

HIGHLIGHTS ON HEALTH IN LITHUANIA



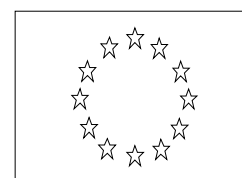
Country Highlights give an overview of the health and health-related situation in a given country and compare, where possible, its position in relation to other countries in the Region. The Highlights have been developed in collaboration with Member States for operational purposes and do not constitute 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 birth rate in Lithuania has been declining since the second half of the 1980s. The natural population growth fell below zero around 1994 and has remained at about the same level since. The birth rate and natural population growth are close to the average for the reference countries¹.

Lithuania has experienced very similar trends in life expectancy and other key health indicators as the two other Baltic states and the countries of the European part of the former USSR, although, in absolute terms, the general health situation is slightly better. Life expectancy and total mortality improved significantly in 1986, owing to Gorbachov's anti-alcohol campaign, followed by a gradual deterioration reaching pre-campaign levels around 1992. This deterioration continued further during 1993–1994. The recovery period started in 1995. By 1998, life expectancy had returned to the 1986 level. It continued improving and in 1999 reached 72.4 years, which was the third highest figure among the reference countries.

Infant mortality, after some increase in 1991–1992 (caused largely by the changed definition of live birth), has declined again since to a level below 10 per 1000 live births (8.6 in 1999). Maternal mortality is close to the average for the reference countries.

Trends in premature mortality from cardiovascular diseases (in the age group 0–64 years) and external causes, the leading causes of death, resemble those in the other Baltic countries and the European part of the former USSR, but the peak levels reached around 1994 are somewhat lower.

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.

As in the other neighbouring countries, premature mortality from cancer declined during the mid-1990s, although it increased slightly again in 1999. Reported cancer incidence, however, shows a continuous increase. Mortality from cancer of the cervix is increasing and is one of the highest in the European Region.

Mortality from motor vehicle traffic accidents is among the highest in Europe.

The suicide rate in Lithuania has increased since 1990 and is still the highest in Europe, although it started to decline after 1996. Mortality from mental disorders (including alcohol dependency) and diseases of the nervous system was also the highest in Europe in 1995, but has since declined significantly to average levels.

The reported rate of mortality from diabetes is among the lowest in Europe.

Tuberculosis incidence, after levelling off in the late 1980s, increased dramatically during the 1990s. Today, tuberculosis incidence in Lithuania, together with Latvia, Romania, the Russian Federation and some other countries, is among the highest in Europe.

Syphilis incidence has also increased dramatically since the early 1990s, as in the other Baltic countries and the newly independent states of the former USSR. A decline started in 1997 but the Baltic states still have the highest incidence among the reference countries.

The reported prevalence of chronic obstructive pulmonary disease is among the highest in Europe.

The reported hospitalization rate due to ischaemic heart disease is among the highest in Europe, together with neighbouring Latvia, Belarus and Finland.

The prevalence of smoking among women, particularly in young age, and among school-children has been increasing rapidly during the 1990s.

The number of hospital beds has declined since 1990, as in most of the neighbouring

countries, but it is still relatively high. In contrast to the two other Baltic countries, the number of physicians remains practically unchanged since 1990, and it is now among the highest in Europe.

The number of hospital admissions, after some drop in the late 1980s, increased steadily during the 1990s. In 1988, the hospitalization rate rose markedly, probably because of the

introduction of a hospital financing scheme based on the number of cases treated. Simultaneously, the average length of stay in hospital declined, as in most of the reference countries.

Total health care expenditure, as a percentage of gross domestic product (GDP), is close to the average for the reference countries but well below the European Union (EU) average.

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 socio-economic 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 Lithuania, the reference countries are ten central and eastern European candidate countries for EU accession - 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 (version January 2001). The database can be downloaded from www.who.dk/country. 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 overshadow quite 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) have been used. Line charts present the trends for all the reference countries and for the EU or another geopolitical group, 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, three-year moving 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

Lithuania was an independent grand duchy in the Middle Ages. In the 16th century, it united with Poland to form a commonwealth. During the partition of this commonwealth by Russia, Prussia and Austria in the 18th century, Lithuania was absorbed into the Russian empire.

After the First World War, on 16 February 1918, the Lithuanian Council proclaimed the restoration of the Lithuanian state. The secret protocol of the Soviet-German frontier treaty in 1939 assigned the greater part of Lithuania to the Soviet sphere of influence and on 3 August 1940 Lithuania became a Soviet Socialist Republic of the USSR. On 11 March 1990, the newly elected Lithuanian Supreme Soviet proclaimed independence based on the continuing

validity of the act of independence of 16 February 1918. A referendum to approve a new constitution was held on 25 October 1992. The parliament is the 141-member *Seimas*. The head of state is the President. There are ten provinces administered by governors.

Lithuania is a member of the United Nations, the North Atlantic Treaty Organization Partnership for Peace, the Council of Europe and the Council of Baltic Sea States, and is an associate partner of the Western European Union and an associate member of the EU. In 1995, Lithuania applied to join the EU and, in December 1999, Lithuania along with five other countries was invited to begin full negotiations for membership in the EU.

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

	Lithuania	Reference countries		
	Vilnius	Average/total	Minimum	Maximum
Capital	Vilnius			
Population	3 699 660	104 705 300	1 450 000	38 664 000
Population 0–14 years (%)	20.1	19.5	16.1	22.2 ^c
Population 15–64 years (%)	66.7	68.0	66.5 ^c	74.2
Population ≥ 65 years (%)	13.2	12.5	9.6	16.0
Area in km ²	65 000	1 077 966	20 000	313 000
Density per km ²	57	97	32	130
Urban population (%)	68	64	50	75
Births per 1000 population	9.8	10.1	8.0	11.1 ^b
Deaths per 1000 population	10.8	11.3	9.6	14.2
Natural growth rate per 1000 population	-1.0	-1.1	-5.5	1.1 ^d
GDP per person in US \$ PPP	6436^a	8156	4809 ^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.

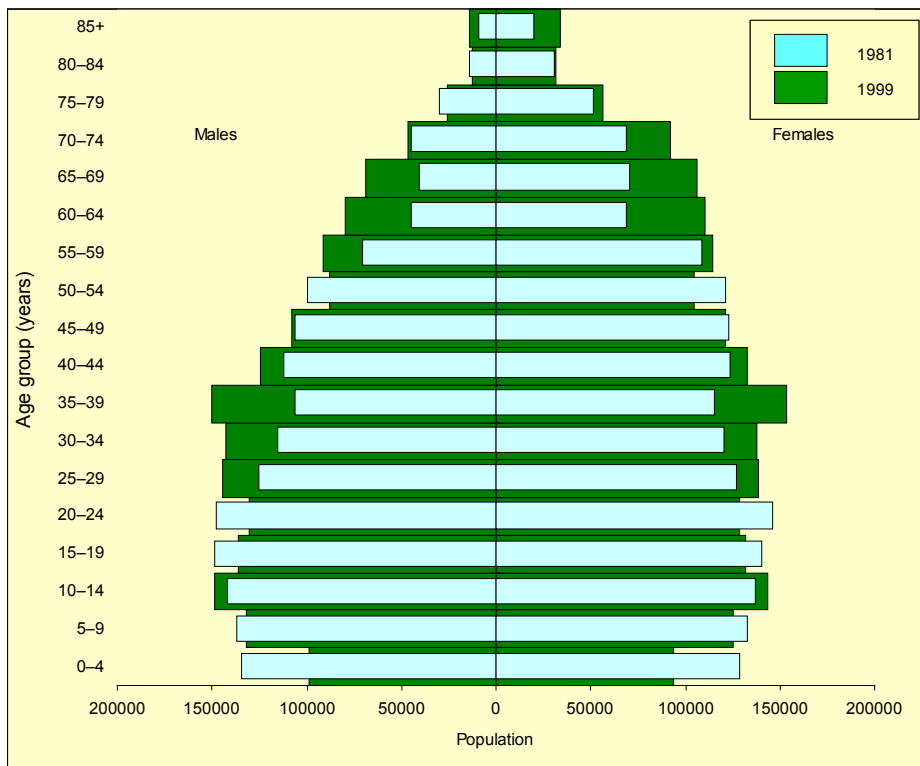
In general, the population age-structure and urban/rural ratio is close to the European Region average. Owing to relatively high birth rates during the 1960s and 1970s and a gradually increasing life expectancy, the Lithuanian population has begun to age. The proportion of the population over 65 years is increasing but still remains below the European average. The population in Lithuania is about the third youngest among the ten reference countries.

Owing to the greater mortality of men, females predominate. The female/male ratio is among the highest in Europe together with the other Baltic states and the newly independent states.

In the 1980s, the birth rate in Lithuania was relatively stable around 15–16 births per 1000 population. As in most other countries of central and eastern Europe, however, the socio-economic difficulties of transition to a market economy have resulted in a significant decline in the birth rate during the first half of the 1990s.

By 1994, the simultaneously increasing mortality resulted in a negative natural population growth, i.e. the number of deaths exceeded the number of births. This negative growth is less pronounced than in the reference countries, but population growth remains below zero (Fig. 2). A negative net migration balance has also contributed to the declining population trend, particularly in 1992–1993.

Fig. 1. Age pyramid, 1981 and 1999



Household composition and family structure

The rate of marriages has decreased from 9.8 marriages per 1000 population in 1990 to 5.1 in 1997. In 1997, there were 60 divorces for every 100 marriages.

Families are relatively small in Lithuania – the average household size was 2.74 in 1997. The proportion of households made up of a single person was 21%, of a single adult and children under 18 years 4%, of couples without children 19%, and of couples with children under 18 years 25% (*Department of Statistics, 2001*).

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.

According to data from 1997, 81.4% of the population are Lithuanians. Other important ethnic groups are Russians (8.3%), Poles (7%),

Belarusians (1.5%), Ukrainians (1%), and Jews (0.1%) (*Department of Statistics, 2001*).

The official language is Lithuanian, but ethnic minorities have the right to use their language where they form a substantial part of the population. Lithuanian is an Indo-European language, apparently as archaic as Sanskrit in its grammatical forms. It is different from the Slavic languages spoken in most neighbouring countries, except Latvian.

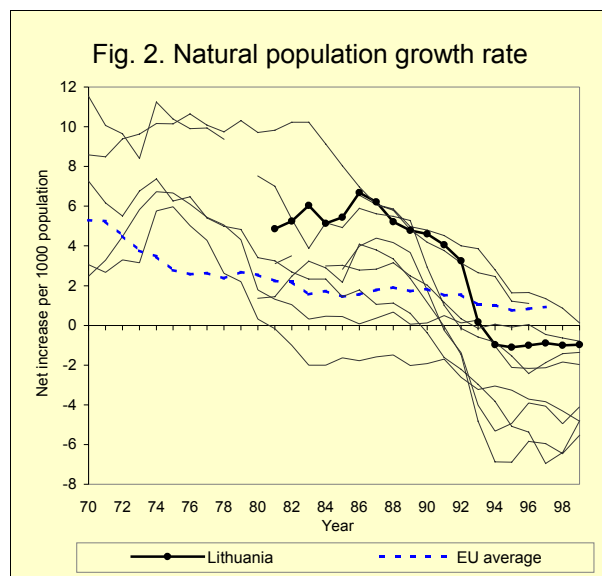
The religion is predominantly Roman Catholic (about 90% of the population) (*Turner, 2000*).

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 1997, the gross enrolment ratio in Lithuania was 90% for secondary and 35% for tertiary education versus 92% and 27% respectively for the reference countries (*UNESCO, 1999*). According to 1989 census data, 57% of the population had secondary education and 12.6% tertiary education.

Together with the other newly independent states of the former USSR, Lithuania experienced a deep economic crisis in the early 1990s. The encouraging signs of macroeconomic stabilization that appeared in 1994 have



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*).

evolved into a sustainable economic revival. The continued decrease in inflation, the growth of GDP, the increased foreign investment, the relatively low and stable unemployment, favourable changes in the balance of payments and privatization reflect the transformation of the Lithuanian economy. According to the Department of Statistics, GDP grew by 3.3% in 1995, 4.7% in 1996 and 7.3% in 1997. The Russian financial crisis in 1998 had strong implications for the Lithuanian economy, however, causing a significant decline in growth rate in 1998–1999. In 1998, GDP growth was 5.1%, while according to provisional estimates for 1999, GNP even declined

by 4.2%. During 1998, up to 70% of GDP derived from the private sector.

According to the household survey, the average total income per capita per month per household increased from US\$ 78.5 in 1996 to US\$ 105 in the first half of 1999 (*Department of Statistics, 2001*).

The unemployment rate has increased continuously and, according to National Labour Exchange information, the unemployment rate in 1998 was 6.4%. By the end of 1999 the rate had reached 8.4% (*Department of Statistics, 2001*).

HEALTH STATUS

In general, life expectancy and most mortality-based indicators showed an improvement in the second half of the 1990s. Fig.3 shows the position of Lithuania relative to the reference countries as regards the main mortality indicators, as well as the change in this position since 1985. The main problems in the health status of the Lithuanian population are:

- Very high suicide rate, although some decline is observed during recent years.
- High mortality from motor vehicle traffic accidents and other accidents.
- High mortality from cancer of the cervix among women.

