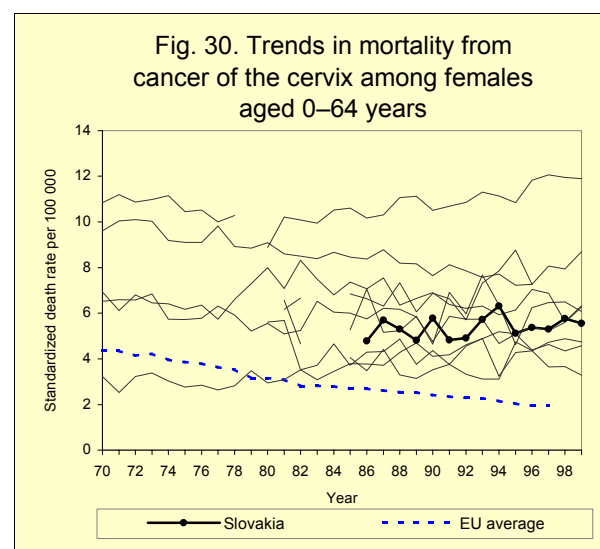
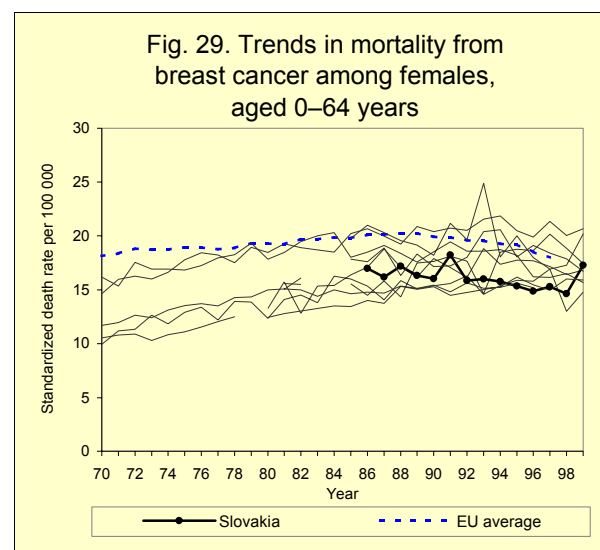
In principle, all Slovak women have access to adequate contraceptive services, and the number of users of prescribed contraception increased from 165 000 in 1992, to 190 000 two years later (*Ministry of Health, 1997b*).

In the late 1980s, the SDR for cancer of the female breast in Slovakia was around the average of the reference countries. Since then, the Slovak rate has decreased, and was one of the lowest among the reference countries in the mid-1990s. The 1999 mortality figures show an increase in the Slovak rate, now near the average of reference countries and the EU average (Fig. 29).

The Slovak SDR for cancer of the cervix has increased slightly since the mid-1980s, but

remains below the average of the reference countries. However, since the SDR for the EU has decreased, the difference from the EU rate has become larger, and the Slovak rate has been more than double the EU rate since the mid-1990s (Fig. 30).

Violence against women has received limited attention as a public health issue. Data on the incidence and type of such violence are lacking. The SDR for homicide and purposeful injury for women can be used as a surrogate indicator. The Slovak female SDR for homicide and purposeful injuries increased significantly in the late 1980s, declining since, especially after 1991. In 1998, the Slovak SDR was one of the lowest among the reference countries (1.5 per 100 000 women), but it was still double the EU rate (0.6/100 000 in 1997).



LIFESTYLES

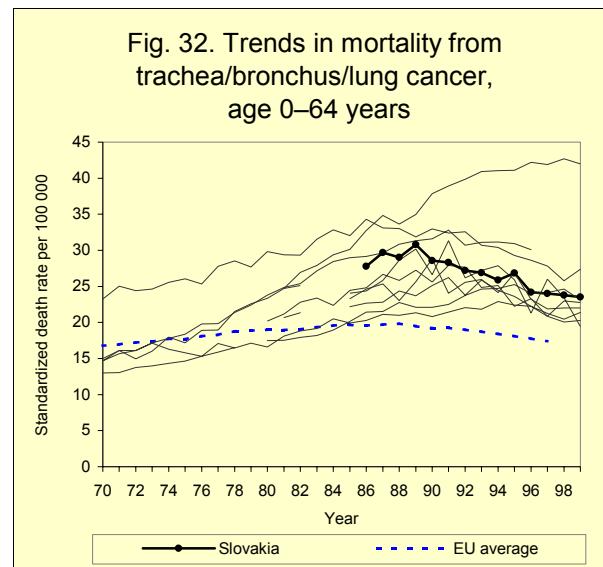
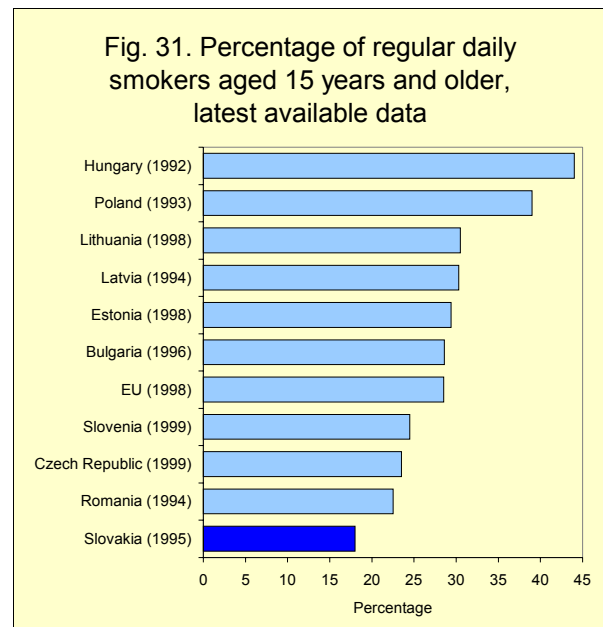
Among the factors (including genetics and the physical and social environments) influencing health, behaviour substantially affects the health and wellbeing of each individual and the population. Lifestyle patterns such as nutritional habits, physical activity and smoking or heavy alcohol consumption together with the prevalence of such risk factors as elevated blood pressure, high serum cholesterol or overweight influence premature mortality, especially from cardiovascular diseases and cancers. These diseases are the main causes of death in Europe. Unhealthy behaviour also contributes to a wide range of other chronic illnesses and thus affects the quality of life in general.

