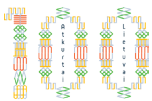




# Health in the Baltic Countries 2016

25<sup>th</sup> edition



Latvija  
100



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National Institute for Health Development

National Institute for Health Development, Estonia  
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Health Information Centre of Institute of Hygiene, Lithuania

# **Health in the Baltic Countries 2016**

**25<sup>th</sup> edition**

**2018**

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**Abbreviations and symbols:**

|                               |       |   |
|-------------------------------|-------|---|
| Estonia                       | EE    |  |
| Latvia                        | LV    |  |
| Lithuania                     | LT    |  |
| European Union (28 countries) | EU-28 |   |
| Data not available            | ...   |   |

When using or quoting the data included in this issue, please indicate the source.

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## PREFACE

“Health in the Baltic Countries 2016” is the twenty fifth edition of the series, released in the year where all Baltic countries celebrated the 100th anniversary of their independence.

The edition aims to provide a basis for the comparison of health statistics of the three Baltic states – Estonia, Latvia and Lithuania. The overview of the health related indicators in 2016 is provided in comparison with the previous years. Some general indicators are compared with the data 25 years ago.

The publication is divided into three chapters. The first chapter includes information concerning socio-economic data, population structure, life expectancy, healthy life years and fertility indicators. The second chapter focuses on mortality and morbidity. The last part compares health care services and resources and their use.

The most important data sources for this publication were registries and databases of various institutions and national statistics offices. World Health Organization Health for All database, Eurostat database and Organisation for Economic Co-operation and Development database were the sources for data of other European countries and the European Union average.

More information can be found on the websites of the countries' health related institutions and national statistics offices, and their online databases. The main references are presented on the back cover.

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## POPULATION AND HEALTH STATUS

### General

The population in all three Baltic countries has been decreasing steadily during the last 25 years. At the beginning of 2017, the population of Lithuania was 2.85 million, in Latvia 1.95 million and in Estonia almost 1.32 million. Comparing to the year 1992, there has been a significant decline in the population – 26% in Latvia, 23% in Lithuania and 15% in Estonia due to negative natural increase and emigration.

The decline in population has mainly influenced urban population. The share of urban population has decreased within 25 years in all Baltic countries while the share of rural population has increased. The population in the capitals of Latvia and Estonia has decreased at the similar rate like the total population, respectively 29% and 14%. Lithuania differs from the others as at the beginning of 2017 the population of Vilnius was only 9% smaller than in 1992. In Lithuania, the population of the other major cities decreased quicker due to people's movement into the capital. Despite the differences in population change, the distribution of the overall urban-rural population was similar in all three countries – about two-thirds of people live in cities.

In terms of population density all three belong to the least densely populated countries in Europe. Lithuania is the most densely populated Baltic country, but within 25 years the density has diminished from 57 persons per square kilometre in 1992 to 44 in 2016. In Estonia as in the smallest of the Baltic countries the population density was 30 persons per square kilometre in 2016, i.e. 4 persons less than in 1992. In 2016, the population density in Latvia reached the same level as in Estonia, being lower than in 1992 by 11 persons per square kilometre.

The share of the working-age population has risen over 60% in all Baltic countries in the 2000s. Compared to 1992, the share has increased by 5–6 percentage points mainly due to the rise of the official upper working age limits, but also due to changes in population structure. In 1992, the retirement age was 60 years for men and 55 years for women in all Baltic countries. By the beginning of 2017, the earliest pension age in the Baltics was for Lithuanian women and the latest for Lithuanian men. The pension age will further increase gradually to 65 in all three countries.

Involvement in labour market has been greatest in Estonia. Therefore, the unemployment rate in 2016 was lowest in Estonia – 7.1%, followed by Lithuania – 7.9% and Latvia – 9.9%. The unemployment rate has slightly increased in Estonia as compared to 2015, but was by 10 percentage points smaller than in 2010, when the share of the unemployed in the labour force was at the highest level after the economic downturn. The labour force data of 2017 suggest the increase in unemployment of Estonia was temporary. The unemployment decreased in Lithuania and Latvia in 2016 compared to the year before. In accordance with the preceding, the share of the employed in the working-age population was highest in Estonia – 73.6%, and lowest in Latvia – 68.7%. In Lithuania the employment rate was 69.4%, having increased most among the three Baltic countries compared to 2015. The growth in employment contributed to the economic growth: the annual increase of gross domestic product was biggest in Lithuania compared with the other Baltic countries.

The employment growth is driven by the increase in the employment of elderly people, which has been steadily increasing. Elderly people are occupationally most active in Estonia. The employment rate among population aged 65–74 in Estonia in 2016 was 25.3%, and has increased more than 3 percentage points compared to the year before. At the same time 15.8% of people of the same age were employed both in Latvia and Lithuania. In Lithuania the employment of elderly people increased at the same rate like in Estonia between 2015 and 2016.

In Estonia the wages have been higher than in Latvia and Lithuania due to steady growth since 2011. In 2016, the average monthly gross wage in Lithuania was approximately a third lower and in Latvia about a fourth lower than in Estonia. The annual growth in wages was faster in Lithuania and Estonia, respectively 8.4% and 7.6%, and slower in Latvia (5%).

Estonia has claimed to be the country with the biggest gender pay gap in Europe. According to Eurostat data for 2016, the gender pay gap was 25.3%, but it is decreasing at a moderate pace from year to year. Although the monthly average gross wage and average old-age pension differ in all three countries, the average ratio of old-age pension to monthly gross wage is quite similar, accounting for about 33–34%.

## Population and life expectancy

The changes in the population age structure have been similar in all Baltic countries and it is characteristic to the ageing society. Over the past 25 years the share of people aged 20–64 years has remained at the same level – about 59–60% of the population in all Baltic countries. The changes have occurred in the proportion of younger and elderly people. In 1992, the proportion of people younger than 20 was 28–30%. Nowadays the share of younger age-group has decreased to 20–21% of the population, mainly due to low birth rates and decreasing number of women in childbearing age. At the same time the share of people aged 65 years and over has increased from 11–12% in 1992 to 19–20% in 2017 thanks to the improved quality of medical care and increase in people's awareness about healthier lifestyle, which is the basis for increasing life expectancy and healthy life years.

However, when analysing the changes in population by age groups, a substantial decrease due to the emigration has occurred. Comparing the number of people born within the period of 1978–1992 in their childhood in 1992 with the year 2017, when they have reached the age 25–39, it occurs that their number has decreased by 18% in Estonia, by 30% in Latvia and by 35% in Lithuania. According to the Eurostat data for the period of 2000 to 2014, emigration has exceeded immigration in all three countries. But in Lithuania and Latvia the migration has been several times bigger than in Estonia. Unlike Latvia and Lithuania, Estonia had positive net migration (immigration exceeded emigration) for the second year in a row in 2016.

After regaining independence, the natural increase turned negative and it has lasted so far in all three Baltic countries. In the period 1992–2016 the average natural increase per 1000 persons was –2.6 for Estonia, –4.8 for Latvia and –2.5 for Lithuania. Only once the number of births exceeded the deaths in 2010 in Estonia, while the natural increase rate was 0.03. In recent years the decrease in the population has slowed down.

The life expectancy (LE) at birth is below the European Union (EU) average for all three Baltic countries. In 2016, the EU average LE was 78.2 years for men and 83.6 years for women. Among men, Latvia and Lithuania had the lowest LE rates across the EU countries (69.8 and 69.5 years respectively) in 2016, Estonian men were in the sixth place from behind (73.3 years). It

means that men's life span in Lithuania was about 9, in Latvia about 8 and in Estonia about 5 years shorter than in the EU on average. The women's life span is a little bit longer and compared to the other EU countries the Baltic countries are not the last in the ranking. The life span of women in Latvia was 4 years, in Lithuania about 3.5 and in Estonia about one year shorter than the EU average (LE respectively: 79.6, 80.1 and 82.2 years). The LE for women is generally higher than for men. In the Baltic countries the gender gap in life expectancy was almost a half bigger than the EU average – in Lithuania 10.6, in Latvia about 10 and in Estonia about 9 years. The difference in life span of women and men mostly depends on different lifestyles, occupation, education.

Although Estonia has the longest average LE among the Baltic countries, the proportion of time lived without health-related limitations affecting daily activities, or so called healthy life years (HLY), are highest in Lithuania. The gender gap in HLY is much smaller than for life expectancy. Baltic women can expect to live without disability 2–3 years longer than men. For comparison the EU average gender gap in HLY was less than a year in 2016.

## Fertility and abortions

Having children is increasingly postponed to a later age. The birth rates have been declining among younger women aged 15–24 years and increasing in the older age groups from 25 years of age. The mean age of women at birth of first child has risen year over year very similarly in all Baltic countries. Whereas in 2006 the average age of women giving birth to the first child was 25 years, by the year 2016 it has risen to over 27 years. Despite the rise of age at childbirth, women in the Baltics giving birth to their first child are younger than in the EU – the EU average in 2016 was 29 years.

Legally induced abortions in the years 2006–2016 have remarkably decreased. The biggest decline occurred in Latvia – 62%, reaching from 53 abortions per 100 live births in 2006 to 20.2 in 2016. In Lithuania the decline has been 55% and in Estonia 49% in the same period. The abortions ratio in 2016 was 14.7 abortions per 100 live births in Lithuania and 32.3 in Estonia. For comparison, the EU average abortion rate of 2015 was 20.3. The big difference between countries is caused by different registration systems.

## General data

|  | Estonia   | Latvia  | Lithuania   |
|--|---|---|---|
| Official name of the state                                       | Republic of Estonia<br>(Eesti Vabariik)   | Republic of Latvia<br>(Latvijas Republika)                        | Republic of Lithuania<br>(Lietuvos Respublika)                    |
| Independence Day   | 24 February (1918)  | 18 November (1918)  | 16 February (1918)  |
| Governing body of the state                                      | Parliament (Riigikogu), 101 members, elected for a period of 4 years                                    | Parliament (Saeima), 100 members, elected for a period of 4 years | Parliament (Seimas), 141 members, elected for a period of 4 years |
| Governmental structure   | Republic, the President is elected for the period of 5 years  | Republic, the President is elected for the period of 4 years      | Republic, the President is elected for the period of 5 years      |
| Area (thousand km <sup>2</sup> )                                 | 45.2  | 64.6  | 65.3  |
| Administrative units at the beginning of 2017                    | 15 counties, 213 administrative units with local governments, incl. 30 cities, 183 rural municipalities | 9 cities, 110 counties  | 10 counties, 60 municipalities, 103 cities and towns              |
| Capital, resident population at the beginning of 2017 (thousand) | Tallinn<br>426.5  | Riga<br>641.4   | Vilnius<br>545.3  |
| State language   | Estonian  | Latvian   | Lithuanian  |
| Currency: Euro=100 cents   | Since 2011<br>1 EUR = 15.6466 EEK   | Since 2014<br>1 EUR = 0.7028 LVL                                  | Since 2015<br>1 EUR = 3.4528 LTL                                  |

## Demographic and socio-economic indicators, 2016

|  | Estonia      | Latvia       | Lithuania    |
|--|--------------|--------------|--------------|
| Human Development index and world rank (WR)                      | 0.865 WR: 30 | 0.830 WR: 44 | 0.848 WR: 37 |
| Gross Domestic Product (GDP) per capita, EUR                     | 16 034.7     | 12 722.0     | 13 482.0     |
| Gross National Income (GNI) per capita, EUR                      | 15 722.1     | 12 691.3     | 12 949.7     |
| Employment rate among working-age population, %                  | 73.6         | 68.7*        | 69.4         |
| Employment rate among population aged 65–74, %                   | 25.3         | 15.8         | 15.8         |
| Annual average unemployment rate among working-age population, % | 7.1          | 9.9*         | 7.9          |
| Monthly average gross wage, EUR                                  | 1 146.0      | 859.0        | 774.0        |
| Monthly average old-age pension, EUR                             | 386.0        | 279.6        | 255.0        |

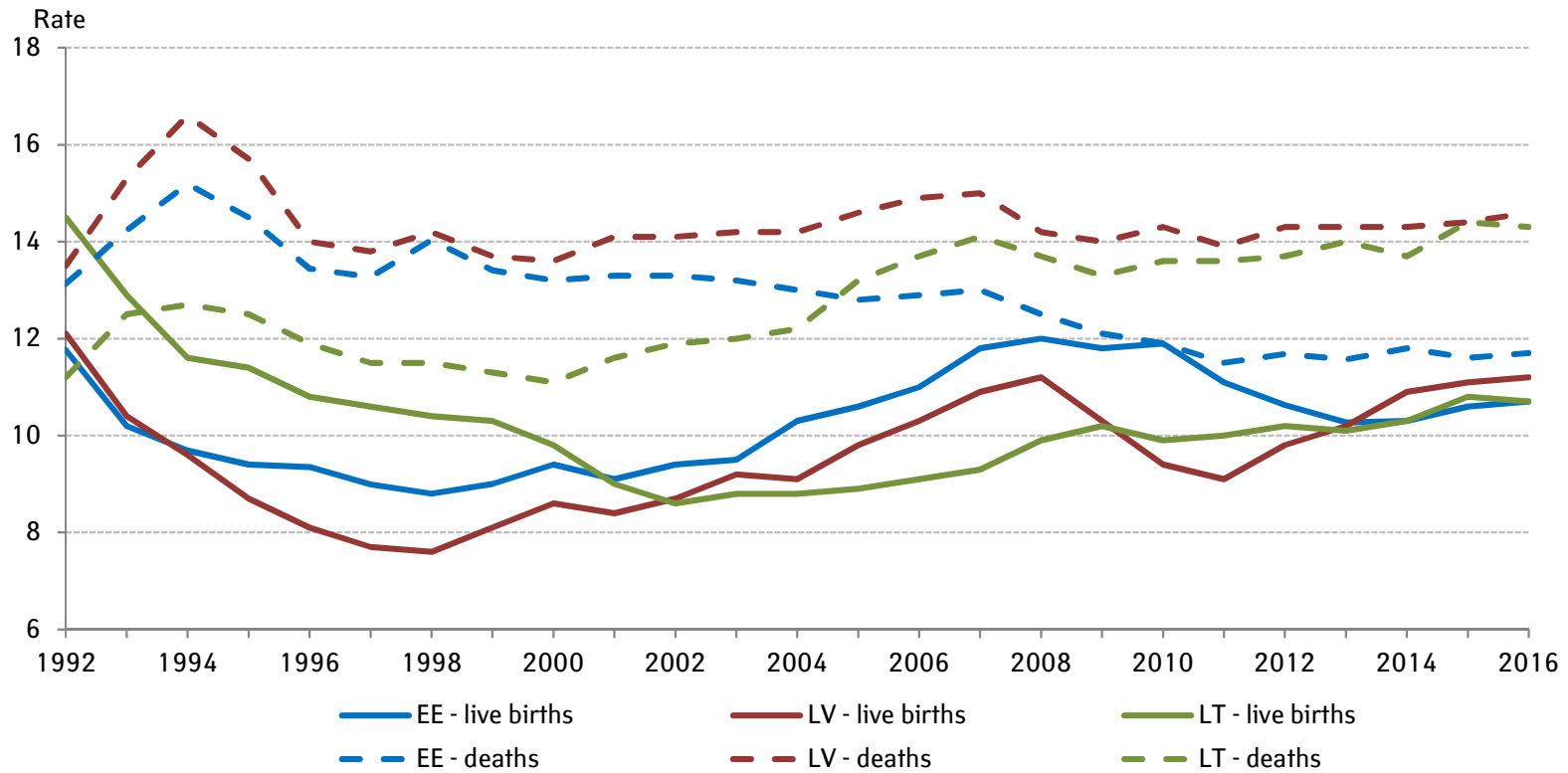
\* Population aged 15–64

## Total population on 1st January 1992 and 2017

|                         | on 1 <sup>st</sup> January 1992 |          |           | on 1 <sup>st</sup> January 2017 |               |               |
|-------------------------|---------------------------------|----------|-----------|---------------------------------|---------------|---------------|
|                         | Estonia                         | Latvia   | Lithuania | Estonia                         | Latvia        | Lithuania     |
| Population (thousand)   | 1 554.9                         | 2 643.0  | 3 706.3   | 1 315.6                         | 1 950.1       | 2 847.9       |
| Per 1 km <sup>2</sup>   | 34.4                            | 40.9     | 56.8      | 30.3                            | 30.2          | 43.6          |
| Urban (thousand)        | 1 110.2                         | 1 827.4  | 2 531.4   | 900.5                           | 1 332.5       | 1 911.1       |
| % from total population | 71.4                            | 69.1     | 68.3      | 68.4                            | 68.3          | 67.1          |
| Rural (thousand)        | 444.7                           | 815.6    | 1 174.9   | 415.2                           | 617.6         | 936.8         |
| % from total population | 28.6                            | 30.9     | 31.7      | 31.6                            | 31.7          | 32.9          |
| Males (thousand)        | 726.8                           | 1 228.6  | 1 752.8   | 617.5                           | 895.7         | 1 312.2       |
| % from total population | 46.7                            | 46.5     | 47.3      | 46.9                            | 45.9          | 46.1          |
| Females (thousand)      | 828.1                           | 1 414.4  | 1 953.5   | 698.1                           | 1 054.4       | 1 535.7       |
| % from total population | 53.3                            | 53.5     | 52.7      | 53.1                            | 54.1          | 53.9          |
| Below working age, %    | 22.0                            | 22.8     | 23.9      | 17.1                            | 15.6          | 15.8          |
| Working age, %          | 57.2                            | 55.8     | 56.4      | 62.3                            | 62.2          | 61.8          |
| Above working age, %    | 20.8                            | 21.4     | 19.7      | 20.6                            | 22.2          | 22.4          |
| <b>Working age</b>      |                                 |          |           |                                 |               |               |
| Males                   | 16–59 y.                        | 16–59 y. | 16–59 y.  | 16–63 y. 3 m.                   | 15–62 y. 9 m. | 16–63 y. 4 m. |
| Females                 | 16–54 y.                        | 16–54 y. | 16–54 y.  | 16–63 y. 3 m.                   | 15–62 y. 9 m. | 16–61 y. 8 m. |