Fig. 3. Lithuania relative to reference countries in 1985 ● and latest available year (1996–1999) ☺														
	BEST					WORST								
POSITION	1	2	3	4	5	6	7	8	9	10	Lithuania	Reference country average	Minimum ^a	Maximum ^b
Life expectancy at birth (years)					☺	●					72.4	72.0	70.2	75.8
Male versus female difference in life expectancy at birth (years)								☺	●		10.4	8.1	6.8	10.9
Infant mortality rate per 1000 live births				☺	●						8.7	12.1	4.6	18.6
Maternal mortality rate from all causes per 100 000 live births ^c					●		☹				15.3	17.3	4.8	44.1
SDR ^d from cardiovascular diseases, age 0–64 years		●		☹							122.9	134.6	61.1	167.3
SDR from ischaemic heart disease, age 0–64 years					●	☹					66.1	57.3	25.3	88.0
SDR from cerebrovascular disease, age 0–64 years				●	☹						22.6	31.3	14.3	51.1
SDR from cancer, age 0–64 years			☺	●							102.7	109.3	92.7	145.3
SDR from trachea/bronchus/lung cancer, age 0–64 years	☺		●								20.3	27.6	19.4	42.0
SDR from cancer of the cervix among females aged 0–64 years							●		☹		8.7	7.6	3.3	11.9
SDR from breast cancer among females aged 0–64 years							●	☹			16.7	16.2	14.8	20.6
SDR from external causes of injury and poisoning								☺		●	142.6	74.8	52.2	156.6
SDR from motor vehicle traffic accidents									☹		21.0	14.7	10.2	26.0
SDR from suicide and self-inflicted injury									●	☹	42.1	17.2	12.0	42.1
☺	Position improved		6		(indicators)									
☹	Position unchanged		1		(indicators)									
☹	Position deteriorated		7		(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

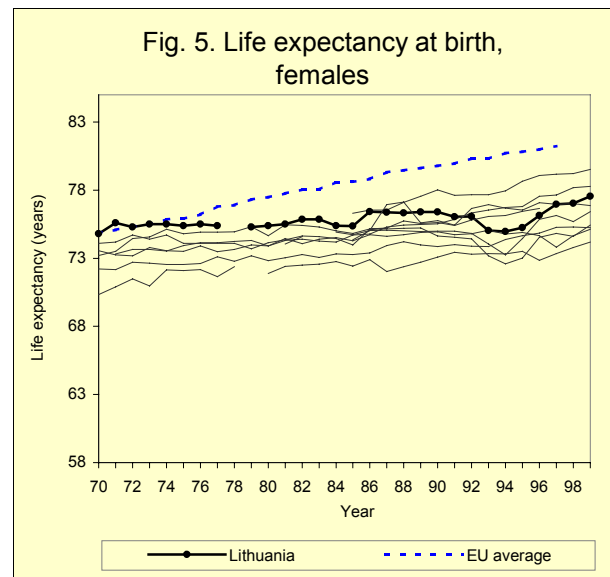
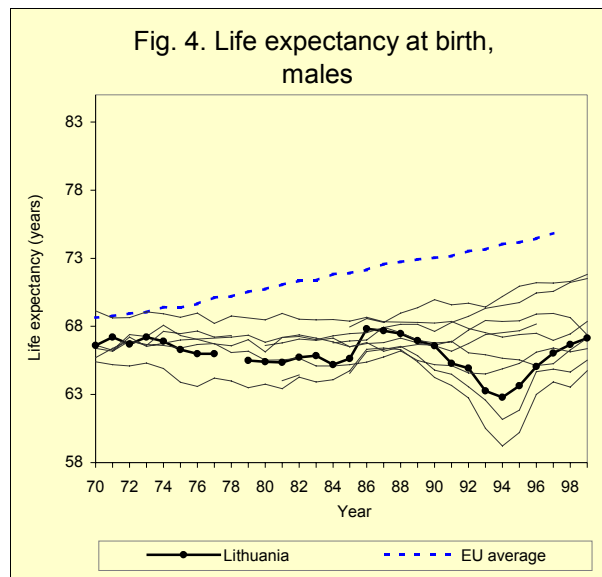
Trends in life expectancy at birth and in overall mortality resemble trends in the other Baltic states and the newly independent states (Fig. 4 and 5). In the 1970s, life expectancy was close to the EU average but subsequently, owing to slightly deteriorating trends, the gap increased. In 1986, Gorbachov's anti-alcohol campaign resulted in a sharp improvement in life expectancy, with a gradual deterioration back to the same, pre-campaign level by about 1992. The decline, associated with the socio-economic crisis, continued until 1994 and then reversed. In 1999, life expectancy in Lithuania had reached 72.4, which was the third highest among the reference countries according to the latest available data (Fig. 6).

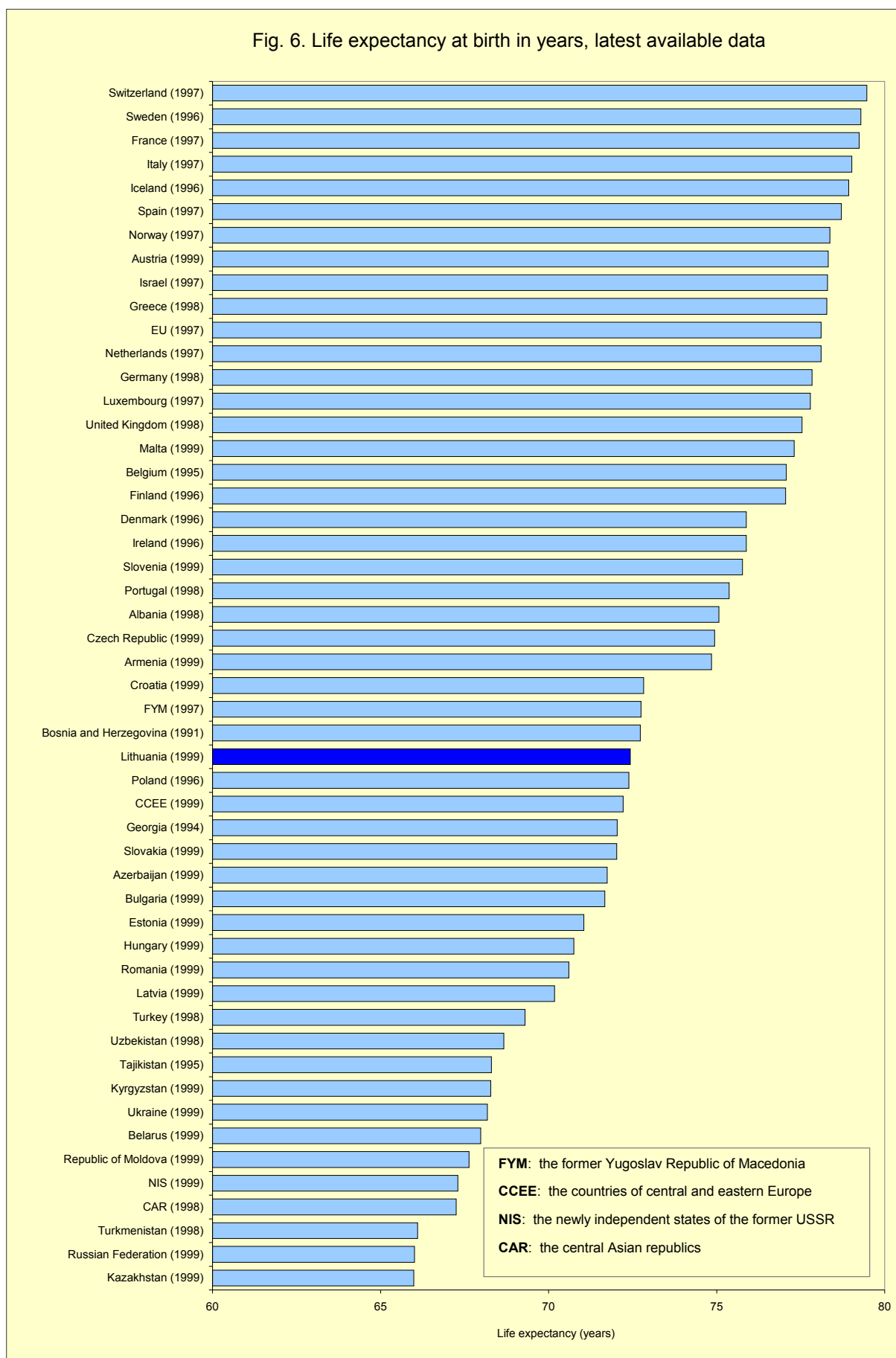
Mortality from cardiovascular diseases and accidents, often associated with alcohol, had the greatest impact on the changes in life expectancy mentioned above.

The difference in life expectancy between males and females is about 10 years. Together with other Baltic states and some newly independent states, this difference is among the widest in Europe.

The life expectancy of the rural population, especially males, tends to be shorter than that of the urban population. The largest difference between urban and rural males was observed in 1996 (4.9 years) and between females in 1993 (2.3 years). Similar differences in health indicators were observed between population groups with different levels of education. In the age group 25–34 years, overall mortality among males with the lowest level of education was more than tenfold higher, and among females eightfold higher, than that of males and females, respectively, with a university education.

Large regional differences in life expectancy have also been observed: the difference between the shortest and longest life expectancy in different regions was 10.8 years in 1994–1996 for males and 5.6 years for females. These geographical differences in life expectancy were due mainly to inequalities in mortality from external causes and cardiovascular diseases. In most regions, differences in male life expectancy were due mainly to external causes, and in female life expectancy to cardiovascular diseases (*Kaunas University of Medicine, 1998*).



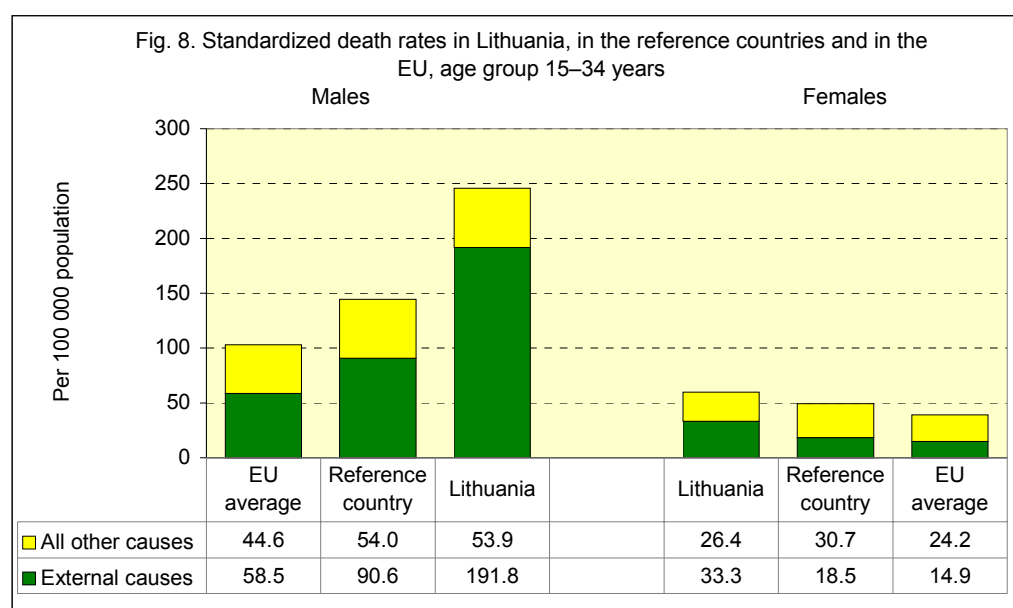
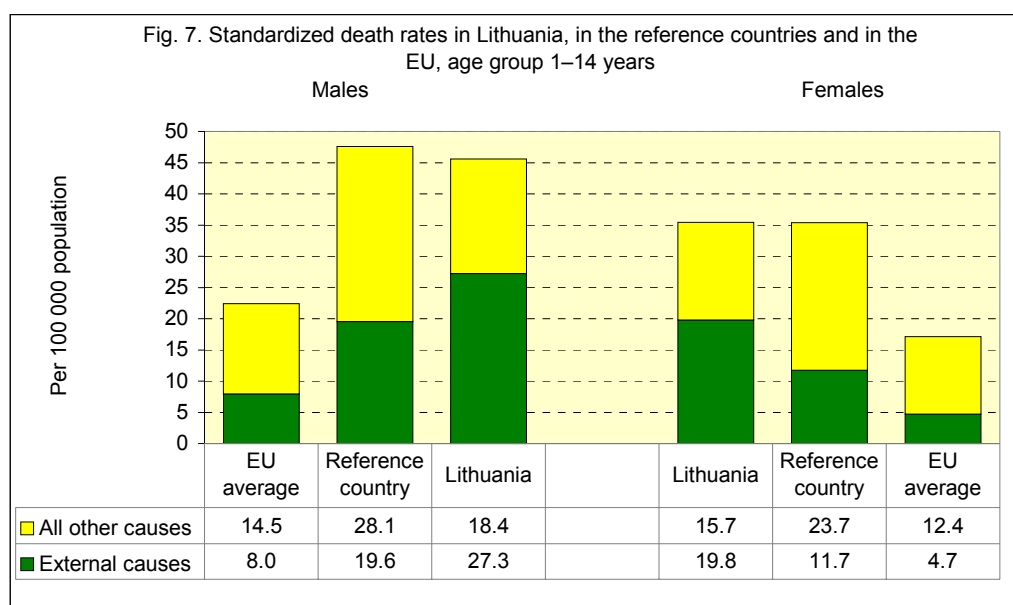


Main causes of death and morbidity

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.

As in most European Region countries, the leading causes of death in Lithuania are diseases of the cardiovascular system, cancer and external causes (correspondingly responsible for about 52%, 20% and 15% of deaths). The

relative contribution is quite different, however, to the averages for western Europe. In Lithuania, many more people die from diseases of the cardiovascular system, particularly in older age groups, and from external causes of death, particularly in younger age groups. The difference in total mortality between Lithuania and the EU is almost entirely due to external causes of death among children and particularly among young adults. In the older age group (35–64 years), both cardiovascular diseases and external causes of death are the main contributors to the mortality gap between Lithuania and the EU (Fig. 7– 9). Cancer is a relatively less frequent cause of death (Table 2).



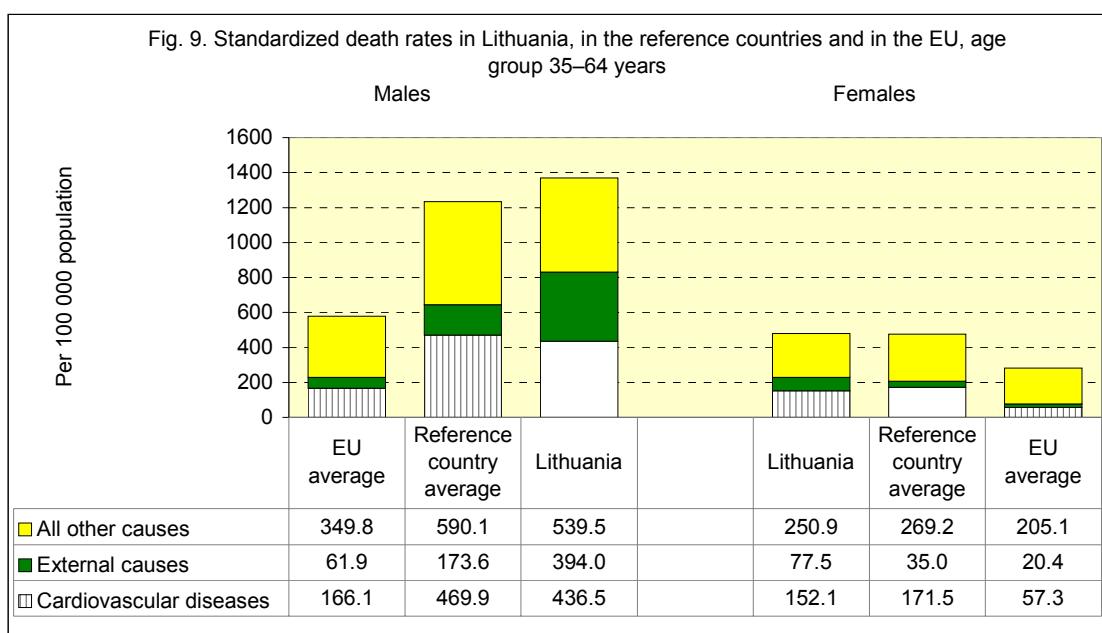


Table 2. Proportional mortality structure in Lithuania (1999) and in the EU (around 1997) by main causes of death and age groups