Lifestyle, however, is also influenced by behavioural patterns common to a person's social group and by more general socioeconomic conditions. Evidence is growing that, at least in most western European countries, improvements in lifestyles have largely been confined to the more socially and economically privileged population groups, who are better placed to adopt health-promoting changes in behaviour (*WHO Regional Office for Europe, 1993 and 1999*).

Tobacco consumption

The Slovak smoking prevalence among the population aged 15 years or more has declined in the 1990s, and was the lowest among the reference countries in the mid-1990s. In 1995, 24% of males and 13% of females were smokers (Fig. 31). The 2000 CINDI survey (Countrywide Integrated Noncommunicable Disease Intervention) performed in Banská Bystrica reported higher prevalences, 32% for men and 20% for women aged 15–64 years. Previous surveys in 1993 and 1998 had, however, reported still higher figures in the same area (*Avdičová et al., 2000*). In 1991, male physicians reported smoking less frequently than men in general, while female physicians and nurses reported smoking more frequently than women in general.

According to a school questionnaire survey performed in 1993–1994, 19% of boys and 5% of girls aged 15 smoked at least once a week. These prevalence figures were among the lowest in the survey, in which 23 countries or regions participated (*WHO Regional Office for Europe, 1997*). However, the study performed four years later reported that the prevalences had reached the average of reference countries, at 26% for boys and 18% for girls.



The same survey observed that the median number of cigarettes smoked weekly was higher than in most reference countries: 15 cigarettes for boys and 30 for girls (*WHO Regional Office for Europe, 2000b*).

The annual consumption of cigarettes per person in Slovakia was stable and below both the EU average and the average of the reference countries in the 1980s. In the following decade, however, Slovak consumption increased from 1600 in 1991 to 2300 in 1998–1999, the largest increase among the reference countries. The Slovak figure exceeded both the EU average and the average of the reference countries.

Mortality for trachea, bronchus and lung cancer can be used as an indicator of the trends and country positions related to the deaths caused by smoking. In the mid-1980s, the Slovak SDR for these causes was among the highest in the reference countries, but it has fallen by more than 25% to below the average of reference countries in the 1990s (Fig. 32). The trend is dominated by changes in mortality for men. For women, an increase in the SDR has been observed in the EU and in several reference countries. Female mortality has been relatively stable in Slovakia, but the rate appears to be increasing in the late 1990s. Compared to the EU rate, the Slovak SDR for trachea, bronchus and lung cancer was 50% higher for males, but still 10% lower for females in the late 1990s.

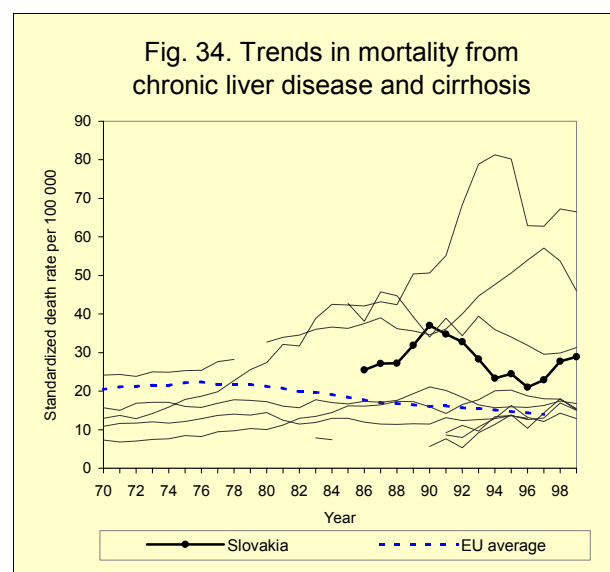
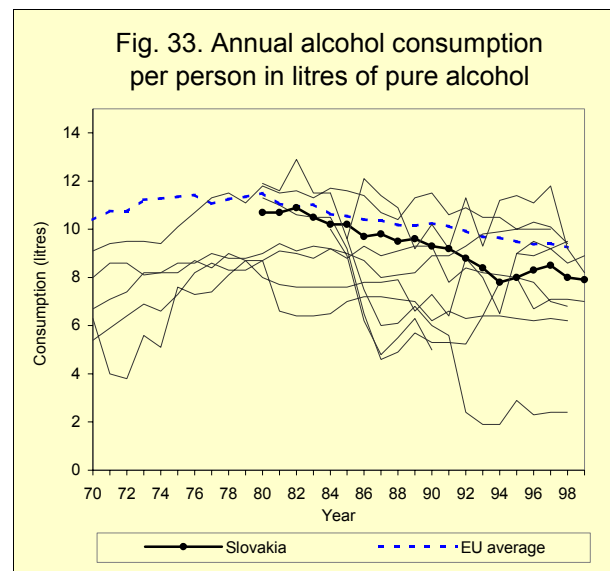
Alcohol consumption

The registered alcohol consumption in Slovakia equalled the EU average in the early 1980s. Consumption has since fallen in both Slovakia and the EU, but this decrease has been more marked in Slovakia. The positive trend ceased in Slovakia in the mid-1990s, but Slovak consumption (7.9 litres in 1999) was still lower than the EU average (9.3 litres in 1998) (Fig. 33). Comparisons of alcohol consumption are, however, difficult, as data quality is variable across Europe, and unrecorded consumption is difficult to estimate and probably significant. For example, some Baltic states recorded a remarkable fall of up to 65% in the 1990s, but local studies reported very

high levels of unrecorded consumption as well as illegal importation and production (*WHO Regional Office for Europe, 1997*).

According to sales data, the consumption of spirits in Slovakia has increased from 3.3 litres (1985) to 4.3 litres (1999) per person per year, while the consumption of beer has decreased from 99 to 88 litres and wine from 17 litres to 12 litres (*Produktschap voor Gedistilleerde Dranken, 2000*).

A local study performed in 1996 reported large socio-economic differences in alcohol consumption: 12% of respondents with a university education reported daily consumption of beer, 7% daily consumption of wine and less than 2% daily consumption of spirits,



the corresponding proportions among respondents with elementary education were considerably higher at 35%, 20% and 18%, respectively (*Rusnak et al., 1998*). According to a school questionnaire survey performed in 1997–1998, 16% of girls and 30% of boys drank beer, wine or spirits at least once a week. Along with the Czech Republic, this was the highest prevalence among the reference countries (*WHO Regional Office for Europe, 2000b*).

