

HIGHLIGHTS ON HEALTH IN HUNGARY



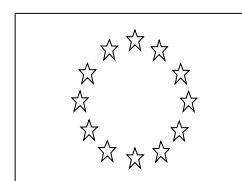
Country Highlights give an overview of the health and health-related situation in a given country and compare, where possible, its position in relation with other countries in the region. The Highlights have been developed in collaboration with Member States for operational purposes and do not constitute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

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AN OVERVIEW

The natural population growth in Hungary fell below zero in 1981, much earlier than in any of the reference countries.¹ This was caused by a decline in the birth rate and relatively high mortality rates.

Hungary's life expectancy at birth was among the lowest in the reference countries between 1970 and 1998. Life expectancy among males generally decreased from 1970 to 1993 and then rose by 1997 to the same level as in 1970. Female life expectancy increased steadily from 1970 to 1988, stagnated until 1993, and rose thereafter. For both sexes, life expectancy in Hungary was about 2 years less than the EU average in 1970. By 1998, this gap had widened to 6 years for women and 8 years for men. The mortality rates among men aged 35–65 years were almost as high in the mid-1990s as they were in the early 1920s.

In the 1970s and 1980s, the standardized death rate (SDR) for cardiovascular diseases in the age group 0–64 years was among the highest in the reference countries, remaining static until the early 1990s. Since then the rates for both sexes have declined and are approaching the average for the reference countries.

The SDR for cancer in the age group 0–64 years was close to the EU average in 1970, but rose rapidly to be the highest among the reference countries. During the 1990s, Hungary's rate has continued to rise, whereas the rates in most of the other reference countries have fallen. In 1998, Hungary had by far the highest cancer mortality among people 0–64 years old of any country in the WHO European Region.

Hungary's SDR for external causes for all ages is the highest of the reference countries excluding Estonia, Latvia and Lithuania, al-

though there has been a slight decrease in the 1990s. Hungary had the highest SDR for suicide in the 1970s and the 1980s, but the rate has decreased markedly since the mid-1980s. Despite this improvement, the rate is still the highest among the reference countries excluding Estonia, Latvia and Lithuania.

Among causes of mortality other than those mentioned above, the SDR for diseases of the digestive system for all ages is the highest among the reference countries, as is its main component – mortality from chronic liver disease and cirrhosis.

The incidence of AIDS is higher than the median of the reference countries but much lower than the EU average. The incidence rates of syphilis, mumps and pertussis are among the lowest in the reference countries.

The infant mortality rate has shown an impressive decrease. From being among the highest of the reference countries in the mid-1980s, it has decreased to below the average for the reference countries in 1998.

The prevalence of smoking is the highest among the reference countries, with smoking rates among teenagers being particularly high. The SDR for lung cancer in the age group 0–64 years is the highest in the WHO European Region. The dramatic increase in Hungary's SDR is of particular concern, since it was below the EU average in the 1970s but twice the EU average by 1998.

Even though the consumption of alcohol has decreased in the 1990s, the annual consumption per person of 9.5 litres in 1996 equals the EU average and is one of the highest among the reference countries. The high consumption of alcohol is also reflected in the trend in the SDR for chronic liver disease and cirrhosis. This was well below the averages of the reference countries and the EU in the early 1970s. By 1998 the rate had increased to be the highest among the reference countries, more than double the average for the reference countries and more than three times the EU average.

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

The major phases in the structural reorganization of the health care system during the 1990s have included the establishment of a national health insurance fund, decentralized financing and delivery of health services and the possibility for family physicians to be funded by public and private sources.

The number of hospital beds per 100 000 population is higher in Hungary than in the reference countries or in the EU, as is the number of physicians per 100 000 population.

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 the WHO European Region as one means of assessing the comparative strengths and weaknesses, 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 Hungary, 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 been taken from one common international source (such as WHO, EUROSTAT, the Organisation for Economic Co-operation and Development, or the International Labour Office), whenever possible. Nevertheless, 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. 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

In October 1989 the Hungarian National Assembly approved a constitutional amendment abolishing the People's Republic and established Hungary as a democratic state. In 1990 a multi-party democracy came into being.

The single-chamber Parliament has 386 members, made up of 176 individual constituencies, 152 allotted by proportional representation from county party lists and 58 from a national list. The Parliament is elected for a 4-year term. The head of the state is the President, elected for 5-year terms by the Parliament.

Hungary has 19 counties and the capital, Budapest, which has county status. Mayors and local councils are elected.

Hungary is a member of the United Nations, the Council of Europe, the Organisation for Economic Co-operation and Development and the Central European Initiative. It is an associate member of the European Union and the Western European Union. Hungary applied to join the European Union in April 1994. Hungary became a full member of the North Atlantic Treaty Organization in March 1999.

Table 1. Hungary and the reference countries (1999 or latest available)

	Hungary	Reference countries		
Capital	Budapest	Average/total	Minimum	Maximum
Population	10 067 500	104 705 300	1 442 400	38 741 000
Population 0–14 years (%)	17.2	19.5	16.1	22.2 ^c
Population 15–64 years (%)	68.2	68.0	66.5 ^c	74.2
Population ≥ 65 years (%)	14.6	12.5	9.6	16.0
Area in km ²	93 000	1 077 966	20 000	313 000
Density per km ²	108	97	32	130
Urban population (%)	64	64	50	75
Births per 1000 population	9.4	10.1	8.0	11.1 ^b
Deaths per 1000 population	14.2	11.3	9.6	14.2
Natural growth rate per 1000 population	-4.8	-1.1	-5.5	1.1 ^b
GDP per person in US \$ PPP	10 968	8 156	4 809 ^a	14 293 ^a
GDP: gross domestic product; PPP: purchasing power parity ^a 1998, ^b 1997, ^c 1996				

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.

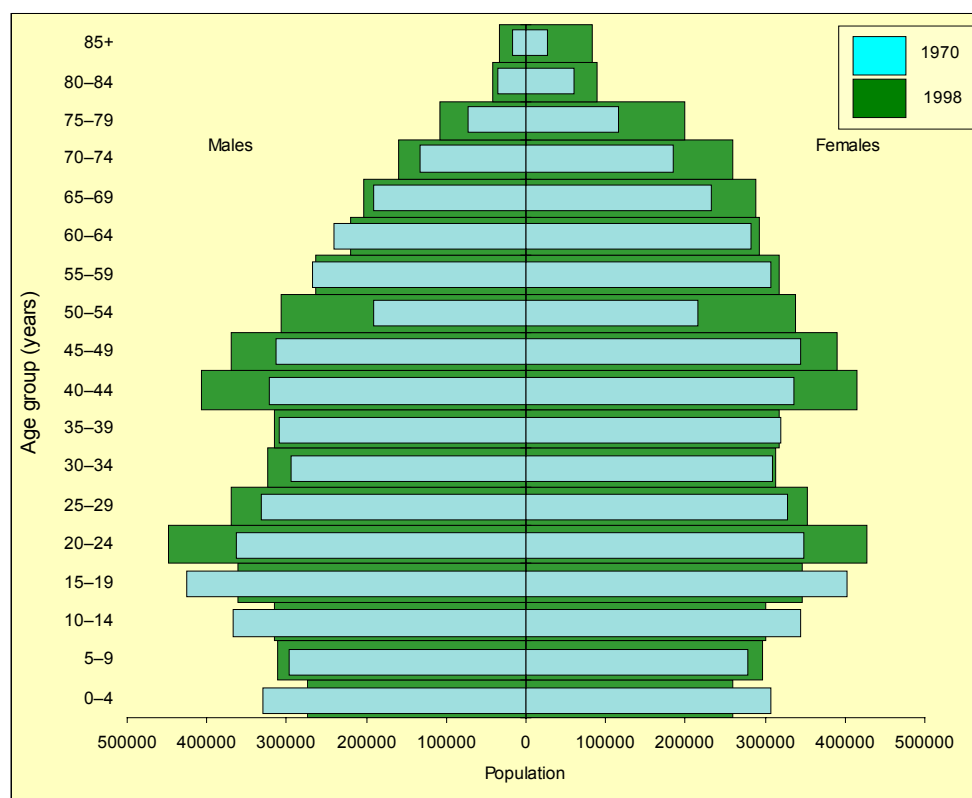
In Hungary the age groups 0–19 years (especially 10–14 years) and 30–39 years were proportionally smaller in 1998 than in the reference countries on average. The older cohorts (age groups 50–59 years and 65 years or more) were larger.

The natural growth rate has been below the EU average since 1979, and Hungary was the first

of the reference countries to have a negative rate (since 1981). In 1998 the Hungarian natural growth rate (–4.3 per 1000 population) was one of the lowest among the reference countries, well below the average for the reference countries (–1.4 per 1000) and the EU average (+0.8 per 1000) (Fig. 2). The crude birth rate has equalled the average for the reference countries, so the low natural growth has been caused by the high crude death rate. Mortality has constantly been the highest among the reference countries.

The fertility rate has fallen under the replacement level in Hungary (1.3 in 1998), similar to the other reference countries (range from 1.1 to 1.5). This is significantly below the average number of children desired (2.1 among young married couples) as estimated according to a national representative survey performed in 1991 (*Hungarian Central Statistical Office, 1996a*).

Fig. 1. Age pyramid, 1970 and 1998



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 the non-ethnic minority population. Illegal immigrants, in particular, can find it difficult to obtain health care, and following up any care given can be problematic.

The main ethnic minorities in Hungary in 1995 were Slovaks (8%), Romanians (7%), Germans (4%), Gypsies (4%) and Serbs (2%) (Turner, 2000). Survey data from the early 1990s estimate the number of Gypsies to be between 434 000 and 482 000 instead of the 143 000 given by the census data. The local Gypsy organizations have given even higher numbers, varying between 700 000 and 800 000 (Council of Europe, 1998).

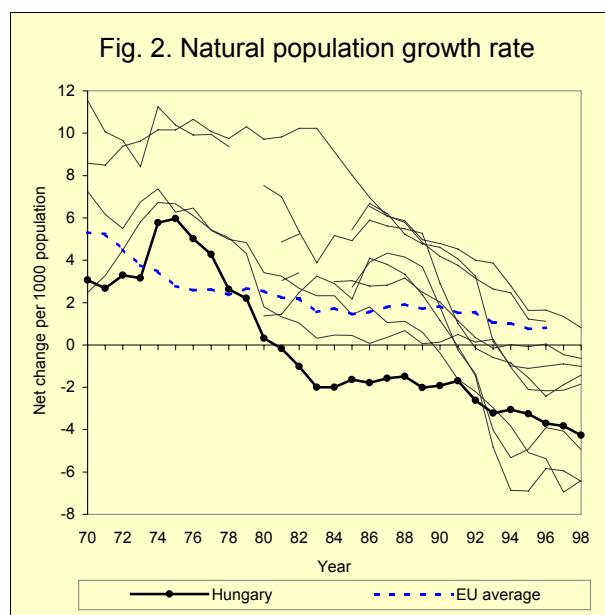
Between 1988 and 1996, about 175 000 foreigners arrived in Hungary. The largest number – 37 000 – arrived in 1990, but immigration stabilized to about 10 000 per year in the mid-1990s. The largest groups of immigrants

come from Romania, from the former Yugoslavia and from Asia. The net effect of migration on population size cannot be assessed, as no data are available on the number of Hungarian citizens leaving the country or returning to the country (Council of Europe, 1997). About 148 000 non-Hungarian citizens had lived in Hungary for more than 1 year in early 1998 (Council of Europe, 1999). However, many people of Hungarian ethnicity reside in other countries: for example, in Romania (2 million), in the United States (0.7 million), in Slovakia (0.6 million), in Vojvodina, Federal Republic of Yugoslavia (0.4 million), in Israel (0.22 million), in Ukraine (0.16 million) and in Canada (0.14 million) (Turner, 2000).

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 Hungary, enrolment in secondary education has risen since comparable figures became available (1980). By 1996, the net enrolment ratio for secondary education was the second highest among the reference countries, at 86%, compared with an average of 79% (UNESCO, 1999).



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).

The Hungarian GDP adjusted for purchasing power parity (PPP) was US \$5920 in 1988. By 1997, it had increased to US \$10 968, the third highest among the reference countries after Slovenia and the Czech Republic, but still only 49% of the EU average. National statistics show that real wages in Hungary fell by 26% between 1989 and 1996, and the inequality in the distribution of earnings has increased since 1989 (*United Nations Economic Commission for Europe, 1999*). Income inequalities were confirmed by the results of the Hungarian Household Panel Survey 1992–1996, which reported growing inequality and less favourable income distribution, especially among families with children (*Galasi, 1998*).

Hungary has already moved to the pattern of post-industrial economies with services as the most important sector of the economy. In

1995, 8% of employed people were working in agriculture, 31% in industry and 61% in services (*Turner, 2000*). According to the preliminary figures for 1997, 7% of the GDP came from agriculture, 27% from industry and 66% from services (*United Nations Economic Commission for Europe, 1999*).

The official unemployment rate is declining and was 9.6% in 1998, near the average for the reference countries (10.0%) but lower than the EU average (11.1% in 1997). Unemployment in most countries in central and eastern Europe may be higher than these official rates.

Inflation has caused severe problems for some countries in central and eastern Europe, but in Hungary the annual inflation rate has been relatively moderate, varying from 35% to 10% between 1991 and 1999.

HEALTH STATUS

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

- In general, Hungary's position relative to the other reference countries was poor both in 1985 and in 1998.
- Although the relative position for most indicators appears to have improved, this has been largely due to a deterioration in the health of certain other reference countries (especially the Baltic states), rather than any marked improvement in health in Hungary.
- Hungary has by far the highest premature mortality rates among the reference countries for lung and breast cancers, as well as cancers overall, and its relative position has also worsened on these indicators. This situation is unlikely to improve in the medium term for lung cancer and all cancers, as Hungarian mortality rates from these causes are still increasing (see pages 14 and 23), as are adult female and teenage smoking rates (see page 22).
- The difference between male and female life expectancy has increased over this period, and this is reflected in the deterioration in Hungary's position relative to the other reference countries.