Causes of death	Age 0–64 years		Age 65 and above	
	Lithuania %	EU average %	Lithuania %	EU average %
Diseases of circulatory system	27.6	22.7	68.4	45.8
Cancer	23.1	35.6	17.7	23.8
External causes of injury and poisoning	30.8	14.2	3.6	2.6
Diseases of respiratory system	3.0	3.9	4.3	10.0
Diseases of digestive system	4.8	6.3	2.2	4.0
Infectious & parasitic diseases	2.4	1.1	0.6	0.8
Other diseases	8.3	16.2	3.2	13.0

Table 3. Hospitalisation rate (% of all hospitalisations) by main causes of diseases in Lithuania (1999) and in the EU (around 1998)

Class of diseases	Lithuania %	EU average
Infectious and parasitic diseases	4.2	1.8
Cancer	6.0	8.9
Diseases of the circulatory system	16.1	12.9
Diseases of the respiratory system	12.6	6.8
Diseases of the digestive system	9.3	9.8
Injuries and poisoning	8.7	9.1
Other causes	43.1	50.7

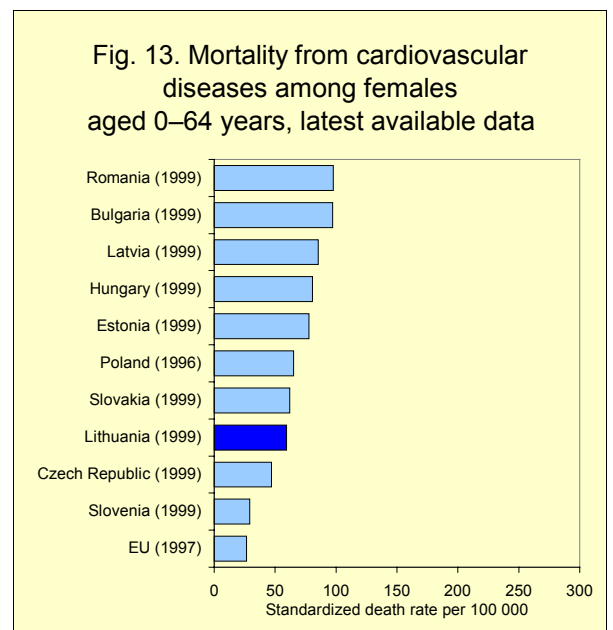
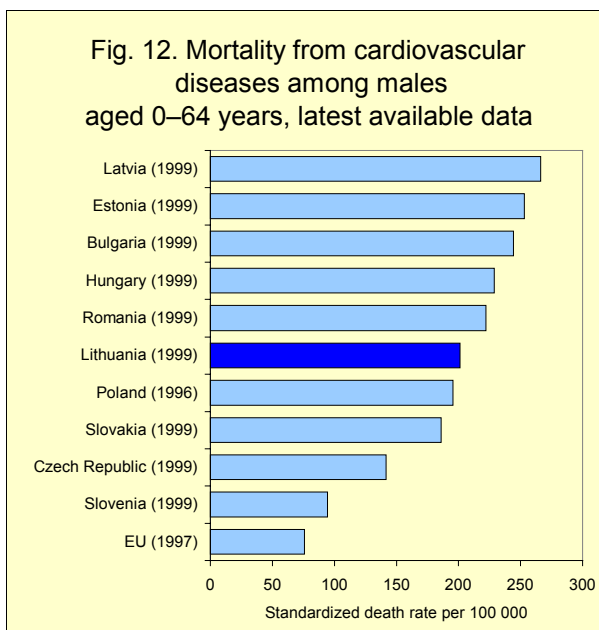
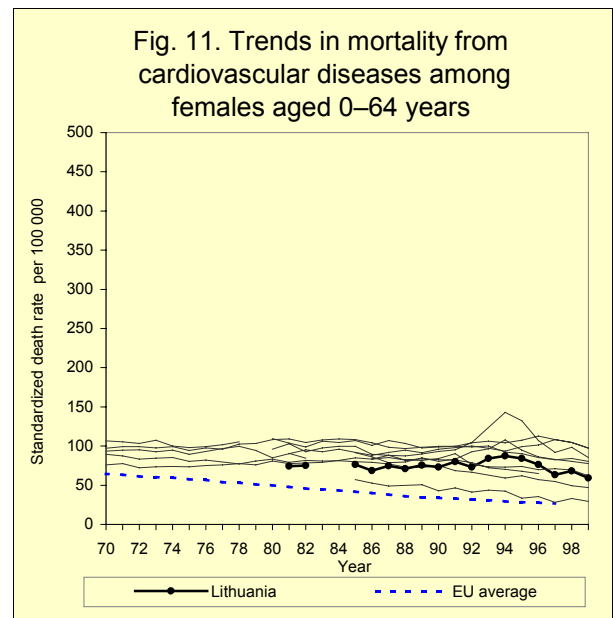
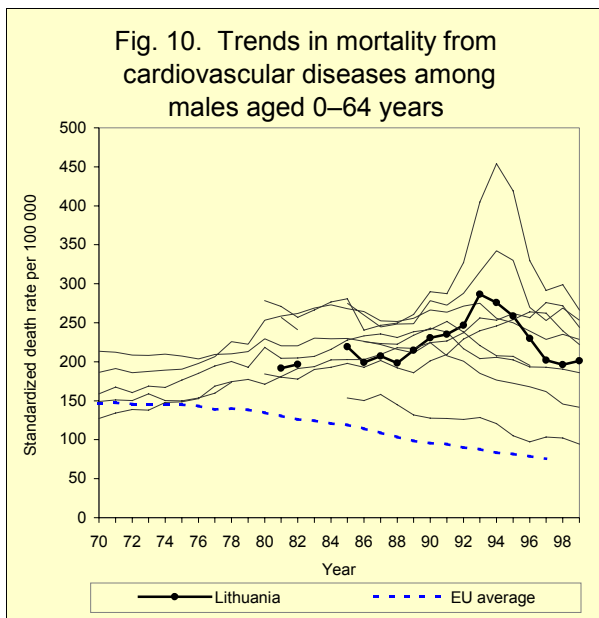
In general, the hospitalization structure as a rough estimate of morbidity by main disease groups shows similar differences between Lithuania and the EU average as in the case of mortality, except perhaps for diseases of the respiratory system (Table 3).

Cardiovascular diseases

In Lithuania, cardiovascular diseases account for about half of total mortality, 30% of disabilities and 15–20% of all referrals to health care institutions. In 1999, the standardized death rate (SDR) for cardiovascular diseases was 509 per 100 000 population. Ischaemic

heart disease and stroke contributed the greatest proportions (60% and 23%, respectively) of total mortality from cardiovascular diseases. This proportion of ischaemic heart disease is the highest among the reference countries and it is close to the other two Baltic countries.

After some decline in 1986, premature mortality (in those aged 0–64 years) from cardiovascular diseases in Lithuania increased until 1993 (Fig. 10, 11). Since 1994, cardiovascular disease mortality has declined again. The greatest increase was observed in 1993, due mainly to cardiovascular diseases other than ischaemic heart disease and stroke. This may



indicate certain changes in death certification practices.

According to the latest available data from 1999, premature mortality from cardiovascular diseases in Lithuania is close to the average for the reference countries (Fig. 12, 13), but more than twice the EU average. The rate of hospitalization due to cardiovascular diseases is also among the highest in Europe, both in absolute and relative terms, i.e. per 100 000 population and as a percentage of total hospitalizations.

As in many other countries, strong social inequalities exist: the lower the education, the higher the risk of cardiovascular diseases. Some 40% of the difference in mortality between urban and rural males and about 80% of the differences between urban and rural females can be attributed to the higher mortality from cardiovascular diseases in rural areas (*Kaunas University of Medicine, 1998*).

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 those on cancer of the trachea, bronchus and lung are presented in the section on smoking.

Cancers are the second leading cause of mortality, after cardiovascular diseases, accounting for about 20% of all mortality in 1999.

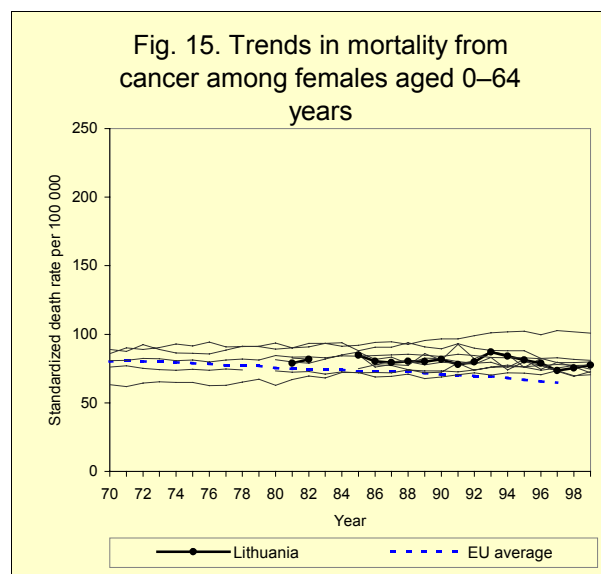
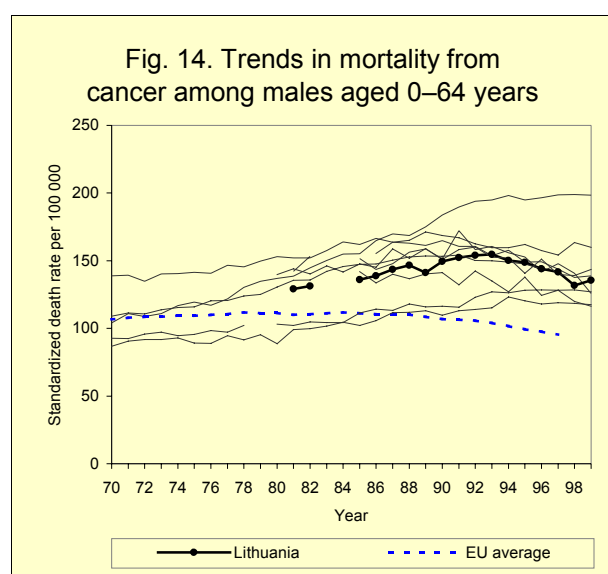
Increasing cancer mortality trends reversed in 1994 and have declined since then, although some increase has been observed again in recent years, particularly among women (Fig. 14, 15). The most common causes of cancer death in men were lung and stomach cancer, in women cancer of the breast and stomach. Contrary to the cancer mortality trends mentioned above, the incidence of cancer has increased steadily since 1990 although it is still well below the EU average (Fig. 16).

Almost half of all cancers are diagnosed during the third or fourth stage when the disease is advanced and frequently incurable.

The level of premature cancer mortality in Lithuania is close to the average for the reference countries, but exceeds the EU average by about 20–30%.

There are clear urban/rural and social differences in cancer mortality. During the period 1970–1990, cancer mortality increased by 45% in rural and 12% in urban males (*Kaunas University of Medicine, 1998*). The more rapid growth in cancer mortality among rural males was caused mainly by lung cancer.

Men with a lower education have a higher cancer mortality risk, which to a certain extent may be explained by differences in smoking prevalence and exposure to other risk factors (*Kaunas Medical Academy, 1998*). Conversely, women with a university education have a higher risk than women with a second-



dary or lower education, possibly also related to the different fertility patterns in these groups.

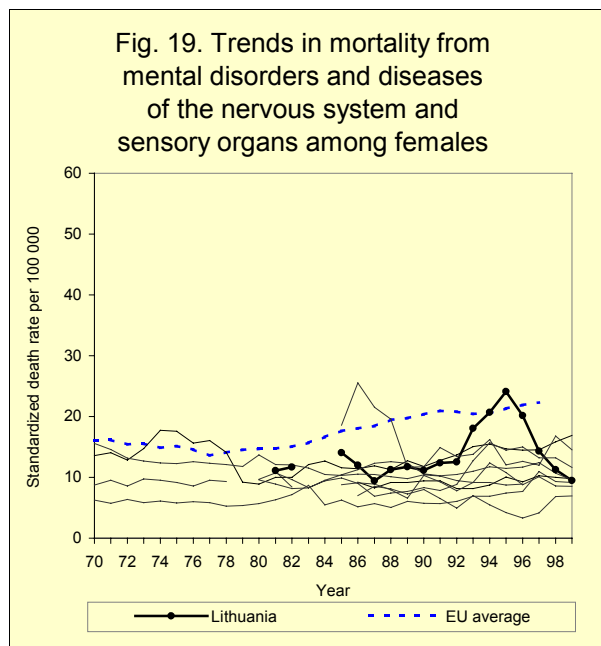
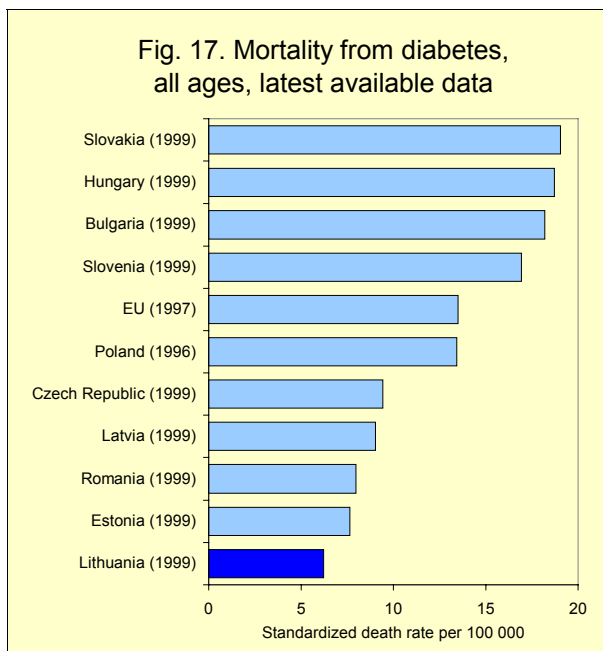
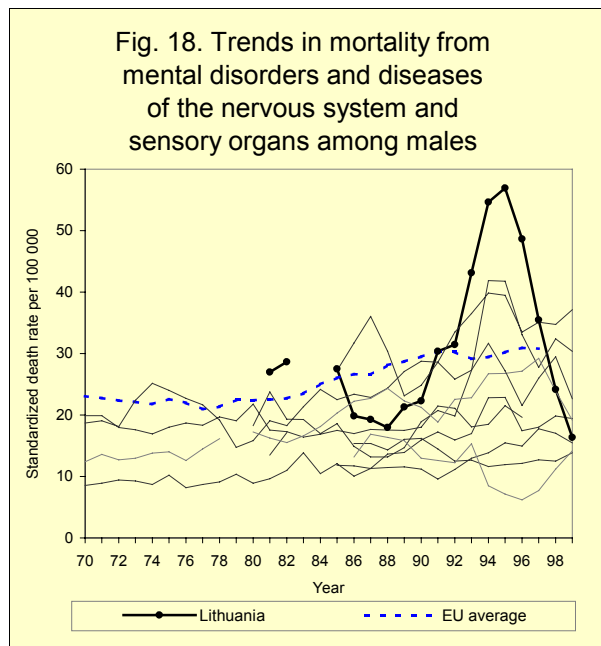
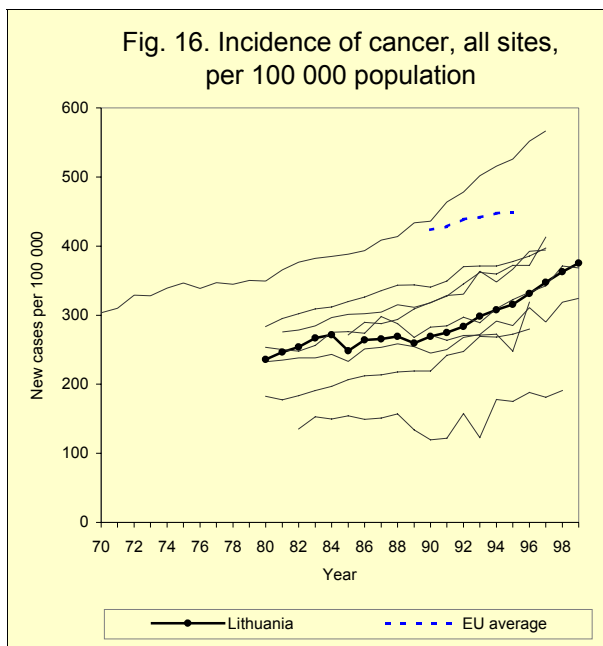
Other natural causes of death

Mortality from diseases of the respiratory system is around the average for the reference countries and the level remained stable during the 1990s.