The number of deaths due to chronic liver disease and cirrhosis can be used to give an indication of the harmful effect of long-term alcohol consumption. The SDR for chronic liver disease and cirrhosis has decreased in the EU in the 1990s. The Slovak rate also fell until the mid-1990s when the trend changed to an increasing one. Current Slovak mortality is more than double the EU average (Fig. 34).

Illicit drug use

Comparable data on drug use are rare. In general, the reference countries have reported increased drug use in the 1990s, even though the level is still lower than in the EU.

In Slovakia, the use of cannabis is reported to be increasing. The number of heroin users was estimated to be 7000–10 000 in the 1990s. Use of heroin as the first illegal drug has increased and the age at first use has fallen. In 1994, 73% of clients in drug centres and hospitals used heroin and other opiates, 46% injecting their drugs (mainly heroin and stimulants). Cocaine use has also increased in the 1990s (*WHO Regional Office for Europe, 1997*).

The number of young people (aged less than 19 years) using drugs increased from 526 to 691 between 1994 and 1995, mainly reflecting increased use by teenage boys. In 1994, 2.2% of teenagers aged 16 years had taken an illicit drug in the past 30 days and 9.7% had taken at least one at some time (*Ministry of Health, 1997b*). According to the 1995 ESPAD-survey (European School Survey Report on alcohol and other drug use among 15 to 16-year-old), 12% of boys and 6% of girls had used cannabis at least once (*Hibell et al., 1997*). In the 1999 survey, the total percentage of respon-

dents reporting cannabis use had increased further to 19%. Both proportions were among the highest in the reference countries. Overall, 6% of boys and 5% of girls reported use of some drug other than cannabis, which were among the lowest percentages in the reference countries (*Hibell et al., 2000*).

Nutrition

Nutritional habits are rooted in cultural traditions and food production. Nevertheless, in recent decades changes have occurred with increasing globalization, as global food markets have opened up, transport has become more rapid and more efficient techniques for conserving food have been developed. These factors together with increased mobility and increases in purchasing power are some of the reasons why the historically different nutrition patterns in Europe appear to converge.

The historical differences in western Europe between the northern and southern dietary patterns are confirmed by data relating to the amount of food available (national food balance sheets) in each country collected since the 1960s by the Food and Agriculture Organization (FAO) of the United Nations.⁴ Typical of northern Europe is a high availability of saturated fat and a low availability of fruit and vegetables. This pattern is reversed in southern Europe.

The FAO data suggest that Slovakia follows broadly a northern pattern, with high consumption of animal fat, sugar and low consumption of fruit and vegetables. The only exception to this pattern was a relatively high consumption of cereals in Slovakia (Fig. 35).

A local study performed in 1996 reported significant differences in eating habits between social classes. Respondents with university education reported more daily use of milk

⁴ The rapid increase in international trade accelerated in 1994, when food was incorporated into international free trade agreements (the GATT Uruguay Round). This has affected the reliability of national food statistics, making international comparisons more difficult.

products, vegetable oils, fruits and vegetables, but less use of animal fats than respondents with elementary education (Rusnak et al., 1998).

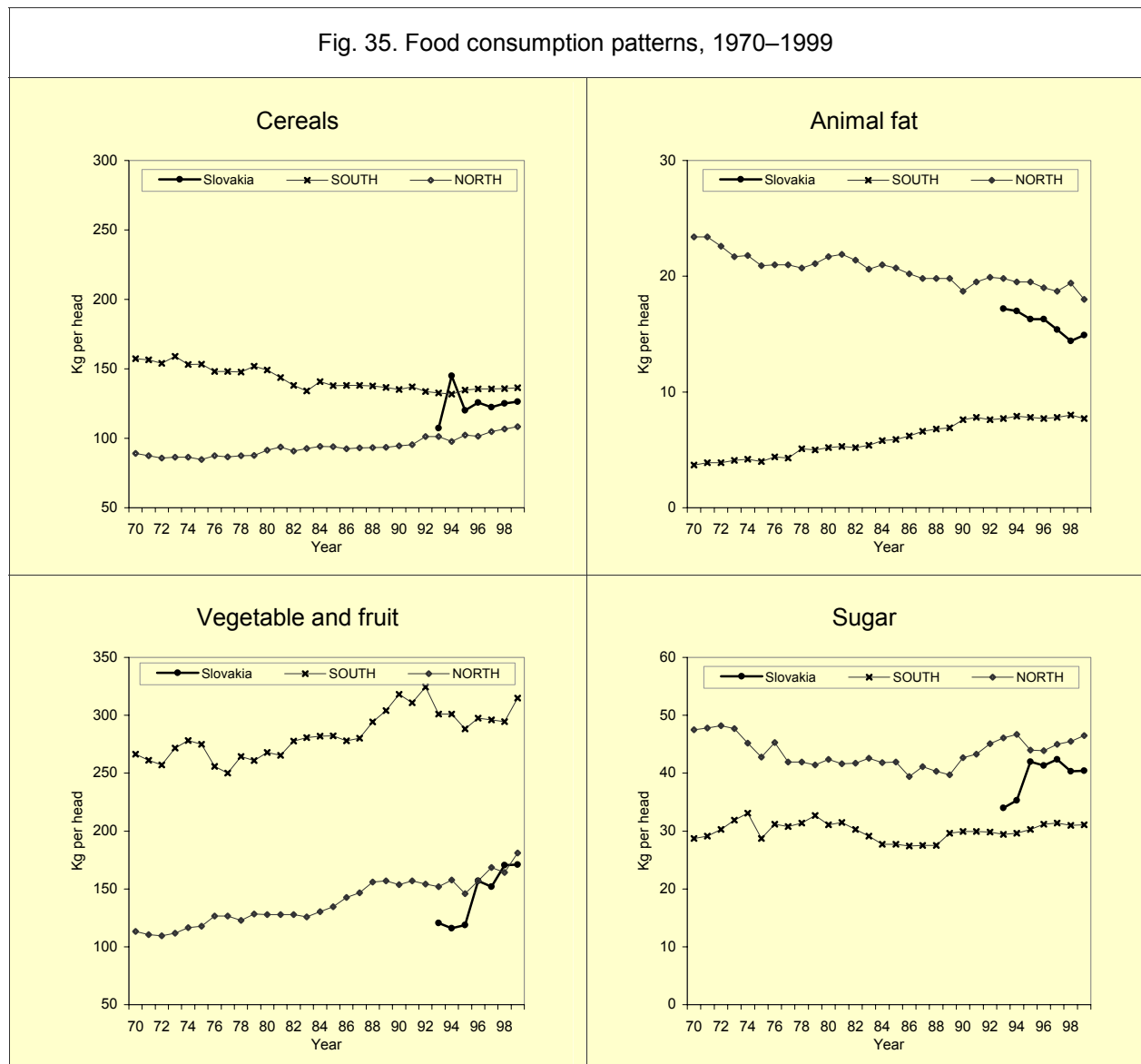
Overweight

Overweight and obesity are commonly assessed with the body mass index (BMI), calculated as weight in kilograms/(height in metres)².

