

Life expectancy and mortality in the three Baltic countries during 1990-2010: commonalities and differences

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Introduction

Life expectancy is a summary measure of health and mortality, and one of the components of human development index. It reflects the overall level of socio-economic development and has an impact on the reproduction of the population, ensuring the vital capacity of the labour force and on security in retirement ages. This analysis gives a summary of commonalities and differences in life expectancy trends, and factors behind the mortality change in the three Baltic countries- Estonia, Latvia and Lithuania, compared with Poland, Finland, Sweden, Belarus and Russia.

Life expectancy trends

The current diversity in socio-economic trends across Europe has been determined, to a large extent, by diverse patterns of health and mortality since the mid-1960s and with a considerable clear-cut division along pre-1990 political borders (Meslé, 2004; Nolte et.al, 2005). Since the collapse of the former USSR, the renewal of independence and market-based developments, health indicators have undergone diverse patterns between neighbouring countries in the Baltic Sea region and even between the three Baltic countries (Katus and Puur, 2003). Since the mid-1960s, life expectancy stagnated or even declined in the Baltic countries (Krumins, 1994). In 1990, the life expectancy in Estonia was 69.9, Latvia 69.5 and Lithuania 71.6 years and was only on the level of the mid-1970s. The fast transition to the market economy, the worsening of the macroeconomic situation and a decline in living standards caused life expectancy to decrease in many countries of the post-communist space at the beginning of the 1990s. The Baltic countries and all other republics of the former USSR faced a particularly sharp decline. During 1990–1995, life expectancy for both sexes fell by 2.2 years in Estonia, 2.4 years in Lithuania and 3.2 years in Latvia (Figure 1). Psychosocial stress was found as the most plausible explanation for the health crisis in Latvia at the beginning of the transition to the market economy. Also, unemployment appeared to be an important source of stress, particularly because due to its highly unequal distribution across age groups, gender, regions, levels of education, and other socio-demographic characteristics (Krumins and Usackis, 2000).

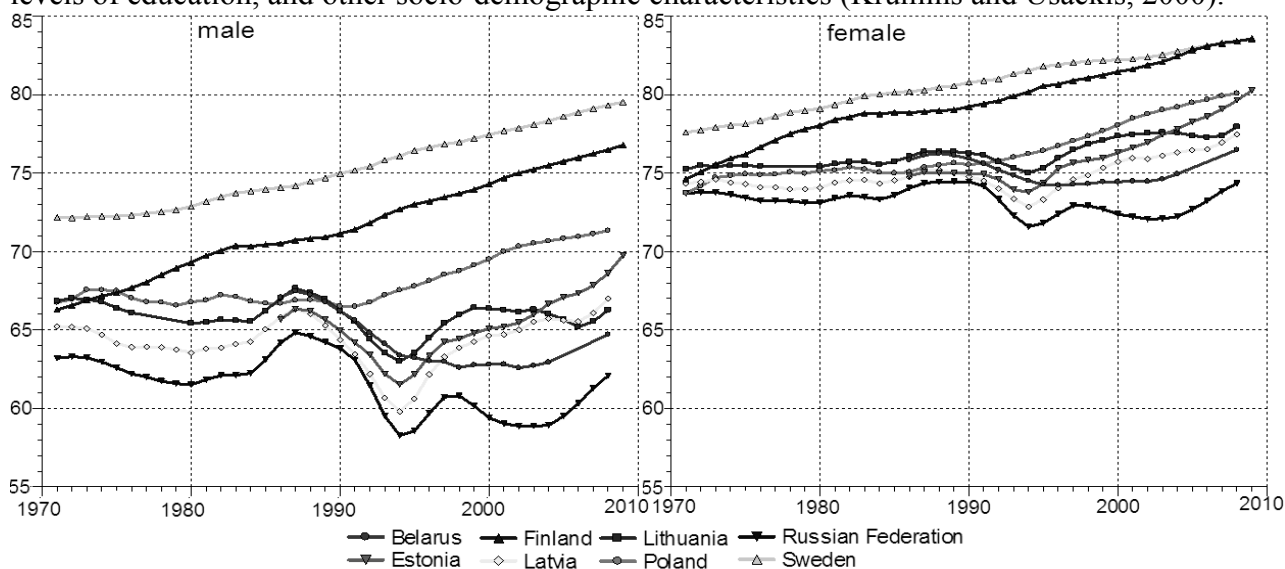


Figure 1. Male and female life expectancy.

Source: European Health for All Database

In the following years, the situation improved significantly – decline was replaced by growth. The

life expectancy level of 1990 was surpassed in Estonia in 1996, in Latvia in 1998, but not until 1999 in Lithuania. The situation continued to improve at the beginning of 21st century, but not so fast as has been expected. A total growth in life expectancy during the last twenty years among the three Baltic countries was highest in Estonia, followed by Latvia and Lithuania (Table 1 and 2). The life expectancy increase for men and women in Estonia was even higher than the average increase in the new and old EU member states. Lithuania lost the leading position among the Baltic countries due to limited improvement in the last twenty years and it had the lowest life expectancy among the Baltic countries in 2010. Latvia remained in-between its two neighbours.

The least improvement was achieved in male life expectancy. Male life expectancy in the Baltic countries presently is substantially lower (by 7.5–10 years) than in the old EU member states and is lagging behind, by 0.6–3 years, the average of the new EU member states that joined the EU in 2004 and later.

Table 1. Life expectancy at birth (Eo), male

Countries	Eo, years		Changes 199–2010	
	1990	2010	years	%
Estonia	64.68	70.7	+6.02	9.3
Latvia	64.18	68.8	+4.62	7.2
Lithuania	66.52	67.98	+1.46	2.2
Poland	66.57	71.6*	+5.03	7.6
Finland	71.02	76.97	+5.95	8.4
Sweden	74.93	79.73	+4.80	6.4
Belarus	66.26	64.8*	-1.46	-2.2
Russia	63.79	62.82*	-0.97	-1.5
EU members before May 2004	73.04	78.21*	+5.17	7.0
EU members since 2004 and 2007	66.76	71.33	+4.57	6.8
CIS	64.75	64.44*	-0.31	-0.5

Table 2. Life expectancy at birth (Eo), female

Countries	Eo, years		Changes 199–2010	
	1990	2010	years	%
Estonia	74.97	80.84	+5.87	7.8
Latvia	74.63	78.4	+3.77	5.1
Lithuania	76.36	78.78	+2.42	3.2
Poland	75.63	80.2*	+4.57	6.0
Finland	79.07	83.66	+4.59	5.8
Sweden	80.65	83.74	+3.09	3.8
Belarus	75.84	76.57*	+0.73	0.96
Russia	74.42	74.78*	+0.36	0.5
EU members before May 2004	79.79	83.64*	+3.85	4.8
EU members since 2004 and 2007	74.92	79.33	+4.41	5.9
CIS	74.33	74.66*	+0.33	0.4

Note: * 2009

Calculated from: European Health for All Database (HFA-DB). WHO Europe; National Statistical Bureaus' last available data.

