

**Health**

**2**





## Introduction

Health is an issue of paramount importance — quite literally a matter of life and death. This chapter presents recent health statistics for the regions of the [European Union \(EU\)](#). It provides information on some of the most common [causes of death](#), notably diseases of the circulatory and respiratory systems and cancer. It also presents statistics on [healthcare services](#), with an analysis of the number of [hospital beds](#) and the number of [physicians](#).

Health is an important priority for Europeans, who expect to be protected against illness and accident and to receive appropriate healthcare services. The competence for the organisation and delivery of healthcare services is largely held by the individual EU Member States. For the EU as a whole, health issues cut across a range of topics — these generally fall under the remit of the European Commission's [Directorate-General for Health and Consumers](#) and the [Directorate-General for Employment, Social Affairs and Inclusion](#).

EU actions on health are concentrated on protecting people from health threats and disease (flu or other epidemics), consumer protection (food safety issues), promoting lifestyle choices (fitness and healthy eating), workplace safety, and helping national authorities cooperate. The European Commission works with EU Member States using an open method of coordination for health issues, a voluntary process based on agreeing common objectives and measuring progress towards these goals.

Health determinants include, among others: access to and the availability of healthcare services; an individual's lifestyle, behaviour and genetics; or social, economic and environmental factors. These determinants extend well beyond the boundaries of public healthcare systems, and the focus of health policy is increasingly linked to aspects such as improving education and awareness or environmental protection, which can be linked to a population's well-being and health status.



### MEASURING THE HEALTH STATUS OF AN INDIVIDUAL OR A POPULATION

The health status of an individual can be measured by a physician, who looks for life-threatening illness, risk factors for premature death (for example, the patient is overweight or a heavy smoker), as well as the severity of any disease in order to assess the patient's overall health. An individual's health status can also be assessed by asking them about how they perceive their own health, for example, their emotional well-being or whether or not they suffer from pain or discomfort.

Measures to determine the health status of an entire population are more difficult to determine — this is generally done by aggregating information collected on individuals. In the absence of comprehensive or absolute measures, average life expectancy, morbidity and mortality measures, the prevalence of preventable diseases, and availability of healthcare services are often used as proxies. Judgments regarding the health status of a particular population are usually made by comparing one population to another, or by studying the development of a particular health indicator / ratio over time.

The EU's health strategy is closely aligned with the [Europe 2020](#) strategy, as it aims to foster health as an indispensable condition for smart, sustainable and inclusive growth. Health inequalities may be seen as a waste of potential human capital. Investing in health can potentially reduce these inequalities, thereby keeping a higher proportion of the population active for longer; changes such as these are likely to have a positive impact on productivity and competitiveness, while the gradual ageing of Europe's population means that there will probably be an increasing need for qualified workers to provide the EU's healthcare services.

The first programme for Community action in the field of public health covered the period from 2003–08. On 23 October 2007, the European Commission released a White Paper titled [Together for health: a strategic approach for the EU 2008-2013](#) (COM(2007) 630). This second programme set out a health strategy designed to confront some of the most common healthcare challenges faced by the EU Member States, for example, population ageing, cross-border health threats, or illnesses linked to unhealthy lifestyles. Regulation 282/2014 of the European Parliament and of the Council of 14 March 2014 on [the establishment of a third Programme for the Union's action in the field of](#)



health (2014-2020) emphasises the link between health and economic prosperity, as the health of individuals directly influences economic outcomes such as productivity, labour supply and human capital. The programme foresees expenditure of almost EUR 450 million over the seven-year period in the form of grants and public procurement contracts. It will focus on:

- the challenging demographic context that is threatening the sustainability of healthcare systems;
- the increasing health inequalities between EU Member States;
- the prevalence of chronic diseases; and
- the fragile economic recovery that is limiting the resources available for investment in healthcare.

The EU's third health programme aims to:

- make healthcare services more sustainable and encourage innovation in health;
- improve public health, preventing disease and fostering supportive environments for healthy lifestyles;
- protect citizens from cross-border health threats (such as flu epidemics);
- contribute to innovative, efficient and sustainable healthcare systems;
- facilitate access to better and safer healthcare for EU citizens.

This third programme for health in the EU is complemented by research framework programmes (for example, supporting initiatives in areas such as biotechnology), or cohesion funds (for example, supporting investment in healthcare infrastructure, e-health services, or initiatives to promote active ageing).



## HEALTH — COHESION POLICY FUNDING

Policy initiatives in the health domain have recently focused on the relationship between health issues, competitiveness and economic growth. If populations live longer and healthier lives this should benefit not only the individuals concerned but also result in a higher proportion of the population being able to remain active within society for longer, while putting less strain on healthcare systems. As such, health has been recognised as an important asset for regional development and has become eligible for regional cohesion funding.

Indeed, regional funding through the European Regional Development Fund (ERDF) over the period 2007–13 allocated around EUR 5 billion to health infrastructure projects, while the European Social Fund (ESF) provided investment for initiatives linked to active ageing, e-health, health promotion and training. These investments by the ERDF and ESF on health-related expenditure represented approximately 1.5 % of the EU's total cohesion fund budget during the period 2007–13.

### **For more information:**

Cohesion policy and health: [http://ec.europa.eu/regional\\_policy/activity/health/index\\_en.cfm](http://ec.europa.eu/regional_policy/activity/health/index_en.cfm)

## Main statistical findings

The life expectancy of women at birth was 83.1 years in the EU-28 in 2012, while that for men was 5.6 years lower at 77.5 years. While life expectancy continues to rise and may, at least in part, explain the demographic shift in the structure of the EU's population, policy attention has increasingly turned to the quality of life. Healthy life years provide a measure of the number of years that a person may be expected to live in a healthy condition (defined by the absence of limitations in functioning / disability). At birth, a woman born in 2012 could be expected to live 61.9 years free from any disability, while the corresponding value for men was only 0.6 years lower.