Mortality from diseases of the digestive system is relatively low but increased gradually from the end of the 1990s.

Mortality from diabetes in Lithuania is the lowest among the reference countries and is among the lowest in the European Region (Fig. 17).

Trends in mortality from mental diseases (including alcohol dependence syndrome) and from diseases of the nervous system demonstrate a pattern similar to external causes of death: mortality dropped in 1986 during the anti-alcohol campaign and started to rise again, reaching a peak in 1995. In 1999, it dropped sharply again to around the average level for the reference countries (Fig. 18, 19).

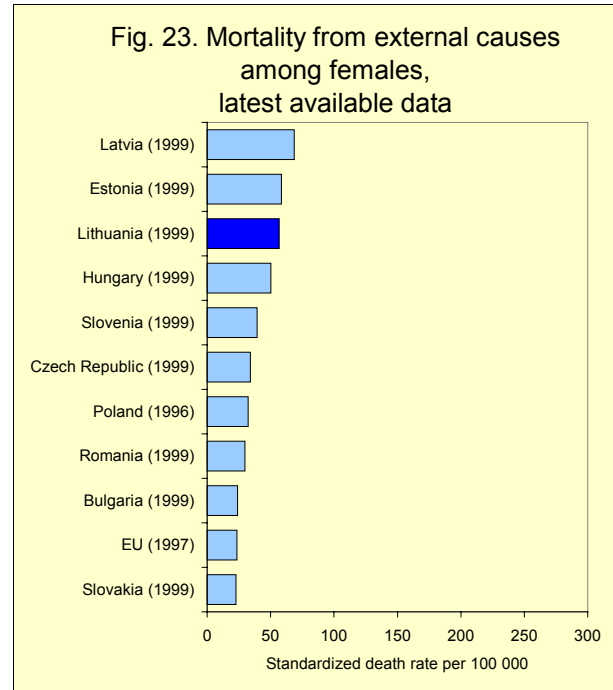
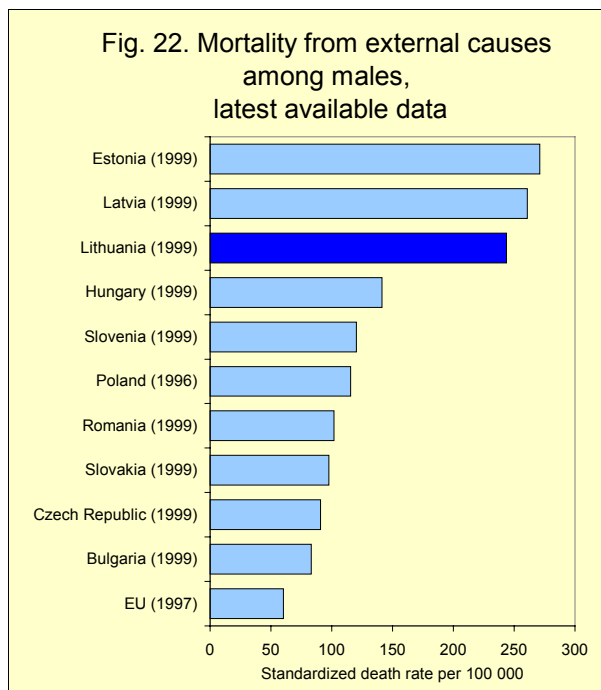
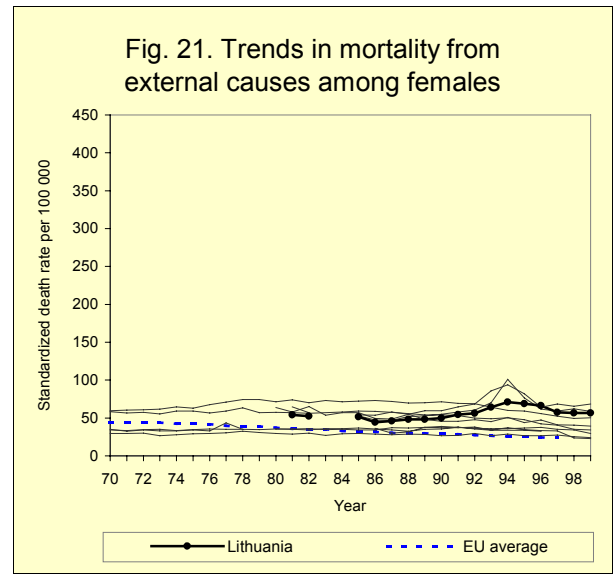
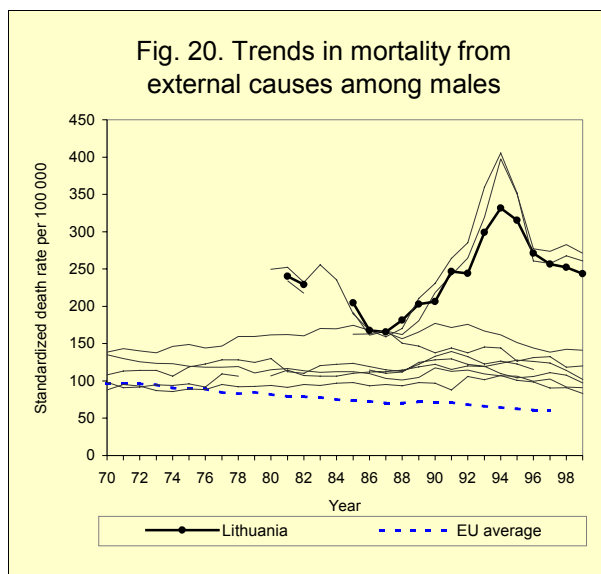


External causes of death and injuries

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.

External causes of death and injuries are the third leading cause of mortality. In 1999, they accounted for about 15% of total mortality in Lithuania. The trend in mortality from these causes, particularly from motor vehicle traffic accidents, has been falling in western Europe since 1970. In Lithuania, as in the other Baltic

states and the newly independent states, it is significantly higher than in western European countries and the rest of the reference countries. Trends during the 1980s and 1990s reflect the combined effect of the anti-alcohol campaign introduced in the former USSR in 1985–1986, and the socioeconomic changes and the return to the old patterns of alcohol consumption in the 1990s. Mortality from external causes, particularly suicides and accidents, dropped in 1985–1986, later rising gradually again to reach a peak in 1994. Since 1995, it has declined again and



the subsequent trends in all the three Baltic states suggest that mortality from external causes will stabilize around the levels observed in the early 1980s or around 1991 (Fig. 20, 21). In 1999, Lithuania had the third highest mortality from external causes among the reference countries, closely following the other two Baltic states (Fig. 22, 23). This is about three times higher than the EU average. This high mortality in the Baltic states is due mostly to extremely high levels among males. Suicide rates in Lithuania are particularly high.

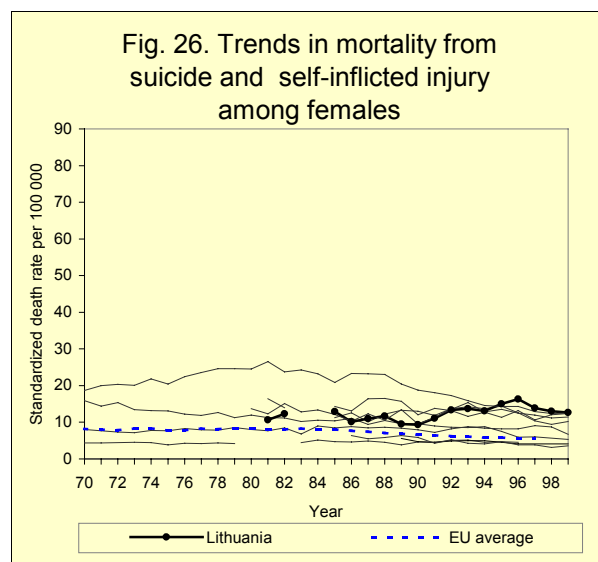
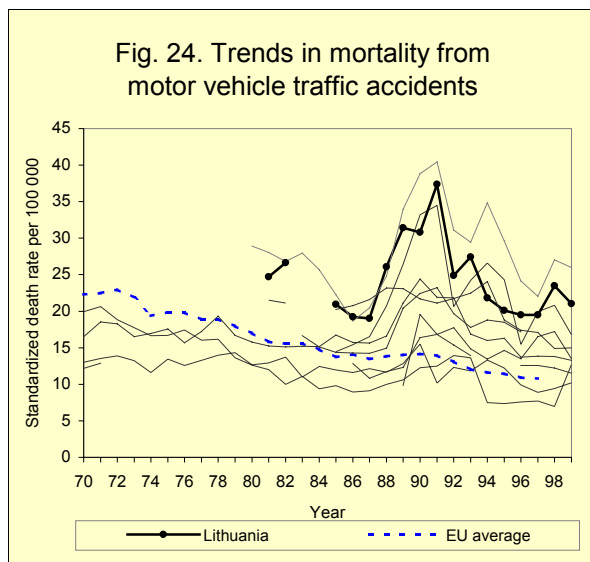
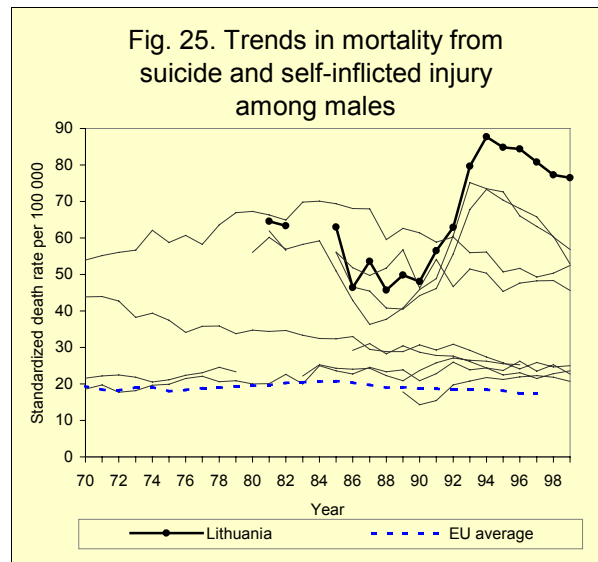
Mortality from motor vehicle traffic accidents in Lithuania is also among the highest in the European Region, together with Latvia, Poland and Estonia (Fig. 24). Trends for motor vehicle traffic accidents in the Baltic states are somewhat different from the typical patterns observed for other accidents, suicide and homicide. Additional factors with a significant impact include the rapidly growing number of cars (mainly old, second-hand cars imported from western countries), the limited fuel supplies in early 1990 after the announcement of independence (due to the economic blockade imposed by the Russian Federation) and relatively high fuel prices since.

Social differences in mortality from external causes are particularly large. For example, the mortality ratio between males with a university education and those with a primary or lower education is about 1:4, or those with a secondary education about 1:3 (*Kaunas University of Medicine, 1998*).

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 1999, mortality from suicide and self-inflicted injury in Lithuania was 42 per 100 000 (76.5 for males and 12.6 per 100 000 for females, Fig. 25, 26). This is almost four times higher than the EU average. Although suicide rates in Lithuania have declined for the last three years or so, they are still the highest, not only among the reference countries, but also in the whole European Region. In 1986, there



was a significant drop during the introduction of the anti-alcohol campaign, but from 1990 the rates started to go up again reaching 47 per 100 000 in 1994–1996.

The greatest increase in suicide mortality was observed among the rural population. In 1990–1996, it doubled reaching 74 per 100 000 population (*Ministry of Health, 1998*). To a large extent, these high suicide levels can be attributed to alcohol consumption and the socioeconomic situation which is particularly difficult in rural areas.

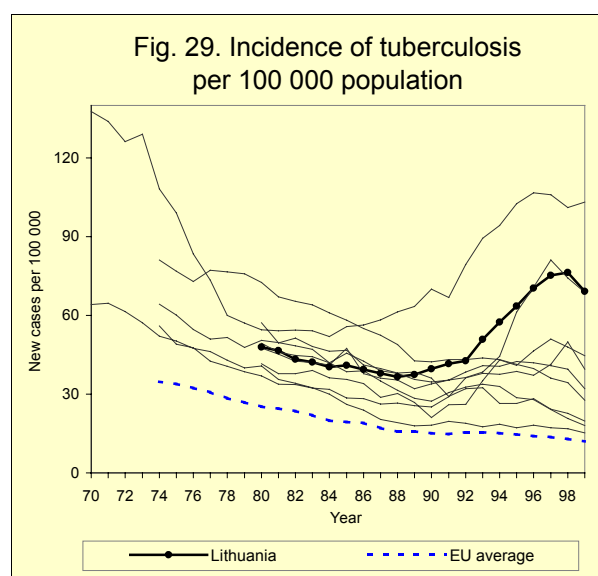
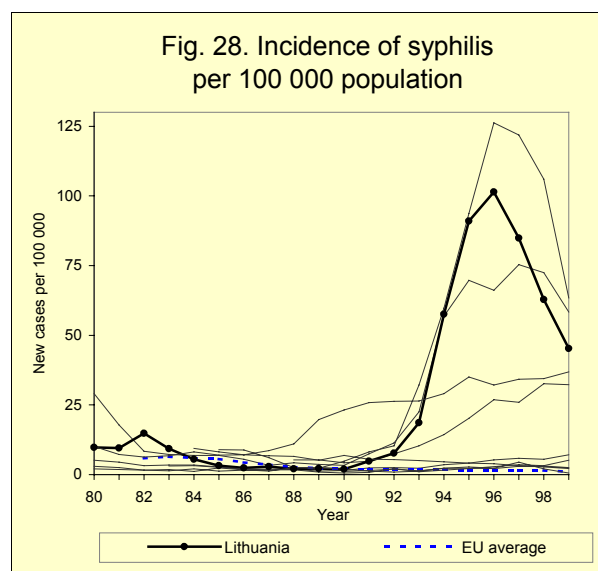
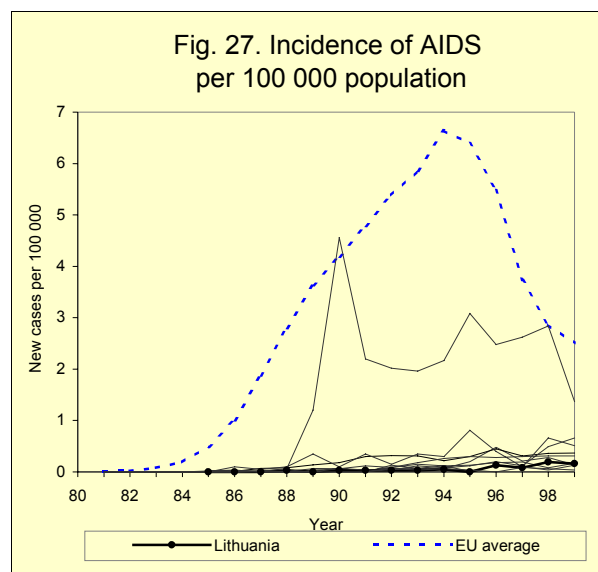
The registered prevalence of mental diseases among the total population was 4.2% in 1998. This means that about 150 000 people in Lithuania suffer from mental diseases. Epidemiological studies show that almost 500 000 people may need psychological, psychotherapeutic or psychiatric counselling. During the last decade, the registered incidence (around 400 new cases per 100 000) and prevalence of mental diseases remained fairly stable.