The absolute and relative growth in male life expectancy from 1990–2010 exceeds the growth in

female life expectancy (see Table 1 and 2). This is a general trend for both the old and new EU member states, excluding Lithuania, Belarus and Russia. The life expectancy increase for men in the Baltic states in the past twenty years align a middle trajectory between the most successful Eastern and Central European countries (Slovenia, Czech Republic, Poland) and those lagging behind – Belarus, Russian Federation, Ukraine and Moldova. The increase in women’s life expectancy in the Baltic countries is more favourable and is approaching the average level of the new EU member states. Estonia has already surpassed the mean of female life expectancy of new EU member states since 2003.

Changes of mortality by age

Trends in aggregate indicators such as life expectancy should be supplemented by age-specific mortality rates demonstrating diverse changes in mortality for different age groups. Nowadays, the traditionally higher impact of infant and child mortality on life expectancy has been replaced by the growing role of mortality in the working ages.

Since the mid-1990s, infant mortality in all three Baltic countries has shown a continuous downward trend. Also, the under-5 mortality rate during 1990–2008 has declined in Estonia 2.6 times, and in Latvia and Lithuania 1.9 times. However, its level still exceeds the under-5 mortality rate in Finland and Sweden by 2–3 times, although it is lower than in Belarus and Russia (Table 3).

Table 3. Under-5 mortality rate (probability of dying by the age of 5 per 1,000 live births)

	1990	2000	2008	2008/1990, %
Estonia	16	11	6	38
Latvia	17	13	9	53
Lithuania	13	11	7	54
Poland	18	9	7	39
Finland	7	4	3	43
Sweden	7	4	3	43
Belarus	24	17	13	54
Russia	21	20	11	52
WHO European region	32	22	14	44
Global	90	78	65	72

Calculated from: World Health Statistics 2010. Geneva: WHO, 2010. Pp. 49, 51, 53, 55, 57.

The significant impact on life expectancy changes in all transition countries has been determined by age-specific mortality changes in the working ages (Vallin et al, 2001). The three Baltic countries are not exceptions, but there are some differences among them. In Estonia, both for men and women, the probability of dying during working ages has declined, as in Poland, Finland and Sweden. In Latvia, the slight decline is only observed for women (Table 4). On the contrary, Lithuania demonstrates an increase in mortality in working ages for both men and women, as in Belarus and Russia.

Table 4. Probability of dying between 15 and 60 years per 1,000 population

	Male				Female			
	1990	2000	2008	2008/ 1990,%	1990	2000	2008	2008/ 1990,%
Estonia	301	318	249	83	107	120	84	79
Latvia	311	320	311	100	118	117	115	97
Lithuania	287	293	314	109	107	103	114	107
Poland	263	216	205	78	102	86	77	75
Finland	183	143	129	70	70	63	57	81
Sweden	114	87	76	67	66	56	48	73
Belarus	282	354	330	117	107	125	111	104
Russia	318	445	396	125	117	161	147	126
WHO European region	215	229	208	97	97	98	90	93
Global	246	236	213	87	173	163	146	84

Calculated from: World Health Statistics 2010. Geneva: WHO, 2010. Pp. 49, 51, 53, 55, 57.

The impact of recent mortality pattern on life expectancy can be characterized by the reduction of life expectancy through deaths before the age of 65 (in years). Countries according to the descending order of that indicator are as follows – Russia 12.3, Belarus 9.3, Latvia 8.5, Lithuania 8.2, Estonia 7.5, Poland 6.6, Finland 4.6, Sweden 3.3. These figures reflex inequality to face death among mentioned populations and indirectly demonstrate how achievable lower indexes of mortality can be due to progress in the reduction of avoidable mortality. More favourable socio-economic growth plays a significant role in it.

Healthy life expectancy

From the point of quality of life, it is important to take into account not only fatal but also non-fatal health outcomes (Sakkeus and Karelson, 2010). Such an integrated measure of health and mortality is disability-adjusted life expectancy, also called healthy life expectancy, which is based on the life tables for each country, surveys assessing physical and cognitive disability and general health status as well as detailed information on the epidemiology of the major disabling conditions in each country.

The last available indicator of healthy life expectancy in the three Baltic countries was below the average of new EU member states by 1–4 years, but the difference with the old EU member states is remarkable: 7–10 years in 2007. Healthy life expectancies demonstrate almost the same sequence as that of conventional life expectancies in the respective year. The value of female and male healthy life expectancy in 2007 is higher in Estonia than in Lithuania and Latvia and is lower than in Finland or Sweden (Table 5).

Table 5. Healthy life expectancy (years), 2007

	Male	Female	Female over male	Both sexes
Estonia	61.3	70.6	9.3	65.9
Latvia	59.2	68.4	9.2	63.8
Lithuania	58.3	67.8	9.5	63.0
Poland	64.1	70.2	6.1	67.1
Finland	69.6	74.7	5.1	72.1
Sweden	72.3	74.9	2.6	73.6
Belarus	58.3	66.1	7.8	62.2

Russia	54.6	65.5	10.9	60.1
EU members before May 2004	...	...	...	73,0
EU members since 2004 and 2007	...	...	...	66.7
CIS	...	...	...	59.7
WHO European region	64	70	6	67
Global	58	61	3	59

Source: European Health for All Database, National Statistical Bureaus' last available data.

World Health Statistics 2010. Geneva: WHO, 2010. Pp. 48,50,52,54,56. Estimates take into account the Global Burden of Disease estimates for the year 2004.

Female healthy life expectancy in Estonia, Latvia and Lithuania exceeds significantly – more than 9 years – the healthy life expectancy of men. In Sweden, this difference is 2.6 years, but in Russia it is almost 11 years. The proportion of healthy life from the total life expectancy in 2007 for the Baltic countries ranged from 88–91%. For men, that share was 1–2 per cent points higher than for women. It allows us to conclude that men's self-assessed life is little bit healthier than women's.

Self-perceived health also differs significantly and not only by gender, but by country as well (Figure 2). Estonians are more likely to declare good and very good health conditions but in parallel have highest long-standing illness and activity limitation rates of all three Baltic countries (Figure 3 and 4). Compared to Finland and Sweden in Latvia Estonia and Lithuania share of population declaring health condition as very good is 3-7 times smaller.