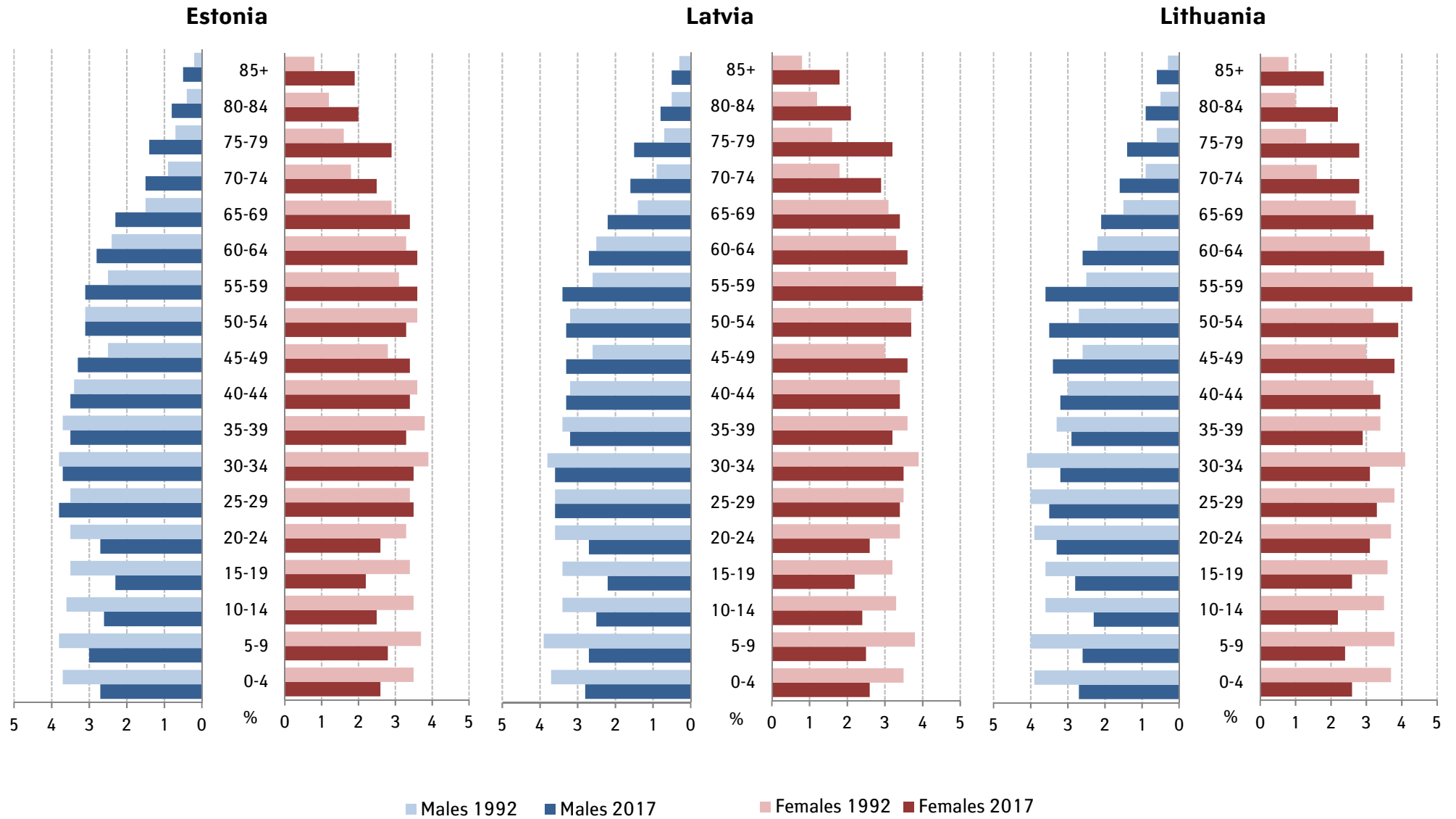


Births and deaths per 1000 population, 1992–2016

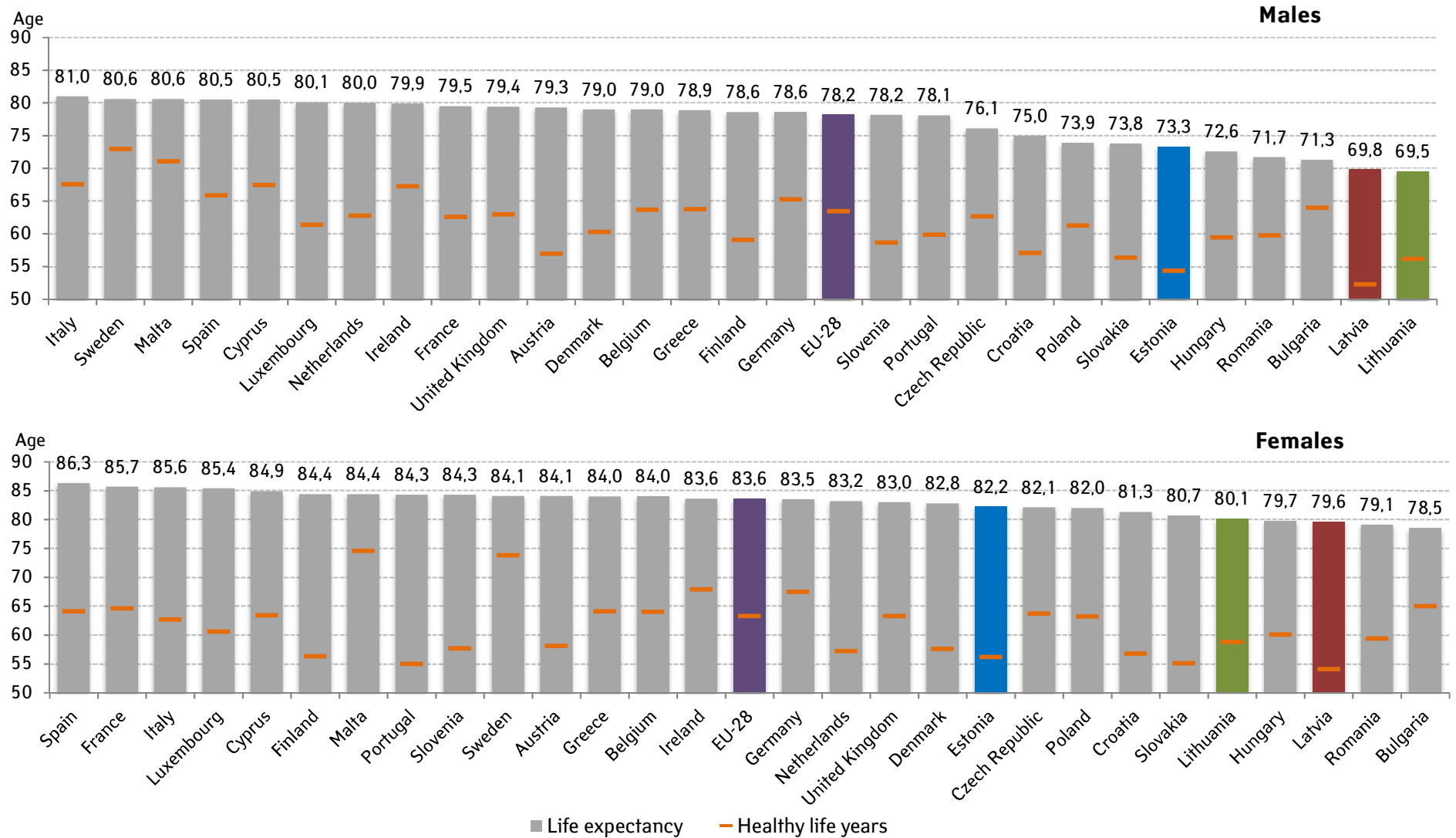


Population structure by sex and age

on 1<sup>st</sup> January 1992 and 2017 (percentage of total population)

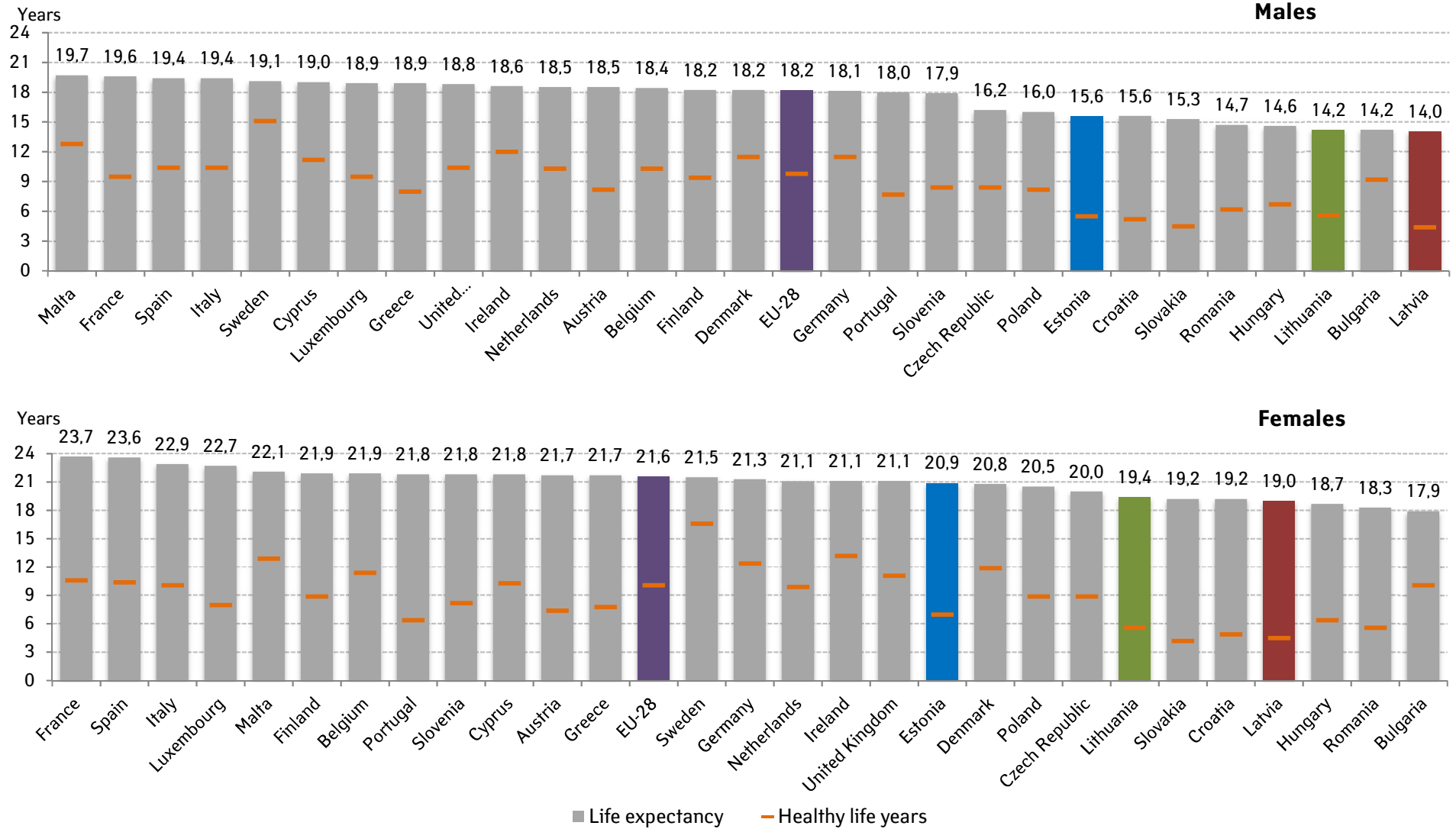


Life expectancy and healthy life years at birth in EU member states, 2016



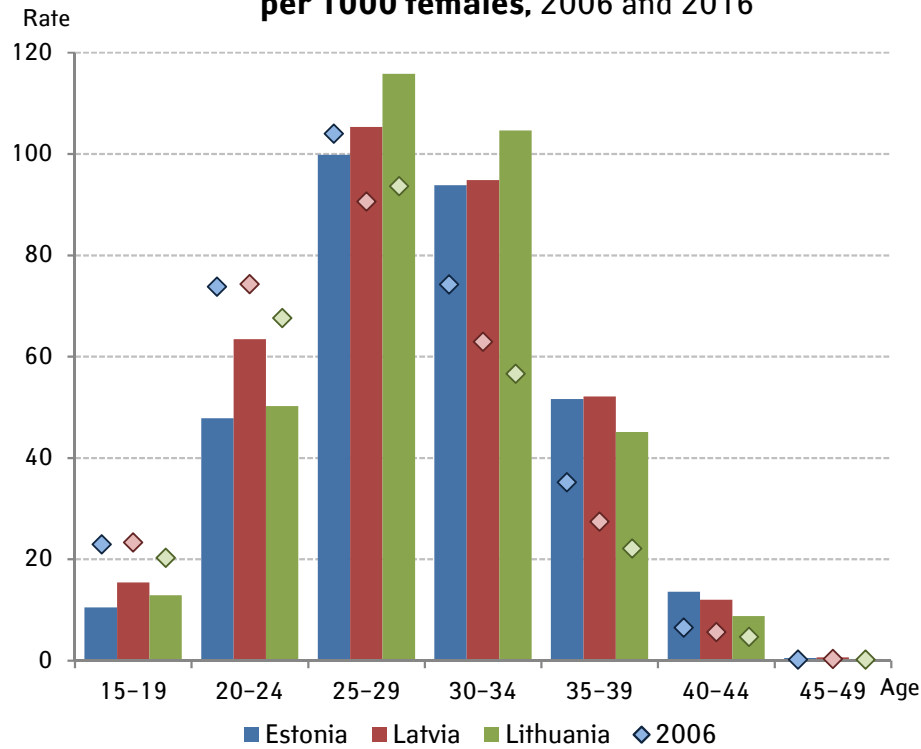
Source: Eurostat

Life expectancy and healthy life years at 65 years of age in EU member states, 2016

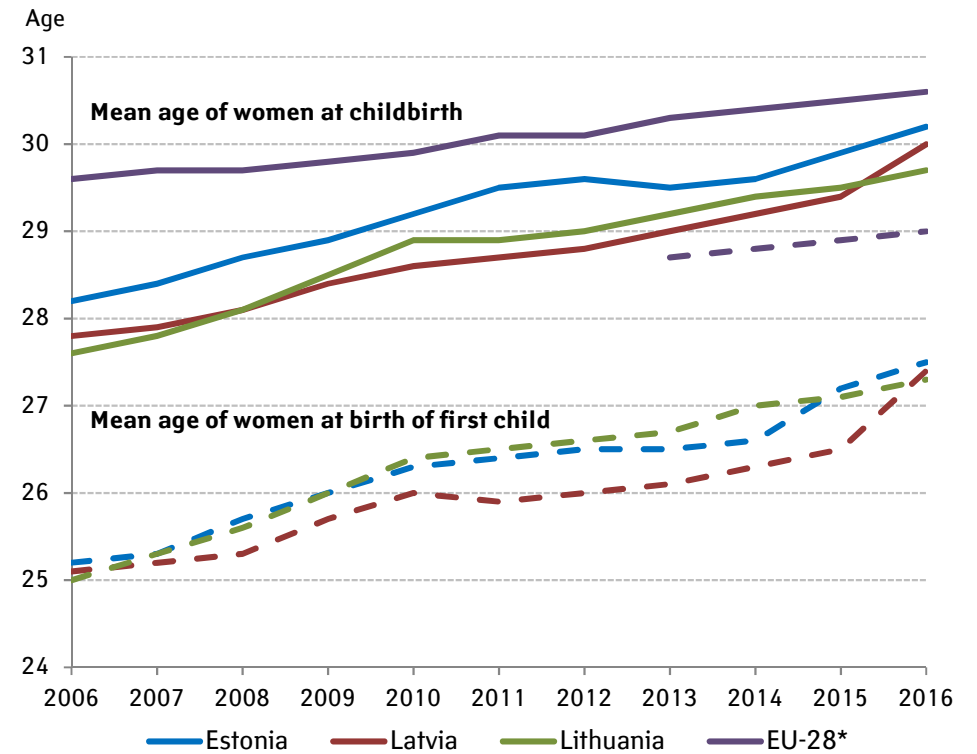


Source: Eurostat

**Age-specific fertility rate by age of mother per 1000 females, 2006 and 2016**



**Mean age of women at childbirth, 2006-2016**



**Total fertility rate, 1992, 2006 and 2016**

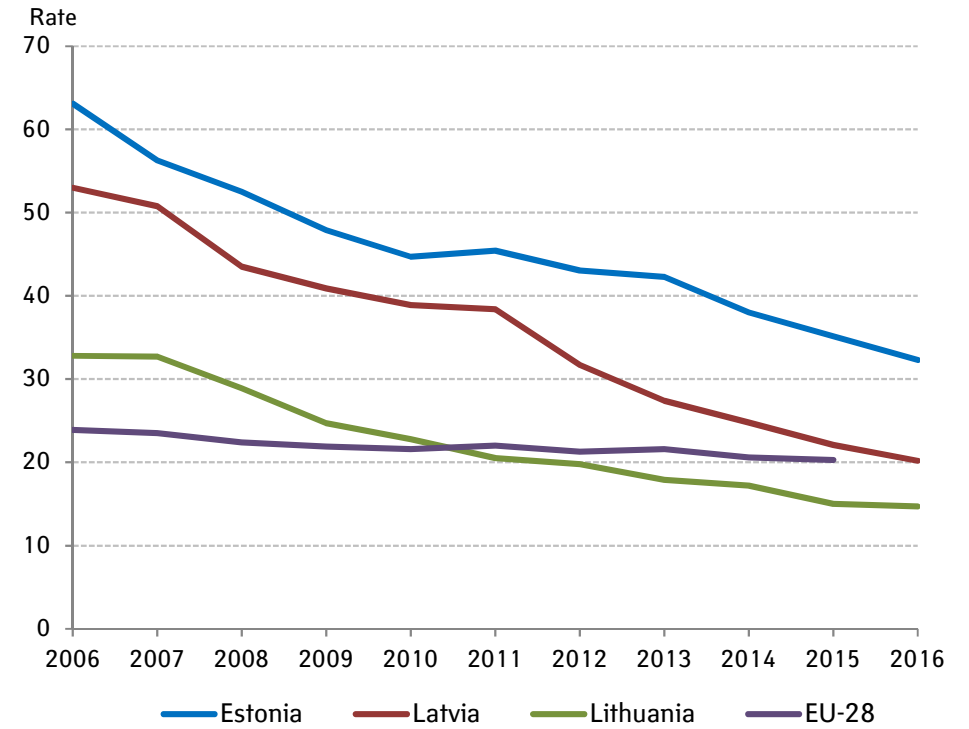
|  | 1992 |   | 2006 |   | 2016 |
|--|------|---|------|---|------|
|  | 1.7  | ↘ | 1.6  | ↗ | 1.6  |
|  | 1.7  | ↘ | 1.5  | ↗ | 1.7  |
|  | 1.9  | ↘ | 1.3  | ↗ | 1.7  |

\* Mean age of women at birth of first child in EU-28 is available only for 2013-2016.