Fig. 3. Hungary relative to reference countries in 1985 ● and latest available year (1996–1998) ☺

POSITION	BEST					WORST					Hungary	Reference country average	Minimum ^a	Maximum ^b
	1	2	3	4	5	6	7	8	9	10				
Life expectancy at birth (years)							☺			●	70.7	71.8	69.1	75.4
Male versus female difference in life expectancy at birth (years)					●		☹				9.1	8.2	7.0	11.1
Infant mortality rate per 1000 live births						☺				●	9.7	12.9	5.2	20.5
Maternal mortality rate from all causes per 100 000 live births ^c						☺					12.9	17.1	4.4	41.0
SDR ^d from cardiovascular diseases, age 0–64 years						☺				●	153.3	140.6	66.8	187.0
SDR from ischaemic heart disease, age 0–64 years							☺				74.4	59.6	28.2	100.3
SDR from cerebrovascular disease, age 0–64 years							☺			●	37.2	33.8	17.9	56.6
SDR from cancer, age 0–64 years									●	☹	146.1	109.9	92.9	146.1
SDR from trachea/bronchus/lung cancer, age 0–64 years									●	☹	42.7	27.9	20.1	42.7
SDR from cancer of the cervix among females aged 0–64 years					☺				●		5.6	7.5	3.7	11.9
SDR from breast cancer among females aged 0–64 years										☺	20.0	16.0	13.0	20.0
SDR from external causes of injury and poisoning							☺			●	92.5	77.7	56.7	159.7
SDR from motor vehicle traffic accidents			☺					●			13.8	15.0	7.0	27.0
SDR from suicide and self-inflicted injury							☺			●	29.9	17.6	12.5	42.4
☺	Position improved		8		(indicators)									
☺	Position unchanged		3		(indicators)									
☹	Position deteriorated		3		(indicators)									
											^a Lowest value observed among ten reference countries			
											^b Highest value observed among ten reference countries			
											^c Three-year averages			
											^d SDR: standardized death rate			

Life expectancy

Life expectancy at birth was 66.2 years for men and 75.3 years for women in 1998, both well below the average for the reference countries. Except for a brief period between 1984 and 1988, when levels rose almost to the level in 1970, male life expectancy fell between 1970 and 1994. It increased from 1993 to 1997 and declined in 1998. Life expectancy among women increased steadily from 1970 to 1988 and then stagnated until 1993. It then increased steadily until 1997, levelling off in 1998. Because life expectancy in Hungary has not improved, life expectancy was about 2 years less than the EU average among both males and females in 1970, and this increased to almost 6 years for women and about 8 years for men in 1998 (Fig. 4–6).

As in most of the reference countries, the gender difference in life expectancy at birth has increased in Hungary, from 8.1 years more for females in 1985 to 9.2 years in 1998. This difference was greater than the average difference in the reference countries in 1998 (8.4 years) and more than 2.5 years greater than the EU average in 1998 (6.6 years).

Life expectancy differs substantially between urban and rural communities for men (Budapest 67.6 years, other cities 66.8 years and rural area 64.6 years), but not for women (75.2, 75.1 and 74.2, respectively). There is also marked geographical variation, larger for men (variation from 67.3 years in Western Transdanubia to 65.2 years in Northern Hungary) than for women (variation from 75.4 years in Southern Transdanubia to 74.5 years in the Northern Great Plain) (*Hungarian Central Statistical Office, 1998a*).

Among people over 30 years old, the current probability of dying is higher than in the mid-1960s. The lack of long-term improvement in mortality is particularly pronounced among the middle-aged population. For men aged 35–65 years mortality is almost as high now as it was in the early 1920s (*Hungarian Central Statistical Office, 1998a*).

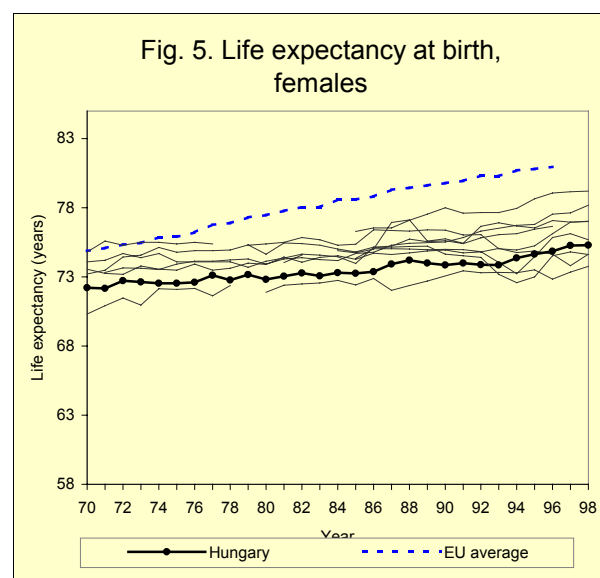
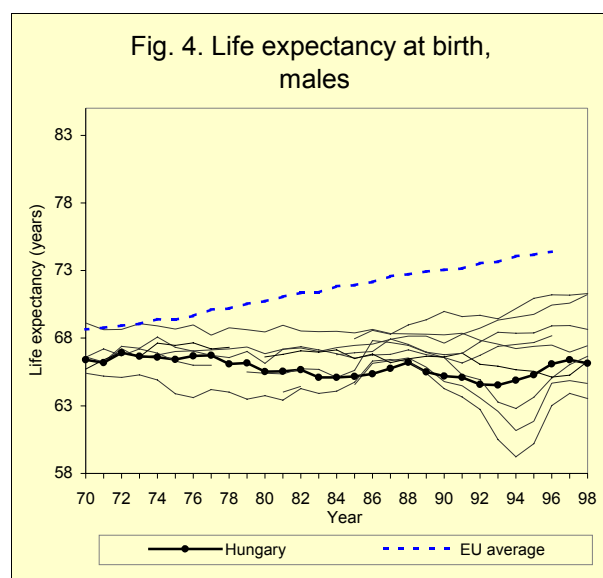
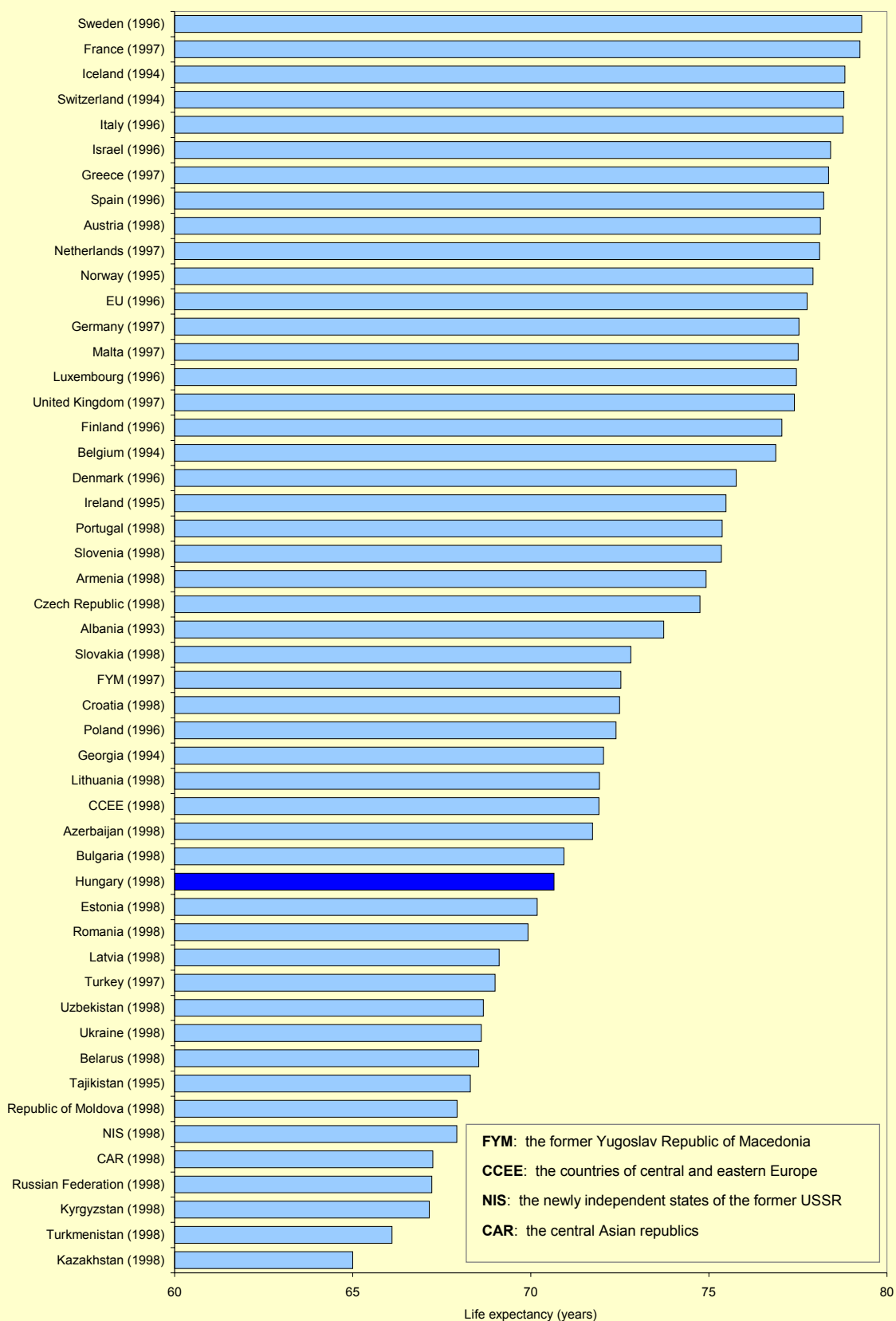


Fig. 6. Life expectancy at birth in years, latest available data



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 in Hungary for the age group 35–64 is particularly high relative to the reference countries and the EU, with mortality due to cancers and cardiovascular disease contributing a high proportion of this excess (Fig. 7). In addition, the SDR for diseases of the digestive system is also especially high in the age group 35–64 years.

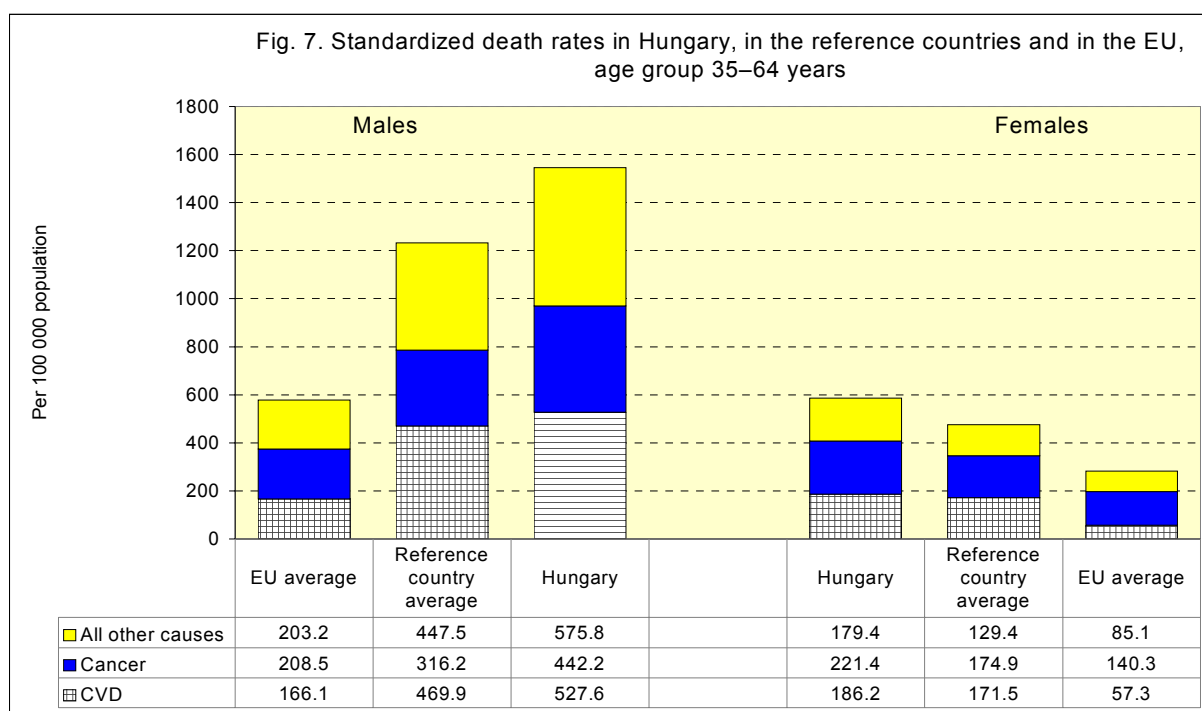
Cardiovascular diseases

The SDRs for cardiovascular diseases among males aged 0–64 years were close to the EU average for most reference countries in 1970. Since then, the SDRs for males have increased in nearly all reference countries, including Hungary, whereas they have declined in the EU. In the 1970s and 1980s, Hungary's SDR

was the highest among the reference countries; although it decreased in the 1990s, especially after 1993, it was still higher than the average for the reference countries and three times the EU average in 1998 (Fig. 8, 9).

The SDR for cardiovascular diseases among females aged 0–64 years was the highest among the reference countries from 1970 to the 1990s (along with Romania) and showed little sign of decline. Mortality started to decrease in the early 1990s, as in most of the reference countries. In 1998, however, the SDR was still one of the highest among the reference countries and, similar to males, three times the EU average (Fig. 10, 11).

The SDR for ischaemic heart disease among males aged 0–64 years was close to the EU average in 1970 but rose rapidly in the late 1970s, remained relatively constant until 1993 and has declined slightly since then. It has, however, remained above the average for the reference countries during the whole period, and has been one of the highest rates, excluding Estonia, Latvia and Lithuania. The rate for females has been the highest for most of the period, excluding Estonia, Latvia and Lithuania (Fig. 12, 13).



The SDRs for cerebrovascular diseases in the age group 0–64 years have exceeded the averages of the reference countries for males and females since 1970. The rates increased significantly between 1975 and 1980 among both males and females, remained almost constant

until 1985 among females and then started to decrease, whereas men remained nearly constant from 1980 to 1993 before declining. The annual rate for both sexes combined was almost four times the EU average from 1996 to 1998 (Fig. 14, 15).