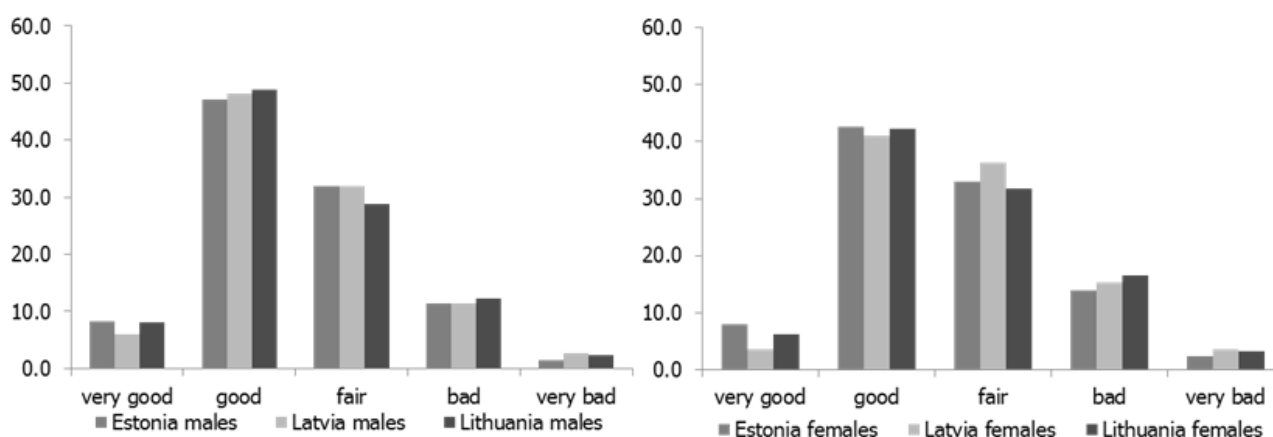


Figure 2. Self-perceived health

Data: Eurostat; SILC <http://appsso.eurostat.ec.europa.eu/nui/show.do> <http://appsso.eurostat.ec.europa.eu/nui/show.do>

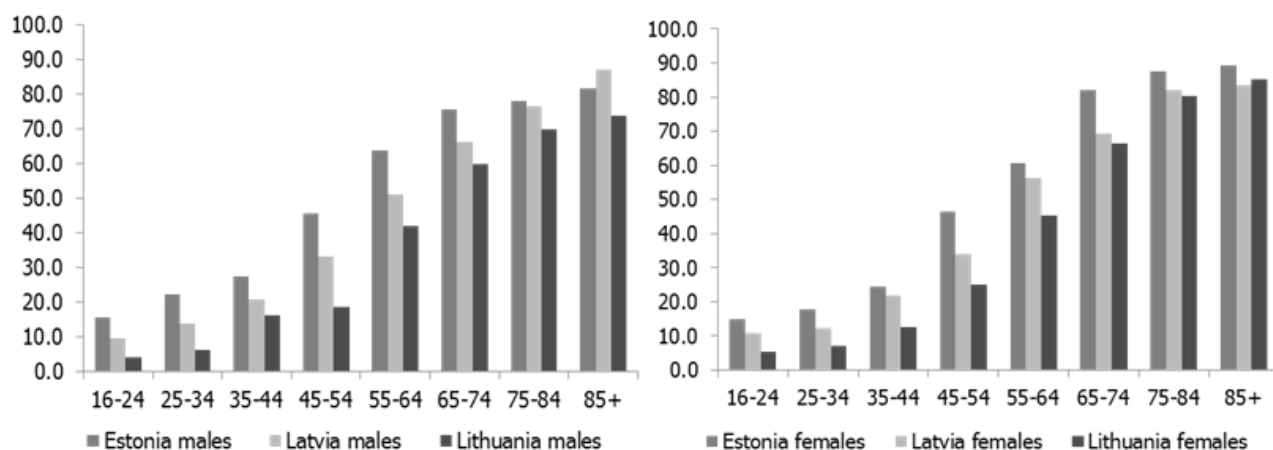


Figure 3. Self-perceived long-standing illness or health problem

Data: Eurostat; SILC http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_silc_01&lang=en

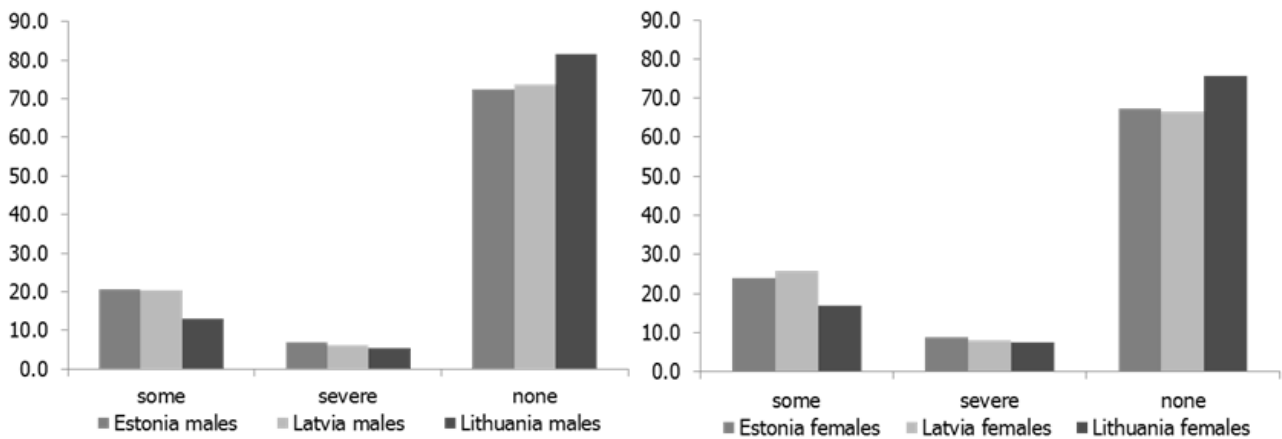


Figure 4. Self-perceived limitations in daily activities

Data: Eurostat; SILC; <http://appsso.eurostat.ec.europa.eu/nui/setupModifyTableLayout.do>

It is expected further growth of life expectancy (Table 6), which in situation of further population ageing will result in growing social assistance and health care expenditures.

Table 6. Projection of life expectancy at birth

	Male						Female					
	2010	2020	2030	2040	2050	2060	2010	2020	2030	2040	2050	2060
Estonia	69.8	72.5	75.0	77.4	79.6	81.6	80.1	81.9	83.6	85.1	86.6	88.0
Latvia	68.3	71.2	74.0	76.6	78.9	81.1	78.0	80.1	82.1	83.9	85.6	87.2
Lithuania	67.7	70.7	73.5	76.1	78.5	80.7	78.7	80.6	82.4	84.0	85.6	87.1
Poland	71.7	74.2	76.4	78.6	80.6	82.4	80.1	81.9	83.5	85.1	86.6	87.9
Finland	76.6	78.4	80.0	81.6	83.0	84.4	83.2	84.6	85.9	87.0	88.2	89.2
Sweden	79.4	80.8	82.1	83.3	84.4	85.5	83.4	84.8	86.0	87.2	88.3	89.3

Source: The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies

Data: Commission services based on Eurostat EUROPOP2010

According to the World Bank projections old-age dependency ratio in Europe by the year 2025 will increase to 0.35 but by 2050 to 0.51; for Baltic countries on average to 0.3 by 2025 and 0.44 by 2050. Labour force by 2050 is expected to face a 19% decrease.