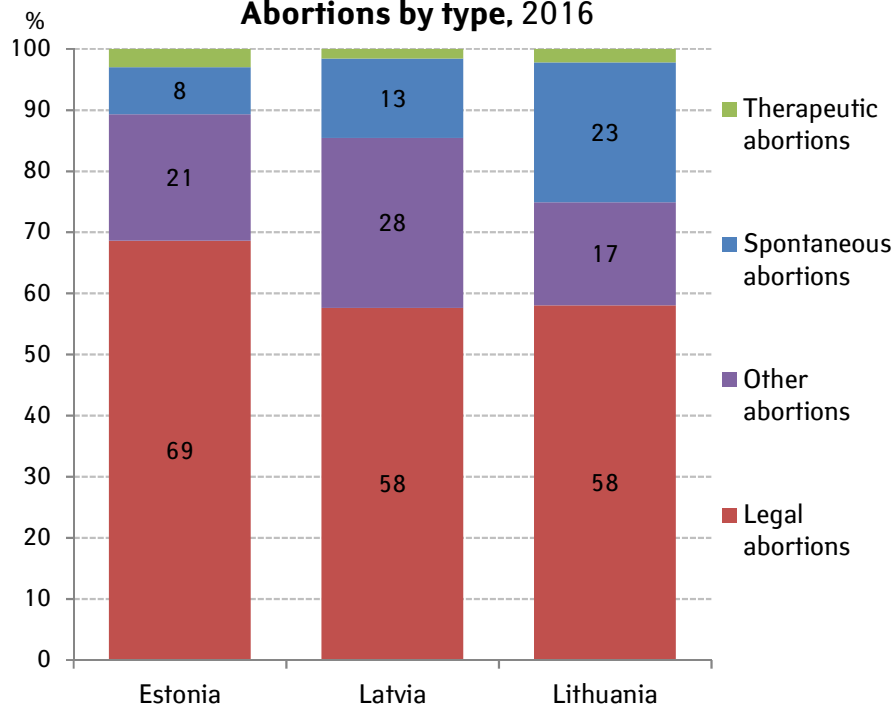
Abortions, 2016

|                                 | Estonia | Latvia | Lithuania |
|---------------------------------|---------|--------|-----------|
| <b>All abortions</b>            |         |        |           |
| Per 1000 women aged 15–49 years | 21.6    | 17.1   | 11.6      |
| Per 100 live births             | 45.1    | 34.0   | 24.4      |
| <b>Induced abortions</b>        |         |        |           |
| Per 1000 women aged 15–49 years | 15.5    | 10.2   | 7.0       |
| Per 100 live births             | 32.3    | 20.2   | 14.7      |

Induced abortions per 100 live births, 2006–2016



Abortions by type, 2016



## MORTALITY AND MORBIDITY

### Infant mortality

There has been a steady decline in infant mortality in all Baltic countries since the 1990s. While in 1992 there were 16–17 deaths of children aged less than one year per 1000 live births, by 2016 it has diminished to 2–5 deaths. In Latvia the infant mortality rate was higher than in Estonia and Lithuania until 2014, when it decreased below the Lithuanian average. In Estonia infant mortality has been lowest among the Baltic countries from the year 2003. In 2016 there were 2.3 infant deaths per 1000 live births in Estonia, 3.7 in Latvia and 4.5 in Lithuania.

The European average infant mortality was 3.6 deaths per 1000 live births in 2015. In Estonia the infant mortality rate has been lower than the European average since 2009. The Latvian and Lithuanian rates were slightly above the European average.

Most of the infant mortality cases are neonatal deaths (during the first four weeks) and most of which in turn fall into early neonatal period (0–6 days of life). The progress in reducing neonatal deaths has had its impact on the decline of infant mortality in general.

There were two main causes of death among children aged less than one year in all three countries: certain conditions originating from perinatal period and congenital anomalies. These two causes accounted two-thirds of infant deaths in Estonia and slightly more in Latvia and Lithuania. Half of infant deaths was caused by the perinatal conditions in Latvia and Estonia in 2014–2016. At the same time the congenital anomalies have become the first main cause for infant mortality in Lithuania. In Latvia, sudden infant death syndrome accounted for on average a tenth of all infant deaths.

### Mortality

Overall age-standardised death rates in the Baltic countries have been higher than the European average. In 2015 the EU average age-standardised death rate was 1 287 per 100 000 men and 849 per 100 000 women. In Estonia the men's death rate was by a third higher than the EU average

whereas in Latvia and Lithuania it exceeded the EU average even by 60%. The women's death rates were closer to the EU average being by 8% higher in Estonia and about 30% in Latvia and Lithuania.

The two main causes of death are the same in the Baltic countries as in the EU – diseases of the circulatory system and cancer. The third cause of death in the Baltics is injuries for men and diseases of digestive system for women, whereas in the EU it is respiratory system diseases. The main causes of death in the Baltics are the same for men and women but the death rates vary significantly. The overall death rate among men is almost two times greater than women. The largest gender gap has been observed in deaths caused by injuries and respiratory system diseases. Four times more men than women die due to injuries and three times more men than women due to respiratory system diseases. In EU on average, death rates due to injuries and respiratory system diseases are about two times higher for men comparing to women.

**Circulatory system diseases** are the leading cause of death in the Baltics as in most European countries. Deaths due to these diseases account for about a half of men's and about 60% of women's deaths in all three Baltic countries. In the EU the share of deaths due to circulatory system diseases is slightly below 40% of all death causes. In Estonia the death rates from circulatory system diseases have been slightly lower than in Latvia and Lithuania.

**Malignant neoplasms** have been the cause for about a fourth of all deaths in the EU and for a fifth of deaths on average in the Baltic countries. Compared to the EU average the age-standardized death rates from malignant neoplasms were by 30% higher for Baltic men and at the European average level for Baltic women. The death rates among men are twice as high than among women in the Baltics. The main cause of cancer mortality among men is lung cancer, which accounts for almost a quarter of all cancer deaths. Compared to 2006 the men's mortality from lung cancer has been decreased. Among women, breast and colorectal cancer are the most common causes of death.

**Injuries, poisoning and other external causes** accounted on average for 7–9% of men's and 3–4% of women's deaths in the Baltics in 2016. Death rates vary largely not only between genders but also between age groups.

Most injury-related deaths occur among men aged over 45. In 2006 the deaths from injuries were more common among men aged 45–64, whereas in 2016 it was rather a cause of death among men aged over 65 in Latvia and Lithuania as in Estonia it occurred slightly more in the age-group 45–64. There is 70–80% less deaths from injuries and poisoning among women than among men and it has been more common for the age group 65 and over.

Transport accidents are one of external death causes. The number of human casualties caused by transport accidents has decreased by 64% on average in the Baltics when comparing the data of 2016 with 2001. In 2016, transport accident was the cause of death for 16 men per 100 000 population in Latvia, for 14 men in Lithuania and 8 men in Estonia, being by 20–30 persons less than in 2001. Among women the death rates from transport accidents have been quite similar in the Baltic countries accounted for 3–4 women per 100 000 in 2016 instead of 8–12 in 2001.

The suicide rates in all three Baltic countries were high in the 1990s and started to decrease at the turn of the century. There have been some relapses related with the economic crisis in 2008–2009, when there were more suicides. Since 1996 the suicide rates have decreased by nearly half in Latvia and by nearly two thirds in Estonia, both for men and women. The decline has been slower in Lithuania, where the rate has fallen about 36% for men and 53% for women, remaining still significantly higher than in the other two Baltic countries. The suicide rates have been 4 to 6 times higher for men than for women over the years. Comparing to the EU average in 2015, which was 17.3 suicides per 100 000 men and 5 per 100 000 women, the rates in the Baltics were still higher. Lithuania holds the last position in the ranking of the EU countries.

### Cancer incidence

In the recent years new cancer cases have been increasing steadily. Comparing with the situation 10 years ago, about a fifth more new cancer cases have been registered in Latvia, slightly more than a third in Estonia and over a half more in Lithuania, when not considering the preliminary data for 2013–2016 for Lithuania. The incidence rates have always been higher for

men whereas the increase of incidence was faster for women in 2016 compared to 2006. In Estonia and Latvia, the number of new cancer cases among men is about 10% higher, and in Lithuania even 30% higher than among women. Latvia has the lowest rate of new cancer cases in the Baltics – mainly because of men's lower prostate cancer rates and women's lower skin cancer rates.

Prostate cancer is the most common cancer type among men that accounted for from a fifth in Latvia to almost a third in Lithuania of all new cancer cases. Skin and breast cancer are more common among women: in 2016 skin cancer was most frequent in Estonia and Lithuania, respectively a fourth and a fifth of new cancer cases. Among Latvian women breast cancer accounted for a fifth of all cases. Comparing 2016 to 2006, the new cases of skin cancer have increased most rapidly.

### Incidence of selected infectious diseases

Infectious diseases, including HIV, tuberculosis and hepatitis, continue to be the important public health challenges in all three Baltic countries.

Among all intestinal infections, the rotaviral enteritis, the most common cause of diarrhoea for infants and children, have had the high notification rates in Baltic countries. In recent years, the number of new cases of rotavirus has markedly decreased in Estonia and Latvia, but there has been a slight increase in Lithuania. The vaccination of infants against rotavirus was implemented in the national immunisation programme in Estonia since 2014 and in Latvia since 2015. Norwalk virus was the second most common intestinal infection in Estonia and Latvia. In 2016 the notification of Norwalk virus doubled in Estonia and was by a third higher in Latvia compared to 2015. Also, the incidence rates for salmonellosis increased compared to the year before, being in Lithuania higher than for the Norwalk virus.

Due to the differences in registration, the data on influenza, the most widespread droplet infection in the Baltic countries, are not included. Among the vaccine-preventable droplet infections, whooping cough is still causing problems in Europe and in the Baltics. In 2016 the increased incidence rates could be observed in Latvia – 13.1 cases per 100 000 population while in Estonia the rate was over 2 times and in Lithuania 10 times smaller.



Lyme disease and tick-borne encephalitis (TBE) are the most prevalent transmissible infections in the Baltics. The rate of new TBE cases in 2016 was highest in Lithuania – 22.1 cases per 100 000 population. The incidence rates of Lyme disease (borreliosis) are several times higher in all countries.

The prevalence of viral hepatitis is mostly caused by infection with the hepatitis C virus in the Baltic countries. The number of newly diagnosed hepatitis C cases has remained at a high level, especially in Latvia, which rates have been highest compared to the others EU countries. The notification rates of hepatitis C virus exceeded the EU average level in all Baltic countries in 2016, being several times higher just for chronic cases.

Chlamydial infections had the highest prevalence in the group of sexually transmitted diseases in the Baltics. However, the incidence rate in Latvia was by a quarter and in Lithuania even eight times smaller than in Estonia, although in a declining trend in all three Baltic countries.

### **Tuberculosis**

After regaining independence, tuberculosis morbidity increased significantly in all Baltic countries. Since the beginning of the 2000s the tuberculosis incidence has been constantly decreasing. In 2016 there were 54% less new cases in Estonia, 45% less in Latvia and 37% less in Lithuania than in 2006. The average annual rate of decrease was 4–7% during this period. Tuberculosis affects more men than women – there were about three times more men among the newly infected in the Baltics. For comparison the EU average male-to-female ratio in new TB cases was 1.5 in 2016. The incidence rate in Lithuania was more than three times higher than in Estonia, and 40% higher than in Latvia in 2016 and the difference has increased during the last decade. The number of new cases per population has remained high in the Baltics – respectively 40, 29 and 13 new cases per 100 000 in Lithuania, Latvia and Estonia. Therefore, WHO continuously classifies all three Baltic countries among 18 high-priority countries in the European region (ECDC, 2018). In addition, multidrug resistant (MDR) tuberculosis continue to be particularly prevalent in the Baltics. The proportion of MDR among all new tuberculosis cases in 2016 varied from 6% in Latvia to 10% in Estonia and

Lithuania. Over the past ten years, the MDR percentage in Estonia and Latvia has been declining. Tuberculosis has become a serious problem for HIV-positive patients. In 2016, 12% of the newly diagnosed people with tuberculosis in Estonia, nearly 7% in Latvia and 2% in Lithuania had also HIV. The proportion of co-infected cases in Estonia was one of the highest in EU.

Mortality due to tuberculosis has been highest in Lithuania. In 2016 there were 6 deaths from tuberculosis per 100 000 persons in Lithuania, 4 deaths in Latvia and 2 deaths in Estonia.

### **HIV and AIDS**

HIV incidence rates are slightly rising in Latvia and Lithuania, having a falling tendency in Estonia. Nevertheless, HIV rates in Estonia have been significantly higher than in the Baltic neighbouring countries since 2000. In 2016 there were 17.4 new cases of HIV per 100 000 population against about 50 cases in 2006 in Estonia. During this period the number of cases has decreased almost two-thirds. In Estonia the HIV incidence rate of 2016 was more than two times higher than in Lithuania, but in 2006 the difference was 16 times. In Latvia the HIV rate has increased compared to 2015 and exceeded the Estonian rate for the first time. As a result, Latvia currently ranks highest in the EU with 18.6 new cases of HIV per 100 000 population in 2016, until then Estonia was the fastest HIV spread country in the EU.

The rates of new AIDS cases were in 2016 higher than 10 years ago in all three Baltic countries. Since 2008 the highest rates have been in Latvia: in 2016 there were 5.8 new cases per 100 000 population – almost two times more than in Estonia, being more than threefold rate compared to Lithuania.

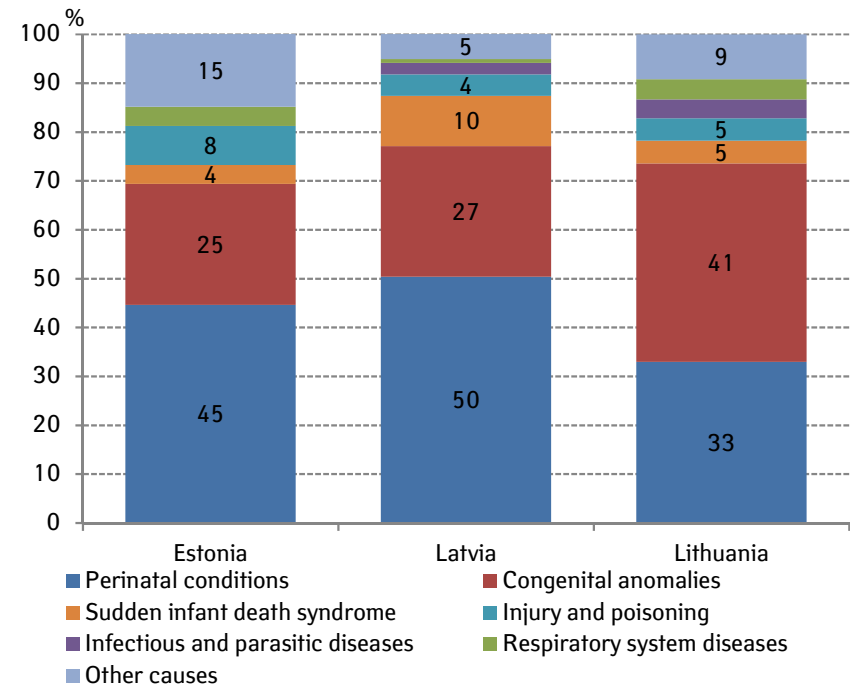
In 2016 the mortality rate caused by AIDS ranged from 3.6 in Latvia and 3.3 in Estonia to 1.2 deaths per 100 000 population in Lithuania. The Latvian rate has been highest from 2012 compared to the neighbouring countries, still indicating a falling trend after the maximum rate in 2013. In Lithuania the death rate exceeded one per 100 000 population for the first time in 2016, whereas in Estonia the rate was more than 3 deaths per 100 000 over the last decade.