## Causes of death

A total of 5.0 million people died in the EU-28 in 2012, which equates to a crude death rate of 9.9 deaths per thousand inhabitants. Statistics on causes of death provide information on mortality patterns and provide public health information. As most causes of death vary significantly with people's age and sex, the use of **standardised death rates** improves comparability over time and between countries, measuring death rates independently of different age structures. At the regional level, standardised death rates are computed in the form of three-year averages; in this publication the latest data cover the period 2008–10. These statistics refer to the underlying disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of an accident or an act of violence which produced a fatal injury; they are classified according to a standardised list of 86 different causes of death.



### ***Almost 40 % of deaths in the EU-28 are attributed to diseases of the circulatory system***

The most common cause of death in the EU-28 in 2010 was diseases of the circulatory system (1.9 million deaths, or 39.2 % of the total). There were 1.3 million deaths in the EU-28 caused by cancer (malignant neoplasms) in 2010, which equated to just over one quarter (25.9 %) of the total, while the third most prevalent cause of death was diseases of the respiratory system (373 thousand or 7.6 % of the total).

### ***There was an increase of 7.2 % in deaths from cancer over the period 2000–10***

The number of deaths from diseases of the circulatory system in the EU-28 fell by 9.7 % between 2000 and 2010 and as a result their relative share in the total number of deaths fell by 4.5 percentage points from 43.8 % of the total in 2000. During the most recent decade for which data are available there was also a fall in the overall number of deaths from diseases of the respiratory system (down 5.8 %). By contrast, the number of deaths in the EU-28 caused by cancer rose by 7.2 % between 2000 and 2010.

While their weight in the overall number of deaths in the EU-28 was quite small, the most rapid increase in numbers of deaths between 2000 and 2010 was recorded for diseases of the nervous system and the sense organs (+64.3 %) and for mental and behavioural disorders (+51.3 %). The biggest fall was registered for transport accidents, down 41.9 % between 2000 and 2010. Transport accidents also accounted for a relatively low share of the total number of deaths in the EU-28, some 0.7 % of the total in 2010 (or 35.5 thousand deaths).

### **Diseases of the circulatory system**

Diseases of the circulatory system include cerebrovascular diseases, ischaemic heart diseases and other heart diseases. Diet is thought to play an important role in determining the death rates from diseases of the circulatory system, which tend to be higher in regions where people consume a large amount of saturated fats, dairy products and red meat.

The standardised death rate from diseases of the circulatory system in the EU-28 was 432.3 per 100 000 inhabitants during the period 2008–10, the rate for men (507.7) was just over 35 % higher than that recorded for women (372.2), confirming a pattern of higher mortality rates being recorded for men (compared with those for women) across almost all causes of death.

### ***More than two thirds of deaths in Bulgaria are attributed to diseases of the circulatory system***

Map 2.1 shows that among the EU Member States, the highest standardised death rates from diseases of the circulatory system were often recorded in those [Member States that joined the EU in 2004 or later](#) (other than the Mediterranean islands of Cyprus and Malta); this was particularly true for Bulgaria and Romania. Indeed, more than two thirds of the deaths in Bulgaria during the period 2008–10 could be attributed to diseases of the circulatory system, while the corresponding share for Romania was also close to two thirds.

Six NUTS 2 regions from each of Bulgaria and Romania recorded standardised death rates for diseases of the circulatory system in excess of 1 000 per 100 000 inhabitants during the period 2008–10. The highest death rates were recorded in the three Bulgarian regions of Severozapaden (1 311 per 100 000 inhabitants), Yugoiztochen (1 267) and Severen tsentralen (1 220); Severozapaden was the only region where the death rate from diseases of the circulatory system was more than three times as high as the EU-28 average.

Outside of the Member States that joined the EU in 2004 or more recently, the highest standardised death rates from diseases of the circulatory system were recorded for: the Greek regions of Anatoliki Makedonia, Thraki (593 per 100 000 inhabitants), Thessalia (565) and Dytiki Makedonia (552); the eastern German regions of Sachsen-Anhalt (560) and Brandenburg (528); and the Portuguese Região Autónoma dos Açores (556). The former Yugoslav Republic of Macedonia (which is covered by a single region at this level of detail) also recorded a very high standardised death rate from diseases of the circulatory system (1 128).