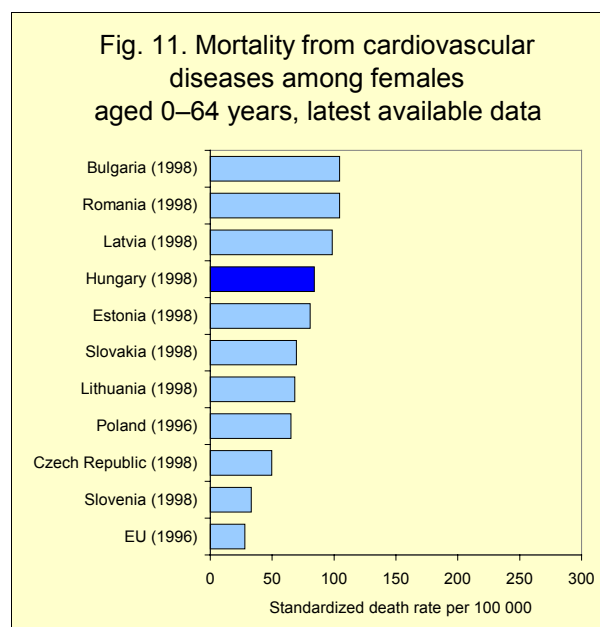
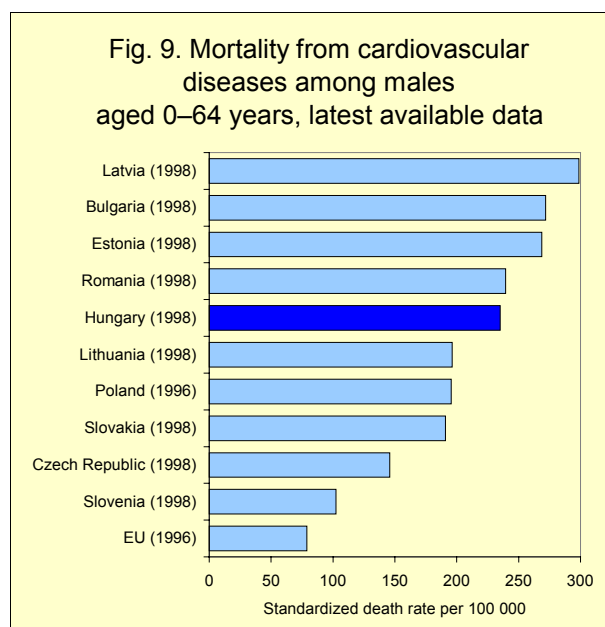
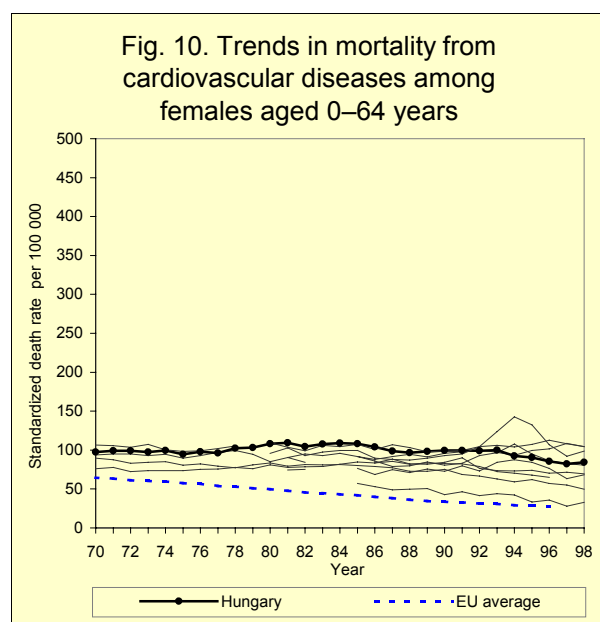
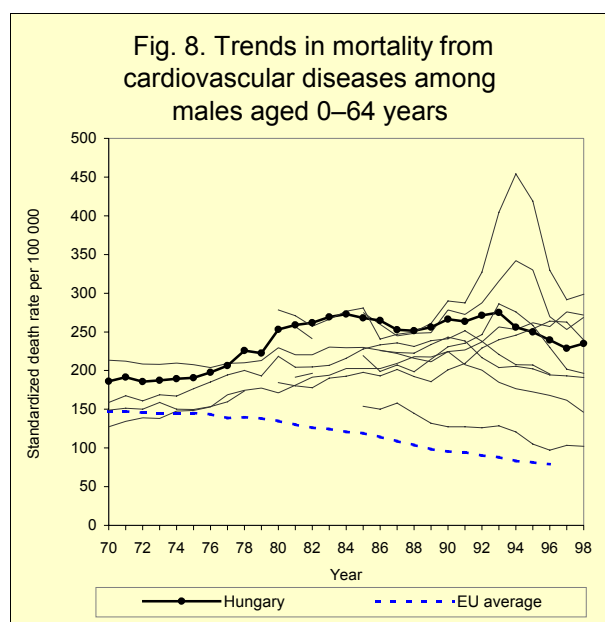


Fig. 12. Trends in mortality from ischaemic heart disease among males aged 0–64 years

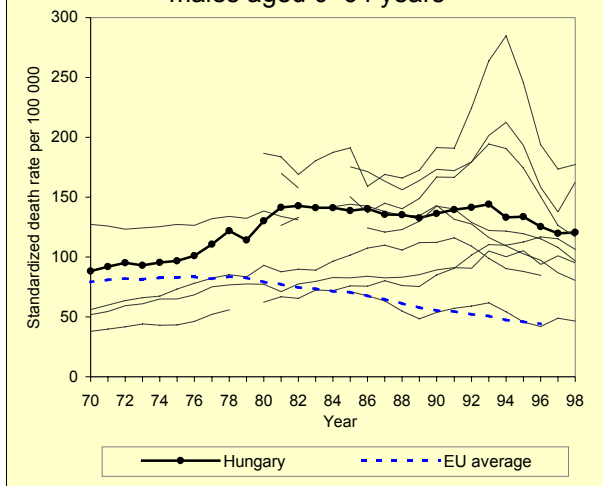


Fig. 13. Trends in mortality from ischaemic heart disease among females aged 0–64 years

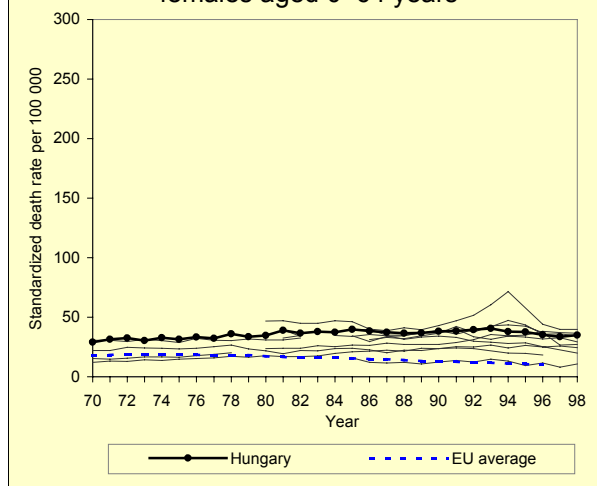


Fig. 14. Trends in mortality from cerebrovascular diseases among males aged 0–64 years

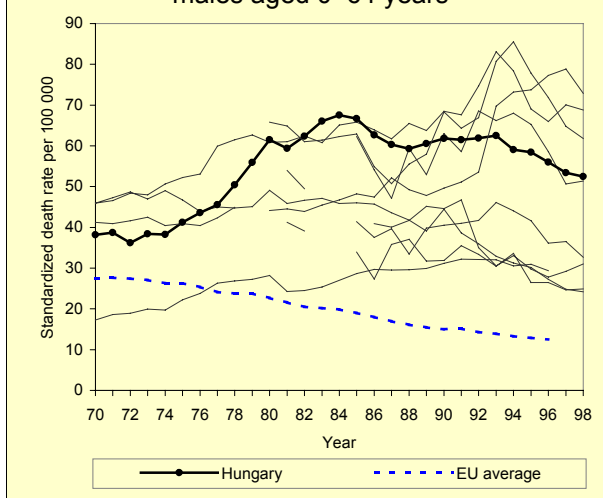
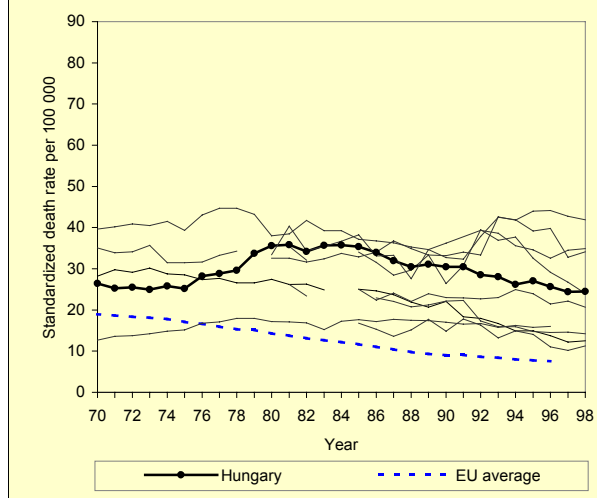


Fig. 15. Trends in mortality from cerebrovascular diseases among females aged 0–64 years



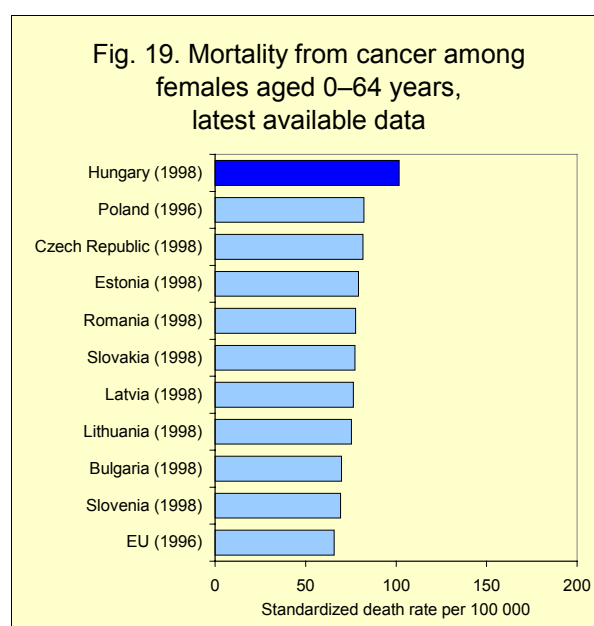
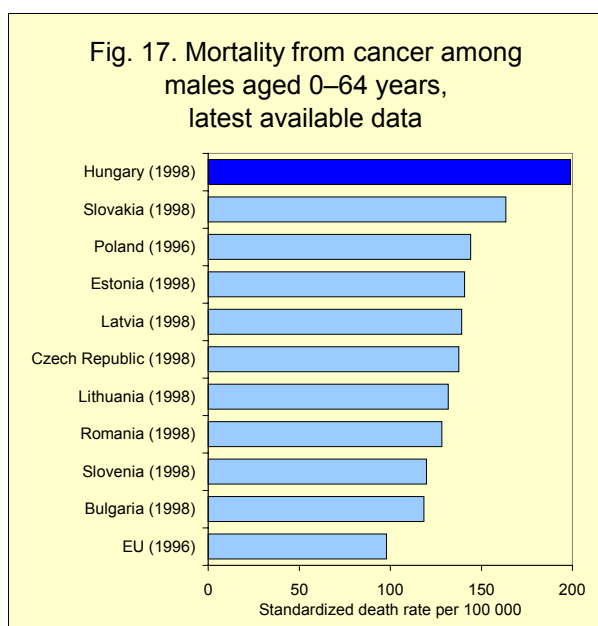
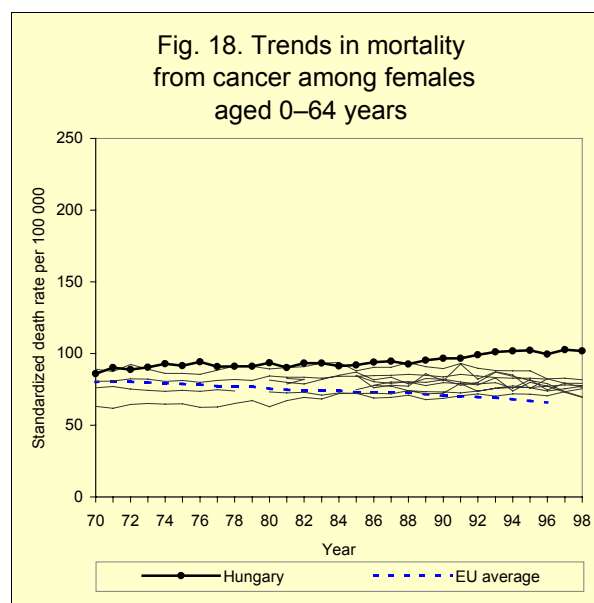
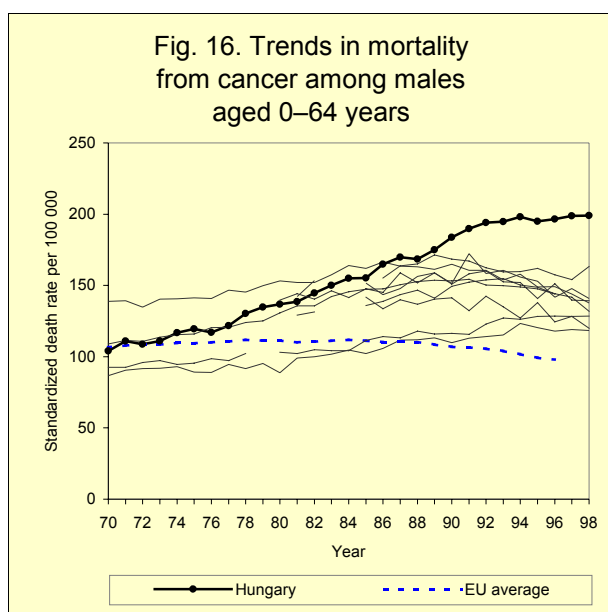
Cancer

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 are presented in the section on smoking.

The SDR for cancer among males aged 0–64 years equalled the EU average and the average for the reference countries in the early 1970s. Since then, whereas the EU average has decreased, the rates in most reference countries have increased, with the increase in Hungary

being the sharpest. Since 1990, the SDR has been considerably higher than in any other reference country, many of which have had declining rates. The increase in the SDR shows little sign of slowing down, and the differences from rates in other reference countries and from that in the EU have continued to increase because of the declining trend in these countries. The rate in Hungary in 1998 was more than twice the EU average in 1996 (Fig. 16, 17).

The SDR for cancer among females aged 0–64 years has been consistently the highest of all of



the reference countries since 1970. The rate increased slowly until the late 1980s but more rapidly in the early 1990s. In recent years, the SDR has not increased further, although it is still 55% higher than the EU average, which has been declining constantly since 1970 (Fig. 18, 19).

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 the early 1980s. After that, the decrease stabilized for most of the countries, but continued in Hungary, and Hungary's rate has almost reached the EU average.

The SDR for diseases of the respiratory system was below the average for the reference countries and that of the EU in the 1970s. In the following two decades, the SDRs for Hungary, the average for the reference countries and the average for the EU have become approximately the same.