In 1997, some 23 400 people had disabilities due to mental disease and 2081 new cases were registered (56.1 per 100 000). For children, disability related to mental disease accounted for 56% of all disabilities.

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.

Taking into account reporting delays, Lithuania had an incidence of about 0.2 cases of clinically diagnosed AIDS per 100 000 population in 1999 (Fig. 27). This is still one of the lowest rates among the reference countries and much lower than the EU average. Nevertheless, owing to the increasing use of intravenous drugs, prostitution and



unsafe sexual behaviour, the AIDS incidence may sharply increase. High incidence in neighbouring countries, especially in the Kaliningrad region, could influence the increase as well. Such a development is already reflected in the increasing incidence of new HIV infections. In 1999, it reached 1.8 per 100 000, the second highest figure among the reference countries after Latvia.

The incidence of other sexually transmitted diseases in Lithuania increased in the first half of the 1990s. As in the other Baltic states and the newly independent states, syphilis incidence in Lithuania increased in an epidemic manner during 1990–1996, reaching 101 per

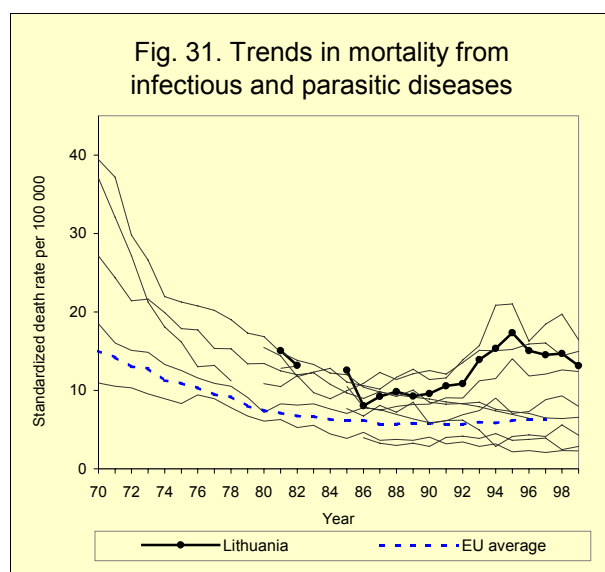
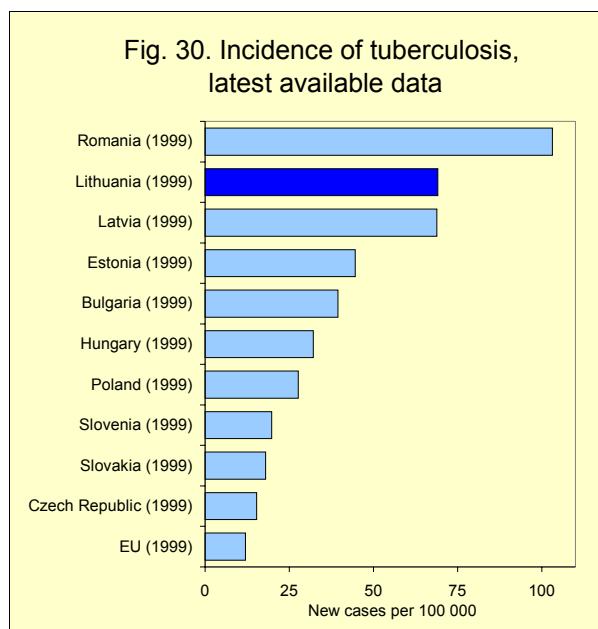
100 000 in 1996. Since 1997, a clear decline has been observed and by 1999 it had reached about 45 cases of syphilis per 100 000 population (Fig. 28). The reported incidence of gonococcal infections reached a peak in 1993 and had declined significantly by 1999. It is likely, however, that some cases are not registered by the health services.

The incidence of hepatitis in Lithuania, after a significant increase up to 140 cases per 100 000 in 1995, has declined again since, reaching about 20 cases per 100 000 in 1999, around the EU average.

In general, vaccine-preventable diseases of childhood are effectively controlled through immunization programmes.

Between 1980 and 1989, the incidence of tuberculosis decreased from 48 to 37 per 100 000 population, but started to increase rapidly after 1989 (Fig. 29). From 1990 to 1998, the incidence of tuberculosis in Lithuania almost doubled, but 1999 data show some reduction to about 70 new cases per 100 000 population. According to the latest available data, Lithuania had the second highest tuberculosis incidence among the reference countries (Fig. 30). Mortality from tuberculosis is also among the highest in the reference countries.

Trends in mortality from all infectious and parasitic diseases in Lithuania depend largely on tuberculosis mortality. It increased steadily between 1986 and 1995, then declined a little. According to the latest data, it is among the highest in the reference countries. A sharp decline in this mortality occurred in 1985–1986 coinciding with the beginning of the anti-alcohol campaign (Fig. 31).



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).

According to the latest available data, Lithuania has one of the highest numbers of registered disability cases among the reference countries. This may very well be because related social benefits are used as a source of income in difficult economic conditions, as a kind of protection of the most vulnerable groups. For the last five years or so, the number of newly registered disability cases has risen constantly. In 1999, about 31 000 new cases were registered (about 840 per 100 000), the highest figure among those European countries where such data are available. About 59% of these cases were among people of working age. Of the new cases of disability, the highest proportion was due to cardiovascular diseases (30%), cancers (14%) and diseases of the musculoskeletal system and connective tissue (16%). Injuries accounted for about 8% of all new cases (*Lithuanian Health Information Centre, 1999–2000*).

According to the survey of 1996, over 8% of respondents aged 20–64 received a disability pension (*Kaunas Medical Academy, 1998*).

Self-assessed health

Data are also not routinely available on the proportion of the population assessing their own health positively. Among the reference countries, only some have some national level data, with Bulgaria having the largest proportion of adult respondents assessing their health as being good (62%) and Latvia the least (26%). In 1998, the proportion of Lithuanian adults (aged 20–64) assessing their health as good/reasonably good was about 37% (42% among males and 33% among females). No significant changes have occurred since 1994 when data began to be collected during regular health behaviour surveys among adults (*Mis-eviciene et al., 2000*). The large observed variation may be caused by the differences in study settings, in data collection or in culture.

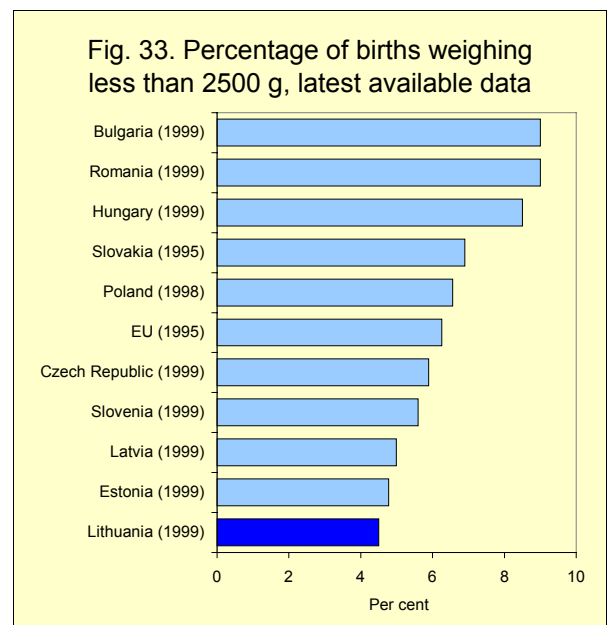
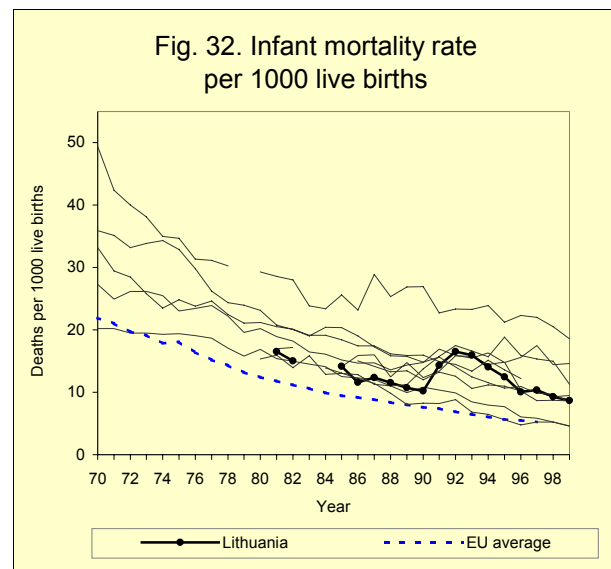
Health of children and adolescents

The infant mortality rate has declined in all the reference countries in recent years. Around 1991–1992, some increase in infant mortality in Lithuania (as well as in Estonia and Latvia)

was attributable to the change in definition of live birth from that used in the former USSR to the one recommended by WHO. Infant mortality continued to decline reaching a relatively low level (8.6 deaths per 1000 live births) in 1999 (Fig. 32). Perinatal mortality is also relatively low.

The main causes of infant mortality in Lithuania are congenital anomalies (about 37%), certain conditions originating in the perinatal period (34%) and accidents (10%) followed by respiratory diseases (5%).

The proportion of babies that weigh less than 2500 grams at birth has often been used as an indicator for newborn health. According to the



latest available data, Lithuania had one of the lowest proportions of babies with low birthweight among the reference countries: 4.5% in 1999 (Fig. 33). This is lower than the EU average (6.3% in 1995). The risk of stillbirths and delivery of babies with a birthweight less than 2500 grams is higher in mothers with a lower educational background, or who are single, divorced or widowed (*Kaunas University of Medicine, 1998*).

Reported immunization coverage in Lithuania is relatively high, as in most reference countries. In 1999, it varied from 93% for pertussis to 99% for tuberculosis.

Over the past decade, children's oral health in western Europe has improved. According to reported data, the DMFT index (the number of decayed, missing or filled teeth) in Lithuania was 3.8 in 1994, which is around the average for the reference countries or somewhat higher and has not changed since 1986.

According to surveys carried out in 1994 and 1998, Lithuanian schoolchildren's oral hygiene was unsatisfactory. In 1998, only 32% of boys and 49% of girls brushed their teeth twice a day or more. Lithuanian figures were the worst for girls and the second worst for boys among schoolchildren of 28 European Region countries (*Currie et al., 2000*).

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

The suicide rate among adolescents has increased in the 1990s in parallel with other age groups. The suicide rate in the age group 15–24 increased threefold between 1990 and 1997 (from 11 to 30 per 100 000). The contribution of suicide to the total mortality in this age group increased correspondingly from 10% to 25%. In 1998, thoughts of committing

suicide were reported by 11.5% of girls and 8% of boys (*National Board of Health, 2000*). Equivalent figures in 1994 were 9% for girls and 7% for boys.

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. The number of live births per 1000 young women aged 15–19 increased during the 1980s in Lithuania, contrary to most of the reference countries. Although it has gradually declined since the early 1990s, in 1998 Lithuania still had one of the highest teenage birth rates among the reference countries (*Council of Europe, 1999*).

Live births to mothers under 20 years of age also increased as a proportion of total live births up until 1995 and then went down again. According to the latest data, the proportion is now close to the average for 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. 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.

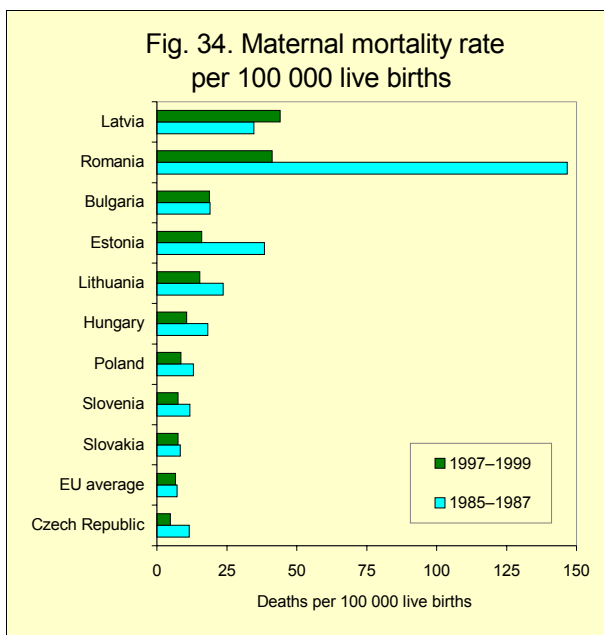
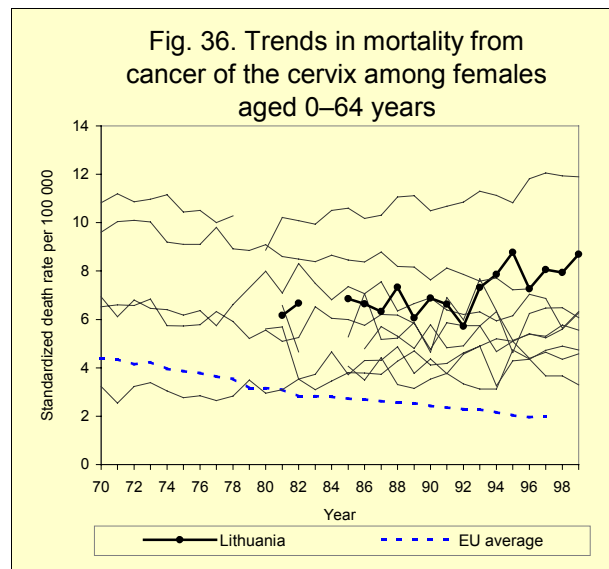
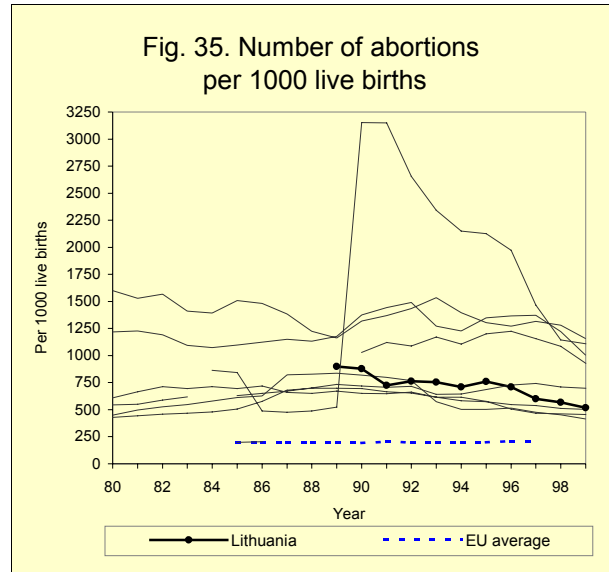
According to the latest data, female life expectancy in Lithuania exceeds male life expectancy by about 10 years. Together with the other Baltic states, this is one of the widest differences among the reference countries, which is mainly the result of high male mortality in these countries. The average difference for the EU countries is about 6.5 years.