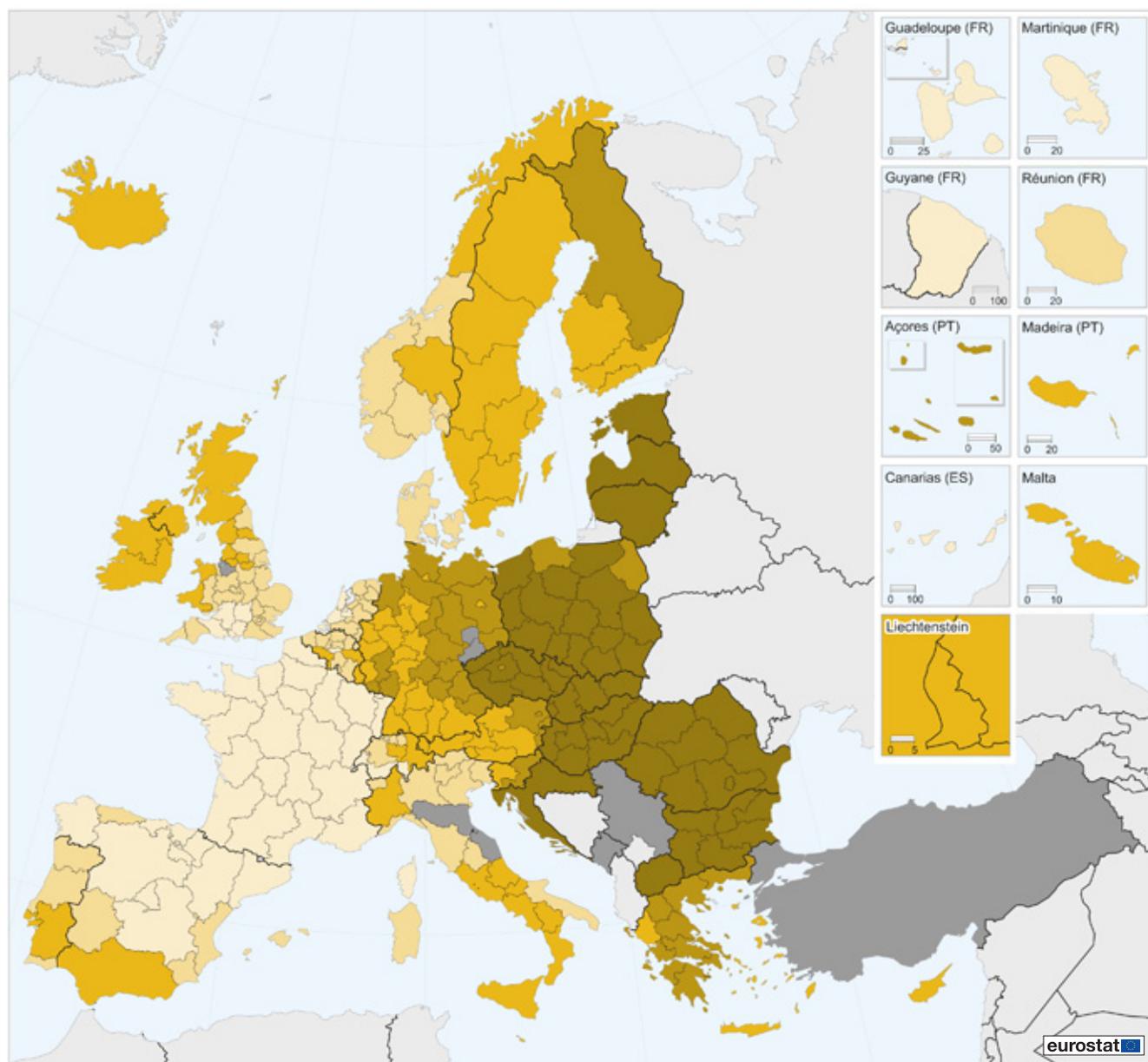
### ***France and Spain recorded the lowest death rates from circulatory diseases***

A range of studies suggest that there may be beneficial effects from a Mediterranean diet (particularly olive oil) and moderate red wine consumption (particularly with meals), and that these two factors could, at least in part, explain the generally low death rates from circulatory diseases in many regions in southern Europe.

Around 27 % of all the deaths that occurred in France in 2008–10 resulted from diseases of the circulatory system, while relatively low shares (30–35 %) were also recorded in Portugal, Spain, Belgium, the Netherlands and the United Kingdom. At a regional level, the lowest standardised death rates from diseases of the circulatory system during the period 2008–10 were systematically recorded across France and Spain; indeed, the 34 NUTS 2 regions in the EU-28 with the lowest death rates from circulatory diseases were from these two countries.



**Map 2.1:** Deaths from diseases of the circulatory system, by NUTS 2 regions, 2008–10 <sup>(1)</sup>  
 (standardised death rate per 100 000 inhabitants, three-year average)



(standardised death rate per 100 000 inhabitants, three-year average)

EU-28 = 432.3

- < 300.0
- 300.0 – < 350.0
- 350.0 – < 450.0
- 450.0 – < 600.0
- >= 600.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 06/2014



<sup>(1)</sup> Liechtenstein: 2010. Denmark and Iceland: 2007–09. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level.  
 Source: Eurostat (online data codes: [hlth\\_cd\\_ysdr1](#) and [hlth\\_cd\\_asdr](#))



SPOTLIGHT ON THE REGIONS:  
ÎLE DE FRANCE (FR10), FRANCE



**Pitié-Salpêtrière hospital, Paris**

The capital region of France was the EU-28 region with the lowest death rate from diseases of the circulatory system: 194.4 deaths per 100 000 inhabitants in 2008–10. While death rates from diseases of the circulatory system were systematically lower than the EU-28 average (432.3) across all French regions, an inhabitant of the Nord - Pas-de-Calais was 1.5 times as likely to die from a disease of the circulatory system as someone living in Paris.

*Photo: Magnus Manske*

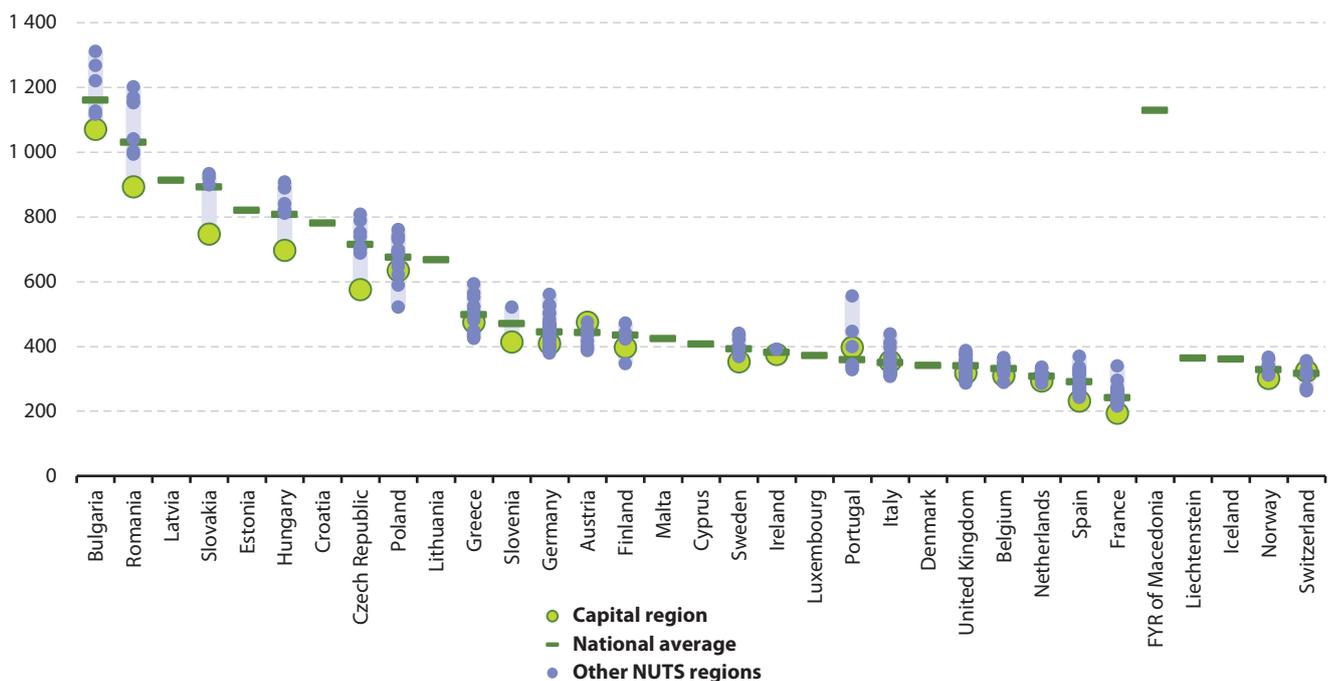
*Close proximity to a hospital may be a determining factor for surviving a heart attack or stroke*