The SDR for diseases of digestive system was well below the EU average and close to the average for the reference countries in the early 1970s. Since then, the EU average has decreased, but the SDR in the reference countries has increased. The increase has been remarkable in Hungary, particularly for men, and its rate has been the highest among the reference countries during the last two decades. A major

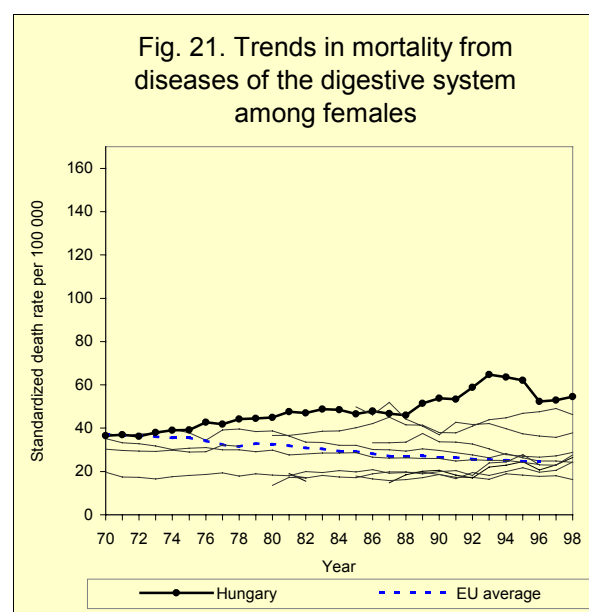
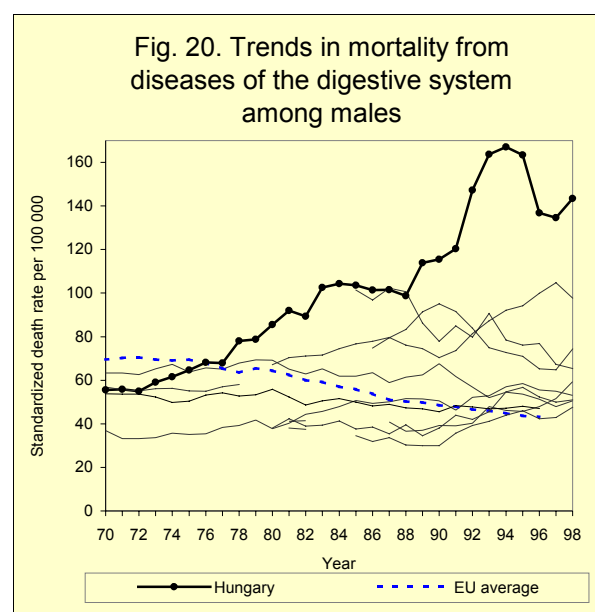
component of mortality from diseases of the digestive system is mortality from chronic liver diseases and cirrhosis, which has similar trends and is discussed in more detail in the section on alcohol. The significant increase in the SDR for diseases of the digestive system for Hungary in the early 1990s was followed by a sharp decline. One reason for this may be the introduction of the tenth edition of the International Classification of Diseases (ICD-10) in Hungary in 1996 (*Hungarian Central Statistical Office, 1998b*) (Fig. 20, 21).

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 among men has been the highest of the reference countries, excluding Estonia, Latvia and Lithuania. Since 1990, however, the rate has declined, but it is still high compared with the other reference countries and more than twice the EU average according to the latest figures (Fig. 22).

The SDR from external causes among women has been the highest of the reference countries during the 1970s and the 1980s. However, the SDRs in Estonia, Latvia and Lithuania exceeded it in the 1990s. Hungary's decrease since 1990 in the SDR for external causes



among females has been one of the largest among the reference countries (excluding Estonia, Latvia and Lithuania), but the rate in 1998 was still one of the highest among the reference countries and more than twice the EU average (Fig. 23).

The mortality from motor vehicle traffic accidents in Hungary was stable until the late 1980s. After this, it increased more than 60% from 15 to 25 per 100 000 population in 1990 but started to decrease in 1991. The decrease between 1991 and 1998 was the largest among the reference countries, leaving Hungary with one of the lowest rates among the reference countries, although 20% higher than the EU average.

Accident statistics confirm the improvement in road safety. The number of recorded road accidents decreased by more than one quarter between 1992 and 1996 (*Ministry of Welfare, 1997b*) and the number of people injured in road accidents declined by one third between 1990 and 1995 (*National Institute of Public Health, 1997*).

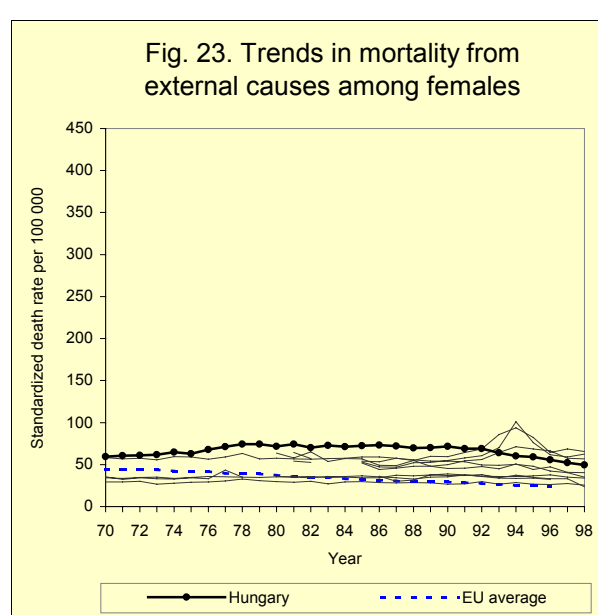
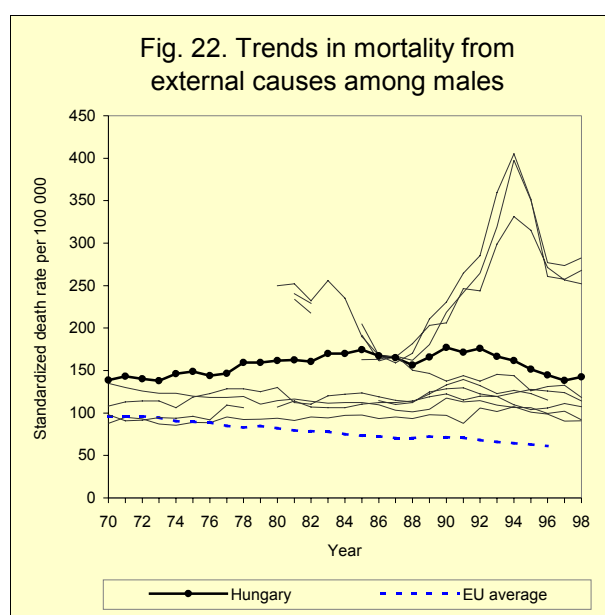
The SDR for homicide and purposeful injury increased slowly until 1993 but decreased after that. It still remains above the EU average and the average for the reference countries, although it is much lower than in Estonia, Latvia and Lithuania.

Mental health

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

In the 1970s and 1980s, the SDR for suicide and self-inflicted injury was the highest of all countries in the European Region and more than three times the EU average. Since the mid-1980s, the SDR has decreased by one third, the largest decrease among the reference countries. This decrease, together with sharp rises in suicide rates in Estonia, Latvia and Lithuania (and many other newly independent states of the former USSR) in the early 1990s has resulted in Hungary's rate no longer being the highest in Europe. However, the SDR is still by far the highest of the reference countries excluding Estonia, Latvia and Lithuania and was still three times the EU average in 1998.

Suicide rates are much higher among men than among women in most countries, and this is the case in Hungary (Fig. 24, 25). The suicide rate among women, like the rate among men and that for both sexes combined, was the highest of all the reference countries for the 1970s and 1980s. In addition, the



suicide rate among Hungarian women was higher than the suicide rate for men in the EU during this period. Although the rate among women peaked in 1981, a steady and constant decrease first started in 1989. However, Hungary still had the highest rate in Europe and the reference countries until 1995 and has only had marginally lower than the highest rates since then.

Suicide rates differ substantially by region: the rate in south-eastern Hungary is more than twice the rate in the western parts of the country (*Hungarian Central Statistical Office, 1998b*).

The parasuicide (attempted suicide) rate has been reported to be decreasing parallel to the declining mortality from suicide (*Ministry of Welfare, 1997b*).

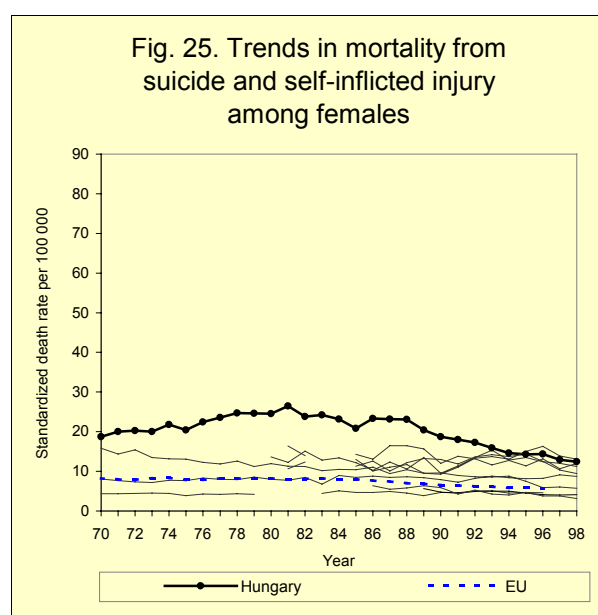
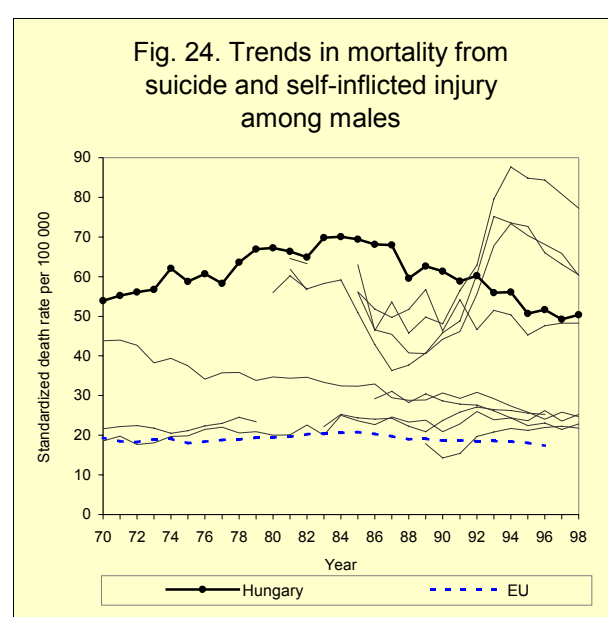
Psychiatric dispensaries (for outpatient treatment) registered 138 900 patients – 87 200 women and 51 700 men – in 1996. The most common reasons were schizophrenia (20%), neurosis and psychosomatic diseases (13%), affective psychosis (10%), and neurotic depression (9%). In January 1996, 9100 patients – 50% men and 50% women – were in psychiatric hospital wards. The most common reasons for hospitalization were schizophrenia

(23%), alcohol addiction (15%) and dementia (13%) (*Hungarian Central Statistical Office, 1998b*).

Infectious diseases

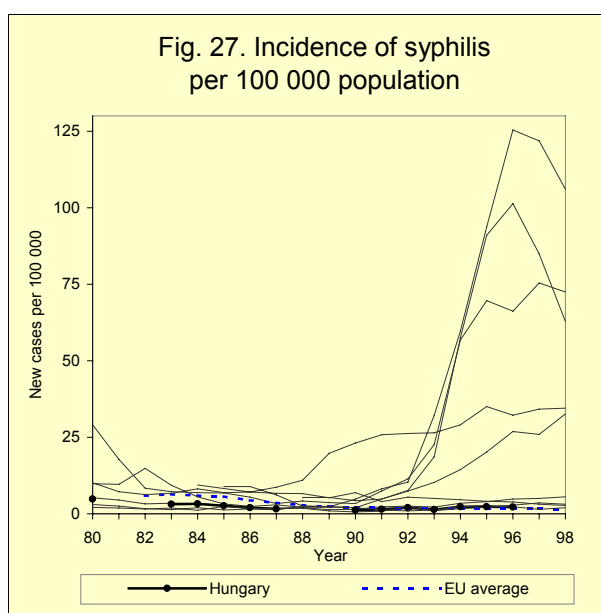
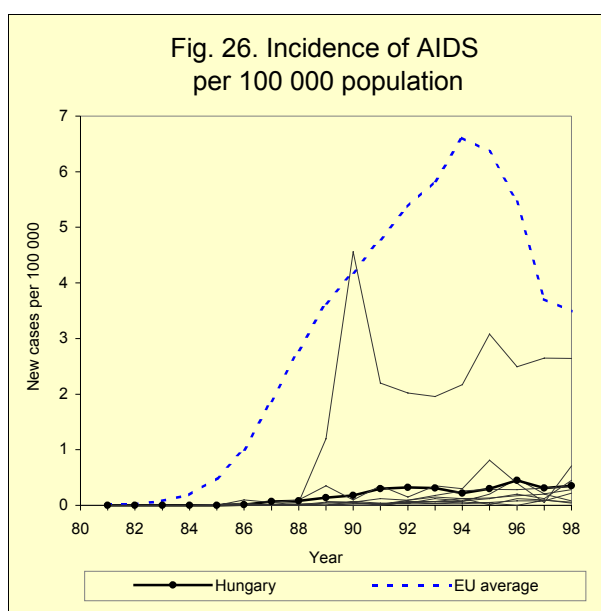
AIDS is caused by the human immunodeficiency virus (HIV), which can be transmitted in three ways: sexual transmission; transfusing infected blood or blood products or using non-sterile injection equipment; or from mother to child. The incubation period between initial HIV infection and developing AIDS 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.

Hungary has one of the highest incidence rates for AIDS among the reference countries (0.3 per 100 000 population in 1998), but this is still much lower than the EU average (3.3 per 100 000) (Fig. 26). The largest transmission groups in Hungary are homo- and bisexual contacts (72%), heterosexual contacts (12%) and blood products (8%). There is some transmission from mother to child (3%), but very few cases of transmission from injected drugs (0.3%) have been reported (*European Centre for the Epidemiological Monitoring of AIDS, 1998*).



The incidence of tuberculosis decreased until 1990 but has increased since then. The incidence in the 1990s was somewhat higher than the average for the reference countries but more than twice the EU average.

The incidence rate for syphilis has been among the lowest in the reference countries since the early 1980s. The decrease has continued, whereas several reference countries have reported major epidemics of syphilis in the 1990s (Fig. 27). The incidence of gonococcal infections has declined from relatively high levels in the early 1980s in accordance with the trends for other reference countries.



Hungary had a relatively high incidence of mumps in the early 1990s, but since the introduction of compulsory vaccination in 1991 this has decreased since 1993 to one of the lowest among the reference countries. The incidence rates of viral hepatitis, diphtheria, measles, pertussis and malaria are all among the lowest rates in the reference countries.

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).

Disability among the population older than 40 years of age is mainly caused by cardiovascular diseases (*Ministry of Welfare, 1997b*). In 1996, 56 300 new cases of disability – 9.1 per 1000 population of working age – were registered. The most common causes were diseases of the circulatory system (30%), mental and behavioural disorders (17%) and diseases of the musculoskeletal system and connective tissue (12%) (*Hungarian Central Statistical Office, 1998b*).