Since the 1980s, maternal mortality has declined noticeably in almost all the reference countries. In Lithuania, it has halved since the early 1980s. In 1999, maternal mortality in Lithuania was about 14 per 100 000 live births, close to the average for most of the reference countries, but more than twice the EU average (Fig. 34). In 1995–1999, about one quarter of all maternal deaths in Lithuania were due to abortion.

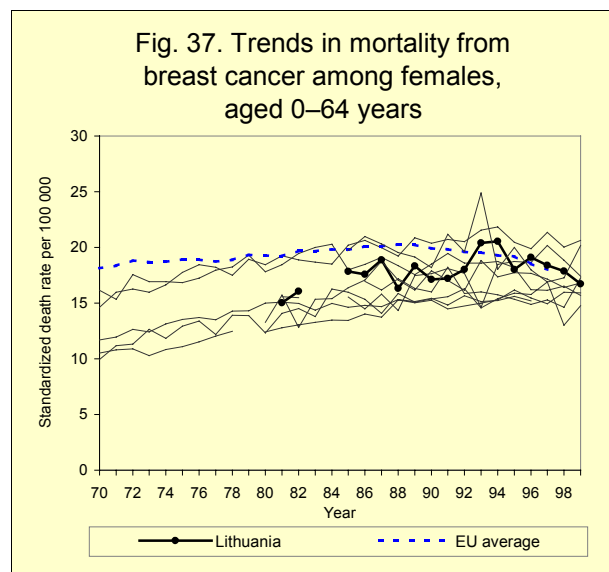
In many central and eastern European countries, induced abortion was and still is a common family planning method. Therefore, the number of induced abortions is usually much higher than the equivalent figures in western European countries. The abortion rate in Lithuania has gradually declined since the early 1990s, reaching 518 abortions per 1000 live births in 1999, which is close to the average for the reference countries but still more than twice as high as the EU average (Fig. 35).

According to the Lithuanian family and fertility survey conducted in 1994–1995, most Lithuanians started their sexual life at the age of 17–19. The prevalence of contraceptive use was still below the rates of EU countries: the pill was used by 4% of respondents, intrauterine devices were used by 23%, condoms by 25%, abstinence and the rhythm method by 21%, withdrawal by 24%, and other methods by 3%. Altogether, 59% of the population aged 19–49 years used contraceptive methods (Klimas & Baublyte, 1997).

Mortality from cancer of the cervix in Lithuania was relatively stable during the 1980s, but started to increase gradually in the 1990s. In 1999, it was one of the highest (8.7 per 100 000 women aged below 65 years) among the reference countries and in Europe as a whole (Fig. 36).



Data for Poland is 1985–1987 and 1994–1996.
Data for EU average is 1985–1987 and 1995–1997.



Mortality from cancer of the breast in Lithuania (in women aged below 65) has declined in recent years and in 1999 it was close to the average for the reference countries and slightly below the EU average (Fig. 37).

Violence against women has received limited attention as a public health issue. Data on the incidence and type of such violence are lacking. Female mortality from homicide and purposeful injury can be used as a surrogate indicator. Female homicide figures in all the three Baltic states follow similar trends as in males, but at much lower levels. They increased from the mid-1980s to the mid-1990s and then started to decline, but they are still among the

highest in the European Region. In 1999, the female homicide rate in Lithuania was the third highest among the reference countries after Latvia and Estonia.

The Lithuanian Women's Issues Information Centre carried out the project "Stop violence against women" in 1997–1998. Data from the study estimated that 42% of women had suffered physical, sexual or psychological abuse at least once from their current male partner, 63% of women over 16 years had at least once in their life experienced physical or sexual violence, and only 11% of victims had reported violent incidents to the police (*Purvaneckiene, 1999*).

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*).

Data on the lifestyles of the Lithuanian population are available from the biennial national health behaviour monitoring surveys, which started in 1994. Data on the prevalence of major risk factors for chronic noncommunicable diseases in the Lithuanian population are available from screenings carried out within the countrywide integrated noncommunicable disease intervention (CINDI) and monitoring of trends in cardiovascular diseases (MONICA) international programmes since 1983 (*Tamosiunas et al., 1999*).

Tobacco consumption

Tobacco smoking is estimated to be responsible for the development of about 25% of cardiovascular diseases, 30% of cancers and 75% of respiratory diseases. For these diseases, smoking is the main preventable risk factor.

Over 7000 people die annually in Lithuania from smoking-related diseases. They account for 20% of total mortality (*Ministry of Health, 1998*).

Available statistics on cigarette production, imports and exports show a radical increase in the annual consumption of cigarettes per person (from 1195 to 1439 in the period 1990–1999). Despite this increase, consumption was still the lowest among the reference countries in 1999 and about 10% below the EU average. These are only rough estimates of cigarette consumption, however, which may be biased by incomplete registration.

Figures for the proportion of regular smokers aged 15 and above in Lithuania (about 30%) are close to the average for the reference countries and the EU.

According to CINDI data, the prevalence of smoking among males (aged 25–64) has increased since the end of 1980. In 1999, 47% of males were regular smokers. The largest increase was observed in the age group 25–34 years, from 48.9% in 1987 up to 56.6% in 1999. The smoking prevalence among women has increased much more significantly, more than tripling from 3.7% in 1987 to 12.8% in 1999, suggesting that the morbidity and mortality attributable to smoking among females are likely to increase in the future (*Miseviciene et al., 2000*).

Similar results have been shown by the latest national health behaviour monitoring survey (part of the FINBALT Health Monitor project) carried out in 1998 on a random sample of 3000 people aged 20–64 years. The prevalence of smoking increased between 1994 and 1998 from 43% to 48% among males and from 6.3% to 12.5% among females. The most remarkable increase was among females aged 20–24, in whom the prevalence rose fivefold from 4% to 20% (*Lithuanian Health Information Centre, 1999–2000*).

According to surveys carried out in 1994 and 1998, the prevalence of smoking among Lithuanian schoolchildren was increasing. In 1994, it was 11.3% for boys and 3.6% for girls, while respective figures in 1998 were 20.1% and 8.1%. Lithuanian figures were still the second best for girls, but for boys were among the highest smoking rates in schoolchildren in 28 European countries (Currie *et al.*, 2000).-

Most lung cancer cases are smoking-related, so mortality from trachea, bronchus and lung cancer depends largely on the past smoking experience of the population (Fig. 38).

In 1999, cancer mortality (0–64 age group) in Lithuania was one of the lowest among the reference countries, mainly because of low female mortality. Past trends were mainly dictated by trends in male lung cancer mortality. The increasing premature mortality of the 1980s gradually started to decline from the early 1990s. A similar pattern is observed in most other reference countries as well as in the EU average. In the EU, the decline started around the mid-1980s.

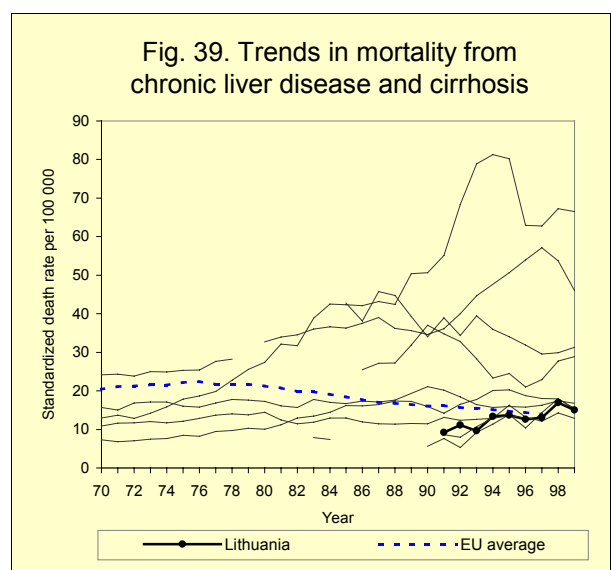
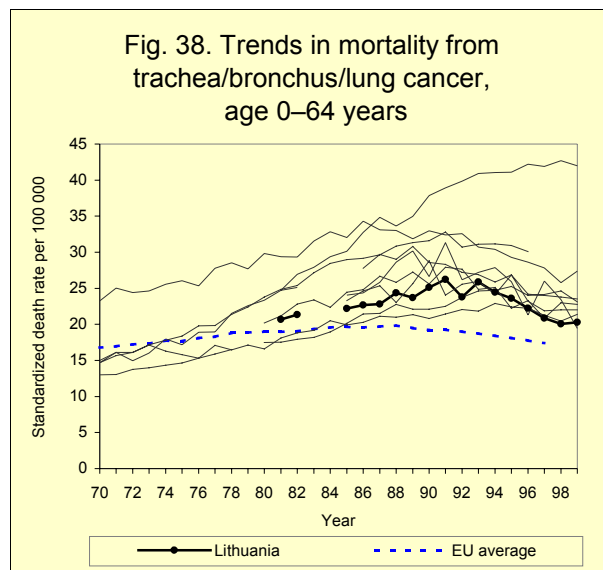
Alcohol consumption

The data on registered alcohol consumption in Lithuania show a drop of about 50% in 1985–1987 during the anti-alcohol campaign in the former USSR. After 1990, when the

open market economy was introduced, the availability and sales of alcoholic drinks increased significantly.

There are no reliable statistics, particularly for the early phase of the reforms, owing to the lack of effective regulation and control of alcohol imports and sales. Available statistics and indirect indicators show, however, that alcohol consumption has returned to the pre-campaign levels and most likely even exceeds them. The incidence of alcoholic psychosis, mortality from mental disorders (mostly deaths classified as due to the alcohol dependency syndrome), the suicide rate and mortality from accidents all started to rise sharply from the beginning of 1990, reaching peak levels around 1994–1995. Similar patterns are observed in the other two Baltic states, which were influenced by the strong alcohol consumption habits prevailing in the former USSR and by the “shock” of the anti-alcohol campaign in 1985–1986. Mortality from liver cirrhosis, which is more dependent on long-term alcohol consumption, also showed a gradual increase during the 1990s (Fig. 39). In 1999, mortality from chronic liver disease and cirrhosis in Lithuania was still about the third lowest among the reference countries.

In the Baltic nutrition and health survey in 1997, the intake of alcohol was estimated to be 7 grams per day for men and 2 grams for women in the 20–64 year age group. This was



slightly more than in Latvia (5 grams and 1 gram), while Estonia reported much higher intakes, especially for males (24 grams). In total, 8% of Lithuanian men and 24% of women reported that they never drink.

Heavy drinking – defined as an intake of 80 grams of alcohol per day or more – was reported by 2.6% of men and 0.3% of women. The proportion of heavy drinkers equalled that in Latvia, but a much higher proportion was observed in Estonia (*WHO Regional Office for Europe, 1999a*).

According to the health behaviour monitoring survey in 1998, about 27.1% of males and 6.7% of females used strong alcohol, at least once a week. No significant difference was observed in the consumption of strong alcohol between the urban and rural population, while urban females reported more frequent use. Beer drinking had become more popular compared to previous years (*Kaunas Medical Academy, 1998*).

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.

Owing to its geographical location, Lithuania has become a transit country for drug trafficking from eastern to western European countries. Drug addiction in Lithuania is a serious social problem. New brands of drugs and psychotropic agents have been introduced into the black market.

In 1995, illegal drugs were used by 3.2% of students. Figures for 1997 and 1998 were 26% and 22.7%. The most popular drug was marijuana, although such drugs as amphetamines, crack, ecstasy, heroin and LSD were used as well.

In 1997, there were 2871 registered drug addicts, all relatively young; 33 drug addicts died in 1996, and 29 in 1997. In 1996, 551 registered crimes were related with illegal drug trade, a sevenfold increase compared to 1990.

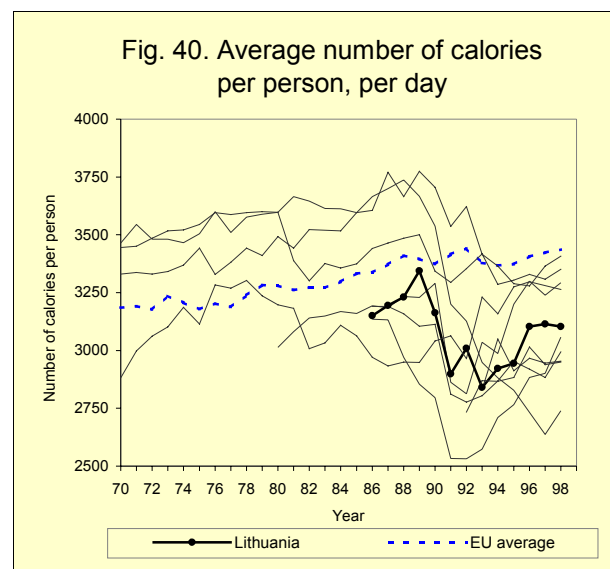
In 1993, the European Communities PHARE-programme against drugs in eastern and cen-

tral European countries was started in Lithuania. In 1994, Lithuania signed the United Nations Simple Convention on Narcotic Drugs of 1961 and the United Nations Convention on Psychotropic Substances of 1971. On 12 March 1998, the Parliament ratified the 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. In 1995, a governmental commission for drug control was established (*Ministry of Health, 1998*). A WHO programme on drug abuse prevention among the young started in 1998.