According to Slovak survey data from 1993, 17% of both males and females aged 35–44 years had a BMI of 30 or more indicating obe-

sity. In the age group of 45–54, this proportion was higher for both sexes being 25% for men and 31% for women (Ministry of Health, 1997b). The 1998 CINDI survey reported that 57% of men and 51% of women aged 15–64 years in Banská Bystrica and 57% of men and 56% of women in the same age group in Trebišov had a BMI of 25 or more indicating overweight. The gender difference was reverse for obesity: 16% of men and 18% of women in Banská Bystrica and 22% of men and 28% of women in Trebišov were obese. According to

Fig. 35. Food consumption patterns, 1970–1999



South: population-weighted average for Greece, Italy, Portugal and Spain.
 North: population-weighted average for Denmark, Finland, Iceland, Norway and Sweden.

the 2000 CINDI survey in Banská Bystrica, 34% of men and 44% of women considered themselves as overweight, indicating that a significant proportion of overweight Slovaks do not consider themselves to be at risk. This is especially true among men (*Avdičová et al., 2000*).

High blood pressure

A systolic blood pressure exceeding 160 mmHg and diastolic pressure exceeding 95 mmHg are considered as levels where treatment is indicated to reduce the risk of cardiovascular disease.

According to the 1998 CINDI survey 23% of men and 13% of women aged 15–64 years in Banská Bystrica and 26% of men and 14% of women in the same age group in Trebišov had high blood pressure. When using lower thresholds (140/90 mmHg), the proportions of respondents with elevated blood pressure was double: 44% for men and 26% for women in Banská Bystrica and 52% of men and 32% of women in Trebišov (*Avdičová et al., 2000*).

High cholesterol

A cholesterol level over 250 mg/dl places the individual at significantly increased risk of cardiovascular diseases. In 1993, high cholesterol level was observed for 34% of men aged 45–54 and 30% of men aged 55–64. High proportions were also observed among women: 40% and 45%, respectively (*Ministry of Health, 1997b*). The prevalence of raised cholesterol (6.5 mmol/l or over) was also assessed among people aged 15–64 years in the 1998 CINDI survey: 20% of men and 22% of women aged 15–64 years in Banská Bystrica and 11% of men and 14% of women in the same age group in Trebišov had high cholesterol levels. The proportions of respondents exceeding the lower threshold of 5.2 mmol/l were 56% for men and 46% for women in Banská Bystrica and 43% of men and 44% of women in Trebišov (*Avdičová et al., 2000*).

ENVIRONMENT AND HEALTH

Environmental conditions affect humans through short-term and long-term exposure to noxious factors. In the long term the main objective is to promote sustainable development compatible with good health, and especially to protect the food chain (water, agricultural products) from the effects of harmful substances. Short-term environmental protection means avoiding or at least reducing potentially harmful situations, bearing in mind that people are not exposed equally to adverse environmental conditions and not all people and social groups are equally vulnerable to them. Thus, children, pregnant women, elderly people and ill people are more likely to be affected by polluted air or contaminated food. Also, specific population groups tend to experience more adverse environmental conditions. Low income, for instance, is often associated with exposure to environmental hazards at work (noxious substances and risk of accidents) and poor housing conditions (such as crowding, air pollution and noise). These situations may affect health and wellbeing either directly by causing discomfort and stress, or indirectly by giving rise to unhealthy coping behaviour such as the use of drugs or heavy drinking.

The increased recognition of the importance of the effects of the environment on health and the need for intersectoral action at all levels has been demonstrated by the development and implementation by nearly all European countries of national environment and health action plans (NEHAP). In Slovakia, the Action Plan for Environment and Health of the Population was prepared by a working group of the Ministry of Health, appointed by the Secretary of State. An intersectoral steering committee and working group elaborated the action plan. The working group reassessed the recommendations of WHO, as outlined in the Action Plan for Environment and Health in Europe, and presented the major priorities as: food safety, drinking water, clean air, occupational health and safety, decreased radiation exposure,

health-promoting housing environment. The Action Plan for Environment and Health of the Population of the Slovak Republic was approved by resolution of the Government in 1996, and a revised version has been approved by the Slovak Parliament (*Ministry of Health, 1997a, Ministry of Health of the Slovak Republic, 2001*).

Microbial foodborne diseases

The number of microbial foodborne outbreaks and the number of people who have suffered from these diseases can be used to indicate the quality of food and its production, even though some of the observed variation can be caused by differences in definitions and data-collection methods.

According to the most recent data, the variation between the reference countries is large (from less than one person affected by microbial foodborne outbreaks per 100 000 population in Estonia to 585 per 100 000 in the Czech Republic in 1999). In Slovakia, the number of victims from foodborne outbreaks increased substantially from 154 per 100 000 in 1990 to 434 per 100 000 in 1998, but decreased to 354 per 100 000 in 1999. Despite this improvement, the Slovak rate is one of the highest among the reference countries. Local statistics give more detailed information on the outbreaks: the incidence of shigellosis has declined to below 50 cases per 100 000 population, but the incidence of salmonellosis has increased from 100 to 320 per 100 000 population since 1989 (*Ministry of Health, 1997b*). More salmonellosis has been reported from the west of the country, while shigellosis is more common in the east (*Ministry of Health, 1997a*).

Air quality, water quality and waste

The main environmental problems in Slovakia are air pollution in industrial areas and larger cities, and water and food chain pollution by

nitrites, pesticides and heavy metals in predominantly agricultural areas (*Ministry of Health of the Slovak Republic, 2001*).