Self-assessed health

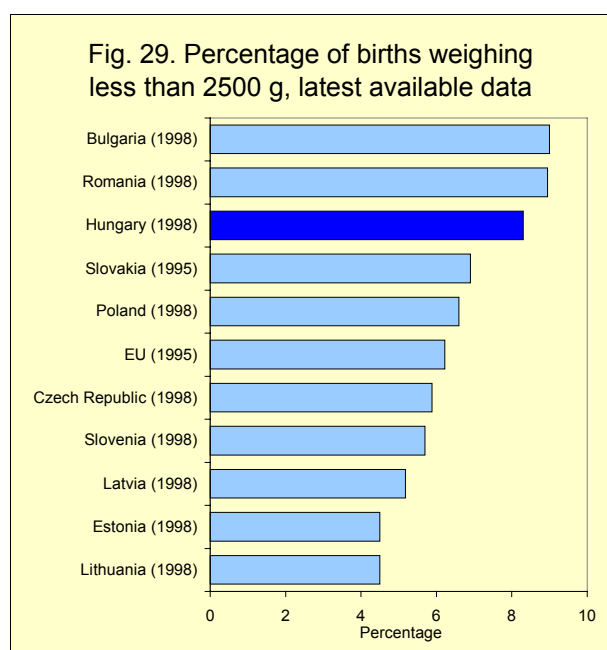
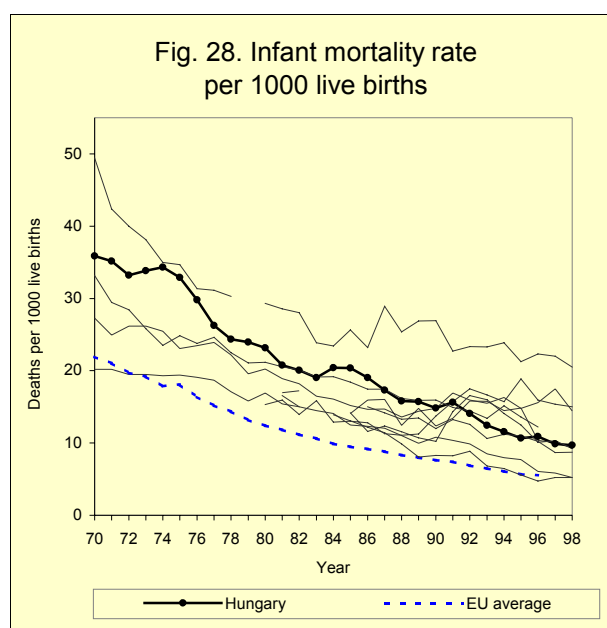
Data are also not routinely available on the proportion of the population assessing their health positively. While seven other reference countries had some national data, none are available for Hungary. However, a local study reported that 79% of people aged 15–64 years considered their health as being good, and nine of ten respondents considered their lifestyle as being healthy or satisfactory (*Hungarian Central Statistical Office, 1996a and 1996b*). The perception of a healthy lifestyle is in sharp contrast to the high mortality and morbidity among Hungarians.

Health of children and adolescents

The infant mortality rate decreased in almost all reference countries between 1985 and

1998, and the rate in Hungary declined from 20.4 to 9.7 per 1000 live births during this period. This was one of the largest decreases among the reference countries, and the rate is now below the average for the reference countries (Fig. 28).

The main causes of infant mortality in Hungary 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.



However, the proportion of deaths from sudden infant death syndrome is considerably lower (3%) than in the EU, but some of these cases may be classified under other causes of death.

The proportion of children that weighed less than 2500 grams at birth has often been used as an indicator for the health of newborns and for perinatal care. In the EU, 6.0% of all newborn children had low birth weight in 1998; this proportion was higher in the reference countries (7.3%) and even higher in Hungary (8.4%) in 1998 (Fig. 29).

Breastfeeding until 4 months of age has increased substantially: 35% of infants were exclusively breastfed and 16% were without any breastfeeding in 1980, while the figures in 1996 were 53% and 9%, respectively. At the same time, the historically low breastfeeding rates in the capital area rose to the levels in other parts of country (*Hungarian Central Statistical Office, 1998b*).

Children in most of the reference countries have good immunization coverage. This is particularly true for Hungary, which reported a coverage rate of 99.8% or more for all immunization programmes in the late 1990s, the highest coverage among the reference countries (see also page 18).

In general, children's oral health has improved in the reference countries in the 1990s, similar to in the EU. In the mid-1980s, Hungary had relatively high DMFT index scores (the number of decayed, missing or filled teeth), but the score decreased from 7.0 in 1985 to 4.3 in 1991.

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 (*Ain-scow & 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 1998, the birth rate per 1000 women aged 15-19 in Hungary was 25, equaling the reference country average, but still much higher than the EU average of 8 per 1000 (*Council of Europe, 1999*). The birth rate in this age group has been declining in nearly all the reference countries since 1980. The decrease in Hungary has been 63%, the second largest among the reference countries.

Women's health

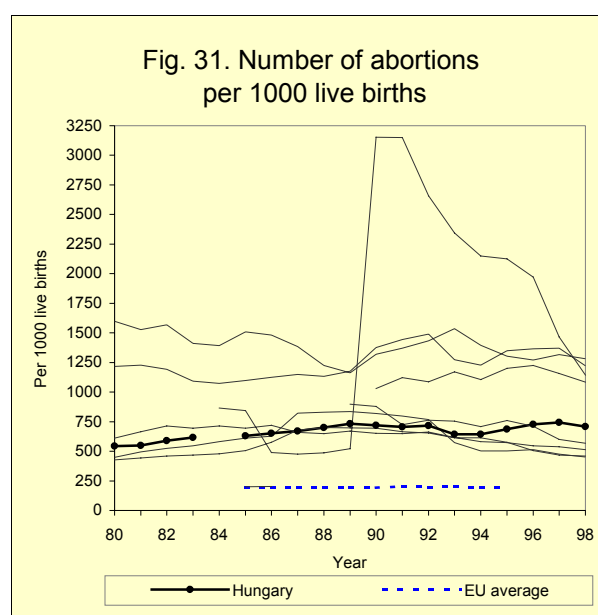
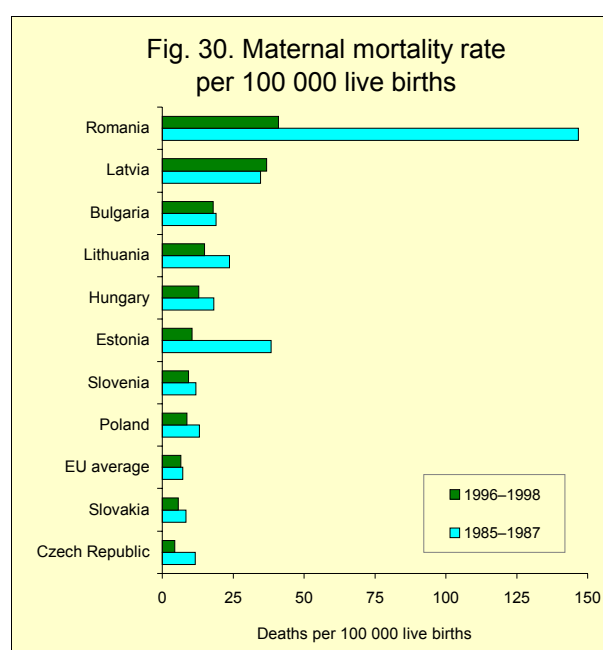
Women as a group live longer than men and have lower mortality rates for all the main causes of death. For example, in 1998 in Hungary, the SDRs for cancer in the age group 0-64 years were 49% lower for women than for men and 64% lower for diseases of the circulatory system. However, women have higher 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.

The maternal mortality rate has declined noticeably in almost all reference countries since the 1980s. The maternal mortality rate in Hungary declined from 18.2 to 12.9 per 100 000 live births. It is now near the average for the reference countries but still almost twice the EU average of 6.5 per 100 000 live births (Fig. 30).

In the countries of central and eastern Europe and in the newly independent states, induced abortion was commonly used as a contraceptive method. The number of induced abortions was therefore usually much higher than in western European countries. The annual number of abortions in Hungary declined by 18% from 90 400 in 1990 to 74 000 in 1997, in part because of the 1992 Foetal Life Protection Law, which changed the conditions for terminating a pregnancy, requiring the women to judge that the continuation of the pregnancy would cause a "severe crisis" (*Hungarian Central Statistical Office, 1996a*). The proportional decline in the number of live births was equal, so the number of induced abortions per

1000 live births has remained at the same level: below the average for the reference countries but higher than the EU average (Fig. 31).

In 1993, 63% of married or cohabiting women aged 19-41 years used a form of reliable contraception – oral contraception (38%), intrauterine contraceptive devices (17%) or condom (8%). More than 6% used coitus interruptus and 3% relied on temporary abstinence or the calendar method. According to a 1994 health interview survey, 17% of all respondents aged

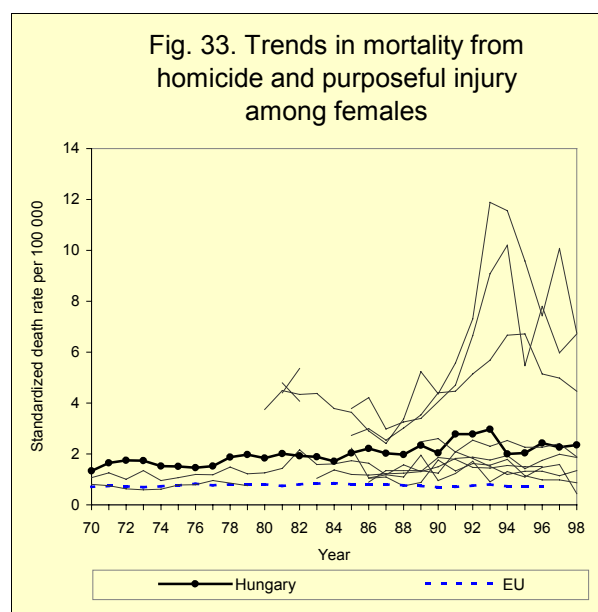
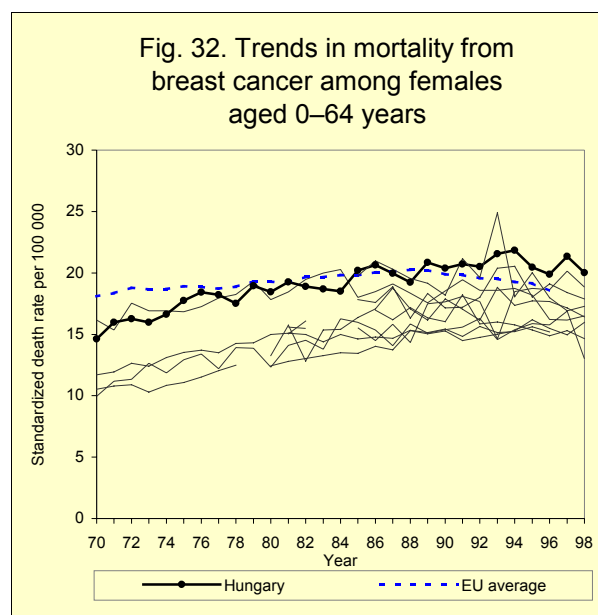


15–64 years used oral contraception at the time of the survey and 37% had used it at some time prior to the survey. Oral contraceptives were more common in Budapest than in the other parts of the country (*Hungarian Central Statistical Office, 1996b*).

Hungary's SDR for female breast cancer is the highest among the reference countries. Hungary's rate was below the EU average during the 1970s, but it reached the EU average in the 1980s and has exceeded it since then (Fig. 32).

The SDR for cervical cancer has been among the highest in the reference countries since the late 1970s. The SDR declined slowly from the early 1980s, but an increase in the mid-1990s brought the SDR back to the same level as in 1970. The Hungary's SDR was almost three times the EU average in 1998.

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. Between 1985 and 1997, the SDR for homicide among women increased by more than 40% in Hungary, one of the largest increases in the reference countries (Fig. 33). In 1998, the Hungarian rate was 2.4 per 100 000 women: three times the EU average, five times the lowest rate among the reference countries, with only the rates in Estonia, Latvia, Lithuania and Romania exceeding it. In addition, within any particular country homicide rates for men are usually significantly higher than for women. This has not been the case in Hungary for the last thirty years, where the male rate has only been 30% higher than the female rate, less than half the average difference across the reference countries.



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 1999b*).

In the mid-1990s, an estimated 27% of all deaths in Hungary were caused by smoking and alcohol related causes. An unhealthy diet, including consumption of food containing harmful ingredients and the high intake of calories, further contributed to the high mortality of the 1990s (*Hungarian Central Statistical Office, 1996a*).

Tobacco consumption

The prevalence of smoking among the population aged 15 years or older was 44% in 1992, the highest among the reference countries and higher than any EU country (Fig. 34). The gender difference in smoking has been small and declining, since the prevalence of smoking is decreasing among men and increasing among women (*Hungarian Central Statistical Office, 1996a*). According to a 1994 health in-

terview survey, the average daily consumption of cigarettes was 20.2 among men who smoke and 15.5 among women who smoke, and 66% of male smokers and 43% of female smokers consumed more than 20 cigarettes a day. Smoking is more common in Budapest (versus the rest of the country), among people who are divorced and widowed (versus currently married or never married), among blue-collar workers (versus other social groups), and among less educated people having general or vocational education only. For example, physicians (26%), teachers (28%) and members of Parliament (29%) all have lower prevalence rates than average (*Hungarian Central Statistical Office, 1996b*).

Seven of the reference countries, including Hungary, took part in surveys of health behaviour among young people conducted in 1993–94 and in 1997–98. The percentage of Hungarian girls aged 15 years who smoked at least once a week in 1997 was by far the highest among the participating countries at 28%, and had increased from 19% in the earlier survey. The corresponding figure for boys was 36% in 1997, with only Latvia (37%) having a

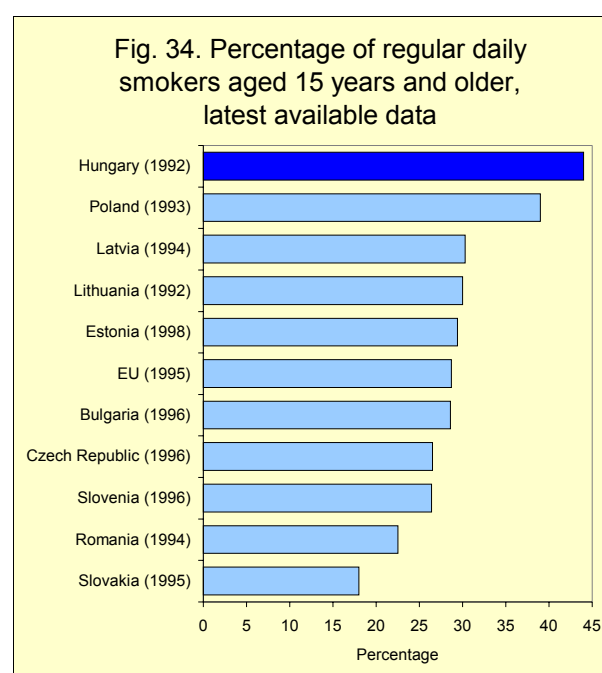
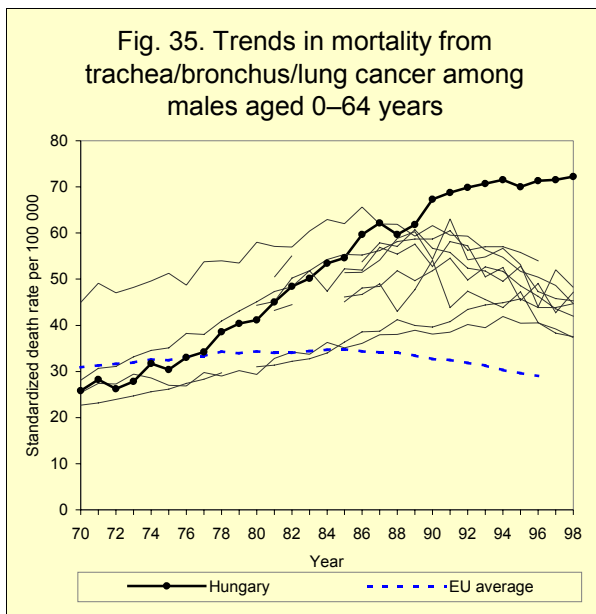


figure this high. Again the percentage of smokers had increased significantly from 25% in the earlier survey (*WHO Regional Office for Europe, 1997 and 2000*).