Another factor that may well explain regional patterns of death rates for diseases of the circulatory system is the speed with which hospital treatment can be made available — in other words, issues linked to access and availability of services for those suffering a heart attack or a stroke. The lowest death rates from diseases of the circulatory system in France and Spain were registered in the two capital regions of Île de France and the Comunidad de Madrid; both of these regions are densely populated, and patients in need of medical assistance could expect to travel relatively short distances to receive medical attention.

This pattern of lower death rates for capital regions could be observed across most of the EU Member States, as shown in **Figure 2.1**. The exceptions were the Austrian and Portuguese capital regions of Wien and Lisboa which were the only capital regions within the EU-28 to record standardised death rates for diseases of the circulatory system that were higher than their respective national averages; a similar situation was observed in Switzerland.

The lowest standardised death rates from diseases of the circulatory system during the period 2008–10 were recorded in the three French regions of Île de France (194.4 per 100 000 inhabitants), Provence-Alpes-Côte d'Azur (which contains Marseille, 216.0) and Rhône-Alpes (which contains Lyon, 223.3).

**Figure 2.1:** Regional disparities in deaths from diseases of the circulatory system, by NUTS 2 regions, 2008–10<sup>(1)</sup> (standardised death rate per 100 000 inhabitants, three-year average)



<sup>(1)</sup> The light purple shaded bar shows the range of the highest to lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Liechtenstein: 2010. Denmark and Iceland: 2007–09. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (IT13), Lancashire (UKD4) and Cheshire (UKD6): not available.

Source: Eurostat (online data codes: [hlth\\_cd\\_ysdr1](#) and [hlth\\_cd\\_asdr](#))



### *Men were more than twice as likely as women to die from diseases of the circulatory system in Lithuania*

Lithuania (one region at this level of detail) was the only NUTS 2 region to record a standardised death rate for diseases of the circulatory system among men that was at least twice as high as that for women (1 048.7 per 100 000 inhabitants compared with 479.4). There were generally wide disparities between the sexes in the other two [Baltic Member States](#), as well as in many regions of Finland and France, where male death rates were generally 1.5–1.7 times as high as those for women.

By contrast, the differences in death rates between the sexes were relatively low in most German, Greek and Portuguese regions, as well as in Croatia (only national data available). Standardised death rates from diseases of the circulatory system were marginally higher for women in just five NUTS 2 regions across the whole of the EU-28 in 2008–10; all of these were located in Greece — Sterea Ellada, Dytiki Ellada, Kriti, Ionia Nisia and Thessalia.

### **Diseases of the respiratory system**

Respiratory diseases include infectious acute respiratory diseases (such as influenza and pneumonia) and chronic lower respiratory diseases (such as bronchitis and asthma). Diseases of the respiratory system mainly affect older people, as almost 90 % of EU-28 deaths from these diseases occur among those aged 65 and above.

**Map 2.2** shows the standardised death rate for diseases of the respiratory system across Europe; the average death rate from these diseases in the EU-28 was 85.3 deaths per 100 000 inhabitants during the period 2008–10, with the rate for men (121.4) almost double that recorded for women (63.3). Relatively high death rates from diseases of the respiratory system may be linked to a range of factors, including: historical working conditions (especially for men, as the economies of many of the regions with high rates used to be based on coal mining, iron and steel and other heavy industries) or differences in public health campaigns (for example, the proportion of elderly persons who are vaccinated against influenza or the proportion of the population who choose to smoke).

### *Respiratory diseases accounted for a high proportion of deaths in the Portuguese island regions of Madeira and the Azores ...*

Of the 13 NUTS 2 regions in the EU-28 that recorded a standardised death rate from diseases of the respiratory system of at least 150 deaths per 100 000 inhabitants in 2008–10 there were two Portuguese regions — the volcanic island chains of the Açores and Madeira — and 11 regions from the former industrial heartlands in the centre and north of the United Kingdom. By far the highest death rate was reported in the Região Autónoma da Madeira (294.6 deaths per 100 000 inhabitants), followed by the Região Autónoma dos Açores (195.8); in both of these regions there were particularly high levels of pneumonia, chronic and acute bronchitis.

### *... while the opposite was true at the other end of the EU in the Baltic Member States and Finland*

The NUTS 2 regions with the lowest death rates from respiratory diseases included all three of the Baltic Member States (each of which is composed of a single region at this level of analysis) and all but one of the five regions in Finland (the islands of Åland were the exception, although here too the death rate remained below the EU-28 average). French regions (other than those in the north and east of the country) and several Austrian and Italian regions also recorded relatively low standardised death rates for respiratory diseases. The lowest standardised death rate for respiratory diseases across all NUTS 2 regions was recorded in Latvia, at 34.6 deaths per 100 000 inhabitants in 2008–10.