Slovakia reported lower emissions per person of ammonia, carbon monoxide, carbon dioxide and methane than the reference countries in general or the EU in 1995. For sulphur dioxide, Slovak emissions were lower than the reference country average, but higher than EU emissions. Emissions of nitrogen dioxide equalled the EU level and were higher than the average for the reference countries (*United Nations Economic Commission for Europe, 1999*).

The quality of drinking water has improved in Slovakia, but some 5% of the tested water samples still do not meet Slovak standards regarding microbial and chemical contamination (mainly iron, magnesium and nitrites). The limit value of chlorine was not maintained in 61% of tested samples, but toxic metals were not above the given limits. Only 8 of 62 recreational water surfaces met the state standards of water quality (*Ministry of Health, 1997b*). There are 16 districts that experience shortages of drinking water (*Ministry of Health of the Slovak Republic, 2001*).

The total amount of municipal waste generated fell by 15% between 1985 and 1995. In the latter year, there were 301 kilograms of municipal waste per person, equalling the average of the five reference countries that provided data (*United Nations Economic Commission for Europe, 1999*).

Table 2. Emission of selected air pollutants in kg per person in Slovakia, in the reference countries and in the EU in 1995			
	Slovakia	Reference countries	EU countries
Sulphur dioxide	44.4	68.3	31.5
Nitrogen dioxide	32.3	25.3	32.4
Ammonia	8.8	10.7	9.4
Carbon monoxide	76.8	99.1	119.3
Carbon dioxide	7455	7555	8499
Methane	54.2	56.5	61.4

Housing

The average estimated size of dwellings in Slovakia (average 45 m²) is below the average of the reference countries (54 m²) and well below the EU average (89 m²). Half of the Slovak dwellings were owner-occupied in 1995. This was one of the lowest percentages among the reference countries and only few EU countries have lower figures (*United Nations Economic Commission for Europe, 1999*).

One aspect of the quality of housing is the proportion of population with connection to water and with access to hygienic sewage disposal. In 1991, 93% of Slovaks had a water connection, one of the highest proportions in the reference countries (*United Nations Economic Commission for Europe, 1999*). No data on the access to hygienic sewage disposal are available.

Whereas housing conditions, such as quality, location and infrastructure, affect people's health and wellbeing, lack of housing is even more crucial. Homeless people are more vulnerable to health problems, such as malnutrition, infectious diseases and psychosocial stress caused by solitude and insecurity, than the rest of the population. Whereas data on the quality of housing (albeit not always comparable) are increasingly becoming available, reliable data on homelessness are lacking. The Slovak authorities report that the phenomena of homeless is new for their country and that the numbers affected have increased in the 1990s (*Ministry of Health, 1997b*).

Occupational health and safety

Exposure to health hazards at the workplace is still an important cause of ill health and death. However, information about exposure in terms of the type, frequency and intensity of hazards and the number of workplaces or people affected is not always available and comparable data are scarce.

The rates of injuries from work-related accidents per 100 000 population varied substantially among the reference countries, which suggests that the figures may describe different phenomena in the countries. Nevertheless, the number of such injuries has declined in all

reference countries by an average of 51%, from 592 to 292 per 100 000 population between 1985 and 1999. The decline in Slovakia was slightly larger, in total 57%.

The data on deaths from work-related accidents may be more comparable than data on injuries. The number of deaths has decreased in all reference countries indicating improvements in occupational safety. Between 1985 and 1999, the number of deaths in work-related accidents decreased from 3.8 to 1.8 per 100 000 population in the reference countries (a decrease of 53%). In 1999, there were more work-related accidental deaths in Slovakia (2.1 per 100 000) than in the reference countries or in the EU (1.6 per 100 000, a decrease of 28% since 1985). This does, however, represent a decrease in Slovakia of 45% since 1985.

Overall, 9–10% of the working population are exposed to risk factors at work (*Ministry of Health, 1997a*). The largest occupational risk group, representing 71% of workers exposed to any risk, are those exposed to average daily noise levels of 85 dBA or more, even though their number has decreased from 132 500 in 1990 to 86 700 in 1996. The numbers exposed to hazardous dusts also fell from 52 600 to 33 700 during the same period (*Ministry of Health, 1997b*). Other major occupational risk groups are those exposed to chemical substances, vibrations, ionizing radiation, carcinogens and infectious agents (*Ministry of Health, 1997a*).

HEALTH CARE SYSTEM⁵

The health care system in Slovakia has Bismarckian traditions dating back to the Austro-Hungarian Empire. In the 1920s, employees were provided with insurance coverage. Step-by-step, the Czechoslovak health care system was augmented by various forms of insurance and by charity.

In 1948, substantial political changes took place in the country, when the political system was changed to be based on communist ideological principles, and the country was linked politically and economically to the former Soviet Union. Almost all property was nationalised, including the institutions of the health care system. After the Act on National Insurance came into force, the different types of insurance were unified, and mandatory insurance – including family members and self-employed – was introduced.

A newly designed System of Unified State Health Care was adopted in January 1952. This centralist system was reasonably effective in dealing with post-war problems, and in the

beginning of 1960s, the health status in Czechoslovakia was internationally good. In 1966, the insurance-based insurance financing of health care was replaced with a tax-financed system.

Health care reform

From the late 1960s, the Czechoslovak health care system was not able to respond to new health problems, for example those caused by lifestyle and environmental factors, and both the health care system and health indicators stagnated until the late 1980s. The health care delivery system was not affected by the temporary political reforms of 1968, when the Federation of Czech and Slovak Republics were proclaimed.

The main objective of the health care reforms in Slovakia has been to improve the health status of the population. This was to be ensured by radical changes in structure, management and financing of health care, pursuing the following goals:

	Slovakia	Reference countries	Minimum	Maximum
Hospital beds per 100 000 population	810	716	555	938
Physicians per 100 000 population	322	265	191	394
Hospital admissions per 100 population	19.4	18.1	13.8 ^a	25.4
Average length of hospital stay in days	10.4	10.3	9.0	11.9
Total health care expenditure as a percentage of GDP	7.2^a	5.6	2.6 ^a	7.7
^a 1998				

⁵ This section is largely based on *Health care systems in transition. Slovakia (WHO Regional Office for Europe, 2000c)*.