The annual consumption of cigarettes per person in Hungary and in Poland has been the highest among the reference countries since the 1970s. Even though the number of cigarettes consumed in Hungary has decreased in the 1990s, it is still slightly higher than in 1970. The difference from the EU average has increased, since the EU average has declined since 1980. Consumption in Hungary was substantially higher than the EU average in the late 1990s. Increased black market sale or increased import of tobacco products, however, may explain some of the observed decline in the consumption figures, at least in the 1990s.

The mortality for trachea, bronchus and lung cancer can be used as an indicator to measure the trends and country positions related to the deaths caused by smoking. In the early 1970s, the SDR for lung cancer in Hungary was lower than the EU average. However, the SDR has been increasing since then, and it has been the highest among the reference countries since the mid-1980s. The SDR continued to increase in the 1990s, even though most reference countries already show a declining trend. According to the latest figures, the SDR for men was the highest of all the countries in the European Region and more than twice the EU average (Fig. 35).

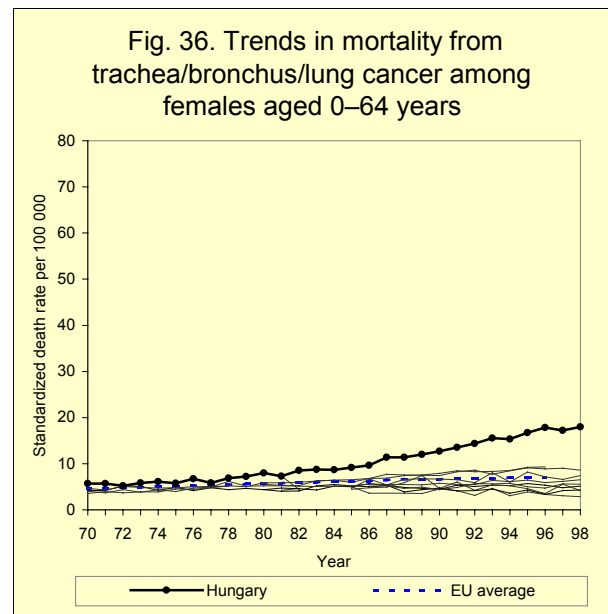


Among women, the SDR for lung cancer has been the highest among the reference countries since the 1970s. The increase has continued since then and even accelerated after the mid-1980s. The SDR for women was the second highest in the WHO European Region after Denmark and more than twice the EU average (Fig. 36).

Since men smoke more than women, there are large gender differences in SDR for lung cancer. The SDR from lung cancer is four times higher among men than among women in Hungary. This difference has diminished in recent years, mainly because the rate for lung cancer is accelerating among women.

Alcohol consumption

The registered alcohol consumption in Hungary decreased from 11.6 to 9.5 litres of pure alcohol per person (18%) from the mid-1980s to 1997, when it reached the EU average (9.4 litres in 1997). Despite this favourable trend, alcohol consumption in Hungary is one of the highest among the reference countries (Fig. 37). The consumption data for some countries, however, may be incomplete because of registration problems. For example, Estonia and Lithuania recorded remarkable decreases in the 1990s, but local studies reported a very high level of unrecorded consumption as well as illegal import and production (*WHO Regional Office for Europe, 1997*).



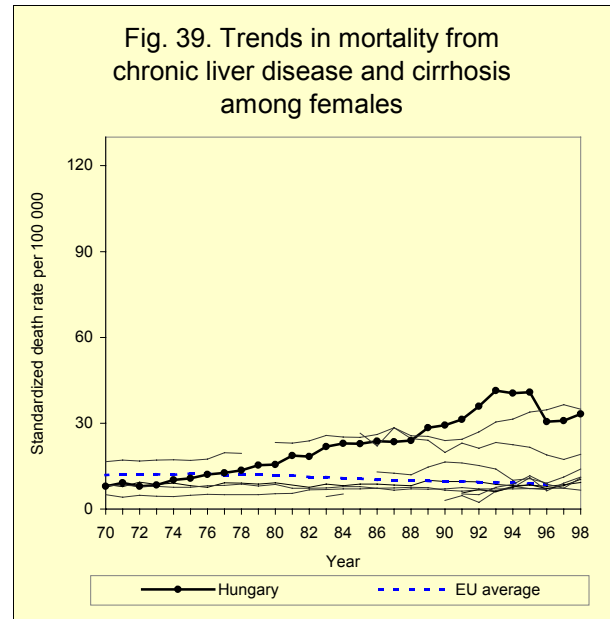
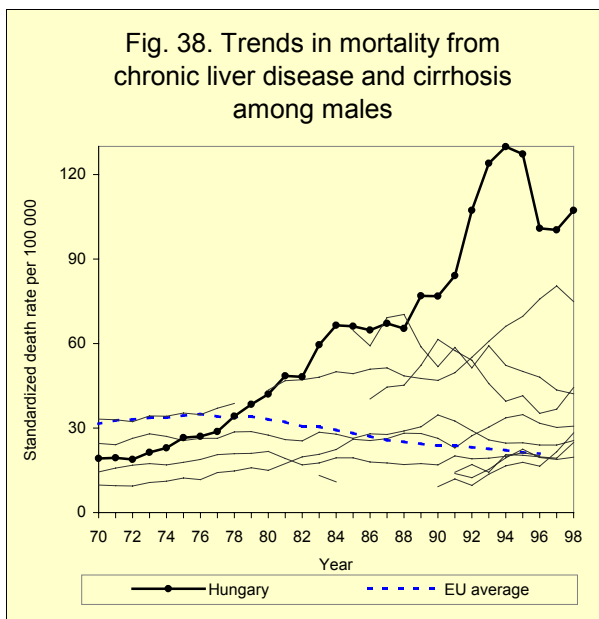
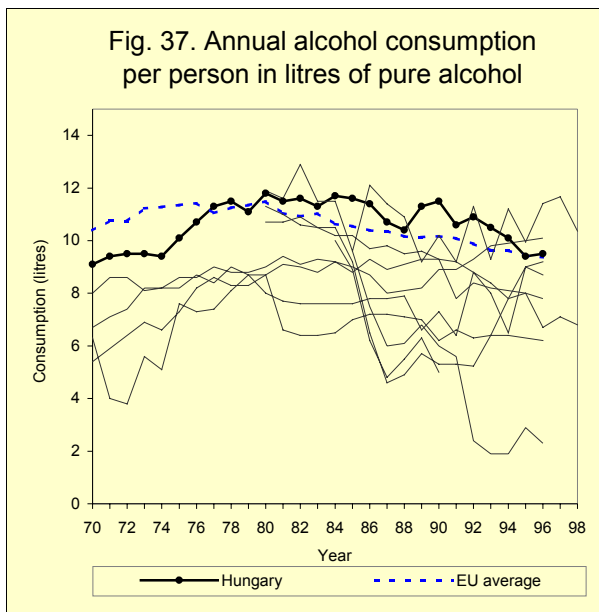
According to sales data, the registered consumption of spirits has decreased from 5.5 litres to 3.3 litres and the consumption of beer from 93 to 70 litres since the mid-1980s, but the consumption of wine has increased from 25 litres to 29 litres (*Produktschap voor Ge-distilleerde Dranken, 1998*).

According to the 1994 health interview survey, 16% of men and 40% of women reported that they never drink alcohol, while 22% of men and 3% of women reported daily drinking (*Hungarian Central Statistical Office, 1996b*). According to another study, 25% of adult men

and 2.4% of women were classified as heavy drinkers by a 6-month prevalence figure (*WHO Regional Office for Europe, 1997*). The number of heavy drinkers has been estimated to be 800 000, 8% of the total population and 12% of the population aged 15–64 years (*Hungarian Central Statistical Office, 1996a*). Only 52 000 of these 800 000 people, or 5.1 per 1000 population, were registered to receive care. This rate was somewhat higher than in 1980 (4.7 per 1000), but significantly lower than in the late 1980s (6.2 per 1000). The highest rate was reported for men aged 35–54 years: 16.2 per 1000 men (*Hungarian Central Statistical Office, 1998b*).

According to a school questionnaire survey in 1993–1994, 24% of boys and 14% of girls aged 15 years drank alcohol at least once a week. The averages for the seven reference countries included in this survey are 25% for boys and 11% for girls (*WHO Regional Office for Europe, 1997*).

Mortality from chronic liver disease and cirrhosis can indicate the harmful effect of alcohol. The SDR for chronic liver disease and cirrhosis in Hungary was well below the EU average in the early 1970s but exceeded it in the late 1970s. In the following years, the SDR had the largest increase among the reference countries. The rate has remained the highest



among the reference countries and one of the highest in the European Region, at least four times the EU average. The trends were similar for both sexes in all reference countries, but men had a higher mortality rate than women. In Hungary the SDR among men was more than three times the rate among women. The sudden decrease in the SDR after 1995 may be an artefact resulting from the introduction of ICD-10 in 1996 (*Hungarian Central Statistical Office, 1998b*) (Fig. 38, 39).

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 Hungary, marijuana is reported to be common on the drug scene, and it is also used by many heroin, cocaine and LSD addicts. According to a 1995 European School Survey Project on Alcohol and other Drugs (ESPAD), 5% of 15–16 year-old boys and 4% of girls in Hungary had used cannabis at least once. These proportions were among the lowest in the reference countries (*European Monitoring Centre for Drugs and Drug Addiction, 1998*). It has been estimated that the lifetime prevalence for use of cannabis in Hungary is 14.1% (*Elekes & Paksi, 2000*).

The use of opioids, including heroin, has also increased in Hungary. Use in the form of prescription drugs increased sharply in the 1980s, but from the late 1980s opioids have mainly been produced from poppy seeds using home-made technology. The social composition of opiate users is reported to have changed, with a higher proportion of entrepreneurs and the long-term unemployed being the highest users (*WHO Regional Office for Europe, 1997*).

There are some reported users of LSD and a few cocaine users have been appearing in treatment centres in the 1990s. The use of recreational ecstasy is reported to be increasing considerably, but solvent use has been uncommon. Drug related criminal offences increased from 51 in 1991 to 2860 in 1999 (*Ministry of Sport and Youth, 2000*).

About 100 000 people, mainly middle-aged and elderly women, are reported to be dependent on tranquillizers and sedatives, making this one of the most common drug dependency problems (*WHO Regional Office for Europe, 1997*).

Nutrition

Nutritional habits are rooted in cultural traditions and food production. Nevertheless, in recent decades changes have occurred with increasing globalization, as 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 Hungary follows the northern pattern, except that the availability of cereals appears to be high (Fig. 40). The availability of fruits and vegetables may, however, be underestimated, since home-grown fruit and vegetables may not be recorded in this data, and the actual intake can best be verified by dietary intake surveys. Local studies have reported a large seasonal difference in the use of fruits and vegetables: during winter 90% of men and 88% of women do not eat

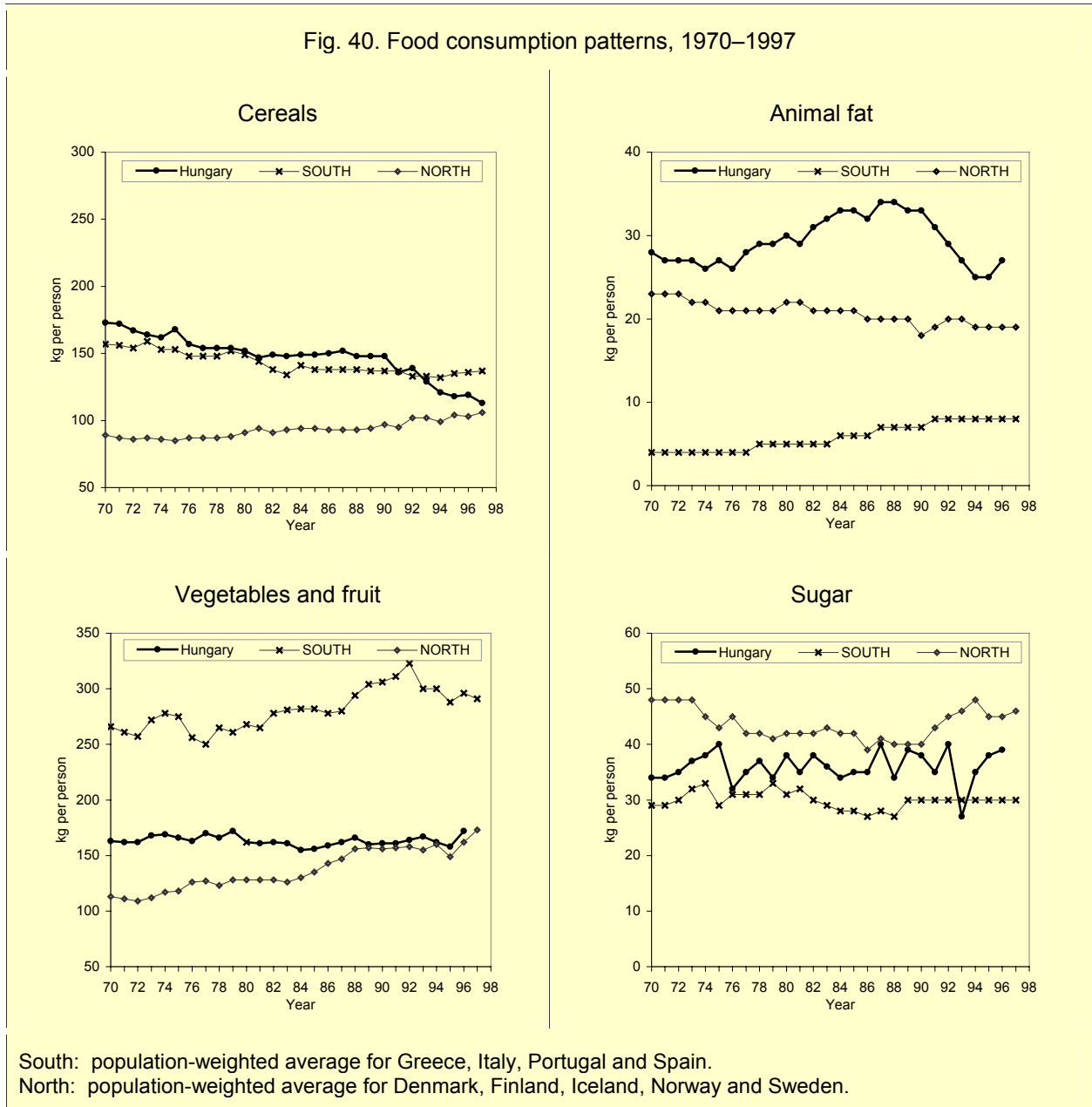
⁴ The rapid increase in international trade accelerated in 1994, when food was incorporated into international free trade agreements (the GATT Uruguay Round). This has affected the reliability of national food statistics, making international comparisons more difficult.

vegetables regularly and 71% of men and 66% of women eat fresh fruit only exceptionally (*Hungarian Central Statistical Office, 1996a*). These conclusions about the typical Hungarian diet are supported by international comparative surveys of expenditure on food (*European Commission, 1997*). The study also showed large regional and socioeconomic differences in the consumption of fats and sugar in Hungary. People living in rural areas and people

with a low educational level used two to three times the amount of animal fat and sugar used by people living in urban areas and people with a high educational level.