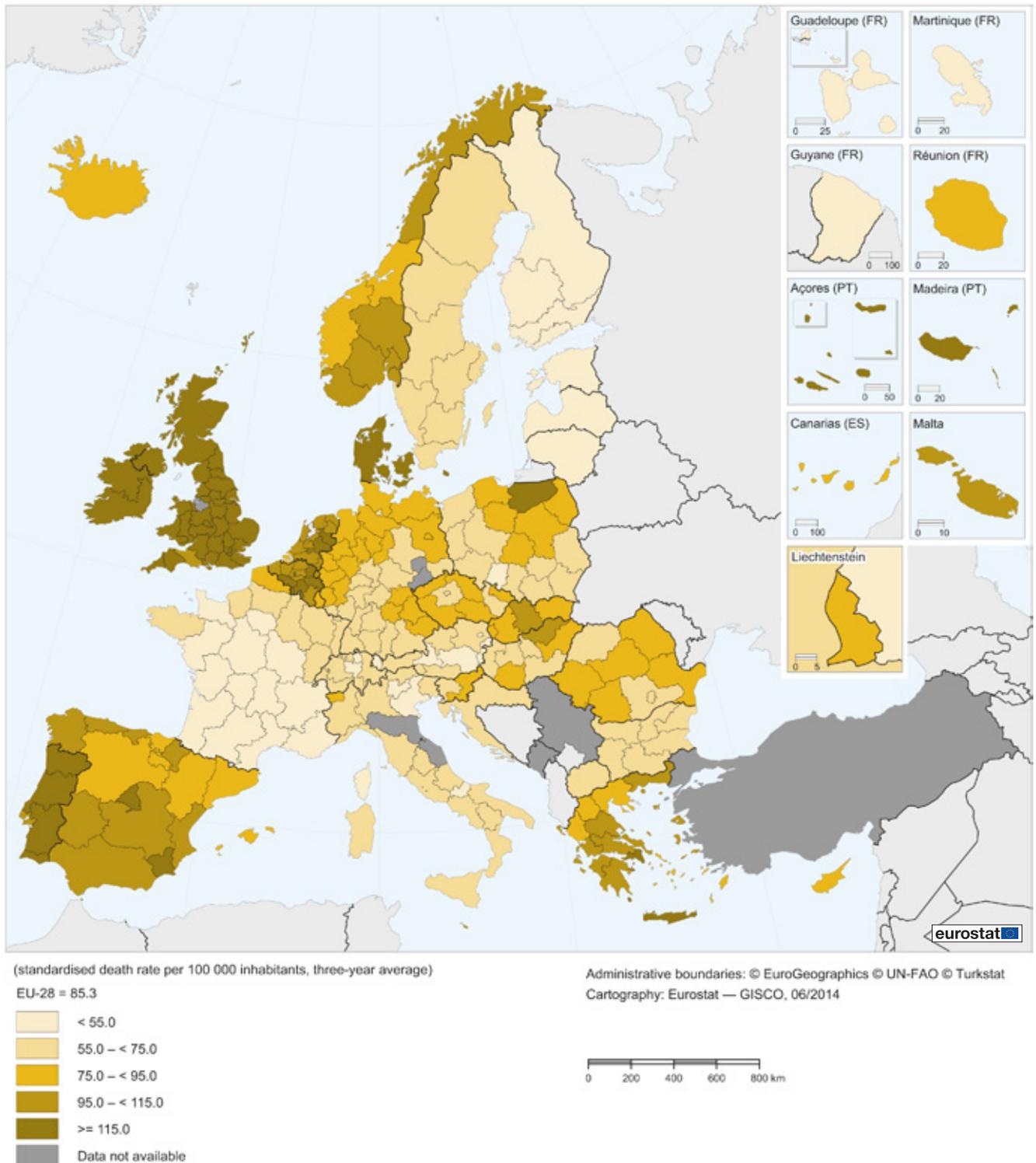
### *Death rates from respiratory diseases were almost twice as high among men as women across the EU-28*

Standardised death rates for men from respiratory diseases were almost twice as high (1.9 times) as those for women within the EU-28 during the period 2008–10. Male death rates from respiratory diseases were systematically higher than those recorded for women across all NUTS 2 regions of the EU. The ratio of death rates among men compared with those for women rose above 2.5 in several Spanish, Italian, Hungarian, Polish and Finnish regions.

The largest absolute differences in death rates from respiratory diseases between the sexes were often recorded in those regions with the highest overall death rates: for example, the Portuguese Regiões Autónomas da Madeira and dos Açores. There were also large differences in a number of Spanish regions (including the southern regions of Andalucía, Extremadura and the Región de Murcia), the central Belgian regions of the Province/Provincie Hainaut and Province/Provincie Namur, and the northerly Polish region of Warminsko-Mazurskie; these latter three regions are characterised by their historical specialisation in the coal mining and iron and steel activities.



**Map 2.2:** Deaths from diseases of the respiratory system, by NUTS 2 regions, 2008–10 <sup>(1)</sup>  
(standardised death rate per 100 000 inhabitants, three-year average)



<sup>(1)</sup> Liechtenstein: 2010. Denmark and Iceland: 2007–09. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level.  
Source: Eurostat (online data codes: [hlth\\_cd\\_ysdr1](#) and [hlth\\_cd\\_asdr](#))

*Deaths from respiratory diseases in the Greek, Polish and Spanish capital regions were considerably higher than their respective national averages*

**Figure 2.2** presents the distribution of standardised death rates from respiratory diseases across NUTS 2 regions in 2008–10. There was a relatively narrow range of death rates across the different regions composing each EU Member State, aside from the outlying regions of the Regiões Autónomas da Madeira and dos Açores, Warmińsko-Mazurskie and the Ciudad Autónoma de Ceuta (Spain).