- to remove the state monopoly and to achieve a balance between private and public health care providers,
- to establish economic relationships between the health care provider and the patient,
- to improve the income of health care providers,
- to remove the dependence on one source of financing and to renew the interdependence of the health and economic management,
- to improve curative and preventive care and its material and technical basis,
- to renew citizens' positive attitude towards their own health,
- to introduce free choice of health care provider and
- to improve the social status of the health care professionals in order to ensure their high morale and their responsibilities for health care provision.

These main strategies have remained unchanged despite changing governments. Even though most of the initial reforms have been implemented, many goals have not been achieved, despite ten years of reforms due to frequent changes and lack of resources.

Health care facilities have still an overcapacity of beds and staff in relation to available funds. The reduction of beds had only a small impact on costs, since the number of staff hardly changed. The attempt to introduce a fee-for-service system for inpatient facilities also failed, since the reform was not well planned. One of the major problems with the health care reforms has been the fear of losing political power in the decentralisation process.

Private health care has been possible since 1991. The privatisation of all general practitioners was supposed to bring changes in the performance of services. For several reasons – such as insufficient preparedness of the public to make their own choices in primary care and the information deficiencies in financing care – the assumption that the quality of care would automatically increase after introducing market conditions did not materialise.

There are major problems with the Slovak health care system, despite recent reforms. The current regulation of the health insurance system in the case of an occupational accident is not clear and straightforward. The same is true for long-term care and for the care of elderly people. Furthermore, the alliance of health insurance companies did not initially have an official mandate to negotiate with the government. The salaries and incomes of health care providers have remained low, and there is no appropriate reimbursement system that would motivate health care professionals to provide services more efficiently.

Legislation in the health care sector has suffered from unclear formulation of health policy and its goals. The governmental and non-governmental entities do not yet collaborate in the solution of problems. In order to reach high standards of health, effective managerial and financial control mechanisms are needed to implement legislation (*Rusnak et al., 1998, Vogler and Habl, 1999*).

Organizational structure

In the 1980s and early 1990s, the highest Slovak organizational structures were three regional institutes of health, each covering at least one regional hospital with polyclinic, several district institutes of health and some national institutes aimed at specialized care with country-wide coverage. These were managed and financed by the regional national committees. The Ministry of Health ran and directly financed some national institutes for specialized care and research. Funding was based on taxation, but there was no clear, systematic resource allocation.

By 1992, the three-tier administration was completely abolished. All national health institutes were broken down into legally autonomous units. The main reason for this reform was to reduce the number of administrative workers. In reality, however, their number increased markedly as each health care organization had to carry out the tasks required by national regulations. At this stage, however, no power was transferred to the local level of public administration, and cooperation with the

local administrative bodies and health care facilities needed to be started. This caused a stricter centralisation of powers and impeded development considerably, since major investments were needed to train managers.

In 1996, further organisational reform resulted from the radical revision of the administrative and territorial divisions in Slovakia. This established regional state physicians and district state physicians, controlling the operation of non-state health care providers.

Health care finance and expenditure

In 1992, health care financing switched from a tax-based system to one based on health insurance. The system is based on solidarity, universal coverage and accessibility and plurality, and has similarities with both the former state-run Czechoslovak one and the systems of neighbouring Western countries (e.g. the Federal Republic of Germany). General taxation was replaced by three categories of mandatory insurance – health, sickness and social insurance – and by a system of earmarked taxes. Until 1993, the Ministry of Health continued to directly finance, regulate and administer all health facilities. Also a process of privatization was started. By 1995, all public pharmacies became private, and primary health care providers became private the following year. The privatization of specialist outpatient care has also been permitted.

In 1994, the financing of the National Insurance Company was separated from the state budget, and the company became independent. In January 1995, an act introduced the principle of plurality into the Health Insurance Plan, and the creation of insurance companies became easier, with five operating since 1999.

According to the constitution of the Slovak Republic everyone has the right to health protection and free health care services and medical aids as defined by law. All permanent residents of Slovakia are covered, and only those who are abroad for more than twelve months and who are insured in their country of temporary residence are excluded. Excluding economically inactive citizens (such as unemployed, retired, students, children, military ser-

vants and handicapped), whose premiums are paid by the State, everyone is obliged to pay health insurance contributions. In 1999, self-employed persons paid 13.7% of their assessment basis, while employees paid 3.7% of their assessment basis and employers 10% of the sum of all employees' assessment bases. There is an upper limit on individuals' contributions and lower contributions for disabled workers and the unemployed. Two of them, including the largest one called General Health Insurance Company, are guaranteed by the State.

The health insurance covers medical and dental services, inpatient care in the hospitals and the sanatoriums, pharmaceuticals and medical aid (either totally or partly), and some travel and transportation costs. Some care, such as sterilisation, acupuncture, induced abortion for other than medical reasons and psychotherapy, are not covered. The insurance scheme also includes compensation for maternity, care and sickness leave as well as for occupational diseases and accidents (*Vogler and Habl, 1999*).

The state still plays an important role in the system, for example in the administration of the health care system and in guaranteeing the health insurance system. The objective of introducing a number of companies was to establish and develop a competitive environment and to democratise the health care system. However, it did not lead to its aims. In addition, several insurance companies find themselves in financial difficulties, not exclusively caused by poor management, but also by decisions of the central public administration. This led to a reduction in the number of insurance companies from twelve in 1995 to six three years later. No further fusion has been planned, but they may become necessary, if circumstances change.

International comparisons of health care expenditure are extremely difficult because the definitions underlying health statistics as well as accounting practices vary from one country to another. The following data on health care expenditure should therefore be used with caution, as the boundaries of what constitutes health care can vary substantially between countries.

According to data from 1998 the proportion of health expenditure of total GDP was below the EU average of 8.6% in all reference countries. Slovakia along with the Czech Republic (7.2%) reported the second highest proportion after Slovenia (7.7%) (Fig. 36).

Data on health care expenditure adjusted in purchase power parity (PPP) from 1998 showed that the average of reference countries (US \$480) is one third of the EU average (US \$1848). Slovakia, at US \$693 in 1998, had the fourth highest expenditure after Slovenia, the Czech Republic and Hungary.

Health expenditure has been growing in Slovakia in the 1990s, but the composition of financial resources has remained unfavourable. In 1996, 65% of the costs were covered by insurance, 33% came from the state and only 2% came from other, mainly private sources (*Rusnak et al., 1998*).