Nutrition

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

In addition to the above-mentioned global factors, the rapid socioeconomic changes that followed independence in 1990 also had a very significant impact on the nutrition patterns in the Baltic states. Initially, the availability and consumption of food declined, owing to interruptions in production and supplies, new unstable market relations, high inflation and



other economic difficulties. Around the mid-1990s, the situation improved again. The variety of food products in shops increased significantly, particularly for fruits, and prices became the main factor regulating actual consumption. According to data from the Food and Agriculture Organization (FAO) of the United Nations, the average number of calories per person per day declined in the first half of the 1990s, but in 1996 had returned to levels close to the average for the reference countries, but somewhat lower than the EU average (Fig. 40). The percentage of energy from fat, and particularly from proteins, also declined, presumably indicating a decline in meat consumption. Simultaneously, the availability of cereals was high.

The FAO data also show that the availability of fruits and vegetables is relatively lower than in the EU or most reference countries, but it is still higher than in the other two Baltic states.

FAO data are based on national food balance sheets, i.e. food production, exports and imports, and may therefore be quite inaccurate and biased, owing to incomplete registration and other factors. Dietary intake surveys can provide more accurate data on actual consumption but provide fewer possibilities for international comparisons.

According to the 1996 health behaviour monitoring survey, 34% of females aged 20–64 years and 22% of males indicated a reduced consumption of fat during the last year; while 30% and 20%, respectively, indicated an increased consumption of vegetables (*Kaunas Medical Academy, 1998*).

In 1997, Baltic nutrition and health surveys were conducted in all three Baltic states on representative samples of 3000 people aged 20–64. The survey indicated a high calorie and fat intake, and a large proportion of overweight and obese people in Lithuania, but also a relatively high intake of vegetables, compared to Latvia and Estonia (*WHO Regional Office for Europe, 1999a*). According to the survey data, about 78% of respondents reported that they eat raw, fresh, boiled or stewed vegetables at least six times a week,

which was a higher percentage than in the other Baltic states.

Only 6% of Lithuanians used butter for cooking, but 35% of men and 24% of women reported that they preferred animal fat for cooking. This was less common in the other two Baltic states with percentages below 10%.

According to survey data, the intake of total energy and fat was higher than in the other two countries. The fat consumption was about 10% and 40% higher than in Latvia and Estonia respectively. Lithuanians also had higher average body mass indexes (BMIs) and a higher prevalence of overweight and obesity for both sexes and all age groups (*WHO Regional Office for Europe, 1999a*).

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.

The physical activity of the Lithuanian population is relatively low. According to data in the Baltic nutrition and health survey in Lithuania, low physical activity in leisure time was reported by 64% of men and 57% of women, a higher proportion than in Latvia and Estonia. At the same time, however, 21% of the respondents reported high physical activity, which was also more than in the other two countries. More than three out of four Lithuanians reported that they never participated in regular physical activity to work up a sweat (*WHO Regional Office for Europe, 1999a*).

Overweight

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

As mentioned above, the BMI average and the prevalence of obesity in Lithuania are higher than in the other two Baltic states.

According to CINDI data, the prevalence of overweight (BMI=25 or more) has decreased over the last ten years or so, particularly among females. For males aged 25–64, it declined from 66% in 1987 to 60% in 1999. For

females, it declined from 75% to 62% and this reduction took place in all age groups, while among males the decline was observed mainly in the younger age group (*Miseviciene et al., 2000*).

High blood pressure

According to CINDI data, the prevalence of hypertension (systolic blood pressure above 140 mmHg and/or diastolic blood pressure above 90 mmHg, or the person had received hypertension treatment within the last two weeks) among the male population aged 25–64 is very high and it has hardly changed in the last ten years. It was 62% in 1987 and 59% in 1999. The prevalence of hypertension among females decreased somewhat more significantly from about 50% to 42% (*Miseviciene et al., 2000*).

High cholesterol

Data on the prevalence of high serum cholesterol in the Lithuanian population are available from screenings carried out within the CINDI and MONICA international programmes. The proportion of hypercholesterolemia (serum cholesterol above 6.5 mmol/l) in 1993 was 32% among males (35% in rural and 31% in urban males) and 35% among females (32% and 39% for rural and urban, respectively). The proportion of the population with hypercholesterolemia during the period 1983–1993 increased by over 25% (*Tamosiunas et al., 1999*). The data from later surveys in 1999 indicate, however, that the prevalence of elevated cholesterol levels has declined again (*Miseviciene et al., 2000*).

In the health behaviour monitoring survey in 1996, 11.2% of respondents said their blood cholesterol was tested during the last half year.

ENVIRONMENT AND HEALTH⁴

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). In Lithuania, the NEHAP was developed under the Ministry of Health and Ministry of Environment by working groups of experts, taking into account targets and concepts in the National Environmental Protection Strategy and Action Programme (adopted by the Parliament in September 1996) and the Lithuanian Health Programme (adopted by the Parliament in July 1998).

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 reported statistics, the number of microbial foodborne disease outbreaks has been declining (117 outbreaks in 1994 and 32 in 1998). The number of people who suffer from these diseases has not changed much, however, and is about 60–70 per 100 000 each year. In 1993, the National Nutrition Centre of the Ministry of Health, public health centres and other concerned institutions launched the Lithuanian Food Contamination Monitoring Programme. The results of several thousand tests have shown that the most frequent chemical contaminant of foodstuffs is lead. It is found in almost all types of tested products. Cadmium is almost as frequent and widespread, although the detected concentrations were lower.

Air quality

Between 1993 and 1997, the emission of pollutants was reduced by 28 500 tons. Most of the total emissions come from mobile sources of pollution; the quantities of exhausts have increased over the last five years by 21 500 tons. With the increasing number of motor vehicles in Lithuania, this is inevitable. The number of cars grew rapidly, by 31%, between 1993 and 1996 (mainly old, second-hand cars imported from western countries).

In 1997, emissions of pollutants from motor vehicles and other stationary engines amounted to 407 300 tons, from aircraft engines 100 tons and from ship diesel engines 800 tons.

⁴ If not indicated otherwise, this section is based on draft of National Environmental Health Action Plan, November 1999 (*Ministry of Health, 1999*).

In 1997, over 137 000 tons of pollutants were emitted by national industry. This was 11 300 tons less than in 1996 and 50 000 tons less than in 1993. Owing to stagnation in industry and the implementation of new technologies, emissions of pollutants in Lithuania are tending to decrease. But the rapidly growing number of motor vehicles is raising ambient air pollution, especially in towns.

Lithuania was planning to achieve a stable level in carbon dioxide emissions by the year 2000, and to reduce it further by 2008–2012.

Water quality

Groundwater (from shallow and confined aquifers) is the main source of fresh drinking water in Lithuania. About two thirds of the population use water supplied from centralized systems, and about one third (mostly in rural areas and suburbs) obtain water from dug wells.

Many centralized waterworks have no drinking water quality improvement plants. Iron concentrations exceed the hygienic standards in 50% of water samples analysed. By this definition, the quality of only about 40% of supplied water meets EU requirements. Iron compounds should be removed from 60% of water. About a million Lithuanians use shallow groundwater from about 300 000 wells. The quality of shallow groundwater is gradually deteriorating. Bacterial contamination and a high content of nitrates may make its use dangerous. Over 50% of well water samples do not meet hygienic quality requirements. The water is too hard in 70% of samples, nitrate content is exceeded in 45% of samples, 27% have excessive organic contents, and 60% show microbial contamination. On the other hand, over 60% of water samples taken from centralized systems do not meet the requirements for drinking water either.

Waste management and soil pollution

Increasing quantities of waste are being generated in almost all countries – although this trend may change with the implementation of environmental policy measures – with serious implications for health from the resulting pollution of the air, water and soil.

In 1997, waste volumes declared by 1814 enterprises contained 131 000 tons of dangerous wastes. This does not include sludge from wastewater treatment plants (485 000 tons generated in 1997) and radioactive wastes (1242 tons in 1997), which require specific treatment.

During 1997, industry generated 5.3 million tons of non-dangerous waste, of which organic waste made up 2.1 million tons, construction waste 1.1 million tons, raw mineral enrichment waste 997 000 tons, secondary raw materials 509 000 tons and municipal waste 395 000 tons.

Housing

According to available data, the average number of persons per room in Lithuania is the highest among the reference countries.

Sufficient and suitable housing is an important problem in Lithuania, which has a shortfall of about 100 000 flats. Flat provision is about 70% of that in western European countries (e.g. Denmark or Sweden has about 470 flats per 1000 inhabitants).

Large differences between urban and rural areas exist. The quantitative housing indicators in rural areas are better and there is no shortage of available flats. In 1994, the general useable area per capita in urban households was 18 m² compared to 24 m² in rural areas.

On the other hand, qualitative housing indicators are worse in the countryside. In 1997, over 75% of households in urban areas and over 43% in rural areas had centralized water supplies and sewerage; 68% of urban and 40% of rural households had separate bathrooms. Some 35% of households reported financial problems with paying rent over the last 12 months. Large social and economic differences existed in the housing situation in 1997 (*Department of Statistics, 2001*).

Increasing urbanization and road and air traffic have brought to the fore the issue of noise and its effects on health. In 1995, over 67 000 people lived in zones along main roads. Measurements in Vilnius indicated that the noise level near streets with heavy traffic during “peak” hours was 67–80 dBA, while 43–57 dBA were

found in the flats built near these streets. Noise-proofing of houses and public buildings does not decrease outside noise to an acceptable level inside, even when noise outside is lower than the permissible level of 55 dBA in daytime and 45 dBA at night (*State Public Health Centre, 1996*).

There is no regular monitoring of indoor air quality and its impact on health. Ventilation in public buildings (conference halls, kindergartens, schools, hospitals, libraries and other premises) is an important problem. Mechanical ventilation systems are either not installed or do not function properly. Owing to insufficient ventilation, people often report "feeling bad" while inside, complain of a headache, quickly become tired, or are tormented by heat. High concentrations of carbon dioxide, high relative air humidity, excessive temperatures and heavy pollution by microorganisms are found. This increases the risk of infectious diseases being spread by air.

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 vary substantially among the reference countries, which suggests that the figures may describe different phenomena in the countries. The registered number of injuries from work-related accidents in Lithuania declined sharply between 1991 and 1992 from about 300 to 100 cases per 100 000 population and has remained practically constant since. Similar trends have been observed in Latvia and Estonia. The decline most probably reflects changes in registration practices after privatization and the economic recession.

The data on deaths from work-related accidents may be more comparable than the data on injuries. Since the late 1980s, the number of deaths has decreased in all the reference countries, which may indicate an improvement in occupational safety, but may also reflect the recession in the economy and in industrial production, at least in the Baltic states. According to the latest available data, the number of work-related deaths per 100 000 in Lithuania is higher than the average for the reference countries.

HEALTH CARE SYSTEM⁵

Health care reform

Since 1996, the health care system in Lithuania has been moving away from an integrated, centralized model and toward a contract model. Two major factors have prompted significant changes in the system: the appearance of a third-party payer in the form of a statutory health insurance system; and the enforcement of legislation redefining property rights and the status of health care institutions. Nowadays, the vast majority of Lithuanian health care institutions are non-profit-making enterprises. Public health care institutions are financed by the Statutory Health Insurance Fund (SHIF). Property rights and administrative functions fall under the jurisdiction of the central government (Ministry of Health), its 10 provincial branches (the provincial administration), or the 56 municipalities. In addition to publicly provided health care, a private sector has developed, providing mostly outpatient health care services which are paid for out-of-pocket.

The local health care infrastructure, until 1996, was organized and financed in a pyramid fashion. Municipal hospitals were at the top of the administrative and financing pyramid, below

which were specialized local medical institutions and village hospitals, followed by outpatient facilities at the bottom. The picture of the outpatient institutions' network has since changed significantly as a result of the process of separation of facilities (most commonly, polyclinics and ambulance services) from hospitals. Currently, various outpatient models are in use in municipalities. At the same time, municipalities, with increasing responsibilities in health care provision for the local population, lost the financial tools that would allow them to enforce their decisions, as the newly established Statutory Health Insurance Fund assumed responsibility for financing health care.

The private sector plays a significant role, especially in dental care, cosmetic surgery, psychotherapy and gynaecology. By the end of 1997, a few dental polyclinics had been privatized. No hospitals have been privatized, and there are no official plans to privatize polyclinics or larger hospitals. In 1998, the Ministry of Health initiated a debate on the privatization of general practice, and guidelines for this form of privatization were approved in late autumn

Table 3. Health care resources in Lithuania and in the reference countries (1999 or latest available)

	Lithuania	Reference countries	Minimum	Maximum
Hospital beds per 100 000 population	938	716	555	938
Physicians per 100 000 population	394	265	191	394
Hospital admissions per 100 population	24.5	18.1	13.8 ^a	25.4
Average length of hospital stay in days	11.3	10.3	9.0	11.9
Total health care expenditure as a percentage of GDP	5.3 ^a	5.6	2.6 ^a	7.7
^a 1998				

⁵ If not indicated otherwise, this section is based on the 2000 issue of "Health Care in Transition, Lithuania".

1998. Private health insurance is permitted and the few private insurance companies deal mainly with covering the health care expenditure of Lithuanian citizens during foreign travel and of foreigners residing in Lithuania.

Since the restoration of independence in 1990, the health care system has been through several phases of development and reform. Broadly speaking, the legal framework of the reforms had been designed by 1996. Most reform-related legislation was adopted by the Parliament in 1995–1997. Most of the basic structure of the reformed health care system is now in place: for instance, statutory health insurance funds were founded in 1996–1997. Important issues at present are the strengthening of new capacities, as well as the fine-tuning of the administrative and financial tools installed.

Organizational structure

The Ministry of Health is responsible for the general supervision of the entire health care system. With the decline in scope of directly administered health care institutions, the maintenance and development of tertiary health care have become the focus of the administrative activities of the Ministry of Health. The Ministry of Health has overall responsibility for the public health system's performance. Through the State Public Health Centre, it manages the public health network, including 10 provincial public health centres with their local branches (in total 50 institutions). The State Public Health Centre has subordinate bodies that deal with the prevention of communicable diseases, health education and other public health functions.

At the regional level of each of the ten provinces, most health care providers (provincial hospitals, specialized health care facilities) are governed by the provincial administration. Decision-making in this network of providers requires the participation of the Ministry of Health.

The municipalities are responsible for providing primary health care to their local populations. They have been granted property rights for outpatient facilities and nursing homes, and

they also run small and medium-sized hospitals in their localities.

In addition to the public health care institutions, which account for about 90% of all health care services provided in the country, two parallel state-run health care systems account for another 2% of total public health care expenditure. One is run by the Ministry of Internal Affairs and serves the police and prisoners. The other is run by the Ministry of Defence and provides health care services for military personnel.

Health care finance and expenditure

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.

Until 1997, the statutory health care system in Lithuania was mainly tax-funded, with most financial resources coming from local budgets and the remainder from the national (state) budget. There were also elements of statutory health insurance within the state social insurance system. The Law on Health Insurance was adopted in May 1996. The law came into force in two stages: first after January 1997, and subsequently after July 1997.