Perinatal, neonatal and maternal mortality, 2016

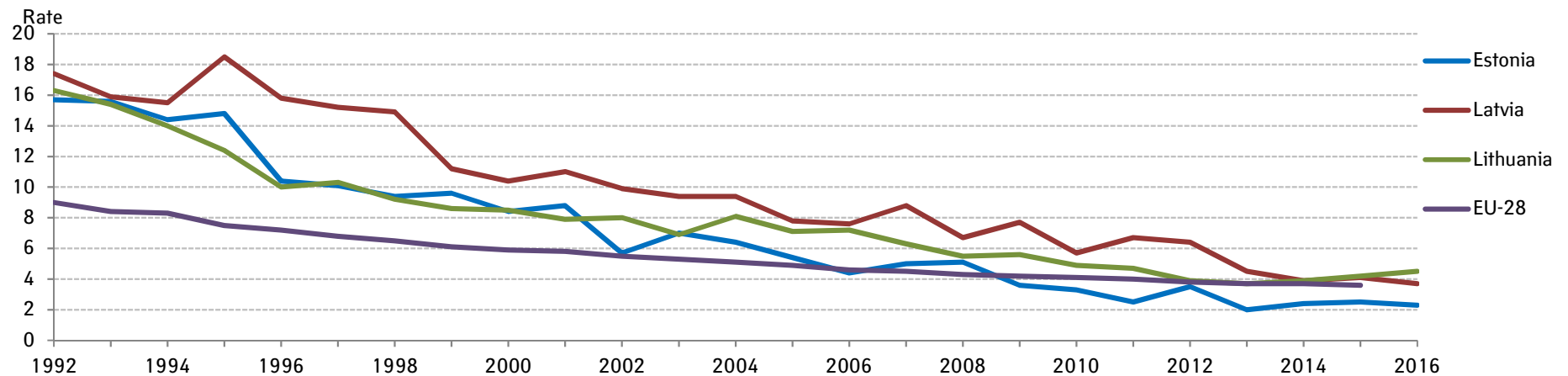
|   | Estonia | Latvia | Lithuania |
|---|---------|--------|-----------|
| Stillbirth rate per 1000 births               | 3.5     | 5.8    | 4.2       |
| Early neonatal mortality per 1000 live births | 0.7     | 1.8    | 1.6       |
| Perinatal mortality per 1000 births           | 4.3     | 7.5    | 5.9       |
| Neonatal mortality per 1000 live births       | 0.9     | 2.5    | 2.5       |
| Standard perinatal mortality*                 | 3.2     | 5.2    | 4.0       |
| Standard stillbirth rate*                     | 2.7     | 4.0    | 3.4       |
| Maternal mortality per 100 000 live births    | 14.4    | 23.1   | 6.5       |

\*Birth weight 1000 grams and more

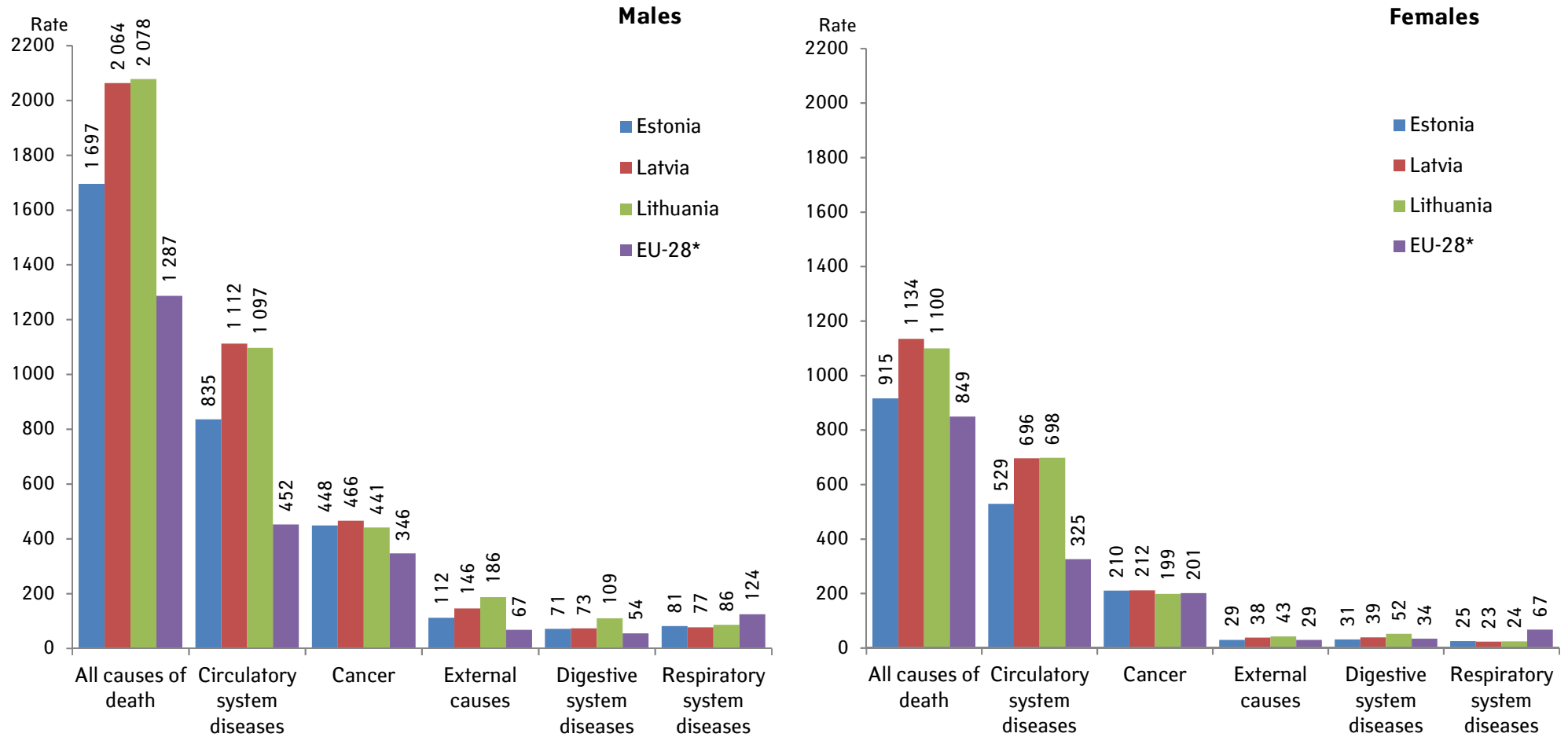
Infant mortality by cause  
three-year (2014–2016) average



Infant mortality per 1000 live births, 1992–2016



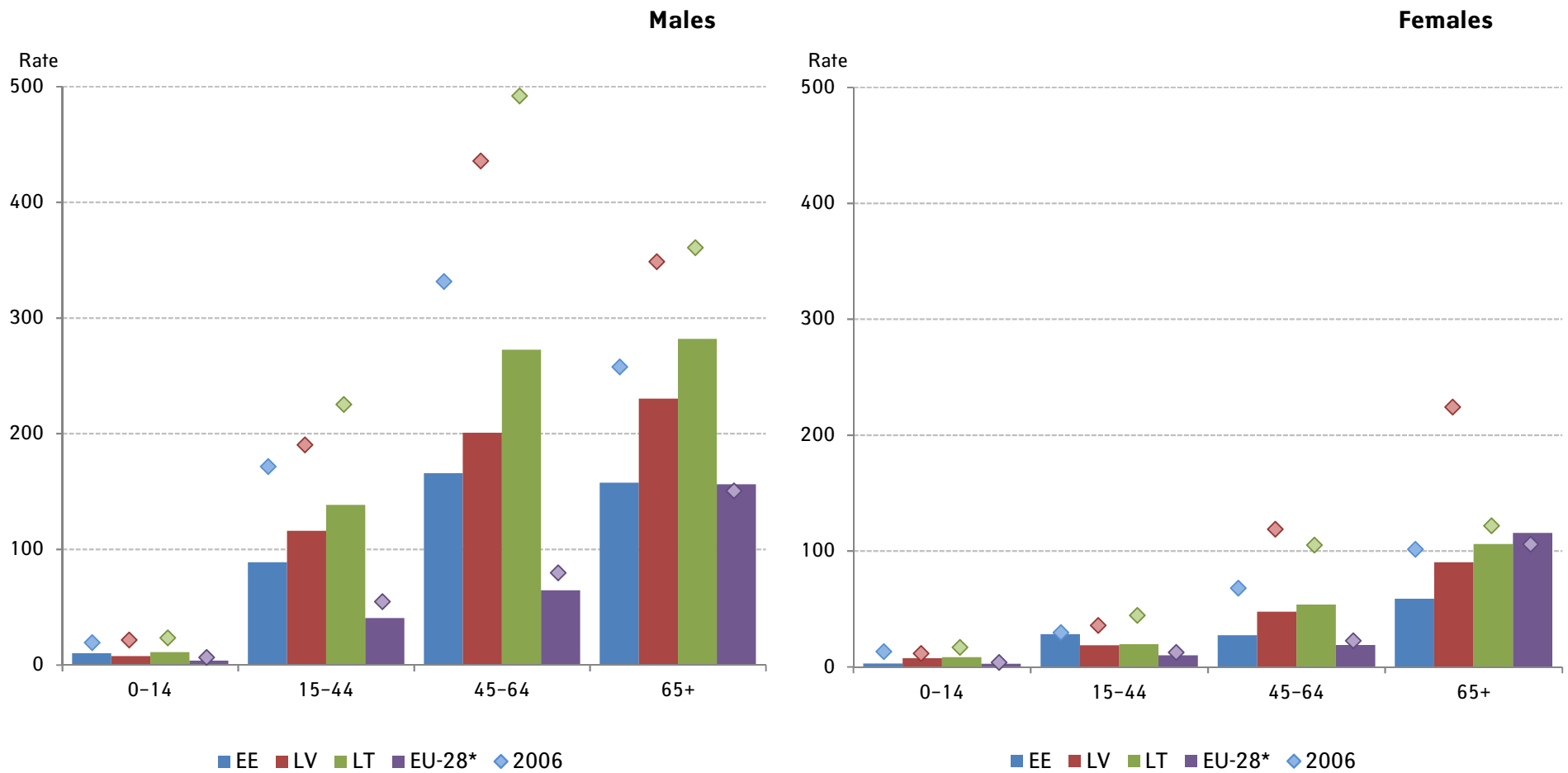
Age-standardised death rates per 100 000 European standard population, 2016



Notes: Age-standardised death rates are calculated using the 2013 European Standard Population.

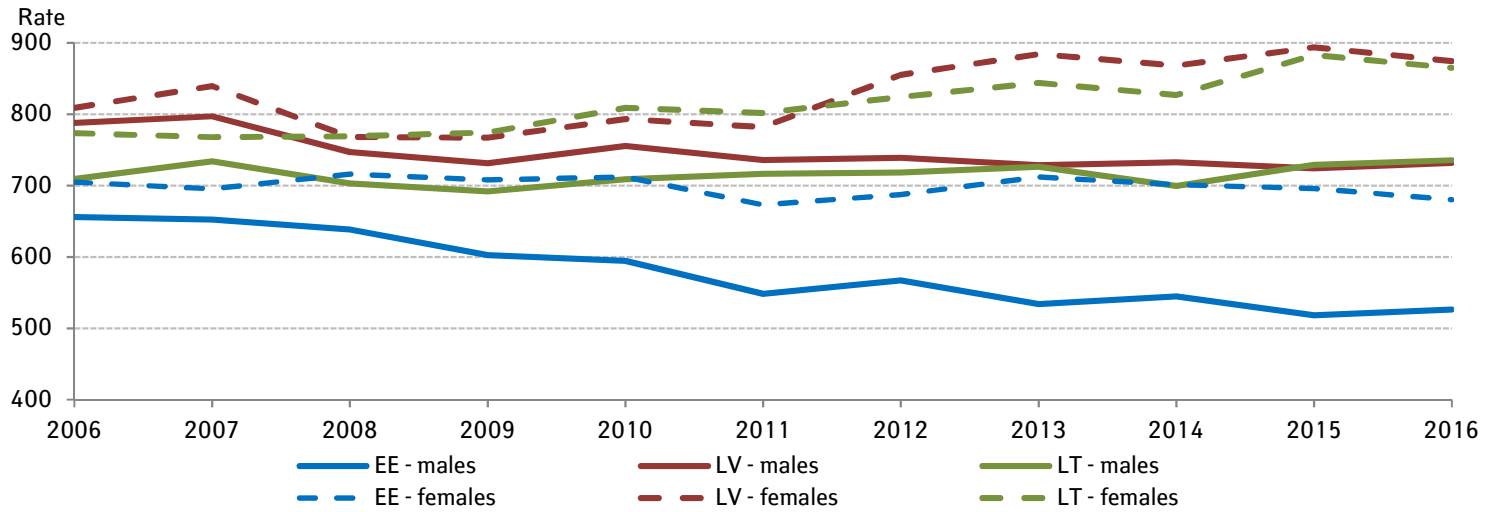
\* EU-28 data for 2015.

Deaths from injuries, poisoning and other external causes  
by age group per 100 000 population, 2006 and 2016

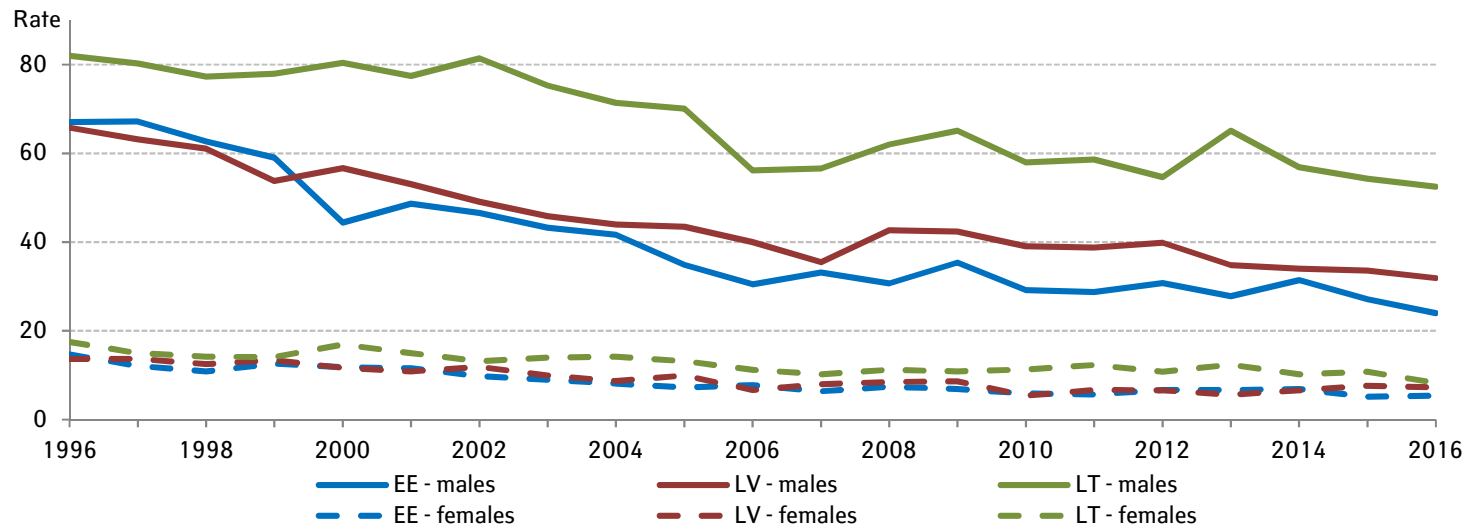


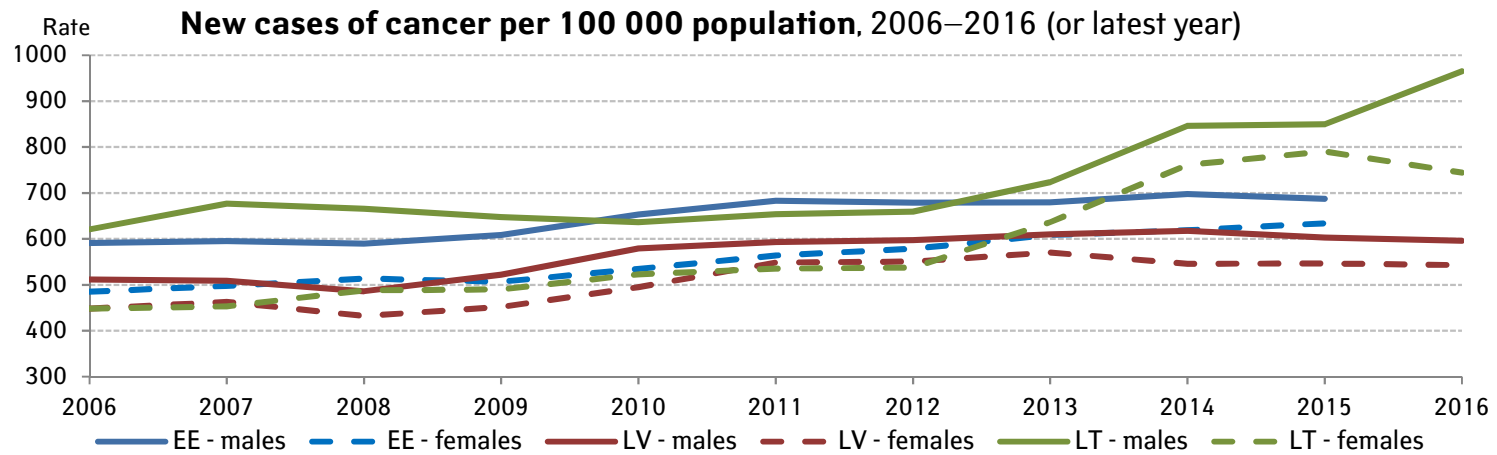
\* EU-28 data for 2015.