Spread of tuberculosis and human immunodeficiency virus: rise and reduction

Compared with the situation in the 1990s, the epidemiological situation for most of communicable diseases in the Baltic countries has improved. Nevertheless spread of tuberculosis and HIV still represent important public health challenge.

In Europe, wealth inequality is directly related to tuberculosis notification. However in countries with lower tuberculosis rates the proportion of tuberculosis case-patients that are foreign-born increases. So with increasing wellbeing status, tuberculosis rates drops, but the proportion of foreign-born TB case-patients increases. (Blystad H., Blad L., Giesecke J., 2002)

Tuberculosis incidence rates have for many years remained low and relatively stable in Sweden and other Nordic countries. Since the year 1980 Poland's tuberculosis rates improved significantly and even during the 1990s faced a decrease. For Latvia, Estonia, Lithuania, Russia and Belarus morbidity and mortality from tuberculosis became a serious public health problem after the Soviet Union collapse in 1991 (Figure 5). Among determinants of such rise were economic recession,

malnutrition, poor living conditions and overcrowding in prisons what had a great impact on the spread of multi-resistant tuberculosis (Dubkova N., 2011).

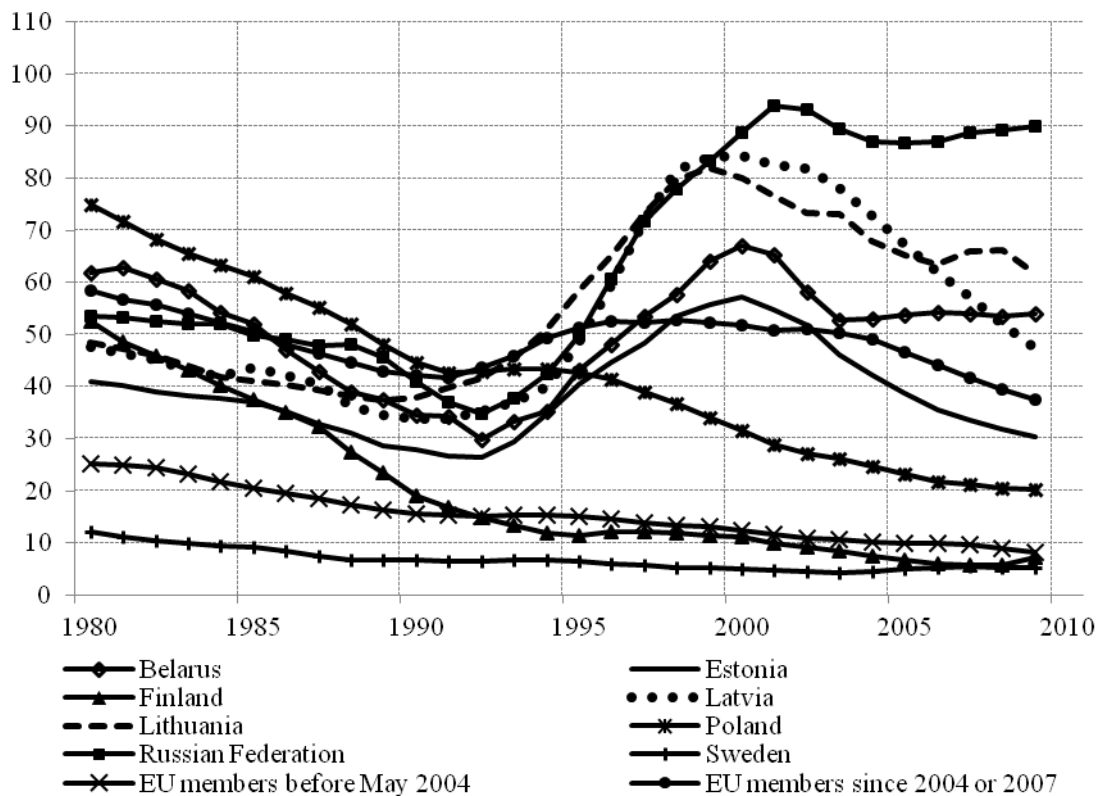


Figure 5. Tuberculosis incidence per 100000 population in selected EU countries, Belarus and Russian Federation.

Source: European Health for All Database.

During the first half of 1990s Baltic countries have experienced relatively low figures of human immunodeficiency virus (HIV) incidence. Among these countries, highest incidence rates were found in Sweden. Rapid HIV increase started in Estonia and Latvia since 1999, while in Lithuania it remained at relative low level. In 2001 number of diagnosed HIV cases per 100 000 peaked in Estonia and HIV epidemic was declared. It was caused by expanding injecting drug use and transmitted mainly through the sharing of contaminated needles and syringes. HIV infection prevailed among people under 25 years of age, and proportion of women among newly infected persons had been increasing (Kutsar and Epshtein, 2009). Despite the significant improvements, Estonia still has the highest HIV incidence among the Baltic countries.

Causes of death

The three main groups of causes of death determine the majority of overall changes in mortality and life expectancy – diseases of the circulatory system, cancer and external causes of death. More than 4/5 of all deceased are attributed to these three groups of causes.

Death due to circulatory system illness peaked in the mid- 1990s in all three Baltic countries (Krumins, 2003). From the mid-1990s, a renewed general downward trend of mortality from the diseases of the circulatory system both for men and women (Figure 6 and 7) has become apparent in all three Baltic countries. The traditionally lower levels of mortality from circulatory system began to increase once again in Lithuania at the turn of the 21st century, and these have only demonstrated a decline since 2006. The Baltic states are holding the medium position in terms of circulatory system deaths between Russia and Belarus with rather high mortality and the old EU member states, which demonstrate a continuing sustainable linear decline in cardiovascular mortality.