Ireland, Portugal, Romania and Slovenia were the only multi-regional EU Member States where the capital region recorded the lowest regional death rate from respiratory diseases. By contrast, in 8 of the 20 multi-regional EU Member States for which data are available, the death rate in the capital region was above the national average; this was notably so in the Greek, Polish and Spanish capital regions of Athens, Warsaw and Madrid, and may in part be attributed to levels of air pollution.

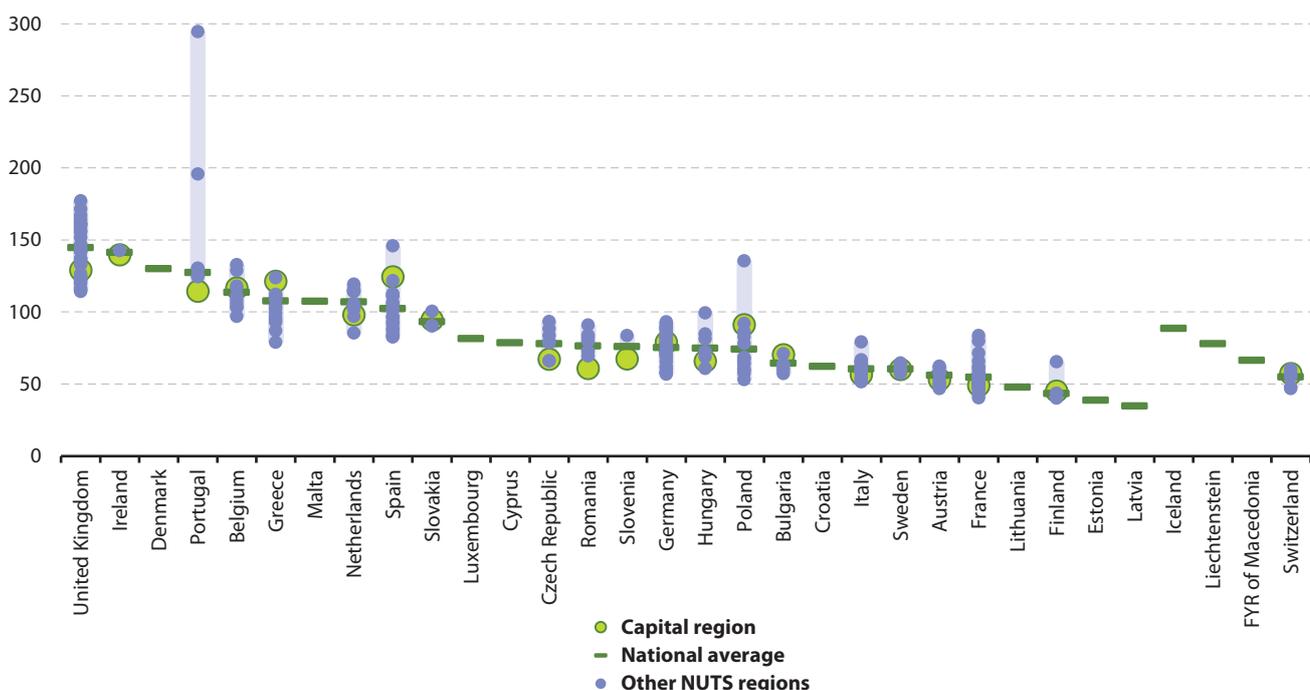
*Biggest overall decline in death rates from diseases of the circulatory system recorded in the Nord-Vest region of Romania*

**Figure 2.3** shows the development of death rates for both diseases of the circulatory and the respiratory system over the period 2000–10. In each part of the figure, lines are shown for the EU-28 average, the region with the highest and lowest death rate in 2008–10, and the region with the biggest increase and reduction in its death rate over the most recent decade for which data are available (note that six regions are excluded from this analysis as they did not have a complete time series).

For diseases of the circulatory system, the biggest reduction in death rates was recorded for the Nord-Vest region of Romania, where the rate fell from a high of 1 489 per 100 000 inhabitants in 2000–02 to 1 169 in 2008–10. Although this was the biggest absolute decline, in relative terms it amounted to a reduction of 21.5 %, which was slightly below the EU-28 average (-23.2 %).

There was an average reduction of 13.3 % in the EU-28's standardised death rate for respiratory diseases over the period from 2000–10. The biggest decline across NUTS 2 regions was recorded in the Border, Midland and Western region of Ireland where the death rate fell by 40.2 %. In Latvia, where the lowest death rate for respiratory diseases was recorded in 2008–10, there was also a marked reduction in death rates between 2000–10 (-21.4 %).

**Figure 2.2:** Regional disparities in deaths from diseases of the respiratory system, by NUTS 2 regions, 2008–10<sup>(1)</sup> (standardised death rate per 100 000 inhabitants, three-year average)