**Deaths from circulatory system diseases  
per 100 000 population, 2006–2016**

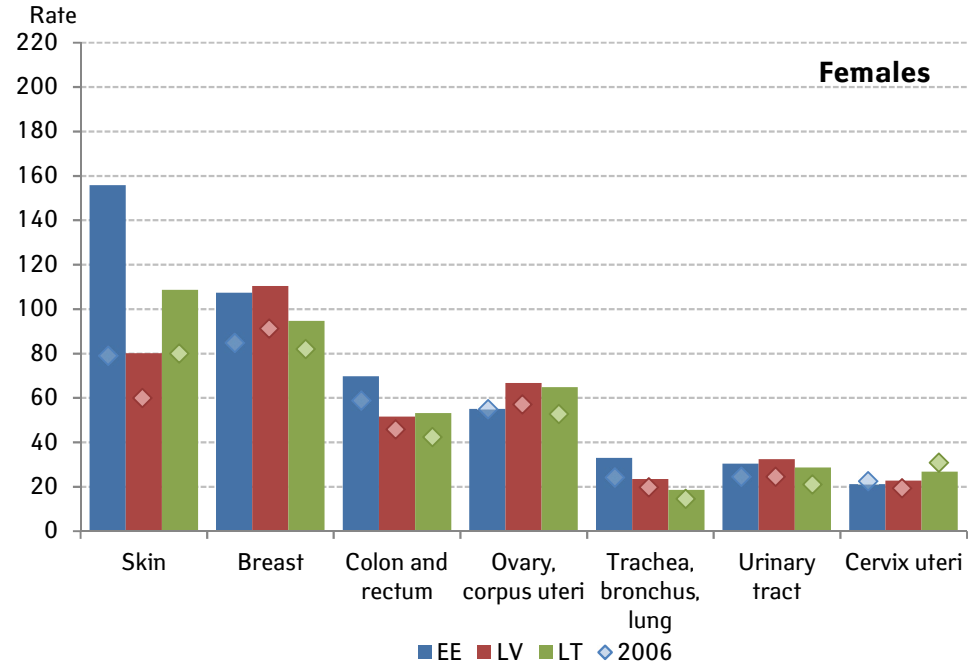
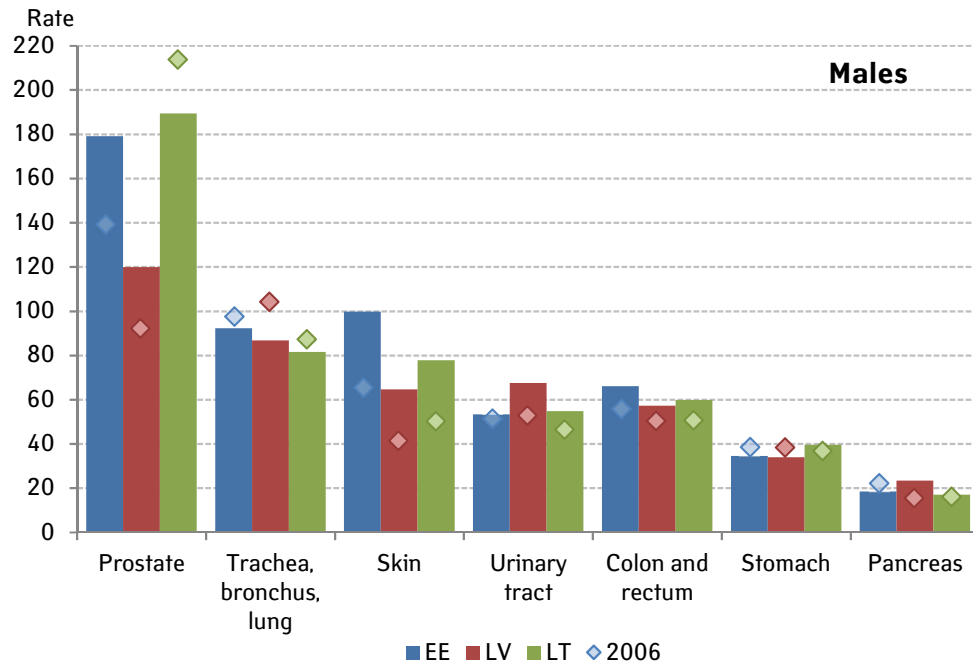


**Suicides  
per 100 000 population, 1996–2016**



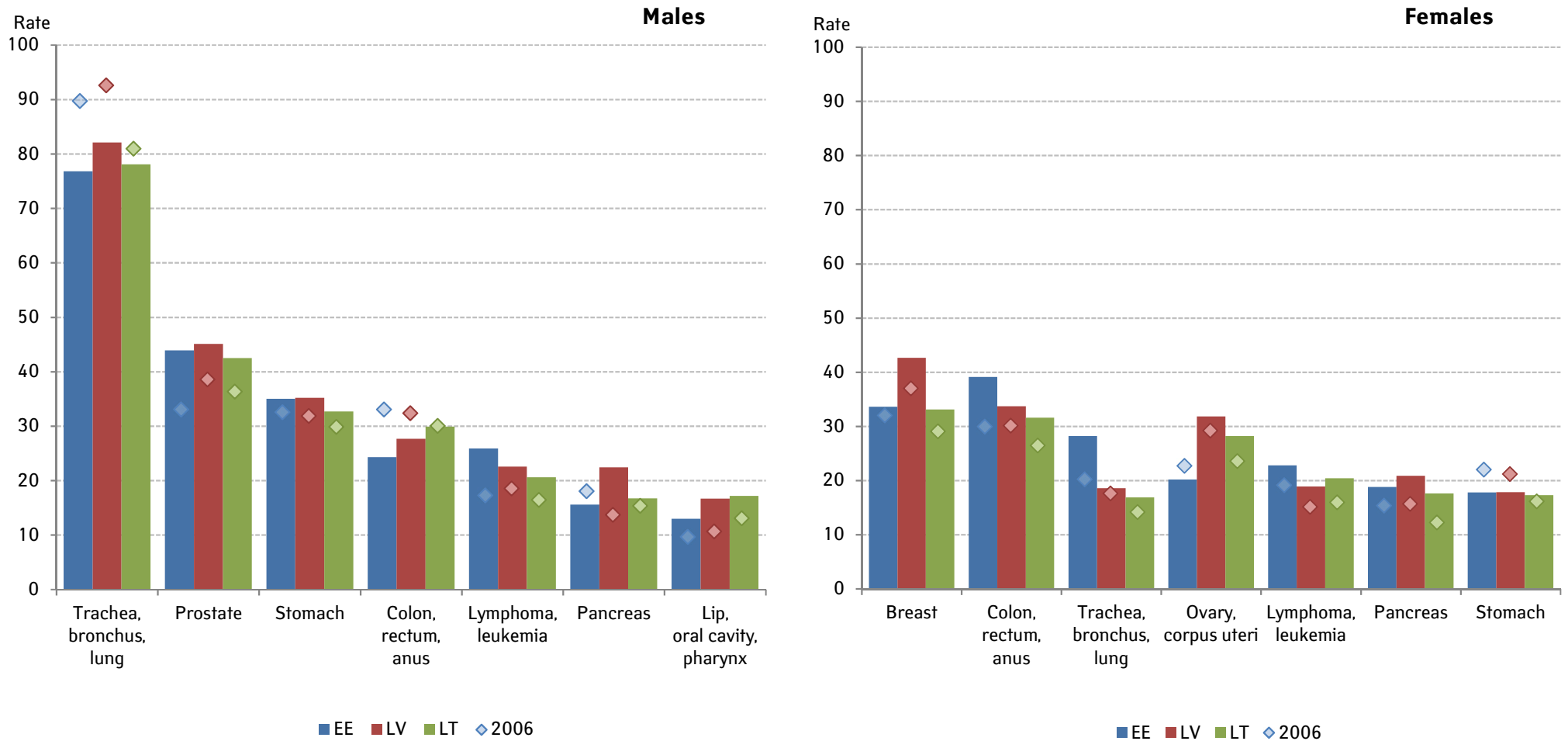


New cases of cancer by main sites per 100 000 population, 2006 and 2016 (or latest year)



Notes: LT preliminary data for 2013–2016. EE data for 2015.

**Main causes of cancer deaths  
per 100 000 population, 2006 and 2016**



Selected infectious diseases, new cases per 100 000 population, 2016

| Disease                                       | ICD-10 code              | Rate    |        |           |
|---|--------------------------|---------|--------|-----------|
|   |                          | Estonia | Latvia | Lithuania |
| <b>Intestinal infections</b>                  |                          |         |        |           |
| Salmonellosis                                 | A02                      | 27.2    | 24.1   | 37.5      |
| Bacillary dysentery                           | A03                      | 1.3     | 0.2    | 0.5       |
| Rotavirus <sup>V</sup>                        | A08.0                    | 30.1    | 76.7   | 141.9     |
| Norwalk virus                                 | A08.1                    | 61.2    | 84.7   | 27.0      |
| <b>Droplet infections</b>                     |                          |         |        |           |
| Tuberculosis <sup>V</sup>                     | A15–A19                  | 12.7    | 28.6   | 40.1      |
| Diphtheria <sup>V</sup>                       | A36                      | 0.0     | 0.3    | 0.0       |
| Whooping cough <sup>V</sup>                   | A37                      | 5.6     | 13.1   | 1.3       |
| Meningococcal infection                       | A39                      | 0.4     | 0.3    | 2.6       |
| Haemophilus influenzae infection <sup>V</sup> | A41.3; G00.0; J14; A49.2 | 3.7     | 0.1    | 0.2       |
| Measles <sup>V</sup>                          | B05                      | 0.2     | 0.0    | 0.8       |
| <b>Wound infections</b>                       |                          |         |        |           |
| Tetanus <sup>V</sup>                          | A33–A35                  | 0.0     | 0.0    | 0.1       |
| <b>Transmissible infections</b>               |                          |         |        |           |
| Lyme disease (borreliosis)                    | A69.2                    | 107.9   | 24.4   | 101.6     |
| Tick-borne encephalitis <sup>P</sup>          | A84                      | 6.2     | 11.7   | 22.1      |
| <b>Viral hepatitis, HIV/AIDS</b>              |                          |         |        |           |
| Viral hepatitis, total                        | B15–B19                  | 20.1    | 121.7  | 52.1      |
| hepatitis A, acute                            | B15                      | 0.5     | 0.5    | 0.6       |
| hepatitis B, acute <sup>V</sup>               | B16.2, B16.9*            | 0.6     | 4.3    | 1.1       |
| hepatitis C, acute                            | B17.1                    | 1.1     | 3.3    | 0.6       |
| hepatitis C, chronic                          | B18.2                    | 15.4    | 97.3   | 32.2      |
| AIDS  | B20–B24                  | 3.1     | 5.8    | 1.7       |
| HIV carrier                                   | Z21                      | 17.4    | 18.6   | 7.5       |
| <b>Sexually transmitted diseases</b>          |                          |         |        |           |
| Syphilis                                      | A50–A53                  | 2.1     | 8.5    | 5.3       |
| Gonorrhoea                                    | A54                      | 7.3     | 8.8    | 4.1       |
| Chlamydial infections                         | A55–A56                  | 96.9    | 71.5   | 12.1      |

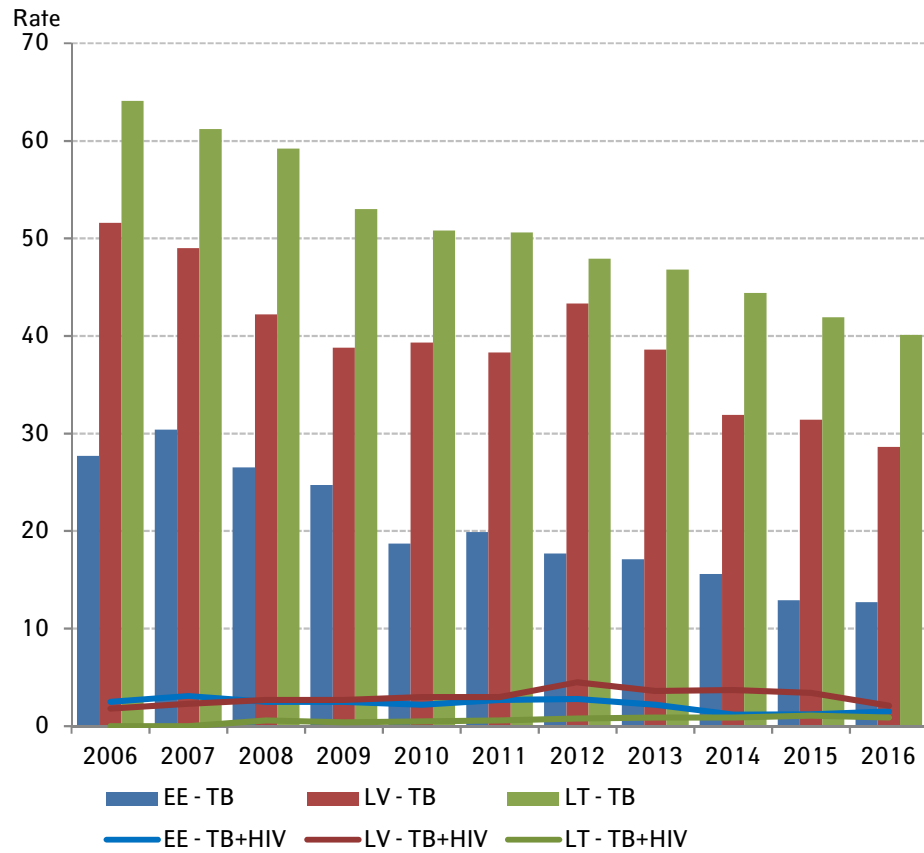
Notes: <sup>V</sup> Diseases that are in the national immunisation programme in all three countries. Only exception is rotavirus that is not in the national immunisation programme in Lithuania.

<sup>P</sup> Vaccination against TBE of children (age 0–18) living in the endemic areas of Latvia.

\* EE: B16

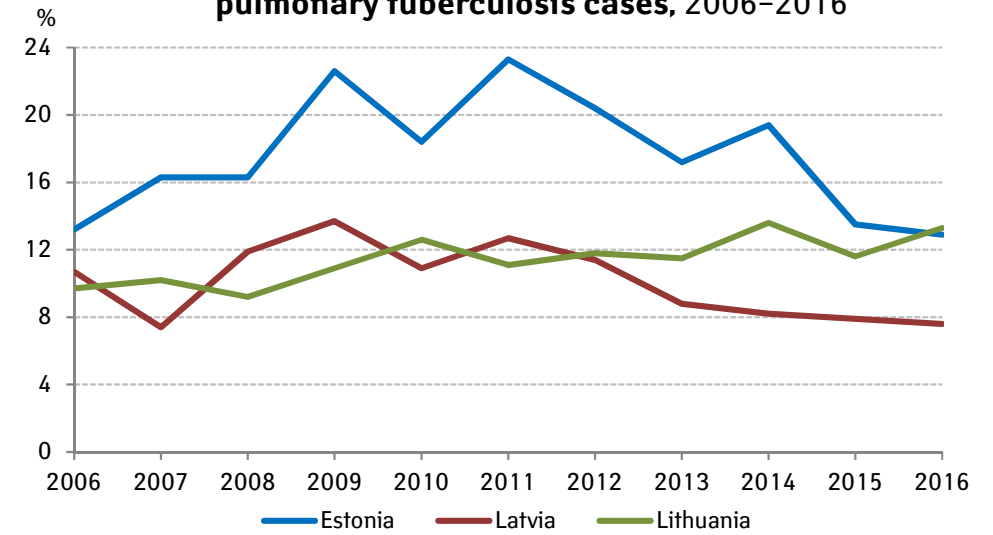


**New cases of tuberculosis per 100 000 population, 2006–2016**



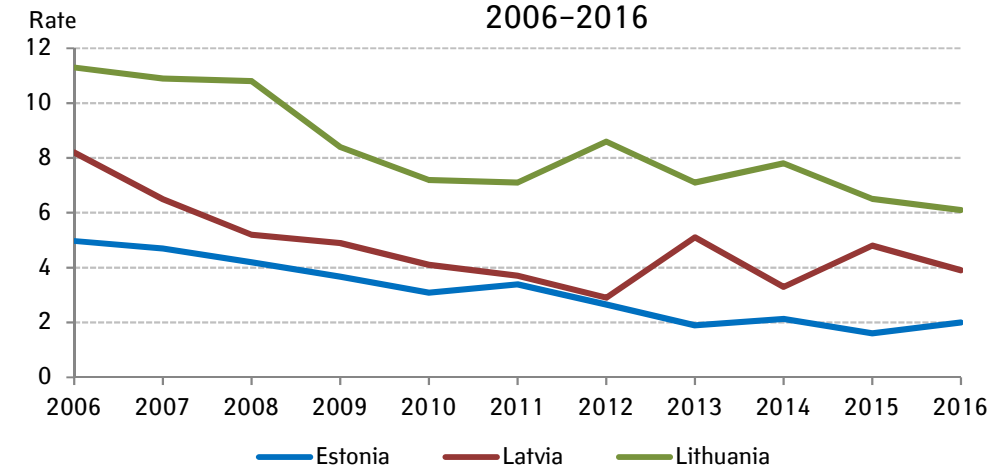
Note: TB – tuberculosis; TB + HIV – tuberculosis with HIV

**MDR cases of all new bacteriologically-confirmed pulmonary tuberculosis cases, 2006–2016**

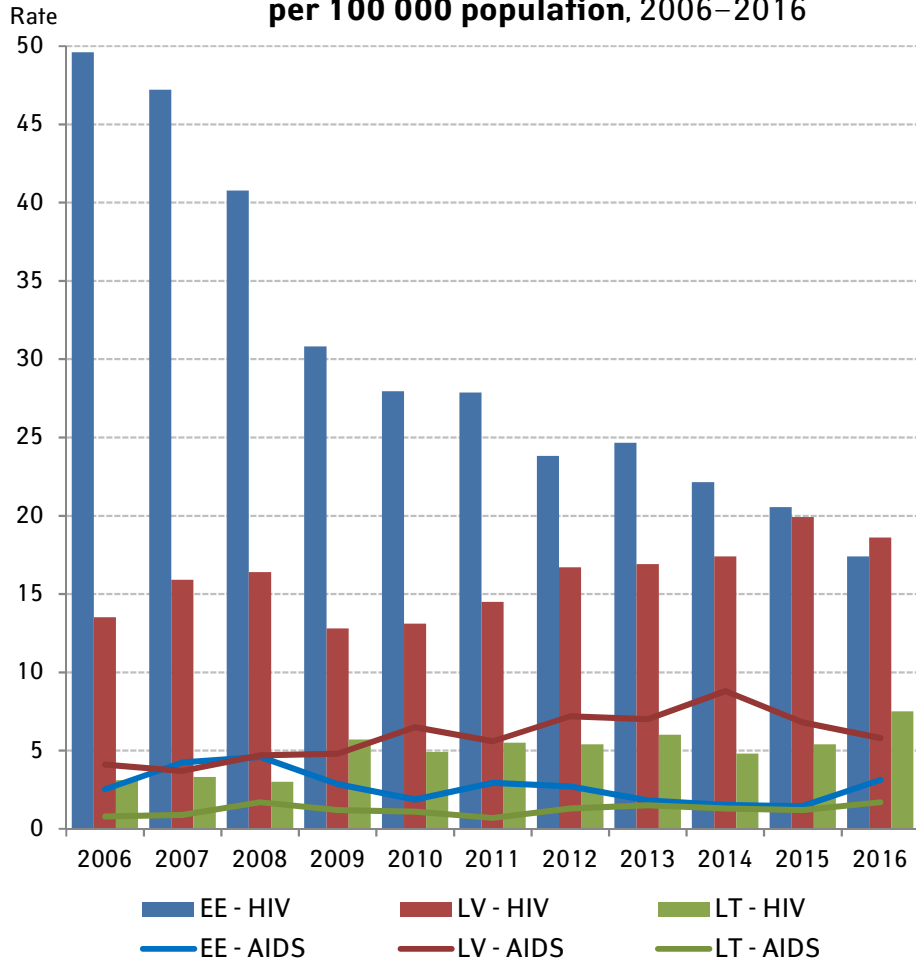


Source: ECDC. Note: MDR – multidrug resistant tuberculosis

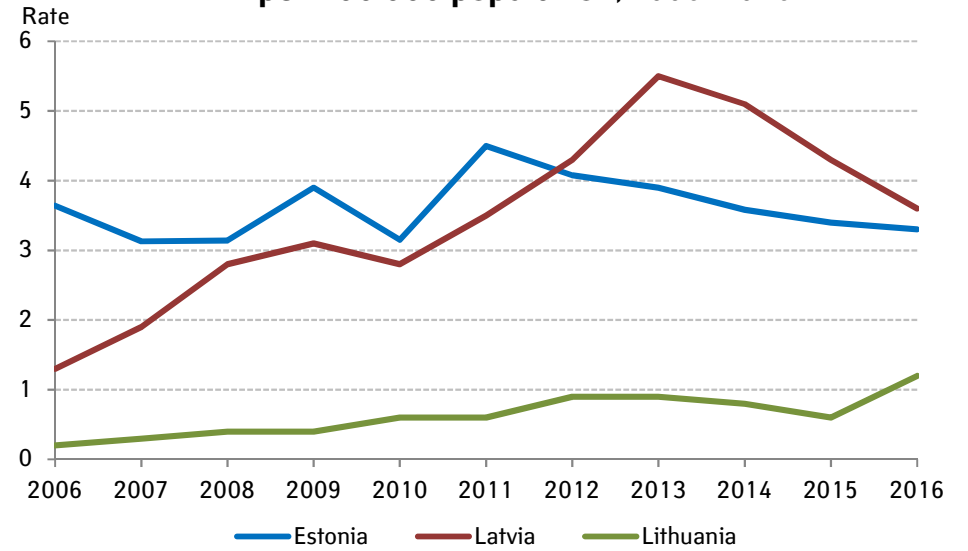
**Deaths from tuberculosis per 100 000 population, 2006–2016**



**New cases of HIV and AIDS  
per 100 000 population, 2006–2016**



**Deaths from AIDS  
per 100 000 population, 2006–2016**



## HEALTH CARE RESOURCES AND SERVICES

### Hospital resources and their use

**Hospitals.** In 2016, the highest number of hospitals per 100 000 population was in Lithuania – 5.1 compared to 4 hospitals in Estonia and 3.3 in Latvia. The number of hospitals decreased between 2006 and 2016 in all three countries. The decrease was largest in Latvia, falling from 4.9 hospitals per 100 000 population in 2006 to the smallest number of hospitals among the Baltic countries in 2016 due to restructuring the hospital network. Mostly the number of acute care hospitals as well as other specialised hospitals (psychiatric and tuberculosis hospitals) decreased during the decade.