The high use of animal fat is also confirmed by the fact that the average proportion of energy derived from overall fat is estimated to be 38%, which is the highest among the reference countries and almost at the EU average (39%).

Fig. 40. Food consumption patterns, 1970–1997



Physical activity

As physical activity in daily life and at work declines, exercise in leisure time becomes more important in maintaining an activity level beneficial to health. Although there are few comparative data for physical activity, survey data show that only 21% of men and 14% of women aged 15–64 years in Hungary exercise regularly. This proportion falls rapidly by age: one quarter of respondents aged 20–29 years reported leisure physical activity, but the proportion was 15% among those 30–39 years old and 10% or less among older respondents (*Hungarian Central Statistical Office, 1996a, b*).

Overweight

Overweight and obesity are commonly assessed with the body mass index (BMI), calculated as weight in kilograms/(height in metres)². According to a 1995 survey done in Pécs as part of the countrywide integrated noncommunicable disease intervention (CINDI) programme, the average BMI was 26.5 for males and 25.5 for females aged 25–64 years. In total 60% of males and 47% of females were overweight or obese, having a BMI of 25 or more. These percentages were lower than in the previous survey performed in 1985, but Hungary had one of the highest proportions of overweight people in the reference countries (*WHO CINDI database, unpublished data*).

The decline in prevalence of overweight and obesity was suggested by the results of the Hungarian representative nutritional surveys performed in 1985–88 and 1994. These data showed that the reduction was greater for women than for men (*Bíró, 1994*).

Previous studies have shown that overweight and obesity are more common among married people than among single people and among people living in rural areas than among people living in urban areas. The same is true for women with low social status, who have a higher prevalence, whereas men have no social class gradient (*Hungarian Central Statistical Office, 1996b*). The 1995 CINDI data with

more detailed data on social status reported that there was a significant correlation between the prevalence of overweight and obesity and low education (*Morava 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 1995 study, 23% of men and 16% of women aged 25–64 years had high blood pressure in Hungary, whereas the percentages were 18% and 14% in 1985 (*WHO CINDI database, unpublished data*). If using the lower limits for blood pressure (140 and 90 mmHg) more than 50% of population aged 25–64 years old had elevated blood pressure, and only about half of them knew about it (*Morava et al., 2000*). The contradiction between the measured and known hypertension by gender may be explained by reporting bias or by differences in health behaviour in general.

High cholesterol

A cholesterol level over 250 mg/dl places the individual at significantly increased risk of cardiovascular diseases. According to the 1995 study, 18% of both male and female respondents aged 25–64 years had such a high value. Even though these figures were not among the highest in the reference countries, they had increased during the last 10 years, when the percentages were 16% for males and 12% for females (*WHO CINDI database, unpublished data*). When using the cholesterol limit of 200 mg/dl, more than half of population in each age group had an elevated cholesterol level (*Morava et al., 2000*). Only 6.4% of the population aged 15–64 years reported that they know that their cholesterol level is high (*Hungarian Central Statistical Office, 1996a*), which suggests that cholesterol levels are not measured routinely in Hungary.

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. 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 intoxicating 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). Hungary was one of the pilot countries for NEHAPs, and a National Public Health Committee supported by the Ministry of Welfare and the Ministry for Environment and Regional Policy was established to elaborate the NEHAP, which has since been published (*National Institute of Public Health, 1997*).

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 from the mid-1990s, the variation between the reference countries is large (from 13 people affected by microbial foodborne outbreaks per 100 000 population in Romania to 464 per 100 000 in the Czech Republic). The number of microbial foodborne diseases in Hungary – especially cases caused by salmonella (*National Institute of Public Health, 1997*) – peaked in 1996, since returning to same level as earlier in the decade. The latest figures (1999) show an infection rate of 32 per 100 000 population, now below the average of the reference countries.

New and more restrictive legislation to minimize impurities in food products has been passed in Hungary. Food control is extensive for special imported products, and food containing for example ochratoxin A and aflatoxins above the regulatory limits are therefore not distributed in Hungary. The lead content of raw versus processed fruit and vegetable products does not differ substantially, suggesting that the processing of these products does not increase lead content significantly (*Ministry of Welfare, 1997b*).

Air quality

Some 13% of Hungary's territory, where almost half the population lives, is regarded as polluted. The main cause is road traffic, followed by industry and district heating (*National Institute of Public Health, 1997*).

Table 2. Emission of selected air pollutants in kg per person in Hungary, in the reference countries and in the EU in 1995

	Hungary	Reference countries	EU countries
Sulphur dioxide	68.3	68.3	31.5
Nitrogen dioxide	16.7	25.3	32.4
Ammonia	15.1	10.7	9.4
Carbon monoxide	75.4	99.1	119.3
Carbon dioxide	5681	7555	8499
Methane	56.1	56.5	61.4

Hungary emitted less nitrogen dioxide, carbon monoxide and carbon dioxide but more ammonia than the average for the reference countries in 1995. However, the emission of sulphur dioxide was more than twice the EU average, whereas considerably less nitrogen dioxide, carbon monoxide and carbon dioxide were emitted than in the EU (*United Nations Economic Commission for Europe, 1999*) (Table 2).

About 10% of urban children are estimated to have a blood lead concentration that is not considered safe (*National Institute of Public Health, 1997*).

Water quality

Strict limits on arsenic in drinking-water, new regulations for spa baths and new guidelines based on the EU directive on the quality of bathing water (*European Council, 1976*) have improved water quality in Hungary (*Ministry of Welfare, 1997b*). Some two thirds of drinking-water has excellent quality, but 3–4% of consumers are exposed to contaminated water with possible health risks from high levels of nitrate, arsenic, or faecal coliform bacteria (*National Institute of Public Health, 1997*). However, contradictions between the aims of improving water quality and financial interest and lack of financial resources have been listed as the main problems related to lack of further improvement in water quality. For example, even though the arsenic concentration in water has decreased as well as epidemics in spa baths and in recreation areas (*Ministry of Welfare, 1997b*), bathing and swimming in the largest streams is not recommended because of microbial contamination. The water quality of Lake Balaton was threatened by algal blooms in the late summer in the late 1990s, since then the quality of the water improved considerably, mainly due to the improvement of the sewage system (*National Institute of Public Health, 1997*).

Waste management and soil pollution

The total quantity of waste amounted to 123 million tonnes in 1995. This included 27 million tonnes of municipal waste, 5 million ton-

nes of hazardous waste and 91 million tonnes of industrial waste. Only 10% of the 2700 known disposal sites are regarded as safe for human health and the environment (*National Institute of Public Health, 1997*).

Soil pollution of industrial sites with heavy metals (lead, cadmium, arsenic and zinc) and heavy pollution on and around hazardous waste landfill sites (polychlorinated benzenes, dioxin, polychlorinated biphenyls and other organic compounds) are the major problems associated with waste management and soil pollution (*Ministry of Welfare, 1997b*).

Housing

The number of rooms per occupied dwelling increased from 1.5 to 2.4 between 1960 and 1995. The number of dwellers per room declined from 2.5 to 1.1 during the same period (*National Institute of Public Health, 1997*). The average estimated size of dwellings in Hungary (71 m²) was the largest among the reference countries (average 54 m²) but smaller than the EU average (89 m²). In Hungary, 89% of dwellings were owner-occupied in 1995. This was one of the highest percentages among the reference countries and higher than for any EU country (*United Nations Economic Commission for Europe, 1999*).

One aspect of the quality of housing is the proportion of the population with connection to water and with access to hygienic sewage disposal. According to data from 1996, 84% of Hungarians had a water connection (*United Nations Economic Commission for Europe, 1999*), which was near the average for the reference countries (81%). However, there were significant differences between the capital area (99%), other urban areas (90%) and villages (71%) (*National Institute of Public Health, 1997*).

On average 94% of Hungarians had access to hygienic sewage disposal, but whereas the percentage was 100% in urban areas, it was 85% in rural areas. Up to 87% of inhabitants in Budapest are connected to the sewerage network versus 59% in other towns and only 4% in villages (*National Institute of Public Health, 1997*).

As many main roads currently pass through settlements, about half the population are reported to be disturbed by noise from road traffic, and this unfavourable situation can be observed all over the country. The construction of ring-roads around major centres of population is intended to improve this. Noise from railways has a smaller impact. Increasing air traffic at Budapest-Ferihegy airport has worsened the local disturbance due to noise. Five per cent of the inhabitants reported being disturbed from noise from industrial or service facilities (*National Institute of Public Health, 1997*).

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.

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 47%, from 592 to 274 per 100 000 population between 1985 and 1997. In Hungary, the decline was even larger: 72%. The number of registered accidents is, however, considered to underestimate the actual number, since both employers and employees may have interests in under-reporting (*National Institute of Public Health, 1997*).

The data on deaths from work-related accidents may be more comparable than the data on injuries. The number of deaths has decreased in all reference countries indicating improvements in occupational safety. Between 1985 and 1997, the number of deaths in work-related accidents decreased from 3.8 to 2.0 per 100 000 population in the reference countries (a decrease of 47%). Hungary's figure for 1997 was 1.5 per 100 000, a decrease of 69% since 1985. This was lower than the EU average (1.6 per 100 000, a decrease of 25% since 1985).

HEALTH CARE SYSTEM⁵

Hungary has a tradition of health services dating back to the eleventh century. The first public health act was passed in 1876, and social security and social insurance systems have a long history in Hungary. From 1948, the mixed-economy health care system was restructured to a centralized state model, in line with other sectors of the economy. The health care legislation adopted in 1972 confirmed that access to health services was a right linked to citizenship and promised comprehensive coverage free of charge at the point of use. However, since the system was underfunded it was unable to meet the level of demand. One consequence of this was that informal payments (gratitude payments) were common.

Health care reform

The need for health care reform became apparent in the 1980s, earlier than in the other reference countries. The governments regarded health care reform as essential because the population's health status was deteriorating; health care costs were high because of hospital-centred services; the health care system was inefficient and ineffective, with health care

professionals that had low income levels, low social status and poor working conditions; and consumers were not satisfied with the lack of choice and the poor standard of care (*WHO Regional Office for Europe, 1999a*).

The initial reforms from 1987 were followed up in 1990–1994 with more major reforms – decentralization, introduction of performance-based methods of paying providers, public health reform and giving priority to primary care. In 1991 the National Public Health and Medical Officer Service was established. It was based on the Network of Hygiene and Epidemiological Offices. After this, health care reform slowed because of the fiscal crisis and the economic stabilization programme.

Between 1990 and 1994, the division of responsibilities between the state and local government was redefined. The state retained direct ownership of health care facilities for specialist services, University hospitals, national institutes and army hospitals, only. The ownership of the primary care surgeries, outpatient clinics and hospitals was transferred to local governments, which also became responsible for maintenance and investment.

Table 3. Health care resources in Hungary and in the reference countries (1998 or latest available)

	Hungary	Reference countries	Minimum	Maximum
Hospital beds per 100 000 population	833	739	562	962
Physicians per 100 000 population	357	265	183	395
Hospital admissions per 100 population	23.6	17.1	11.6	24.2
Average length of hospital stay in days	9.1	10.6	9.1	12.5
Total health care expenditure as a percentage of GDP	6.5	5.1	2.6	7.7

⁵ This section is largely based on *Health care systems in transition. Hungary* (*WHO Regional Office for Europe, 1999a*).

Primary health care was to be strengthened, emphasising health promotion and disease prevention.

Since 1995, legislation has defined the minimum requirements in terms of equipment and personnel institutions need to get a licence. A national system of hospital accreditation has been planned (*Ministry of Welfare, 1997a; Vogler & Habl, 1999*). In 2000, the Parliament declared an Act on independent medical practice.

The objectives of future reforms include: further decentralizing the financing and delivery of health care services, reducing the overall social insurance contribution, reforming the insurance collection system and further privatization of the family physician's practice (*WHO Regional Office for Europe, 1999a*).

Organizational structure

The reformed Hungarian health services comprise three basic tiers:

- National, including the Ministry of Health, other relevant ministries, the National Health Insurance Fund Administration, and a range of other specialist national bodies such as the National Ambulance Service, the National Public Health and Medical Officer Service, and a range of professional organizations and unions.
- Sub-national, including county and municipal governments managing health care facilities, branches of the insurance fund administration, and local offices of the public health service.
- Private providers of care, such as private hospitals and pharmacies.

Broadly speaking, the national level is concerned with regulation, policy and planning. The sub-national government level manages health care facilities, and contracts for primary health care with independent primary care providers. The county and municipal offices of the

public health service monitor the public health and address public health concerns. The county branches of the insurance fund contract with private and state owned health care providers. The private sector is concerned with service provision.

Health care finance and expenditure

The financing system has been changed to be based on insurance, but the longer-term option of competition between insurance schemes was left open. Funding was separated, with investment costs coming from state and local government resources, and the recurrent costs of direct health services funded through the Social Insurance Fund. In 1992, the Social Insurance Fund was divided into a Health Insurance Fund and a Pension Insurance Fund, which became self-governing the following year. It was nationalised again in 1998, and is supervised by a secretary of state of the Ministry of Finance.