Primary health care

Primary health care includes all first contact ambulatory care including home visits and preventive care. The four types of first-contact doctors are general practitioners, paediatricians (for children), ambulatory gynaecologists and dentists. Almost all are now working as private practitioners. Despite the gatekeeping role of primary care doctors, patients may self refer to

an ophthalmologist or in some cases to psychiatrists, geneticists and sexually transmitted diseases specialists. In addition, those with chronic illnesses and who have registered in a specialist's clinic also have direct access to relevant specialists.

People have a right to change their primary health care physician every six months, but this choice is often related to the place of residence or employment. The geographical distribution of outpatient health care facilities is unequal: there are three times more outpatient physician posts in cities compared to small towns., There are, however, only small differences in accessibility or quality of care between urban and rural areas.

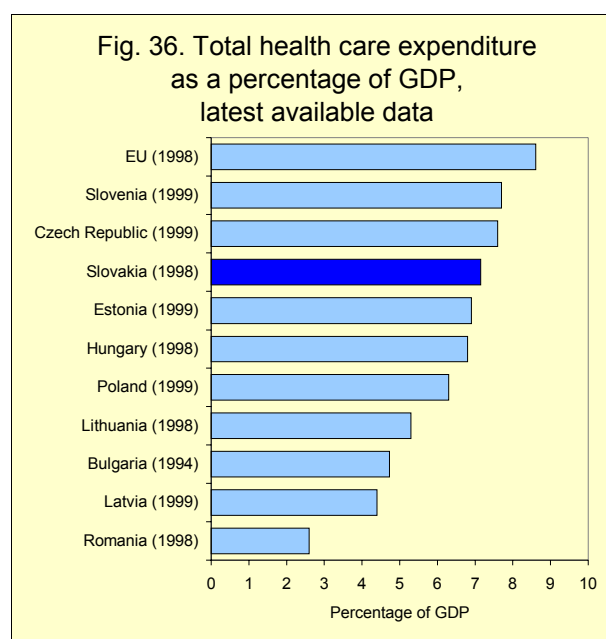
In the mid-1990s, there were some 1700 outpatient health care facilities with over 8600 physician post. Physicians in primary health care usually work in single-handed practices and are almost always private, i.e. they are independent contractors with health insurance companies. They mostly rent rooms and equipment from polyclinics. Some health centres have been sold to groups of doctors.

High numbers of referrals from primary health care physicians, the restricted scope of services provided, low motivation to broaden the range of health care services and the lack of financial motivation to health education have been identified as the main problems of the current primary health care system (*Ministry of Health, 1997b*).

Secondary and tertiary care

Secondary health care is provided in polyclinics, hospitals and other health facilities. In the mid-1990s, there were more than one hundred hospitals, specialized institutes and maternity homes, but by 1997 there were 89.

Outpatient secondary health care is provided in polyclinics. It is intended to privatize the free-standing polyclinics in the future, when an appropriate reimbursement system is functioning. There are, however, no plans to privatize outpatient care in polyclinics attached to state hospitals. Outpatient care and diagnosis has been paid for on the basis of complexity, but there have been plans to review this practice.



Inpatient secondary care is mainly provided in hospitals. Primary health care physicians or specialist mainly refer patients to the hospitals. Until 1997, the hospitals were divided into five types. The first type includes local hospitals which have an incomplete range of services; the second type is also local hospital, but with four basic wards (internal medicine, surgery, paediatrics and gynaecology/obstetrics). The third type includes district hospitals with various basic and specialized departments, the fourth type regional hospitals and the fifth type national specialized institutes, such as the National Cancer Institute, the Institute of Cardiovascular Diseases and the Faculty Hospitals. Tertiary care is provided in hospitals of the third, fourth and fifth type. The current system divides hospitals into three types of hospitals and teaching hospitals.

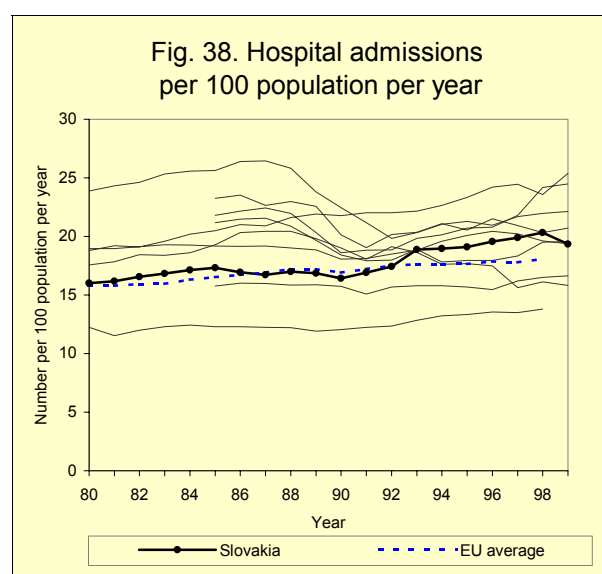
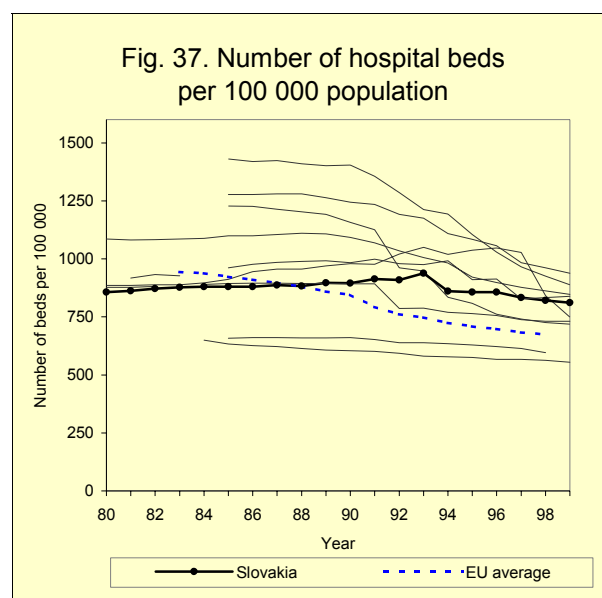
Hospitals are legally autonomous bodies, mainly financed through contracts with insurers. These contracts include the price and volume of health care provision, and the payment is based on daily rates, which differ among the different hospital types. Legislation and the Ministry of Health regulate contract negotiations. The insurance companies have limited the volume of health care services provided since 1997.