**Hospital beds.** There is also a falling trend in the number of hospital beds. In Estonia and Lithuania, the decrease was smaller while in Latvia the number of beds decreased 27% from 2006 to 2016. The share of beds for acute care in all hospital beds is the largest, but decreasing year to year in all Baltic countries. In 2006, there was on average about two-thirds of beds for acute care in the Baltics. By 2016, their share had fallen to 56% both in Estonia and Lithuania. In Latvia the decrease in beds for acute care was largest (31%), but their proportion in all hospital beds decreased only 4%. By specialities the decline affected most the therapeutic and surgical beds. Due to population ageing there is a growing need for nursing care beds. The number of nursing care beds per population as well as the number of hospitalised patients in nursing care increased in all three countries. By 2016, about a fourth of hospital beds had been allocated to nursing care in Estonia and Lithuania, while in Latvia this ratio was 4%. Compared to 2006, the number of hospital nursing care beds has increased at the expense of the decrease of acute care and other hospital beds in 2016. At the same time the number of nursing care admissions has increased almost two times in Estonia, a fifth in Lithuania and almost 11 times in Latvia. Beside nursing care admissions, acute care and other admissions increased only in Lithuania, whereas in Estonia and Latvia they decreased over these years.

The average length of stay in hospitals remained almost the same as 10 years ago in Estonia – around 8 days. In Latvia, it decreased from 10 in 2006 to 8 days in 2016 and in Lithuania from 10 to 9 days in the same period. One

hospital bed was used to give treatment on average to 33 patients in Estonia and Latvia, and to 30 patients in Lithuania in 2016.

The cause of decline in number of hospital beds is the using less invasive treatments, which allows to replace inpatient hospitalisation by day care. The relevance of day care besides outpatient and inpatient medical care is increasing in all three countries due to the more effective use of resources. Compared to 2006, the number of day cases in hospitals per population has increased two times in Estonia, about three times in Lithuania and almost six times in Latvia in 2016. The number of day cases per population is significantly lower in Lithuania than in the other two countries because in Lithuania many day care procedures are performed in outpatient care.

Diseases of the circulatory system are the main cause for hospitalisation in all three Baltic countries. The rate of discharges for this group of diagnosis vary from 278 per 100 000 population in Estonia to 317 in Latvia and 423 in Lithuania in 2016. The average length of stay was the longest for mental disorders. It ranged from 17 days in Estonia to 22 days in Latvia which is 2–3 times longer than for circulatory system diseases. The shortest average length of stay was for the diseases of the eye and adnexa 2–3 days.

### Outpatient visits

Comparing to 2006, the number of physicians' visits per person has increased in Lithuania and Latvia, but decreased in Estonia in 2016. The biggest increase has taken place in Lithuania where physicians made 35% more visits. In Latvia the increase was 5% while in Estonia the number of physicians' visits was quite the same like in 2006. The increase in physicians' visits was mostly due to the increase of family doctors' outpatient visits as they made less and less home visits. The number of family doctors' home visits varied between countries from 3 home visits per 100 persons in Estonia to 12 in Latvia and Lithuania. At the same time, all three Baltic countries have experienced the fast growth of nursing personnel visits. Registered visits per person increased most in Estonia – by four times, reaching at the level of almost two visits per person. In Latvia and Lithuania, the rate of nursing personnel visits was less than one visit per person.

The data about registered dentists' visits are available only for Estonia and Lithuania. In 2016, their number per person was about 1.5 in both countries.

### Inpatient surgical procedures

Classification systems and registration practices of surgical procedures vary across countries, which may affect the comparability of the data. However, analysing the proportions of the surgical procedures, operations on bones and muscle tissue as well on digestive system were the most common surgical procedures in hospitals of all Baltic countries. In 2016, almost a fourth of all operated patients had problems with the musculoskeletal system in Latvia and Lithuania while in Estonia their share accounted for 14%. The gastrointestinal operations were the most prevalent group of surgical interventions in Estonia, being the second cause for surgery in Lithuania. In Latvia, the share of obstetrical operations slightly exceeded the surgery on digestive system. Also in Estonia the obstetrical operations as well as ear, nose and larynx operations were often performed, accounting for over 10% of all surgical operations. In Lithuania the share of the operations on heart and central vessels exceeded a tenth of all operations which was higher than in the others Baltic countries in 2016.

### Blood donation

Blood donation takes important part of health care; it saves lives and improves health. Blood is most frequently needed for cancer patients, during or after childbirth, many complex medical and surgical procedures, for people with anaemia, severe trauma with bleeding and on other diseases. According to WHO, the blood donation rate in high-income countries is 32.1 donations per 1000 people (WHO, 2017). In 2016, that number was higher in Baltic countries for Estonia and Lithuania, 43.9 and 36.7 donations per 1000 population respectively.

WHO estimates that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood. It has also been suggested that for ensuring the sustainable supply of blood in developed countries, at least 4–5% of the population should be active donors (IFRC, 2002). In the Baltic countries, the percentage of donors in population

in 2016 remained below the suggested level – varying from 1.7% in Latvia and 2.3% in Lithuania to 2.5% in Estonia. While the number of donors in population is rising in Lithuania, i.e. 1.9% to 2.3% during 2013–2016, the proportion of Estonian donors is declining in the same time – 2.8% to 2.5%.

### Pharmacy

With the growth of medical visits and overall rise of some chronic diseases in population, the prescribing of different pharmaceuticals has increased in many categories. It is estimated that about 9% of European population have diabetes (IDF, 2017). The estimations for Baltic countries are slightly lower – 5.2% in Lithuania, 5.7% in Estonia and 7% in Latvia (IDF, 2017). The volume for antidiabetics sales has increased by 74% in Baltic countries on average and 20% across EU since 2008. Although the growth of antidiabetics sales has been higher in the Baltics than in EU on average, the sale figures are still about quarter lower in the Baltic countries.

The sales of antihypertensives in 2016 were highest in Lithuania, surpassing the EU average even two and a half times. The sales numbers in Latvia were comparable with EU's value, but in Estonia it was almost three times lower than in EU on average. The sales of cholesterol-lowering drugs have increased by 42% since 2008 on average in EU. The growth has been even more rapid in the Baltics – two and half times higher in Lithuania, three times higher in Estonia and almost four times higher for Latvia. However, the consumption in the Baltics on average remained two times lower than across EU. Growing obesity rate is one important factor behind the anticholesterol sales increase.

Since over-consumption of antibiotics has been linked to bacterial resistance, it is important to keep the antibiotics prescribing low in population. Baltic countries had on average 23% lower antibiotics sales in 2016 than the EU on average in 2015.

The sales of anti-inflammatory and antirheumatic products, non-steroids in 2016 were on average 37% higher in the Baltics than in the EU in 2015.

Hypnotics and sedatives were most sold in Estonia, where the sales numbers were comparable with the EU average level. In Latvia and Lithuania, the sales

volumes of hypnotics and sedatives were smaller by 45% on average. The antidepressants sales show also an 87% growth across the Baltics since 2008. It can be related to the growing awareness of different types of depressions and anxiety disorders, and longer treatment durations (Moore et al., 2009). In the Baltics in 2016, antidepressants were sold most in Lithuania. In Latvia, where the sale was the smallest, it was two times lower. Compared to the EU's average, antidepressants sales figures in the Baltics are still nearly three times smaller.

### Health care personnel

The largest number of doctors and nurses per population in the Baltics are working in Lithuania – in 2016 there were 39 doctors and 78 nurses per 10 000 population. In Estonia the number of practising health care personnel was a fifth lower and in Latvia over a third lower than in Lithuania. The difference between the countries was bigger in the number of nurses – in Latvia were 43% and in Estonia 21% less nurses per 10 000 population than in Lithuania. There were two nurses per one doctor in Estonia and Lithuania, whereas for Latvia the ratio was 1.5. The number of dentists per population was quite the same in Estonia and Lithuania in 2016 – about 9–10 dentists per 10 000 population, while in Latvia the rate was 7. The ratio of dental care nurses per dentist was less than one in all three countries.

The average age of practising physicians was lowest in Lithuania (49 years), whereas the practising nurses were on average by one year older, which was the highest age compared with their peers of the other two countries. The youngest nurses work in Estonia (average age 45). The average age of dentists varied from 47 in Estonia to 50 in Latvia. In line with the increased involvement of elderly people in the labour market, this also applies to health care personnel. A considerable number of doctors and nurses continue practising beyond the retirement age – the average age of practising health care personnel is reaching 50 years or above already.

### Wages

The state average monthly gross wage differs between Estonia and the other Baltic countries. The difference has been bigger in the wages of medical

personnel. The monthly average gross wage of Estonian physicians was by about 1 000 euros bigger than the gross wage of their peers in Latvia and Lithuania. As for nurses, the difference of gross wage was about 500 euros while the state averages differ by about 200–300 euros.

In 2016, a physician's monthly average gross wage was 2 293 euros in Estonia, 1 313 euros in Latvia and 1 368 euros in Lithuania. In all Baltic countries the monthly average gross wage of physicians exceeded the state average and has increased faster than the state average over the last years.

Likewise, the increase of nurses' average gross wage was faster than the increase of the state average in 2016 compared to the previous year. Still, nurses' monthly average gross wage exceeded the state average only in Estonia, whereas in Latvia and Lithuania it remained lower by about 100 euros. In 2016 a nurses' monthly average gross wage was 1 226 euros in Estonia, 761 euros in Latvia and 696 euros in Lithuania. Nurses' average wage represented 58% of the country's average physicians' wage in Latvia, whereas in Estonia and Lithuania the ratio was 53% and 51% respectively.




### Health expenditure

Current health care expenditure per person in 2016 (2015 for Latvia) was the highest in Estonia and the lowest in Latvia (1 410 euros and 705 euros, respectively). If to take account of the different purchasing power of the currency in comparing spending levels, then Estonian and Lithuanian health expenditure per capita were very similar and Latvian health expenditure was 24% smaller. Health expenditure as a share of GDP was also the same in Estonia and in Lithuania – 6.7%.




Relatively high are household out-of-pocket health expenditure in Latvia (42%) and in Lithuania (32%). Therefore, the share of public sector in health financing was the biggest in Estonia (76%).

All three countries' health care financing systems are focused on curative health care. About half of health expenditure was spent on curative care. In Latvia and Lithuania, medicines and other medical goods have bigger share in health expenditure than in Estonia – about 30% compared to 22% in Estonia. Lithuania invests more than others to long-term health care (8%).

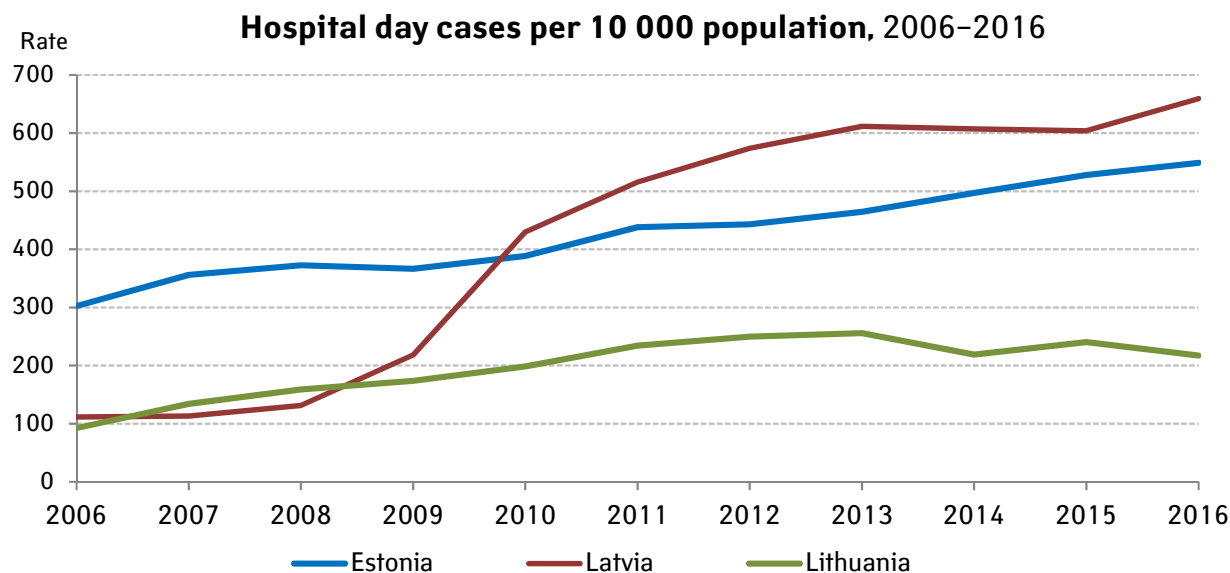
Hospitals per 100 000 population, 2006 and 2016

|   | 2006  |         |       |   | 2016  |         |       |
|---|-------|---------|-------|---|-------|---------|-------|
|   | acute | nursing | other |   | acute | nursing | other |
|  | 2.4   | 1.5     | 0.2   | ↓ | 2.4   | 1.4     | 0.2   |
|  | 3.2   | 0.4     | 1.3   | ↓ | 1.9   | 0.6     | 0.8   |
|  | 2.6   | 1.8     | 0.9   | ↓ | 2.6   | 1.8     | 0.7   |

Hospital admissions per 10 000 population, 2006 and 2016

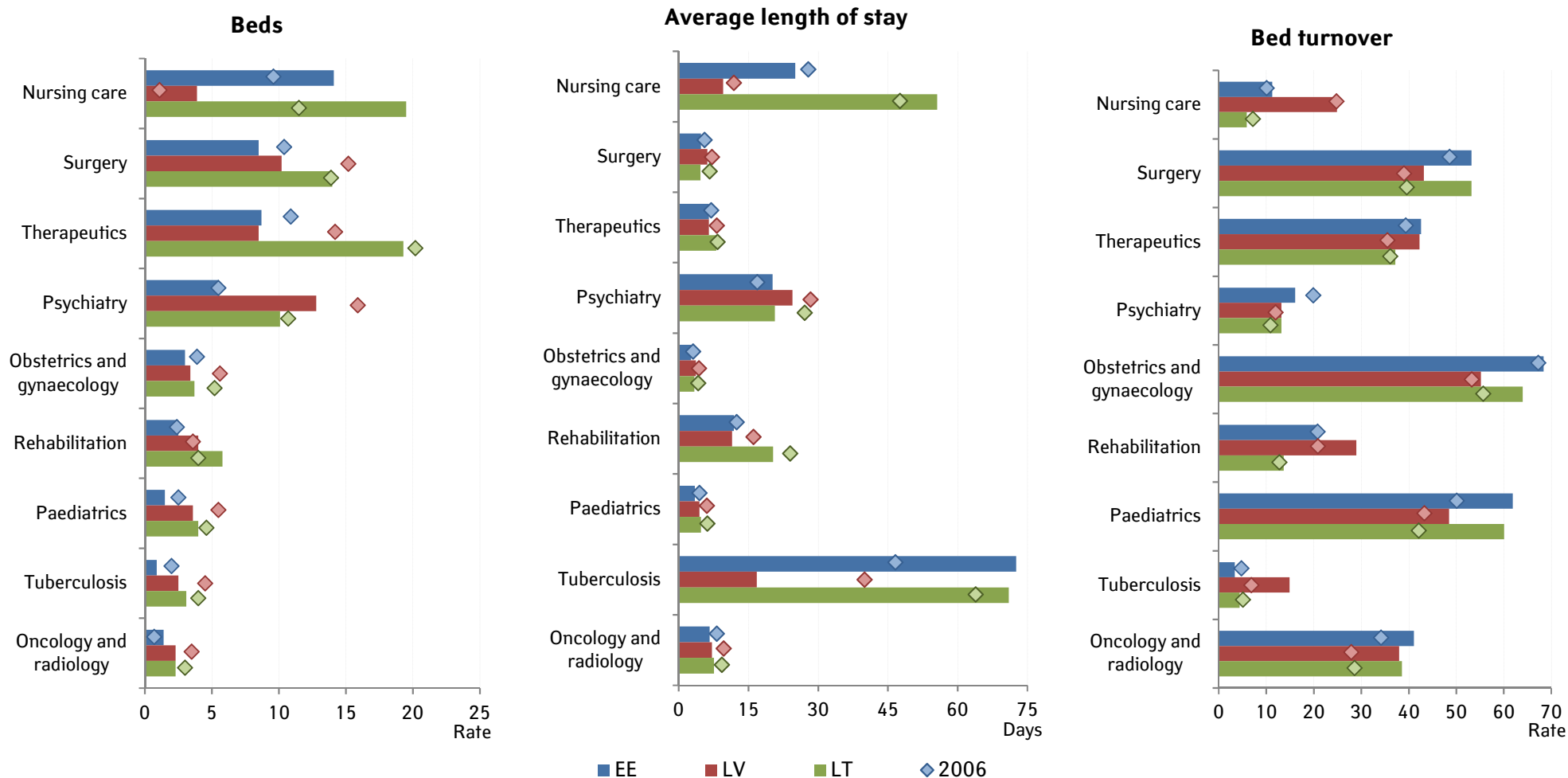
|   | 2006    |         |       |   | 2016    |         |       |
|---|---------|---------|-------|---|---------|---------|-------|
|   | acute   | nursing | other |   | acute   | nursing | other |
|  | 1 626.9 | 85.2    | 165.9 | ↓ | 1 415.8 | 158.7   | 138.9 |
|  | 2 115.8 | 5.0     | 264.3 | ↓ | 1 599.3 | 53.7    | 255.9 |
|  | 2 149.3 | 80.3    | 181.8 | ↑ | 2 329.6 | 97.0    | 209.2 |

Notes: The number of hospitals at the end of the year. **Acute hospitals/admissions** include beds of therapeutic specialities, surgical specialities, oncology, radiology, intensive care, beds for skin and sexually transmitted diseases, infectious diseases, paediatrics, neurology, radiology, ophthalmology, otorhinolaryngology, obstetrics and gynaecology. **Nursing care admissions** in acute and nursing care hospitals (only in acute care hospitals for Latvia). **Other hospitals/admissions** include rehabilitation and psychiatric hospitals (also tuberculosis hospitals in Latvia and Lithuania).