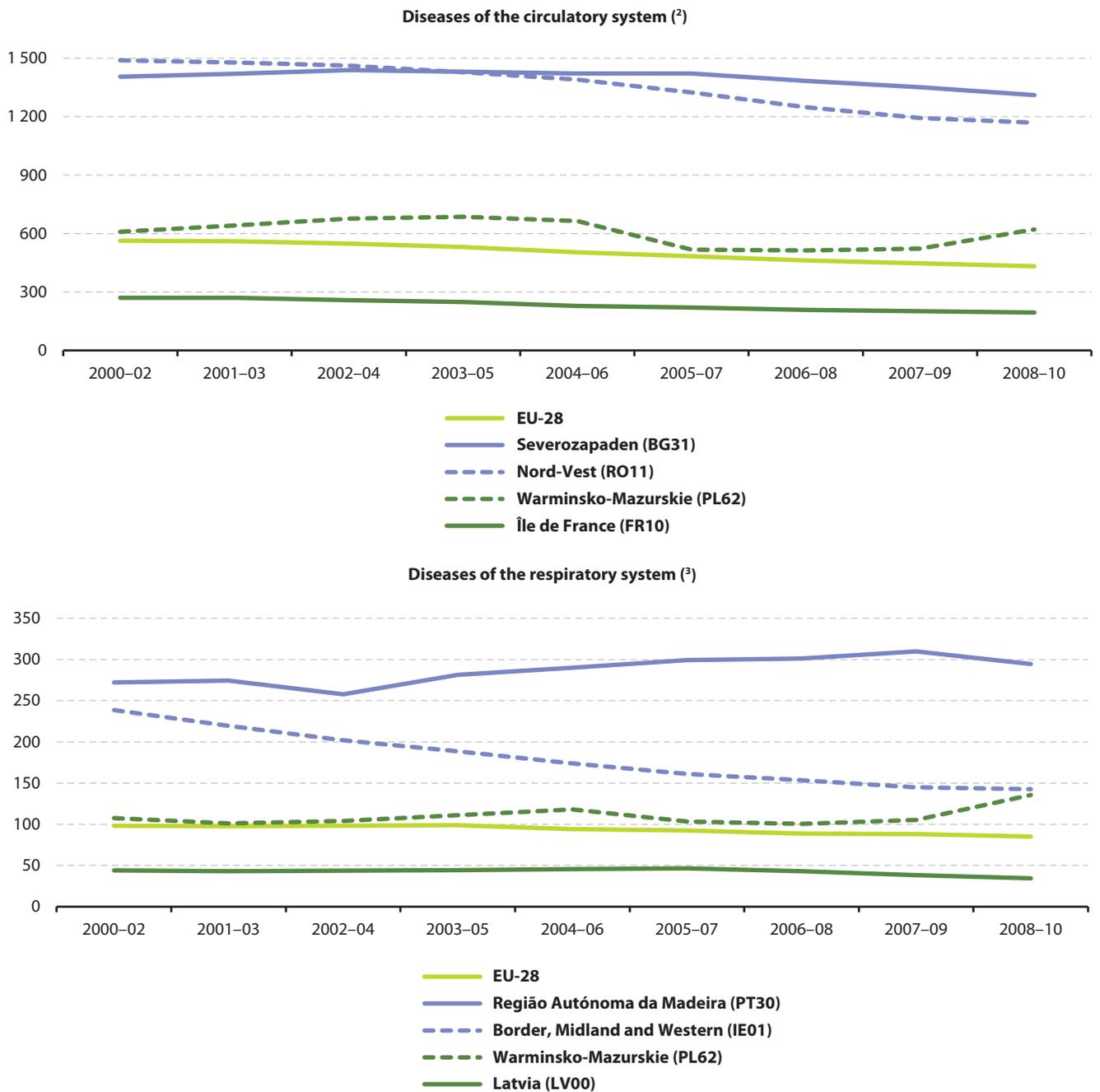


(1) The light purple shaded bar shows the range of the highest to lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Liechtenstein: 2010. Denmark and Iceland: 2007–09. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (IT3), Lancashire (UKD4) and Cheshire (UKD6): not available.

Source: Eurostat (online data codes: [hlth\\_cd\\_ysdr1](#) and [hlth\\_cd\\_asdr](#))



**Figure 2.3:** Deaths from diseases of the circulatory system and the respiratory system, selected NUTS 2 regions in the EU-28, 2000–10 <sup>(1)</sup>  
(standardised death rates per 100 000 inhabitants, three-year averages)



<sup>(1)</sup> Note: the y-axis is different in the two parts of the figure. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Lancashire (UKD4) and Cheshire (UKD6): not available.

<sup>(2)</sup> The figure shows the EU-28 average, the highest (BG31) and lowest (FR10) regions for 2008–10, the region with biggest increase (PL62) from 2000–10 and the region with biggest reduction (RO11) from 2000–10 (subject to data availability).

<sup>(3)</sup> The figure shows the EU-28 average, the highest (PT30) and lowest (LV00) regions for 2008–10, the region with biggest increase (PL62) from 2000–10 and the region with biggest reduction (IE01) from 2000–10 (subject to data availability).

Source: Eurostat (online data code: [hlth\\_cd\\_ysdr1](#))

## Cancer (malignant neoplasms)

There are many different types of cancer (malignant neoplasms) including those of the larynx, trachea, bronchus, lung, colon, breast or prostate, as well as lymphoid or haematopoietic cancers. The EU-28 standardised death rate from cancer was 273.6 per 100 000 inhabitants for the period 2008–10, with the rate for men (370.3) almost 80 % higher than that for women (207.1).

### *Hungarian regions had some of the highest death rates from cancer in the EU ...*

Among the NUTS 2 regions of the EU-28 in 2008–10, the standardised death rate from cancer was highest in the north eastern Hungarian region of Észak-Alföld, peaking at 375.4 deaths per 100 000 inhabitants. The lowest death rates from cancer were generally recorded in eastern and southern Europe (in particular across Bulgarian, Greek and Spanish regions, as well as in Cyprus) and the French overseas regions.

**Map 2.3** shows that the remaining regions of Hungary also had some of the highest death rates from cancer (with lung cancer often the most prevalent form of cancer in these regions). All seven Hungarian regions were present among the 10 EU regions with the highest death rates from cancer, alongside Severozápad (in the north west of the Czech Republic) and the two northerly Polish regions of Kujawsko-Pomorskie and Pomorskie (which includes Gdańsk).

### *... while death rates from cancer were also high in the majority of regions in the Czech Republic, the Netherlands, Poland, Slovakia and Slovenia*

There were a total of 49 regions in the EU-28 that reported 300.0 or more deaths from cancer per 100 000 inhabitants during the period 2008–10. Aside from the 10 regions already mentioned, the majority of regions in the Czech Republic, the Netherlands, Poland, Slovakia and Slovenia were present at the top end of the distribution, along with seven regions from the north of the United Kingdom, Croatia, Denmark and Latvia (only national information available for these three countries) and the Irish capital region of Southern and Eastern. The Romanian capital region of București – Ilfov, the most northerly French region of Nord - Pas-de-Calais and the Portuguese island Região Autónoma dos Açores were all atypical, as they were the only regions from these countries to record death rates from cancer that were above 300 deaths per 100 000 inhabitants during the period 2008–10.