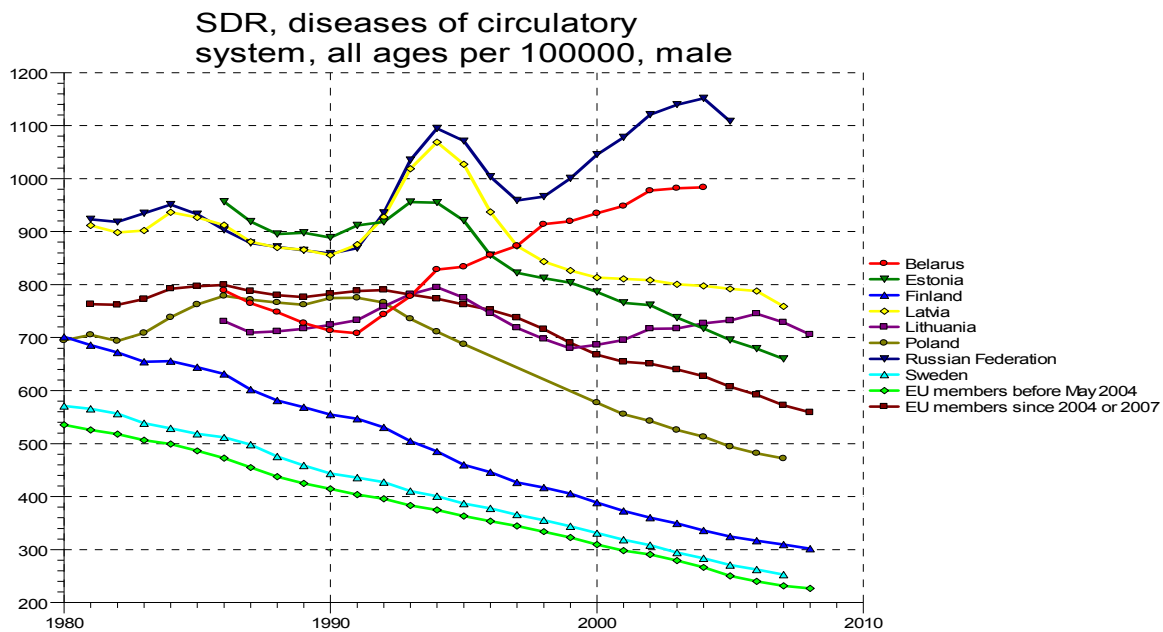


Figure 6. Standardized death rates for diseases of the circulatory system in selected countries for males. Source: European Health for All Database.

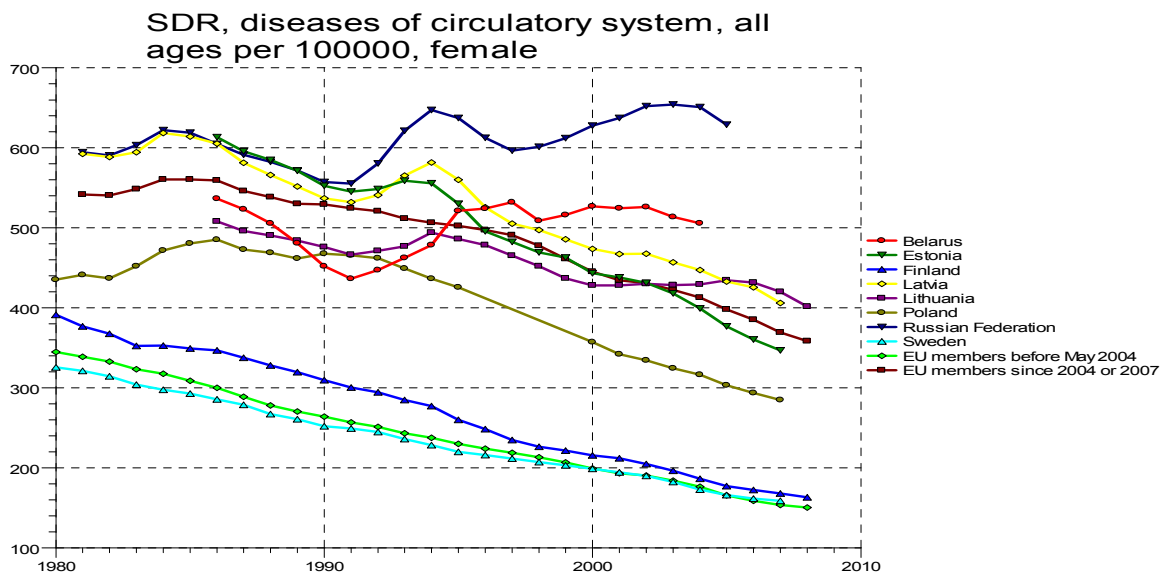


Figure 7. Standardized death rates for diseases of the circulatory system in selected countries for females. Source: European Health for All Database.

The situation is much more varied in the group of malignant neoplasms (Figure 8 and 9). Male mortality from this particular cause of death is high and rather stable in all of the three Baltic countries, exceeding the average mortality level of the new EU member states and demonstrating an increasing gap with the EU old member states. For women in the Baltic countries, mortality trends from malignant neoplasms are more favourable, especially in Estonia, where achieved levels of female mortality are below the average of the EU new member states.

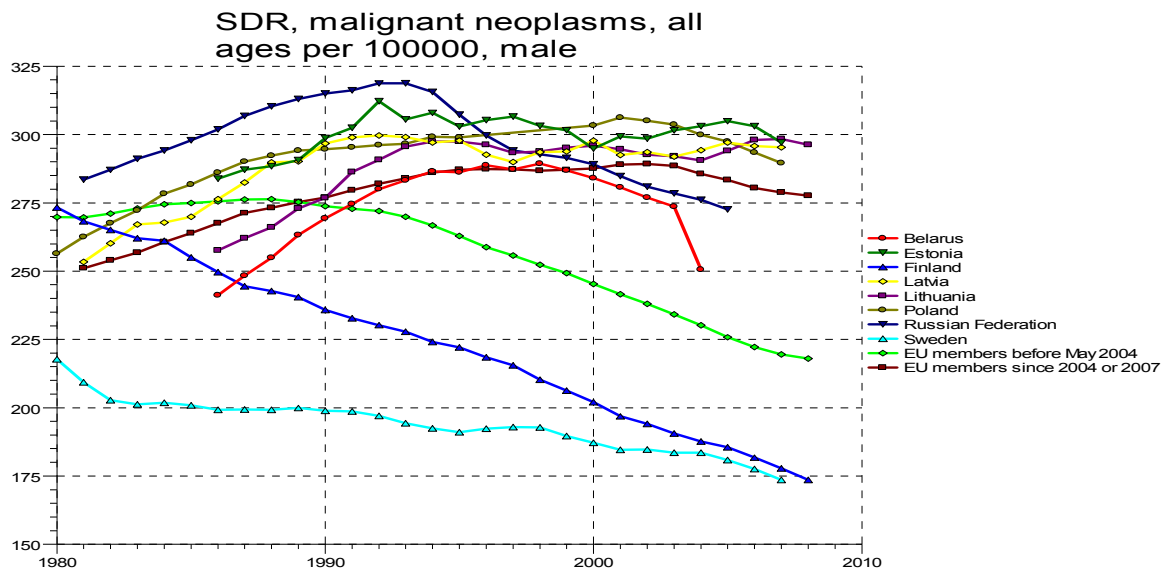


Figure 8. Standardized death rates for malignant neoplasms in selected countries for males.
Source: European Health for All Database.