Note: EE: counted by cases (one day care case may include several bed days); LV: counted by treated patients; LT: counted by cases.







Hospital beds per 10 000 population and beds use by speciality, 2006 and 2016



Notes: The number of hospital beds at the end of the year. Day care beds are excluded.

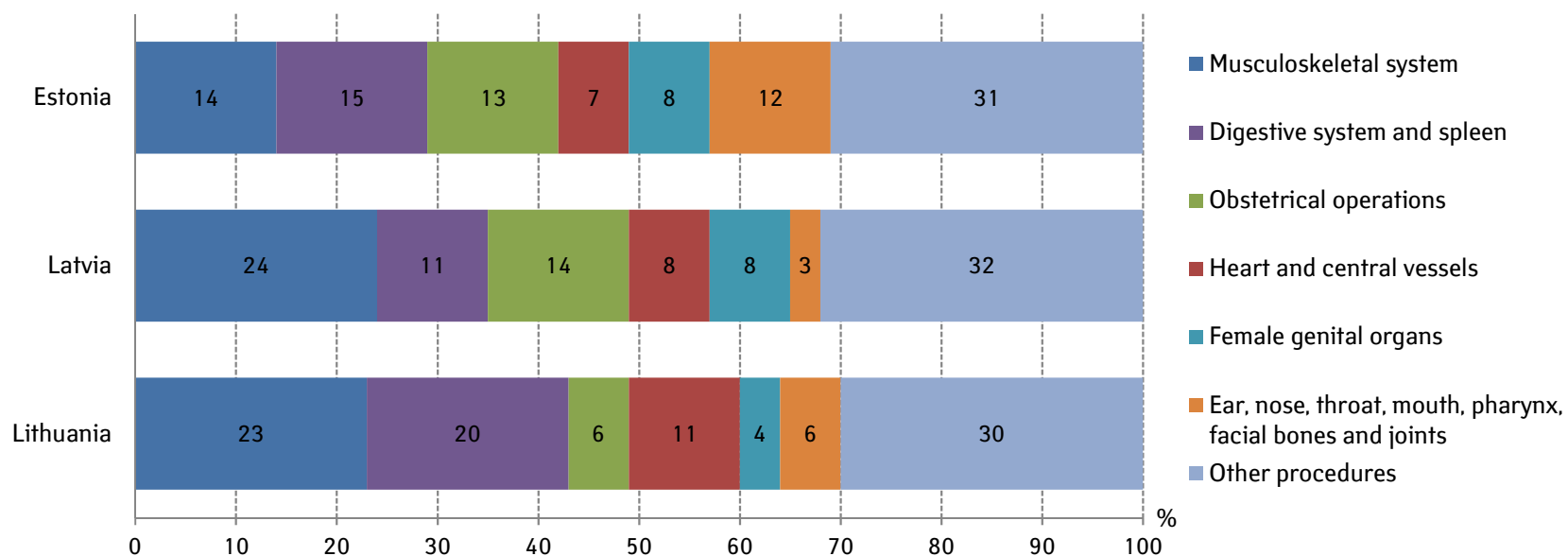
Therapeutics includes internal medicine, cardiology, gastroenterology, endocrinology, haematology, nephrology, pulmonology, rheumatology. Surgery includes general surgery, neurosurgery, thoracic surgery, cardiosurgery, traumatology, burns, orthopaedics, urology, oral surgery, vascular surgery, children surgery. Obstetrics and gynaecology includes also beds of pregnancy pathology.

Hospital beds per 10 000 population, 2006 and 2016

|   | 2006  |         |       |   | 2016  |         |       |
|---|-------|---------|-------|---|-------|---------|-------|
|   | acute | nursing | other |   | acute | nursing | other |
|  | 36.9  | 9.6     | 10.0  |  | 29.7  | 14.1    | 9.0   |
|  | 55.5  | 0.2     | 22.7  |  | 38.5  | 2.4     | 16.3  |
|  | 53.3  | 11.5    | 18.7  |  | 48.4  | 19.5    | 19.0  |

Notes: Acute hospital beds include beds of therapeutic and surgical specialities, oncology, radiology, intensive care, beds for skin and sexually transmitted diseases, infectious diseases, paediatrics, neurology, radiology, ophthalmology, otorhinolaryngology, obstetrics and gynaecology. Nursing care beds include beds in acute and nursing hospitals (only in acute care hospitals for Latvia). Other hospital beds include beds for tuberculosis treatment, psychiatric treatment and beds for rehabilitation.

Surgical operations and procedures in hospitals, 2016





## Hospital discharges and average length of stay, 2016

| Groups of diseases   | ICD-10 code               | Discharges per 10 000 population |                            |                | Average length of stay |                        |            |
|--|---------------------------|----------------------------------|----------------------------|----------------|------------------------|------------------------|------------|
|  |                           | Estonia                          | Latvia                     | Lithuania      | Estonia                | Latvia                 | Lithuania  |
| Certain infectious and parasitic diseases  | A00–B99                   | 64.8                             | 84.6                       | 100.2          | 9.0                    | 9.2                    | 12.6       |
| Neoplasm   | C00–D48                   | 201.3                            | 183.1                      | 192.5          | 7.3                    | 7.8                    | 8.0        |
| Diseases of the blood and blood forming organs and certain disorders involving the immune mechanisms | D50–D89                   | 15.6                             | 12.6                       | 14.6           | 6.6                    | 6.1                    | 8.0        |
| Endocrine, nutritional and metabolic diseases  | E00–E90                   | 31.4                             | 28.7                       | 39.9           | 7.2                    | 8.1                    | 8.3        |
| Mental disorders and behavioural disorders   | F00–F99                   | 95.9                             | 169.6                      | 125.3          | 17.1                   | 22.4                   | 20.3       |
| Diseases of the nervous system   | G00–G99                   | 54.2                             | 93.5                       | 77.2           | 7.8                    | 5.5                    | 8.6        |
| Diseases of the eye and adnexa   | H00–H59                   | 13.0                             |                            | 62.9           | 1.8                    |                        | 2.8        |
| Diseases of the ear and mastoid process  | H60–H95                   | 12.8                             |                            | 15.1           | 3.4                    |                        | 6.3        |
| Diseases of the circulatory system   | I00–I99                   | 277.9                            | 317.2                      | 423.2          | 10.0                   | 7.0                    | 9.7        |
| Diseases of the respiratory system   | J00–J99                   | 143.5                            | 172.4                      | 235.6          | 4.9                    | 6.5                    | 7.3        |
| Diseases of the digestive system   | K00–K93                   | 130.3                            | 146.0                      | 194.9          | 5.2                    | 5.5                    | 5.7        |
| Diseases of the skin and subcutaneous tissue   | L00–L99                   | 31.2                             | 26.3                       | 38.2           | 7.5                    | 7.3                    | 7.4        |
| Diseases of the musculo-skeletal and connective tissue   | M00–M99                   | 102.4                            | 153.0                      | 197.9          | 6.5                    | 8.0                    | 7.6        |
| Diseases of the genitourinary system   | N00–N99                   | 90.9                             | 93.4                       | 123.6          | 5.2                    | 4.9                    | 5.6        |
| Pregnancy, childbirth and puerperium*  | O00–O99                   | 281.2                            | 293.7                      | 271.2          | 2.8                    | 3.7                    | 3.9        |
| Certain conditions originating in perinatal period**   | P00–P96                   | 2 761.5                          | 1 756.5                    | 3 347.9        | 6.2                    | 7.8                    | 5.8        |
| Congenital malformations, deformations and chromosomal abnormalities                                 | Q00–Q99                   | 14.8                             | 12.5                       | 14.7           | 5.2                    | 8.7                    | 6.3        |
| Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified              | R00–R99                   | 17.1                             | 4.3                        | 16.6           | 3.5                    | 4.6                    | 10.5       |
| Injury, poisoning and certain other consequences of external   | S00–T98                   | 113.8                            | 151.3                      | 142.2          | 8.1                    | 6.6                    | 9.0        |
| Factors influencing health and contacts with health services   | Z00–Z99, excl. Z03        | 13.5                             | ...                        | 26.7           | 9.5                    | ...                    | 7.4        |
| <b>TOTAL</b>   | <b>A00–Z99, excl. Z03</b> | <b>1 603.4</b>                   | <b>1 826.8<sup>#</sup></b> | <b>2 221.3</b> | <b>7.4</b>             | <b>8.1<sup>#</sup></b> | <b>8.4</b> |

Notes: Hospital discharges by principal diagnosis, excluding hospital day cases. Excluded: healthy newborns and stillborns, patients transferred to another hospital or deemed to be healthy (ICD-10 code Z03). Includes the deceased.

\*Per 10 000 women; \*\* Per 10 000 children aged under 1; <sup>#</sup> ICD-10 codes Z00–Z99 are excluded.

EE: Includes nursing cases in acute care hospitals.

LV: The cases of the deceased are not taken into account when calculating the average length of stay. Nursing cases are excluded.

LT: Nursing cases are excluded.

**Inpatient surgical procedures in hospitals  
per 10 000 population, 2016**

| Organ system   | Estonia      | Latvia       | Lithuania    |
|--|--------------|--------------|--------------|
| Nervous system   | 25.2         | 17.9         | 29.4         |
| Endocrine system   | 4.2          | 3.7          | 6.0          |
| Eye  | 32.4         | 21.0         | 59.5         |
| Ear, nose, throat, mouth, pharynx, facial bones and joints | 105.8        | 19.7         | 49.2         |
| Respiratory system   | 23.9         | 9.5          | 39.8         |
| Heart and central vessels                                  | 66.4         | 50.7         | 93.5         |
| Peripheral vessels and lymphatic system                    | 57.8         | 18.8         | 12.5         |
| Digestive system and spleen                                | 141.1        | 70.2         | 170.3        |
| Urinary organs   | 28.8         | 27.1         | 45.1         |
| Male genital organs*                                       | 28.9         | ...          | 19.5         |
| Female genital organs**                                    | 143.7        | 94.1         | 67.1         |
| Obstetrical operations**                                   | 230.2        | 159.4        | 88.2         |
| Musculoskeletal system                                     | 131.5        | 147.9        | 199.3        |
| Breast   | 10.6         | 10.6         | 13.1         |
| Skin and subcutaneous tissue                               | 82.5         | 47.4         | 44.3         |
| Other procedures   | 1.4          | 34.4         | 7.2          |
| <b>TOTAL</b>   | <b>923.7</b> | <b>616.0</b> | <b>943.9</b> |

Notes: \* Per 10 000 males

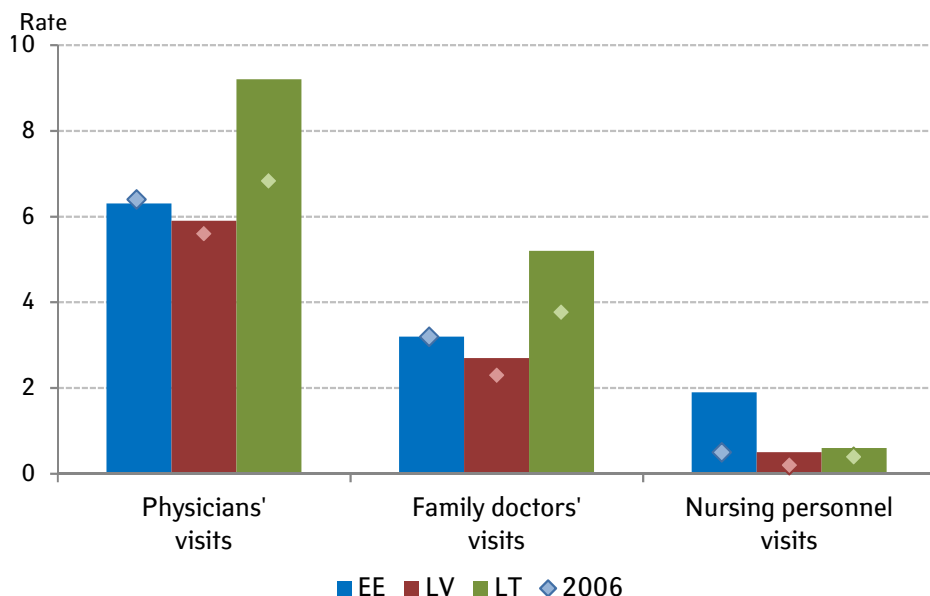
\*\* Per 10 000 females

EE: Includes all procedures.

LV: If several similar procedures are done on one day to a patient, only one of them is counted. Operations on the urinary organs include operations of the prostate (per 10 000 population).

LT: If several similar procedures are done on one day to a patient, only one of them is counted.

**Doctors' and nursing personnel visits per person, 2006 and 2016**



Notes: **Visits** include outpatient and home visits, exclude telephone and e-consultations. **Physicians' visits** include family doctors' visits, exclude dentists' visits. **Nursing personnel** includes nurses and midwives. LT: Family doctors' visits include also district therapists' and paediatricians' visits.

**Family doctors' home visits per 100 population, 2006 and 2016**

|  | 2006 |   | 2016 |
|--|------|---|------|
|  | 10.1 | ↘ | 2.6  |
|  | 12.7 | ↘ | 11.8 |
|  | 24.2 | ↘ | 12.6 |

**Number of blood donations per 1000 population, 2005 and 2016**

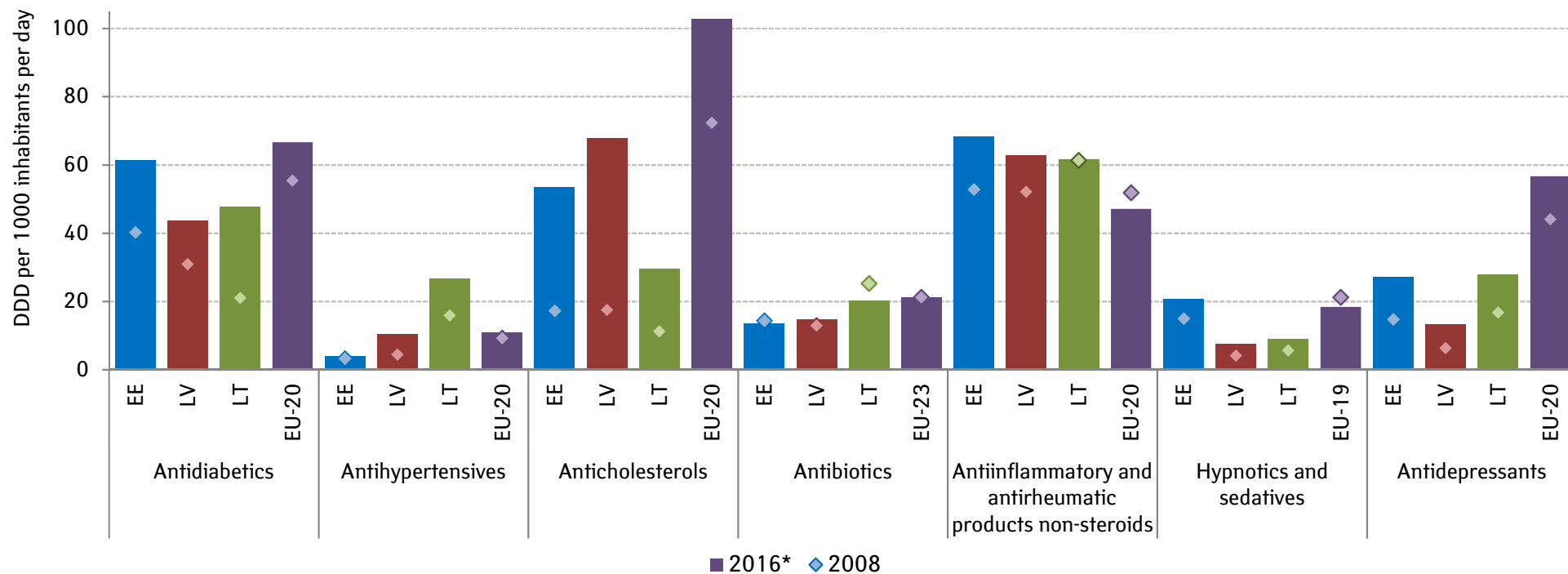
|  | 2005  |   | 2016 |
|--|-------|---|------|
|  | 39.9  | ↗ | 43.9 |
|  | 24.7  | ↗ | 30.7 |
|  | 30.8* | ↗ | 36.7 |

\* Lithuanian data for 2013

**Blood donors and donations, 2016**

|   | Estonia | Latvia | Lithuania |
|---|---------|--------|-----------|
| Percentage of donors in population, %         | 2.5     | 1.7    | 2.3       |
| Percentage of new donors in population, %     | 0.4     | 0.4    | 0.9       |
| Number of blood donations per 1000 population | 43.9    | 30.7   | 36.7      |

Pharmaceutical sales, 2008 and 2016

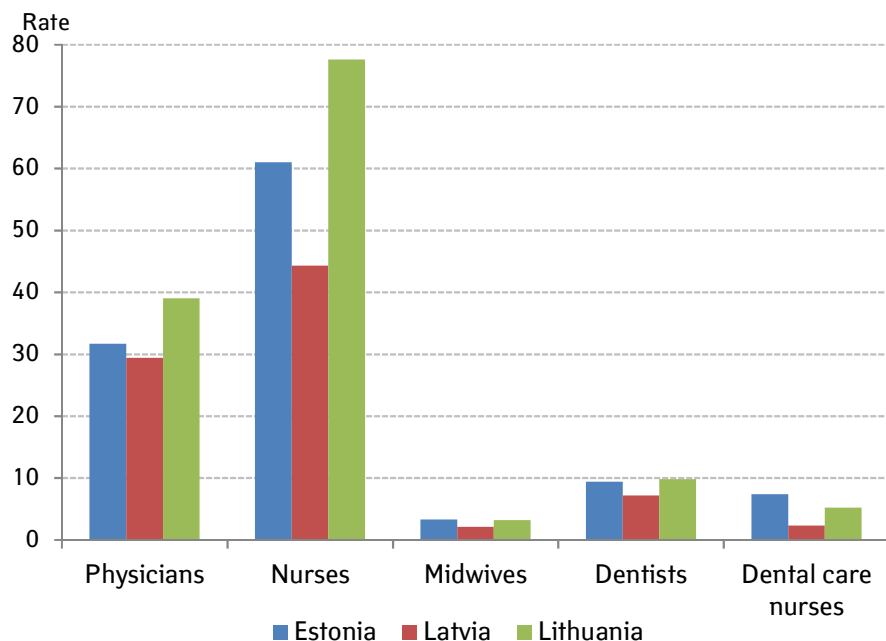


Notes: DDD – defined daily dose.