The compulsory social insurance system covers the whole population and provides practically a full range of services with a marginal role for supplementary insurance. The government controls and supervises the health care delivery system, but ownership is mixed, with dominance of local municipality and state ownership. (*Ministry of Welfare, 1997a; WHO Regional Office for Europe, 1999a*).

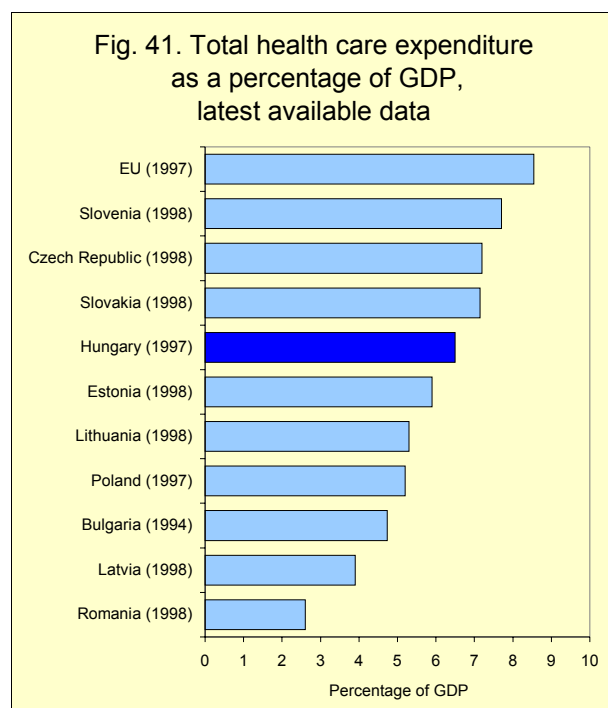
The social insurance schemes are financed by employers' and employees' payments. For the health insurance system in 1998, the employer's payment was 11% of the total income plus a monthly lump-sum payment of Ft 3900 (approximately 5.7% of average gross salary), and the employee's payment was 3% of the total income. Self-employed people pay a similar overall proportion of their total income, and the public sector covers the payments for unemployed people. Health insurance covers all costs related to health check-ups, primary, secondary and tertiary care, deliveries, emergency medicine and blood transfusions. Pharmaceuticals, medical aids, dental care and rehabilitation are also included in the insurance scheme, but out-of-pocket payments are always required. Compensation is paid in case of leave

because of sickness, maternity or occupational disease, or accident (*Vogler & Habl, 1999*).

Performance-based remuneration was introduced for direct medical services. Primary care was financed through patient capitation funds, fee-for-service funding for outpatient services and remuneration based on diagnosis-related groups for inpatient services. Despite some additional improvements in the financing system, there were still incentives to over-provision: for example, people tended to continue being referred to inpatient and specialist care rather than being treated in outpatient and primary care settings.

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.

In 1997, health expenditure as a proportion of GDP for Hungary was 6.5%, above the average for the reference countries (5.1%) but below the EU average of 8.5% (Fig. 41).



Data on health care expenditure adjusted for purchasing power parity (PPP) are only available for four of the reference countries. According to these data, the health expenditure in PPP per person was highest in the Czech Republic (US \$904 in 1996), Slovenia (US \$743 in 1994), while Hungary (US \$602 in 1996) and Poland (US \$371 in 1996) had much lower expenditure.

Primary health care

The practical transformation of the health care delivery system started when a system of family practitioners was established in the early 1990s. This was done to deliver continuous, personal and comprehensive health care, with greater emphasis on prevention, close to where people live. Previously, the family physicians were public sector employees with an obligation to provide primary care to the inhabitants of the area assigned to them. Following these reforms, the entire population is covered by family practitioners. Since 1992 people have been able to freely choose their family practitioners. Until 1996, practically all citizens took advantage of the possibility to choose their primary health care physician. The financing arrangements do provide incentives to family practitioners to work as private entrepreneurs, and the proportion of practitioners with private practice therefore increased rapidly from 10% to about four fifths of all practitioners between 1992 and 1997.

From 1992, postgraduate training for general practitioners was made compulsory, and undergraduate training for family physicians was introduced in medical universities.

The primary health care system also includes a network of nurses for maternal and child care and a network for dental care. The latter is privately financed, and the private sector plays a greater and more important role in dental care than does the public sector. However, each citizen has access to primary dental care. A defined set of dental care services can be accessed at a reduced rate, and regular dental check-ups are provided.

The major problem within primary care is the unequal distribution of care, in terms of both

quantity and quality. The main objectives in developing primary health care are prevention and rehabilitation as well as the home nursing services, which have been operating since 1995 (*Ministry of Welfare, 1997a; Vogler & Habl, 1999*). There is also the possibility that the funding of general practitioners based largely on the number of patients registered does not provide any incentive for them to treat patients within primary care and may lead to inappropriate hospital referrals (*Hungarian Governmental Decree, 1999*).

Secondary and tertiary care

As developments in Hungary since the 1960s focused on increasing the volume of buildings and hospital beds, the standards of medical equipment fell seriously behind. Modern diagnostic and therapeutic equipment first appeared in considerable quantities with economic liberalization in the early 1990s, when private investors were allowed into the health care market.

There are about 250 polyclinics (about 150 polyclinics affiliated with hospitals and about 100 independent polyclinics), which provide diagnostics and therapeutic support to primary health care. An important and developing area is ambulatory care and day surgery (non-invasive and micro-invasive procedures) which can replace inpatient care and surgery. Central development programmes and changes in financing are being implemented to promote outpatient specialist services in polyclinics and hospitals so that they can replace more expensive forms of health care and improve the quality and efficiency of patient care.

There were 162 hospitals operating in 1996. Community hospitals offering the basic specialties are accessible to everyone within 25–30 kilometres. Some of the 19 county hospitals and some of the metropolitan hospitals in Budapest work as regional centres for some specialties. National institutes and departments of medical universities carry out regional and national activities.

The hospital system was well developed, but its size and high costs endangered the operation of the entire health care system. Therefore,

the radical and coordinated modernization of structure, financing and management within the hospital sector become inevitable. The number of hospital beds in intensive care, in chronic care and in rehabilitation has been considered to be too low.

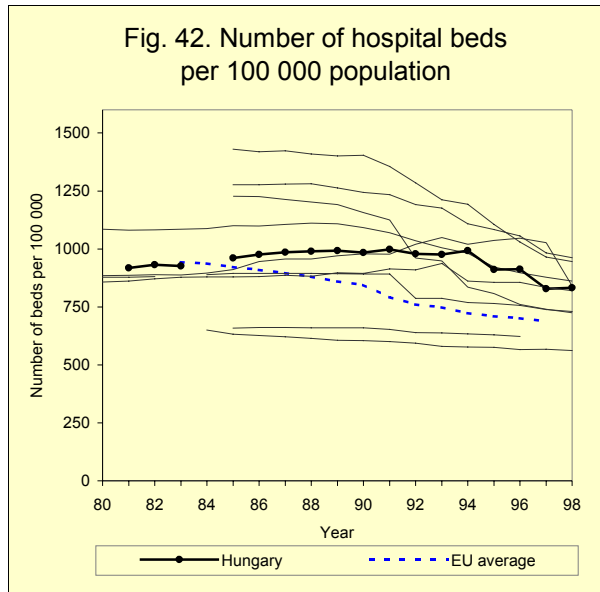
The number of hospital beds per 100 000 population has decreased in almost all reference countries since 1985. The decrease in Hungary (–13%) was smaller than the decrease in the EU in general (–21%), and the rate in Hungary (833 per 100 000 in 1998) remained higher than both the EU average (687 per 100 000 in 1997) and the average for the reference countries (739 per 100 000 in 1998) (Fig. 42).

In 1996, a law was passed intended to fit the distribution of medical services to the health needs of each specific region. The aim was not merely to reduce hospital capacity but also to reduce regional inequalities (*Ministry of Welfare, 1997b*). However, as a result of regional consensus, a total of 18 000 hospital beds were closed, one fifth of all beds. In this process, compromises were made to close beds rather than entire hospitals, and no incentives were introduced to reduce referrals. Consequently, the resulting savings were smaller than expected, and the high hospitalization rates have continued.

Inpatient admission rates vary significantly among the reference countries. Hungary's rate increased by 15% from 1986 to 1998, and the most recent rate (23.6 per 100 in 1998) is one of the highest among the reference countries (average 17.1 per 100 in 1998) and was considerably higher than the EU average (19.0 per 100 in 1996) (Fig. 43).

The average length of hospital stay has decreased in all reference countries since the 1980s. The average for Hungary was 13.6 days in 1985 but decreased to 9.1 in 1998. These were among the lowest figures in the reference countries, well below the average (10.6 days in 1998) (Fig. 44).

The reported number of outpatient contacts also varies greatly among the reference countries: from 4.6 to 15.1 annual contacts per person in 1998. The number of outpatient contacts



in Hungary has increased by 25% since 1985, and the figure in 1998 (13.7) is one of the highest among reference countries.

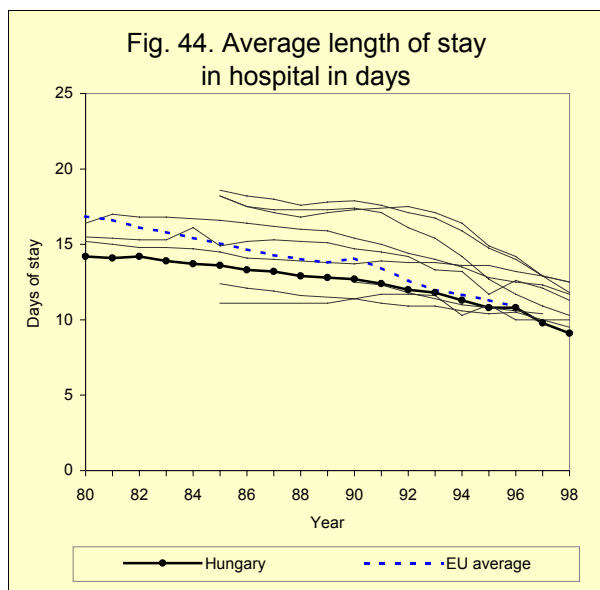
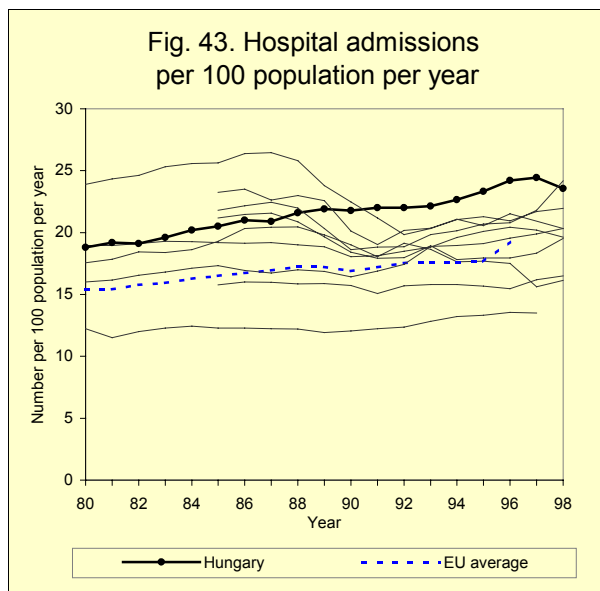
Pharmaceuticals and pharmacies

Pharmaceutical manufacturing constitutes an important element of both industry and health care services. The state-owned pharmaceutical companies were privatized between 1991 and 1996. The wholesale trade of pharmaceuticals was owned by the state prior to 1990 and has now been privatized. In 1997, more than 90% of the retail pharmacies were privately owned (*Ministry of Welfare, 1997a*).

In Hungary, only registered drugs are available on the market. Prior to 1990, people were required to make a nominal contribution to the price of drugs, as they were entitled to pharmaceuticals within the universal social security coverage. Since the establishment of a new insurance system, the health insurance scheme and the population share the burden, with the population paying a continuously increasing proportion of the expenditure.

In 1995, a drug subsidy system based on a drug formulary was introduced in Hungary. There is a list of essential drugs, which includes preparations used in the treatment of the most common chronic conditions. These are dispensed with a social insurance subsidy of 90% to 100%, whereas drugs not on the list are subsidized at 50% to 70%, with a steady increase in the proportion of drugs not subsidized at all.

The use of pharmaceuticals is high, resulting in a high percentage (30%) of total health care costs spent on pharmaceuticals. Though not a problem limited or specific to Hungary, there are still many pharmaceuticals of unproven benefit on the market. The Health Insurance Fund now intends to limit drug spending (*Vogler & Habl, 1999*).



Human resources

The number of physicians in Hungary (357 per 100 000 in 1998) is greater than the average for the EU (349 per 100 000 in 1997) and the 100 000 in 1998) (Fig. 45). Since 1985, the average for the reference countries (265 per

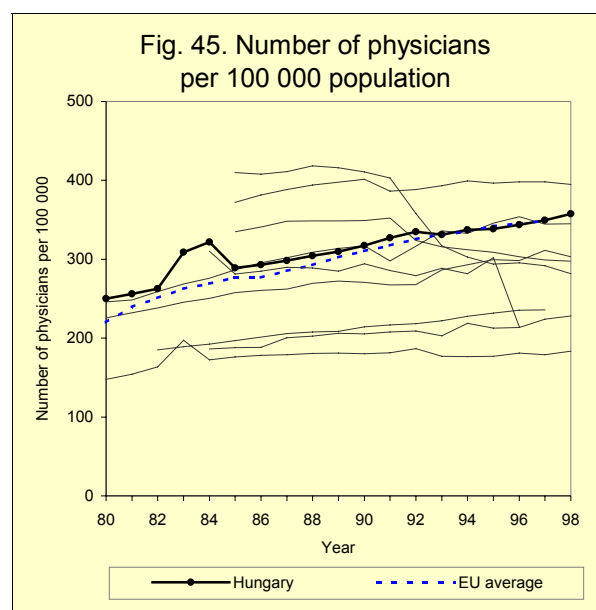
number has increased by 24%, one of the highest increases among the reference countries.

In 1998 Hungary had 42.4 dentists per 100 000 population, slightly lower than the average for the reference countries (44.5 per 100 000 in 1998), and much lower than the EU average (67.7 per 100 000 in 1996).

Since 1985, the number of pharmacists per 100 000 population has increased in Hungary; 47.4 per 100 000 population in 1998. This was higher than the average for the reference countries (37.5 per 100 000 in 1998), but much lower than the EU average (77.6 per 100 000 in 1996).

The number of nurses in Hungary – 392 per 100 000 population in 1998 – was the lowest among the reference countries, even though this number has increased by one third since 1985. The number of midwives was higher in almost all reference countries (average 49.5 per 100 000 in 1998) than in the EU (average

29.6 per 100 000 in 1996), but Hungary was the only country with fewer midwives (18.6 per 100 000 in 1998) than the EU average.



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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.

DISCLAIMER

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