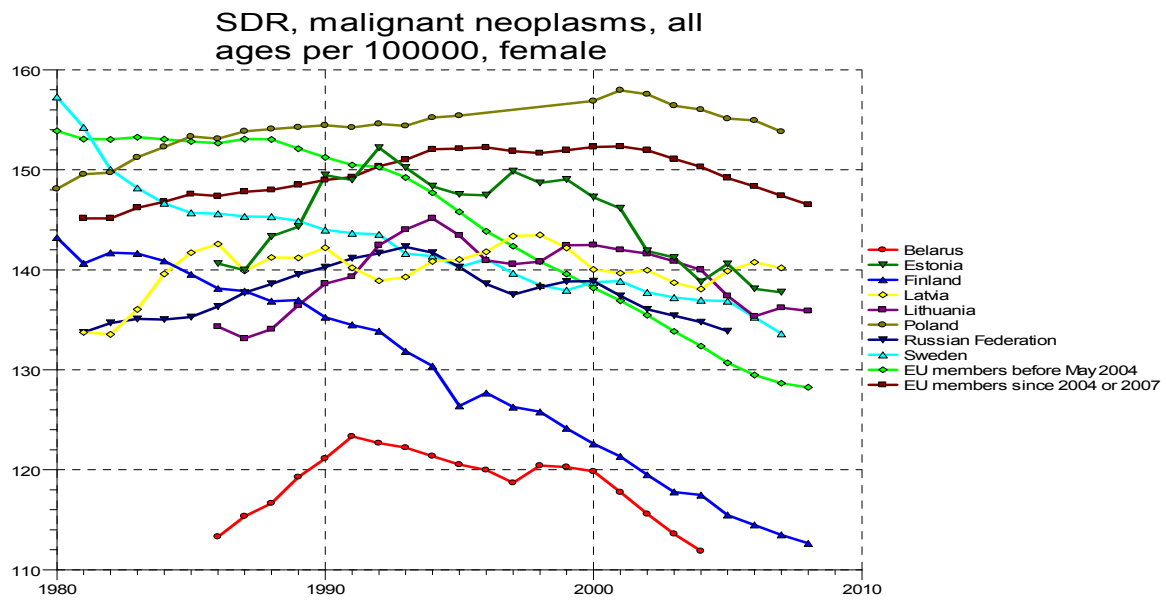


Figure 9. Standardized death rates for malignant neoplasms in selected countries for females.
Source: European Health for All Database.

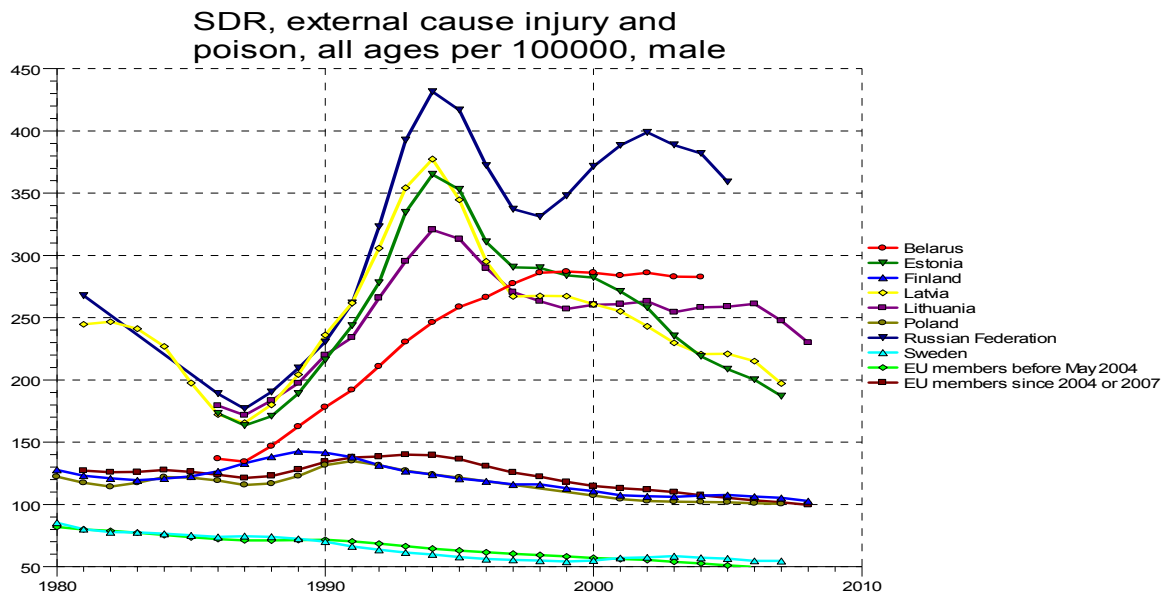


Figure 10. Standardized death rates for external cause injury and poison in selected countries for males. Source: European Health for All Database.

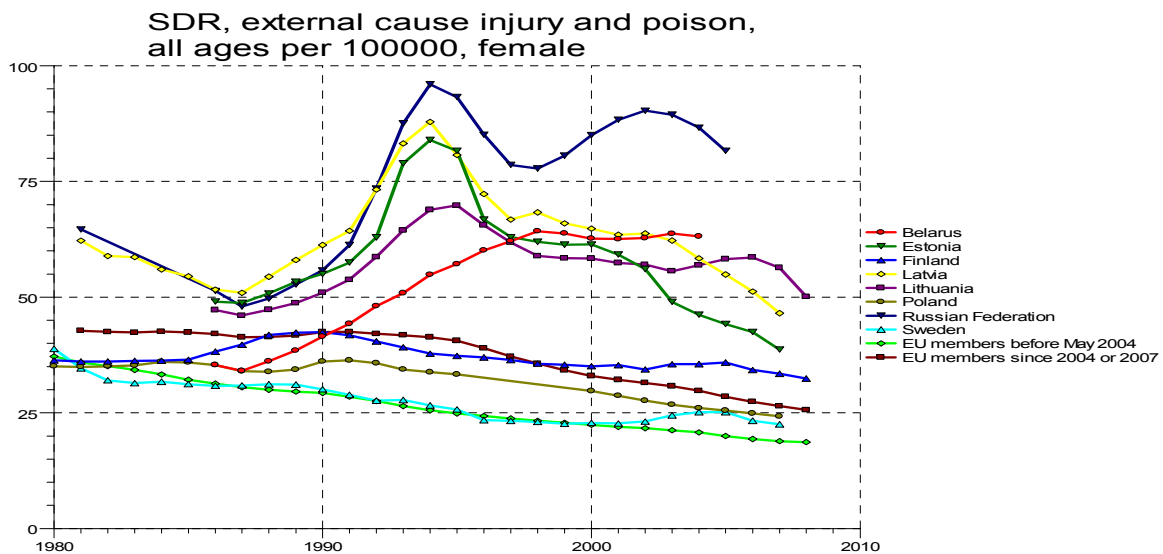


Figure 11. Standardized death rates for external cause injury and poison in selected countries for females. Source: European Health for All Database.

The most significant differences between the Baltic countries and the new and old EU member states exist in mortality from external causes of death — injuries, traffic accidents, suicides, homicides and other (see Figure 10 and 11). Traditionally, males are more prone to this mortality type (Meslè and Hertrich, 1999). Once again, a peak of deaths from external causes was very typical for the mid- 1990s in all the Baltic countries. From the mid- 1990s, there is a decline among both men and women in mortality from external causes of death in all three Baltic countries, which ceased in Lithuania with the turn of the new century. The Baltic countries are holding the medium position between Russia with high violent mortality and the new EU member states. It could take a long time and a significant effort for the Baltic countries to reach the mortality level of the old EU member states for external causes of death, especially for the male population.