Pharmaceuticals are classified by Anatomical Therapeutic Chemical Classification System (ATC) codes: antidiabetics – A10, antihypertensives – C02, anticholesterols – C10, antibiotics – J01, antiinflammatory and antirheumatic products, non-steroids – M01A, hypnotics and sedatives – N05C, antidepressants – N06A. The pharmaceutical sales include sales to general and hospital pharmacies and other institutions (state health care and scientific institutions) by medicinal products sold by wholesalers.

\* EU data for 2015. EU-19 data for: Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Portugal, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom. EU-20: EU-19 including Belgium. EU-23: EU-20 including France, Ireland and Poland.

**Practising health care personnel per 10 000 population, 2016**

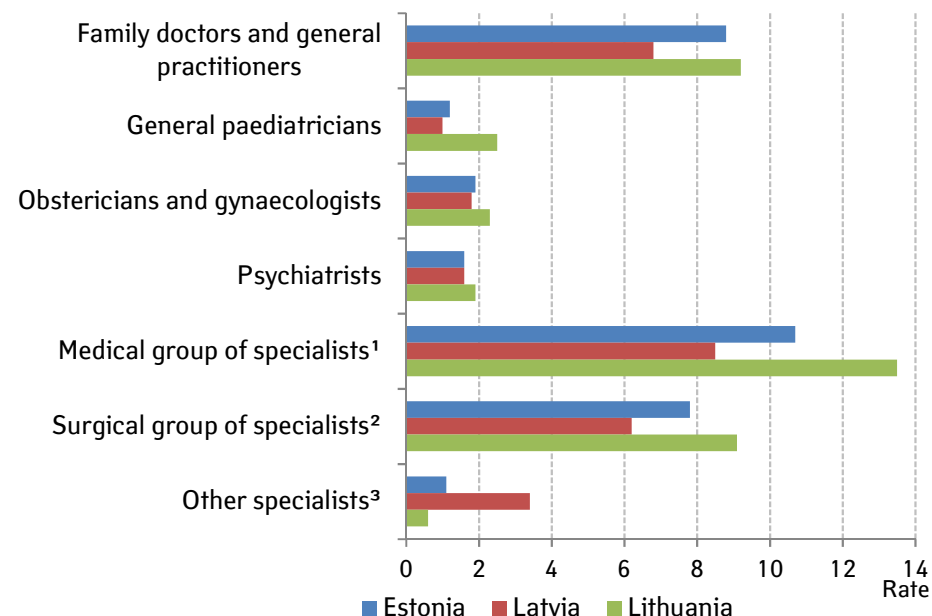


**Average age of practising health care personnel, 2016**

|   | Physicians | Nurses | Dentists |
|---|------------|--------|----------|
|  | 52.9       | 45.1   | 47.0     |
|  | 54.3       | 48.9   | 49.6     |
|  | 48.8       | 49.5   | 47.8     |

Note: Physicians are without dentists, nurses are without dental care nurses and midwives.

**Practising physicians by occupation per 10 000 population, 2016**



Notes: Physicians are without resident physicians. Nurses are without midwives and dental care nurses/assistants.

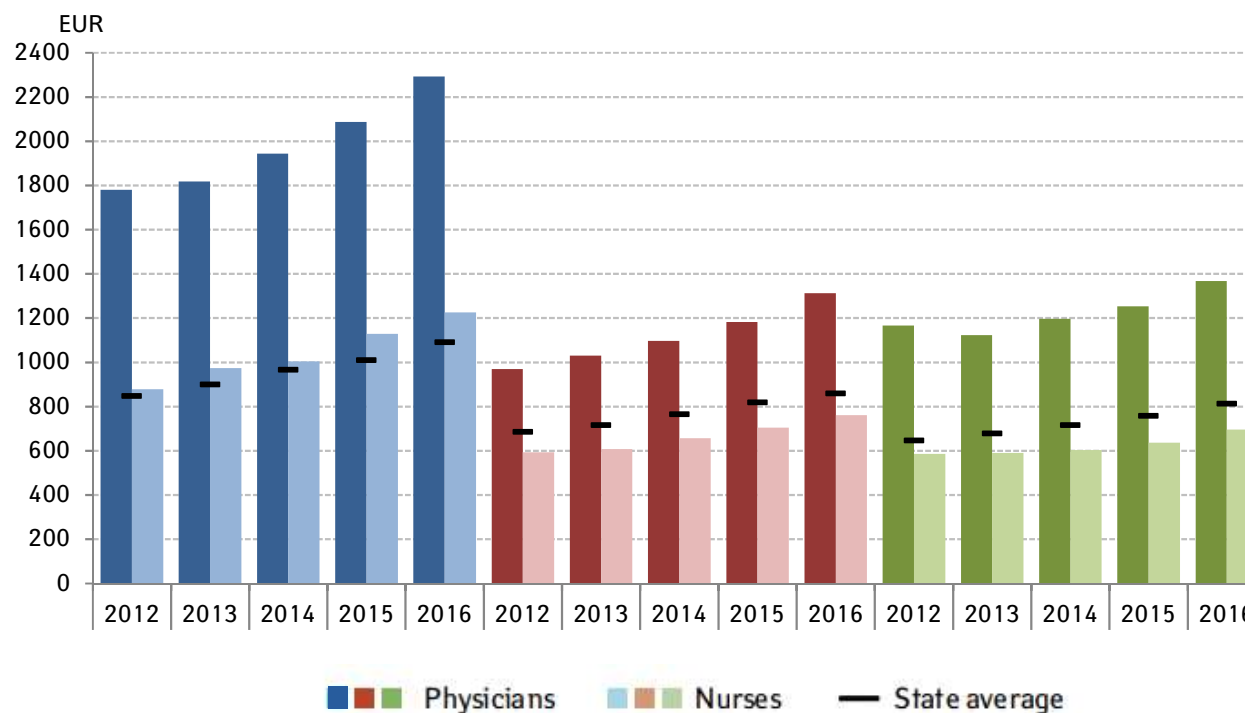
<sup>1</sup> Include specialists of internal medicine, infectology, cardiologists, rheumatologists, endocrinologists, gastroenterologists, haematologists, pulmonologists, oncologists, neurologists, oto-rhino-laryngologists, radiologists, microbiology-bacteriologists, dermatologists, pathologists, occupational medicine and therapists.

<sup>2</sup> Include general surgeons, neurosurgeons, thoracic surgeons, cardiovascular surgeons, nephrologists, urologists, plastic surgeons, transplantologists, paediatric surgeons, traumatologists, orthopaedists, ophthalmologists, intensive care and anaesthesiologists, accident and emergency medicine.

<sup>3</sup> Include all other specialities (clinical microbiology, medical genetics, hygienists, forensic medicine experts, etc.).

LT, LV: psychiatrists include narcologists and psychotherapy specialists.

Average monthly gross wages of health care personnel, 2012–2016



Notes: **Average wage** includes personal income tax, and other taxes paid by the employee; basic additional remuneration, additional payments for evening work, night work, work on days off or during public holidays, and additional payments for overtime. It does not include social tax and other social contributions paid by the employer. **Physicians** include dentists and resident physicians. **Nurses** include midwives and dental care nurses/assistants. **State average** is given according to the data collection time of medical personnel wage, except for LV (EE: I quarter; LV: year average; LT: IV quarter).

EE: physicians' and nurses' average wage also includes irregular additional payments (quarterly and annual bonuses and other irregular performance and value payments), paid in March. All health care providers are covered, but only full-time employees, i.e. those who worked with full workload and for the whole month under survey.

LV: data cover contracting organisations of the National Health Service that provide state-paid health care services. Physicians include also functional specialists (physiotherapists, speech therapists, dietary specialists, ergotherapy specialists, etc.). Nurses include also medical personnel with professional higher education of the 1st and 2nd level, professional secondary education and vocational education, and assistants of functional specialists.

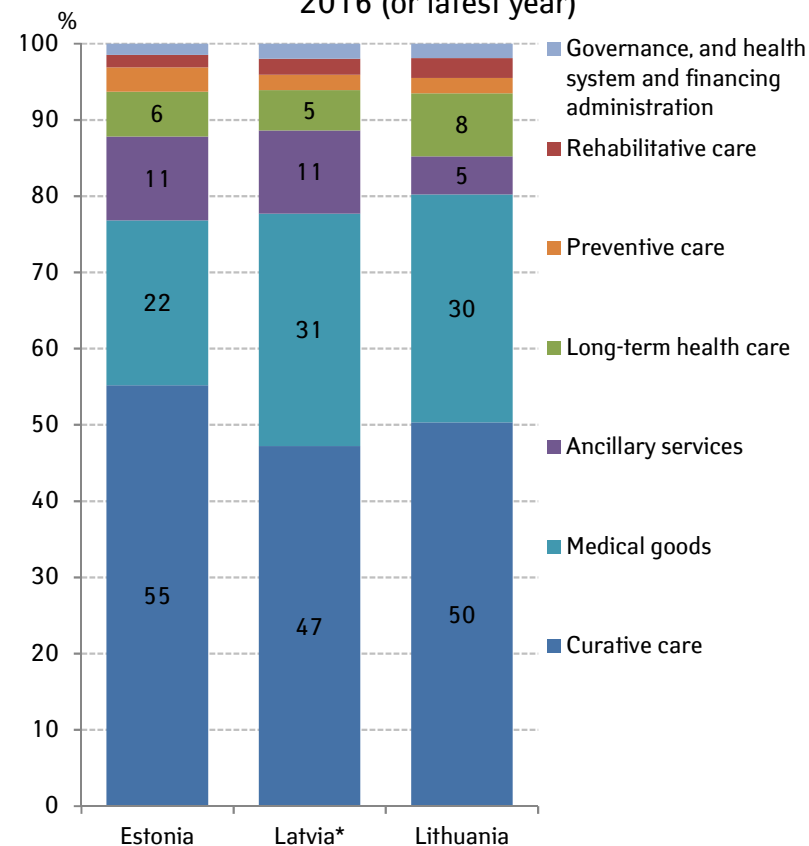
LT: physicians' and state average wage do not cover self-employed persons. Physicians' average wage covers only physicians working in public institutions. Nurses include also other medical specialists with higher medical education, working in institutions that have contracts with Compulsory Health Insurance Fund. Nurses' wage is the year average.

Health expenditure, 2016 (or latest year)

|   | Estonia | Latvia* | Lithuania |
|---|---------|---------|-----------|
| The share of current health expenditure in GDP, %                               | 6.7     | 5.7     | 6.7       |
| Current health expenditure per capita, EUR                                      | 1 410.1 | 705.4   | 899.4     |
| The share of public sector health care schemes in current health expenditure, % | 75.7    | 57.0    | 66.9      |
| The share of household out-of-pocket payment in current health expenditure, %   | 22.7    | 42.1    | 32.3      |

\* Latvian data for 2015

Structure of current health expenditure by health care function, 2016 (or latest year)



\* Latvian data for 2015

Notes: Data calculated according to the OECD-Eurostat-WHO methodology System of Health Accounts 2011 (SHA 2011). GDP – gross domestic product.

## Definitions

**Abortion** – spontaneous or induced (legal, therapeutic, criminal) abortion is the termination of pregnancy by removing the embryo or foetus during the first 22 weeks of gestation.

**Age-standardisation** – a technique used to allow populations to be compared when the age profiles of the populations are quite different. If rates are age-standardised, then differences in the rates over time or between geographical areas do not simply reflect variations in the age structure of the populations.

**Bed turnover** – average number of patients per hospital bed in observed period.

**Day care** – the patient is discharged on the same day as admitted to the hospital.

**Defined daily dose** – the assumed average maintenance dose per day for a drug used for its main indications in adults. The defined daily dose is a unit of measurement and does not necessarily reflect the recommended or real dose.

**Early neonatal death** – death occurring at the age of 0–6 full days of life. The first day of life is considered as day zero.

**Fertility rate** – annual number of live births per 1000 women 15–49 years of age.

**Gross domestic product (GDP)** – the market value of the total final output of goods and services produced in a country over a specific period.

**Gross national income (GNI)** – the sum of value added by all producers who are residents in a nation, plus any product taxes (minus subsidies) not included in output, plus income received from abroad such as employee compensation and property income.

**Healthy life years** – the average number of years an individual is expected to live free of disability if current patterns of mortality and disability continue to apply.

**Hospital discharge** – the formal release of an inpatient from a hospital after a course of treatment.

**Human development index** – a summary measure of country's average achievement in three basic aspects of human development: a long and healthy life, being knowledgeable and have a decent standard of living. Longevity is measured by life expectancy at birth; knowledge is measured by a combination of adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratios; and standard of living by GDP per capita.

**Incidence** – the occurrence of new cases of disease in the population during a certain period of time.

**Induced abortions** – includes legal and therapeutic abortion; the deliberate termination of pregnancy.

**Infant death** – a live-born infant who dies during the first year of life.

**Inpatient** – a patient who is formally admitted to hospital for diagnosis, treatment and/or care and stays for a minimum of one night or more than 24 hours in the hospital.

**Life expectancy** – the average remaining lifetime in years for persons who attain a given age if mortality remains unchanged. At the age of 0 – the life expectancy at birth.

**Live birth** – a foetus that after complete expulsion or extraction from its mother breathes or shows any other evidence of life irrespective of the duration of the pregnancy.

**Maternal death** – the death of a woman while pregnant or within 42 days after termination of pregnancy irrespective of the duration and the site of the pregnancy from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

**Neonatal death** – death occurring at the age of 0–27 full days of life. The first day of life is considered as day zero.

**Perinatal death** – foetal deaths and live-born infants who die at the age of 0–6 full days of life. The standard rate is used for international comparison including births with a weight of 1000 g or more.



**Stillbirth** – death prior to the complete expulsion or extraction from its mother of a foetus after 22 weeks of gestation. The standard rate is used for international comparison including births with a weight of 1000 g or more.

**Total fertility rate** – the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given set of age-specific fertility rates.

**Data sources****Estonia**

National Institute for Health Development including Estonian Medical Birth Registry, Estonian Abortion Registry, Estonian Causes of Death Registry, Estonian Tuberculosis Registry, Estonian Cancer Registry; Statistics Estonia; Estonian Health Board; State Agency of Medicines.

**Latvia**

Central Statistical Bureau of Latvia, The State Agency of Medicines of Latvia, Register of Medical Persons and Medical Support Persons, National Health Service, Register of Causes of Death, State Register of HIV/AIDS cases, National TB Registry, Register of Patients with Particular Diseases.

**Lithuania**

Statistics Lithuania, Institute of Hygiene, Compulsory Health Insurance Fund, State Medicines Control Agency, Centre for Communicable Diseases and AIDS, The Hospital of Infectious Diseases and Tuberculosis, Vilnius University Hospital Santara Clinics, National Cancer Institute.

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## WHERE TO OBTAIN STATISTICAL DATA AND INFORMATION ABOUT BALTIC COUNTRIES?

### ■ ESTONIA

Health statistics and health research database: [www.tai.ee/tstua](http://www.tai.ee/tstua)  
Statistics Estonia: [www.stat.ee](http://www.stat.ee)

### ■ LATVIA

The Centre for Disease Prevention and Control: [www.spkc.gov.lv](http://www.spkc.gov.lv)  
National Health Service: [www.vmnvd.gov.lv](http://www.vmnvd.gov.lv)  
Central Statistical Bureau: [www.csb.gov.lv](http://www.csb.gov.lv)

### ■ LITHUANIA

Institute of Hygiene: [www.hi.lt](http://www.hi.lt)  
Statistics Lithuania: <http://osp.stat.gov.lt>