Most hospitals will not be privatized, but ownership will pass to local municipalities at their request. The current problems for hospitals are caused by the high number of hospital beds (especially for long-term care), lack of resources and insufficient number of facilities providing tertiary care. The provision of inpatient care particularly suffers from insufficient finance, oversupply and inappropriately structured networks of health care facilities. This has led to hospital equipment becoming obsolete and hospitals have difficulty in paying for drugs and medical supplies. Cooperation between primary health care and hospitals has weakened, causing fragmentation of health care provision.

The number of hospital beds per 100 000 population has decreased in almost all reference countries since 1985. Slovakia had one of the smallest decreases (-8%), and the Slovak

figure (810/100 000 in 1999) was above the average of the reference countries (716/100 000 in 1999), and also much higher than the EU average (674/100 000 in 1998) (Fig. 37).

Numbers of inpatient admissions also vary significantly among the reference countries from 13.8 to 25.4 admissions per 100 population in 1999. Since 1990, the Slovak number has increased from 16.4 to 19.4 admissions, and the most recent figure was higher than the average of the reference countries (18.1/100 in 1999) and the EU average (18.1/100 in 1998) (Fig. 38).



The average length of hospital stay has decreased in all reference countries since the 1980s. In 1985, the Slovak average was 14.9 days, falling to 10.4 by 1999. This equalled the average of reference countries (10.3 days in 1999) and of the EU (10.2 days in 1997) (Fig. 39).

There are large differences in the reported number of outpatient contacts among the reference countries with a variation from 4.9 to 16.4 annual contacts per person in 1999. Since the late 1980s, the Slovak rate decreased steadily until 1994. It is thought that figures for 1995 and 1996 were underestimates, since visits in the growing private sector were not included. Following changes in data collection, the average number of outpatient contacts increased to 13.5 in 1997 and to 16.4 in 1999, similar to the levels of the late 1980s. This was also the highest figure among the reference countries, double the average (8.0 contacts in 1999).

Pharmaceuticals and pharmacies

The drug market has changed substantially since 1989. Previously, domestic production accounted for about 80% of drug consumption, but this proportion had fallen to less than 20% by the mid-1990s.

Health care facilities and inhabitants are well supplied with drugs and medical aids through more than 250 wholesale distributors and 800 pharmacies. Nearly all of the public

pharmacies have been privatized, but hospital pharmacies remain state-owned. The rapid privatisation between 1993 and 1995 was problematic: the inspection and regulation of pharmacies was inadequate, and the distribution of services became uneven. The situation improved after more strict legislation was passed in 1997.

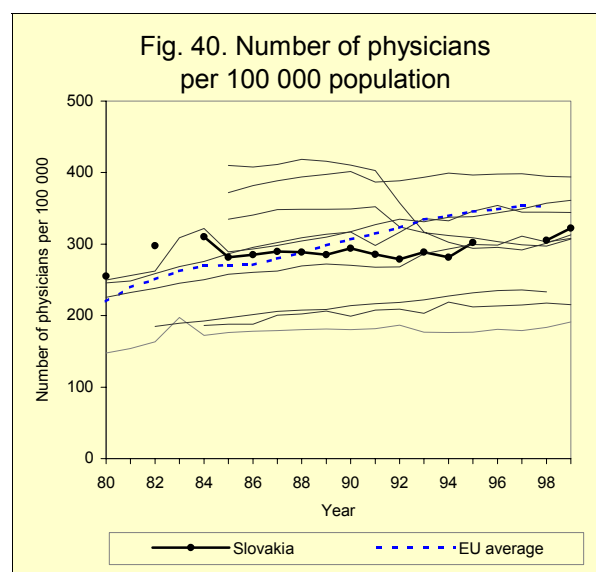
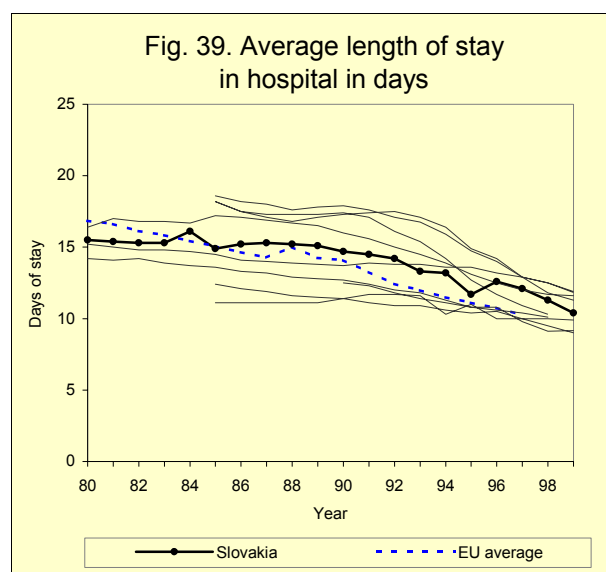
Pharmaceutical consumption in hospitals remains high, despite attempts to reduce it.

Medications are divided into three categories. In the first category there are some two thousand essential drugs, which are fully funded by health insurance. The second category (including many of the same drugs produced by different manufacturers) is partly reimbursed. Those in the third category are mainly vitamins and minerals and are paid for out of pocket. There are plans to reduce the number of drugs in the first category (*WHO Regional Office for Europe, 2000c, Vogler and Habl, 1999*).

Human resources

The number of physicians in Slovakia (322/100 000 population in 1999) was lower than the EU average (353/100 00 in 1998), but above the average of the reference countries (265/100 000 in 1999) (Fig. 40).

Since 1985, the number of Slovak dentists has remained constant. In 1999, Slovakia had 45.1 dentists per 100 000 population, near the



average of the reference countries (45.3/100 000 in 1999) and the EU average (68.6/100 000 in 1998).

Although the number of Slovak pharmacists has fallen to 38.1 per 100 000 population in 1999, it remains above the average of the reference countries (35.9/100 000 in 1999), but still substantially lower than the EU average (81.7/100 000 in 1999).

The number of nurses in Slovakia – 723 per 100 000 population in 1999 – was one of the highest among the reference countries. The number of midwives was higher in almost all reference countries (average 48.1/100 000 in 1999) than in the EU (average 19.5/100 000 in 1997). In Slovakia the number was between these levels (40.8/100 000 in 1999).

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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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