Geographical differences in mortality and life expectancy

Mortality is regionally quite dispersed in the Baltic countries. A long and healthy life differs in accordance with place of residence. There are many factors behind regional differences in life

expectancies — unsafe physical environment, socio-economic differences in population composition, material living conditions, behavioural risk factors, availability and quality of health services, amount and composition of in and out migration and other factors (Vallin et al, 2001).

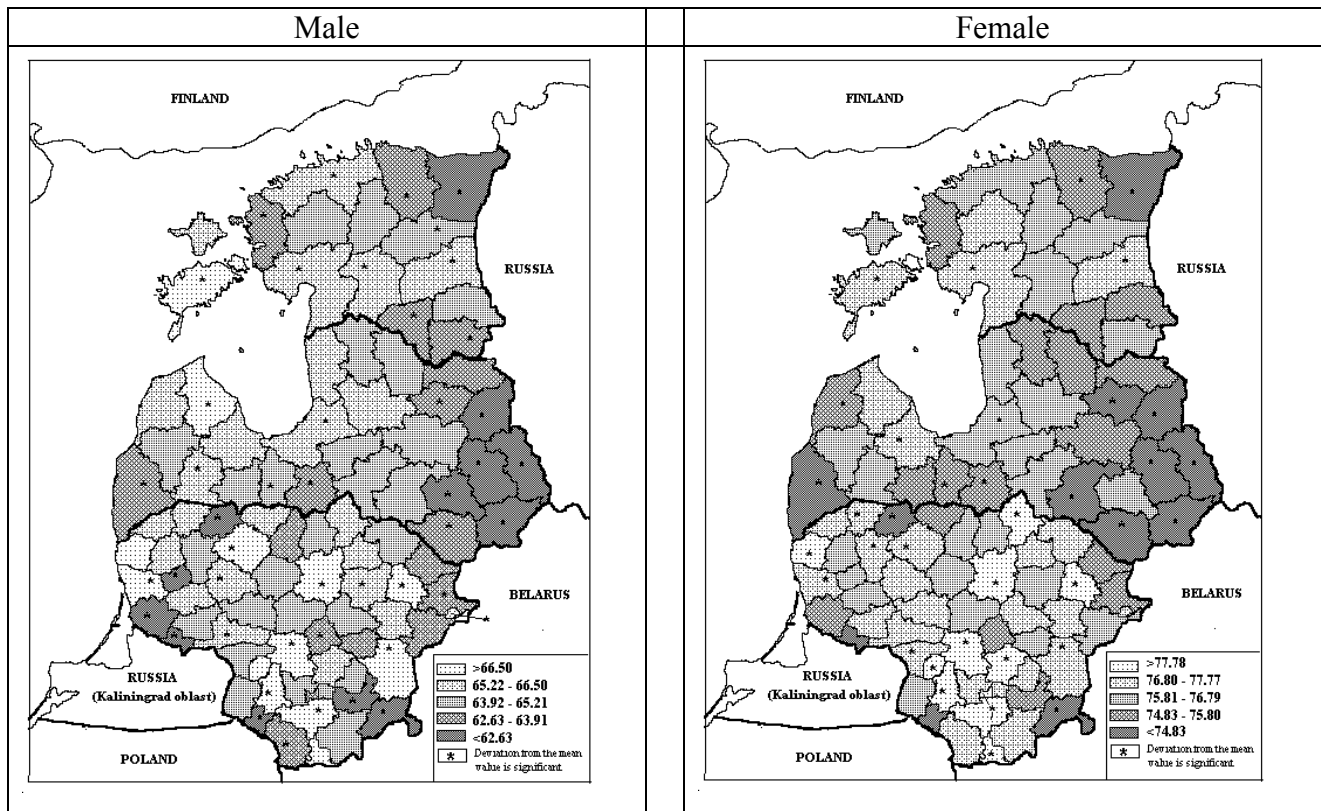


Figure 12. Geographical distribution of male and female life expectancy at birth in the three Baltic countries, 1998–2001. Source: Kruminis et al., 2009.

The geographical variations in mortality in the Baltic countries received insufficient attention until now. Studies have been conducted on the regional disparities of mortality and morbidity in each country, but very little has been published on the three Baltic countries together (Zaborskis et al., 1995; Jozan and Prokhorskas, 1997; Kruminis et al., 1999; Kruminis et al., 2006). Atlases on mortality (Eurostat, 2002 and 2009) describe mortality at NUTS 2 level in 1994–1996 and 2002–2004, but each Baltic state is represented only by one NUTS 2 region.

Administrative units in the Baltic countries vary by surface area, number and composition of population. They also differ by their socio-economic characteristics and level of urbanization. Taking into consideration existing urban-rural differences in mortality, regional analyses of mortality can be performed in two ways. The first approach is based on the entire administrative units including towns. According to the second approach, towns are considered separately.

First, we studied the general mortality level by using the standard mortality ratio (SMR) for all causes of death and life expectancy indicators, followed by cause-specific standard mortality ratio analysis by administrative units. The mortality rates for period around the population censuses of 1998–2001 were taken as reference of mortality to study the geographical variations in the three countries (see Figure 12).

The main conclusions from the regional analysis of mortality in the three Baltic countries are the following. Mortality and life expectancy in the Baltic countries is structured by a North-East to South-West axis. The eastern excess mortality pattern is rather strong in the eastern part of Latvia

and the North-East of Estonia, while the Lithuanian profile finds some extension in Eastern Poland and Western Belarus.

The geographical variation of mortality has increased during the period of socio-economic transition in the Baltic countries states, particularly from diseases of the circulatory system and slightly from neoplasms, but it has declined for external causes of death (Table 7). Geographical variations of mortality are the largest among exogenous causes of death (infectious diseases, respiratory diseases, violent deaths).

Table 7. Absolute changes in geographical distribution of SMR in the three Baltic countries between 1987–1990 and 1998–2001 (+ increase; - decrease)

	Range	Standard deviation	Coefficient of variation
All causes	+0.27	+0.03	+2.9
CVD	+0.54	+0.03	+3.0
Neoplasms	+0.49	+0.01	+0.5
External causes	-0.52	-0.07	-3.3

Source: Kruminis et.al, 2006. P. 109.

Additional analyses showed that there is a clear continuum running from the regions of high cardiovascular mortality in the north down to the regions of low mortality in the south. The prevalence of mortality from respiratory diseases varies in exactly the opposite direction. Cancer mortality does not reveal a geographical pattern. Cancer mortality is higher in the towns and cities than in the countryside. Everywhere in the towns, mortality for external causes is low, with a very narrow range of differences between them in all of the three Baltic countries. The geographical variation of this group of causes is typically shaped by rural areas.