Under this law, employers transfer a certain percentage of personal income tax and contribute a certain percentage of the payroll tax. Self-employed persons contribute a proportion of their personal income tax. Farmers cover themselves and their adult family members by paying a percentage of their declared income. The state covers children up to 18 years old, students, recipients of social assistance and social insurance cash benefits, and people with certain illnesses. The state budget contributes a per capita payment (approved annually by the Parliament) on their behalf.

The financing of health care through social insurance accelerated dramatically from 1997, following implementation of the health insur-

ance legislation. If in 1996 the public share in health care financing was 81% from the national budget and 19% from statutory insurance, in 1998 these proportions had changed to 10% and 90% respectively.

The Law of the Health System, approved by Parliament in July 1994, expresses the state's political will to spend no less than 5% of GDP on health care. In 1998, public health care expenditure amounted to 2078 million Litas or 4.9% of GDP. The public health care expenditure share in GDP has increased steadily since 1992.

Total health care expenditure in 1998 was 5.3% of GDP, close to the average for the reference countries, but well below the EU average. Health care expenditure per capita was about US\$ 450 PPP. About 42% of total health care expenditure was spent on inpatient care and about 25% on primary health care and secondary outpatient care. About 5% of public expenditure was devoted to capital investment.

Primary health care

In the framework of the primary health care development strategy in 1996, the general practitioner's role, including a gate-keeping function, was defined and pilot projects were initiated in four municipalities. In 1996–1997, operational service standards were set for general practitioners, and the functions of nurses (specifically midwives, community nurses and mental health nurses) were defined. Programmes of training and retraining of general practitioners and allied personnel began in 1996.

Primary health care services are delivered in primary health care centres, general practitioners' surgeries, both school and community medical posts (paramedical centres), outpatient facilities and polyclinics, women's consultancies, nursing hospitals, as well as by the ambulance service (stations and divisions). Mental health centres (free-standing or part of other municipal outpatient facilities) employing psychiatrists and other staff are being established in each municipality. The municipalities administer the entire network of primary health care institutions. In addition, primary health

care is provided in the practices of private physicians.

Paramedical centres or medical posts are based in rural areas and employ one feldsher and/or one midwife. There are about 1000 such centres in rural Lithuania. They provide some routine health care, first aid in emergencies, home nursing, and obstetric care, and also supply non-prescription drugs. Most of these centres are administratively linked to an outpatient facility.

In 1998, about 3480 physicians and 1169 dentists worked in public primary health care institutions. This constitutes about 24% and 52% of the total number of employed physicians and dentists respectively. Most primary health care doctors are female.

The proportion of general practitioners is still quite small, constituting about 6% of physicians working as members of a primary health care team, while internists constitute 41% and paediatricians 29% (dentists are not included).

The first contact physician for adults is usually a specialist in internal medicine (known as the district therapist). The equivalent for children is the district paediatrician. If the institution employs a trained general practitioner, he or she delivers primary health care services for all members of the family.

Vocational training for general practitioners has been available since 1992 and retraining for general practitioners since 1993. About 200 general practitioners are trained every year.

Private primary health care is still not very widespread, although there are some private gynaecologists, internists and most of all dentists.

The average outpatient contacts per person have declined since the mid-1980s. In 1999, there were about 6.6 visits per person, close to the average for both the reference countries and the EU.

Secondary and tertiary care

At the end of 1998, Lithuania had 187 hospitals with 35 612 beds: 76 general hospitals, 68 nursing inpatient facilities, 38 specialized hospitals and 5 rehabilitation hospitals. Of the to-

tal hospital beds, 67% are concentrated in general hospitals. This includes more than 5000 beds in university and teaching hospitals, and 10 335 beds in central regional hospitals.

Specialized hospitals hold 23% of hospital beds. Within this category, most beds are for psychiatric care (52% of beds), for tuberculosis (21%) and for cancer (13%). In addition, beds are found in specialized hospitals for infectious diseases, as well as for skin and sexually transmitted diseases.

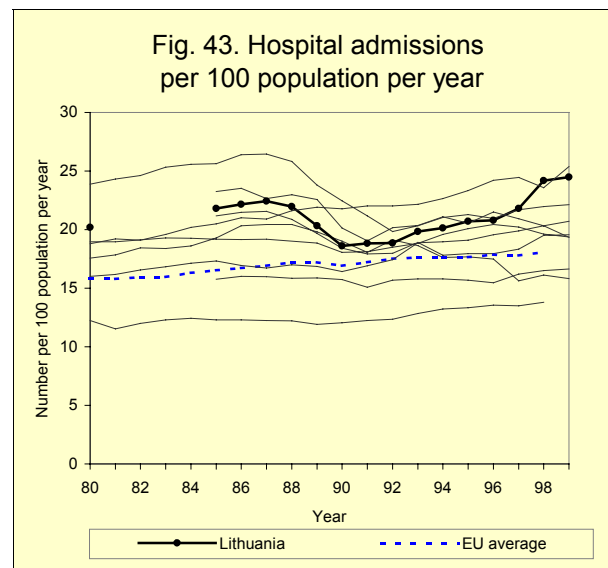
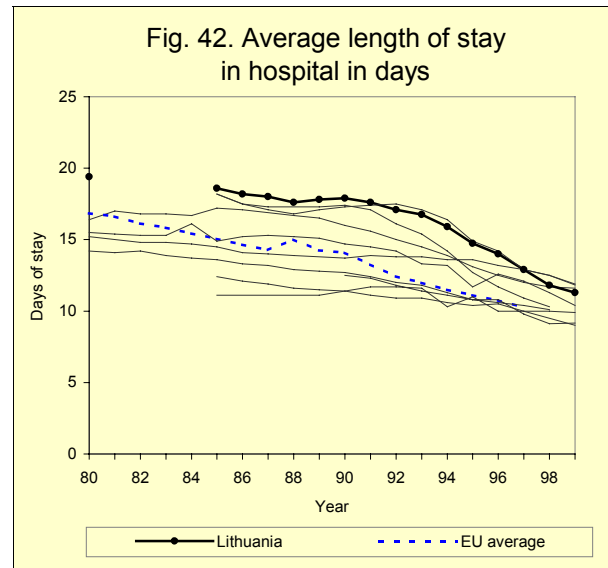
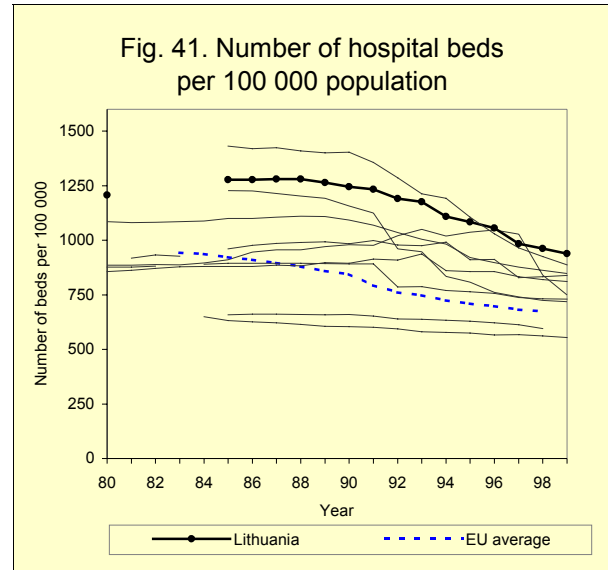
There are 878 beds in rehabilitation hospitals. Besides this, 38 sanatoria are included within the sector.

Over the last few years, many small rural hospitals have been transformed into nursing facilities. As a result, more than 7% of the total number of beds are now used for nursing in relatively small institutions (average size less than 40 beds).

The number of all hospital beds decreased by about 25% from 1990 to 1999 (Fig. 41). Despite the drop, this is still one of the highest levels of bed provision among the reference countries. In 1999, this was 938 beds per 100 000 population. An even larger reduction took place in the number of acute care hospital beds. Between 1993 and 1999, it dropped by about 33%. In 1999, it was 643 per 100 000, which is also a relatively high figure compared to most of the reference countries.

In international terms, inpatient facilities appear to have significant overcapacity, which contributes to relatively long lengths of stay and low levels of occupancy. Reforms in health care financing have contributed to a steady decrease in the average length of stay since 1980, which accelerated during the 1990s, so that this indicator now stands roughly at the same level as the European average (Fig. 42). Incentives of various kinds, including the targets set by the Ministry of Health and payment arrangements, have also led to an increasing occupancy rate since 1990.

Admissions per head of population, on the other hand, have increased steadily. A particularly sharp increase took place in 1998 (Fig. 43). The major reason for this increase is



the reimbursement system based on cost-per-case payments, which creates strong incentives to increase revenues by “inducing” a demand for hospital care. In 1997–1998, hospital budgets were open-ended (contracts between hospitals and statutory health insurance funds imposed no limits on service provision). This, as well as incentives to refer from the primary to the secondary level of care, resulted in the sharp increase in hospital admissions. To put an end to increasing admissions, service provision ceilings were introduced into contracts between hospitals and provincial health insurance funds in 1999, and some additional cost-containment measures are under way.

About 95% of the population live within 20 km of the nearest general hospital and within 120 km of the nearest regional or university hospital. Access to hospital care is therefore quite good. Nevertheless, there are a number of concerns about the quality of care provided and the financial resources required to maintain the current hospital network.

Although there are no queues for most hospital services, access to cardiac surgery, hip replacement and kidney transplantation is restricted by lack of funding. The financial deficit in the hospital sector has resulted in the unofficial but widespread practice whereby patients are asked to pay for medicines and disposable goods.

Most secondary health care facilities were constructed between 1965 and 1990 and are of relatively good quality. Nevertheless, the economic recession has resulted in a sharp decrease in public financing of health care. As a result, there have been cutbacks in building repairs, causing a deterioration in facilities. In view of the budget deficit, health care providers do not get significant support for capital development. In 1998, renovation of facilities became one of the targets of national investment policy.

Pharmaceuticals and pharmacies

Until 1990, the entire pharmaceutical sector was state-owned. Medicines were subsidized by the state, but even the simplest pharmaceuticals were constantly in short supply. Most of

the supply and delivery of pharmaceuticals is now privatized.

In 1991, Lithuania decided to harmonize its standards with those of western Europe, which favoured the opening of the Lithuanian market to more expensive, European-Union-produced drugs. At the same time, it prohibited cheaper imports from the former USSR as these did not meet European standards. The privatization of the supply and delivery of pharmaceuticals has been stimulated by a growing market, but this has also tended to favour more expensive medicines. Prescribers have not been prepared for the wide range of new products available and have been susceptible to marketing techniques. Overall, this has improved the supply of drugs, but expenditure on pharmaceuticals has risen sharply and now stands at least at 30% of total health care expenditure.

The registration of drugs is the responsibility of the State Pharmaceuticals Control Agency, which is an agency of the Ministry of Health. Its principal aim is to ensure quality standards. Following registration, the applicant must apply for the retail price of the pharmaceutical to be fixed.

Drugs are delivered free to the inpatient sector, but the reimbursement system for drugs prescribed in the outpatient sector is complicated. To receive reimbursement of pharmaceutical costs, patients must meet certain eligibility criteria. This means in practice that up to 60% of the population pay the full cost. The first steps the provincial health insurance funds took to address the problem involved the introduction of accurate information systems in order to control the process of reimbursement. Nevertheless, there is still no well developed strategy of cost-containment in the pharmaceutical sector. As the lobbying power of the pharmaceutical industry is great and pharmacies have little interest in cost-containment, reducing expenditure on pharmaceuticals is likely to be a long and difficult process.

In the government programme (a general policy document prepared by the Cabinet of Ministers and approved by Parliament) for the period 1997–2000, growth in the domestic production of pharmaceuticals was a priority. At

present, of 5400 pharmaceuticals registered in the country, just 419 are produced by domestic manufacturers and they account for only 4% of the market in monetary terms.

Regional access to pharmaceuticals has also become a cause for concern. Despite a large number of chemists' shops (970 in 1998) and a wide choice in cities, people living in rural areas have difficulty purchasing drugs. In response to this problem, the Ministry of Health has implemented a policy to ensure the adequate supply of pharmaceuticals through the primary health care centres.

Human resources

About 6% of the total employed population are engaged in the health sector. According to labour exchange data, the sector, particularly physicians, did not suffer significantly from unemployment during the downturn, compared to most other sectors.

The long-term upward trend in the number of health care personnel ceased in 1990. Since 1990, the number of practising physicians has

changed only a little, in contrast to Estonia and Latvia where a significant reduction took place in the first half of the 1990s. In 1999, Lithuania had 394 physicians per 100 000 population. This is higher than in most other countries in Europe and it is the highest figure among the reference countries (Fig. 44).

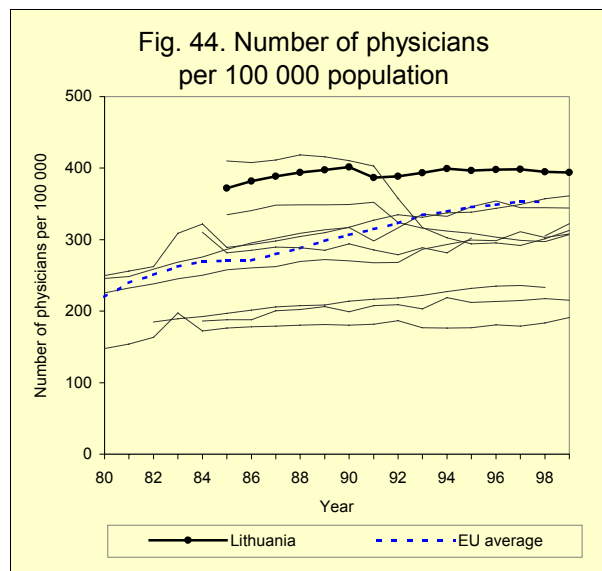
Since 1990, the number of feldshers, midwives and nurses has fallen more rapidly than the number of physicians. Declining midwife numbers may be due to the fall in births that Lithuania has been experiencing. Nevertheless, the number of nurses (810 per 100 000 in 1999) is still one of the highest among the reference countries. The situation and trends in the number of pharmacists is similar to the one observed for physicians, i.e. little change since 1990, and at present the reported number of pharmacists is the highest among the reference countries. The number of practising dentists, after a decline in the first half of the 1990s, has increased again up to 62 per 100 000 in 1999, which is also one of the highest figures among the reference countries.

A serious problem involves the unequal distribution of medical personnel across the country. While the density of physicians differs by a factor of three, that of other health care personnel differs more than fivefold. Lithuania has no consistent policy for dealing with the imbalances in the distribution of health care personnel.

Physicians are trained at the Kaunas Medical University and Vilnius University. In 1992, the formal training of physicians was extended to include residency training programmes following the six-year undergraduate training period.

Lithuania has six colleges for the training of nurses. Training of feldshers stopped in 1998.

A number of changes are taking place in nurses' training. These changes stress health promotion activities and community care.



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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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