Mortality, as well as the assessment of general public health status by region, still strongly depends on the level of socio-economic development of the regions. Therefore, reforms only covering health care systems could not diminish geographical mortality differences. In order to accelerate the convergence of regional life expectancy levels, greater attention should be paid to the reduction of geographical differences in the health of the population and to the impact of a broad range of policies that are related to public health.

Inequalities in the face of death

Inequalities in the face of death still continue to exist among population sub-groups. Some inequalities are rather stable, while some of them are changing in different ways (Stankuniene et.al, 1999; Monden, 2004). One of the most analyzed and discussed phenomenon is the gap between male and female life expectancy. Moderate male excess mortality decline since the mid- 1990s in the Baltic countries is still a serious health and socio-economic issue affecting the reduction of the female-male life expectancy gap, which is slowly approaching the new EU member states average, overrunning it by 1.7–2.9 years. In the old EU member states, female life expectancy excess has been systematically declining over the last twenty years – from 6.8 years in 1990 to 5.5 years in 2009. In the new EU member states that excess diminished insignificantly – from 8.2 to 8.1 years during the same period. Three Baltic countries are among the European countries with the highest men-women life expectancy gap. This gap has practically not changed (10.2 years) in Estonia; in Latvia it has decreased from 10.5 to 9.8 years, but in Lithuania it has even increased from 9.9 to 11.1 year over the last twenty years. In Iceland, the European country with the highest life expectancy (81.9 years in 2009), female-male life expectancy gap has reached 3.9 years, while in Russia (the European country with the lowest life expectancy) during 1990–2006 it has increased from 10.6 to 12.8 years.

Inherited from the Soviet period, urban-rural differences continue to be apparent in welfare, health and mortality. Rural excess mortality results in the urban-rural life expectancy gap, which in Latvia is rather stable: 2.0 years in 1990, 2.4 years in 2000 and 2.2 years in 2008 (CSB, 2009). The urban life expectancy gap is higher among men (1.8–3.0 years) in comparison with women (0.9–1.3 years) in Latvia. The advantage of urban life is also observed in Lithuania, where the gap between urban and rural life expectancy in 2000 was 3.3 years, but in 2009 was 3.1 years (Statistics Lithuania, 2011). In Estonia, there are no recent life table calculations separately for urban and rural population. In 1989, the urban-rural life expectancy gap for men in Estonia was 2.1 years and 1.7 years for women.

Urban-rural differences in mortality are mainly determined by the higher level of premature mortality due to external causes of death among rural males. For females, differences are caused by the higher mortality in older ages due to cardiovascular diseases in rural areas (Jasilionis, 2003). Differences are mainly determined by the higher level of education of the urban population and the lower effectiveness of health care services and health policy measures in rural areas.

Educational inequalities are an important factor in explanations of mortality changes and differences in general and by particular groups of causes of death (see Shkolnikov et al., 2006; Ezendam et al., 2008; Leinsalu et al., 2009; Stirbu et al., 2010). Large differences by education in mortality and life expectancy are witnessed in all three Baltic countries over the last twenty years. On the onset of the transition to the market economy, the gap between the higher educational level and primary education or less were 12.6 years for Latvian males at age 25 and 7.1 years for females of the same age (Krumins, 1993). During the 1990s, the declining mortality of the higher educated and the rising mortality of the lower educated resulted in an enormous mortality gap in Estonia. In 2000, male graduates aged 25 could expect to live 13.1 years longer than corresponding men with the lowest education; among women, the difference was 8.6 years (Leinsalu et al., 2003). In Lithuania, on the eve of 21st century, life expectancy at age 30 differed by 11.3 years between men with the highest and those with the lowest educational levels, mainly due to the excess mortality of the latter between 40 and 60 years of age (Jasilionis et al., 2007).

Socio-economic and political transformation has affected ethnic differences in mortality and life expectancy in multi-ethnic societies, including the Baltic countries. The standardized life expectancy (by place of residence) of Latvians surpassed that indicator for the largest minority group – Russians – in Latvia at the end of the 1970s and 1980s by 1.7 years. The mortality gap between Latvians and Russians, measured with age-standardized death rates has increased from 10 to 17 per cent for men from 1988 to 1995, and from 13 to 14 per cent for women for the same period (Krumins and Usackis, 2000). Increasing ethnic differences are also typical for Estonia. In the period from 1989–2000, the advantage of Estonians in life expectancy increased from 0.4 to 6.1 years among men and from 0.6 to 3.5 years among women (Leinsalu et al., 2004). In Lithuania, with its more ethnically homogeneous population, the difference in life expectancy at age 30 among Lithuanians and Russians is 1.82, while among Lithuanians and Poles it is 3.15 years (Jasilionis et al., 2007). Ethnic differences in mortality are partially attributed to differences in educational level and the urban-rural place of residence. Differences in life expectancy are mostly generated by cardiovascular diseases and external causes of death.

Differences between the most unfavourable and most favourable groups are huge. For example, in 2001–2004, the life expectancy gap at age 30 composed more than twenty years for men with higher education, married, Lithuanian and living in urban areas (47.7 years) compared with men with lower than secondary education, non-married, non-Lithuanian, urban (27.3 years), and more than 15 years for women, if women with higher education, married, non-Lithuanian, urban (55.8) is compared with women with lower than secondary education, non-married, non-Lithuanian, rural (40.0 years) (Jasilionis et al., 2007).

Concluding remarks

We have reached a point when many of us are finding answers to questions such as: How successful was the advancement of the three Baltic countries in the past twenty years in terms of human development, improvement of health and increase in life expectancy? Have we achieved more in comparison with the first decennials of independence during the 1920s and 1930s? Are the recent trends in mortality showing a break up with the Soviet-type excess mortality pattern and stagnating life expectancy? What are underlying factors behind the observed changes and policy implications?

Scholars from different fields and countries conduct intensive research in search of comprehensive answers to these issues. It is clear that one can find many explanations to cumulative process like mortality change in social development and people's health during the preceding decades. The Soviet health care system and social policy together with echoes from wars and post-war Stalinist repressions hindered the decline in mortality. Several countries (like Finland and Portugal) with a comparable or lower level of pre-war life expectancy outpaced the Baltic countries during the post-war period.

The renewal of independence and the following period of market-led reforms and social transformations resulted in a further decline of mortality in all three Baltic countries. Successive economic growth accompanied by growing social inequality predetermined a lasting or even growing socio-economic and demo-geographic differentiation of mortality.

The change in life expectancy in the three Baltic countries in the last twenty years aligns to a middle trajectory between the most successful Eastern and Central European countries and those countries lagging behind. Estonia became a leader among the Baltic countries in terms of life expectancy in recent years and Lithuania is lagging behind Estonia and Latvia. Cardiovascular diseases and violent deaths are still playing considerable role in excess mortality, especially for men.

Despite increasing life expectancy, it would probably take a long time and a significant effort for the Baltic states to narrow the mortality and life expectancy gap with more advanced European countries, especially for the male population. It is challenge for the coming decades. To find an answer, let us repeat this analogous comparative analysis in another twenty years!

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