### *Men were more than twice as likely to die from cancer as women in all Portuguese and Spanish regions*

An analysis by sex for the period 2008–10 shows that standardised death rates from cancer across EU regions were systematically higher for men than for women. The widest gender gap was recorded in the region with the highest overall death rate for cancer, Észak-Alföld, where the rate for men peaked at 558.7 deaths per 100 000 male inhabitants, some 300 deaths higher than the corresponding rate for women. Male death rates from cancer were more than twice as high as female rates in every Portuguese and Spanish region, as well as in most French and Hungarian regions, and about half of all Greek and Polish regions.



### SPOTLIGHT ON THE REGIONS: SEVEROZÁPAD (CZ04), THE CZECH REPUBLIC



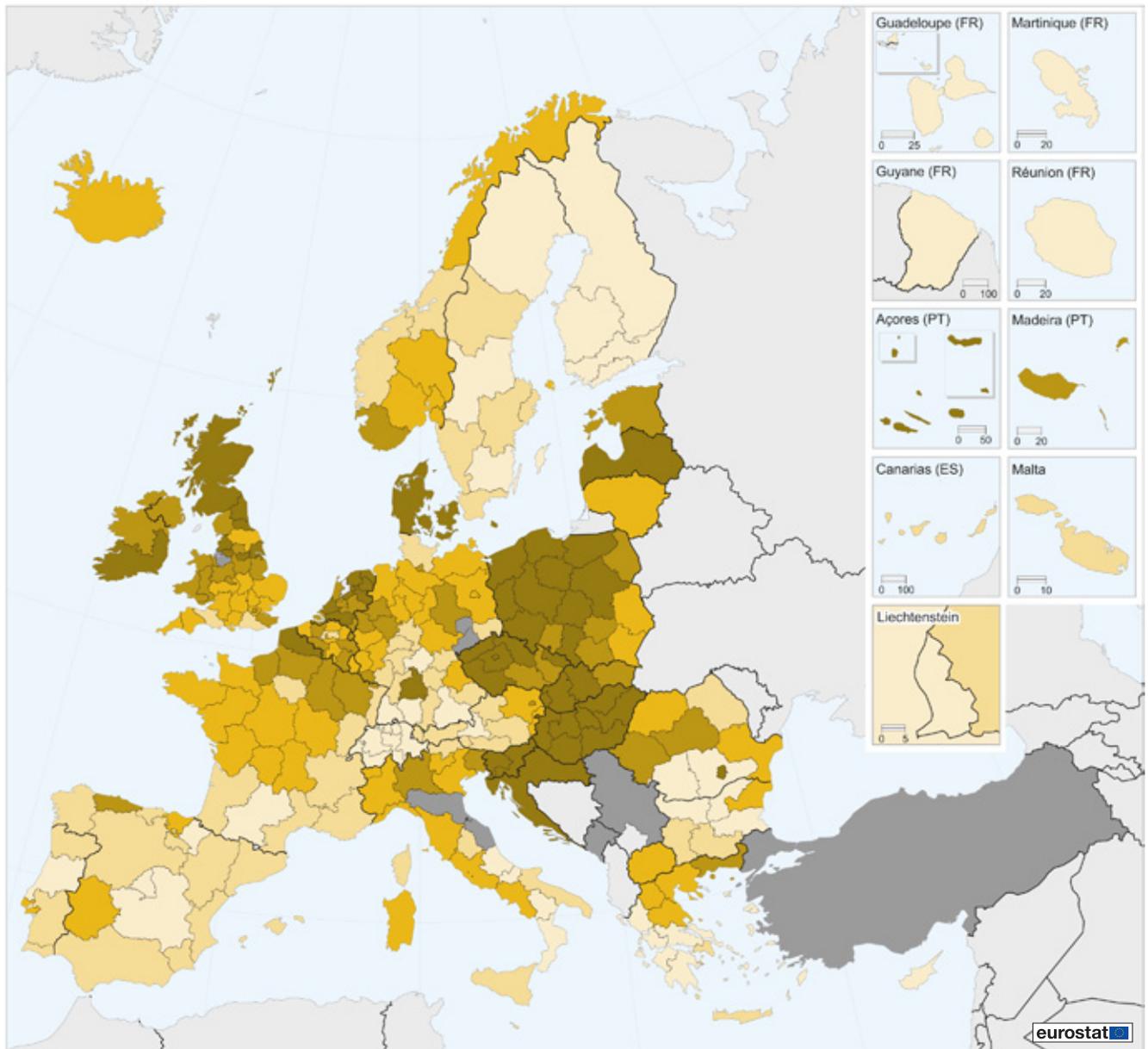
#### The spa town of Karlovy Vary, Severozápad

Severozápad was the EU region which recorded the most rapid reduction in death rates from breast cancer among women during the period 2000–10 (-32.7 %); this was 3.5 times as fast as the corresponding reduction for the whole of the EU-28. As a result the death rate from breast cancer in Severozápad fell below the EU-28 average in 2007–09. In the seven other NUTS 2 regions of the Czech Republic, female death rates from breast cancer also fell at a relatively fast pace, with reductions in the range of 22–27 % for six regions. The only exception was the region surrounding the capital Praha, as the death rate fell by 14.3 % in Střední Čechy. Nevertheless, this was also at a faster pace than the EU-28 average (-9.5 %).

*Photo: Juan de Vojník*

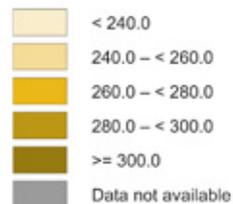


**Map 2.3:** Deaths from cancer (malignant neoplasms), by NUTS 2 regions, 2008–10 <sup>(1)</sup>  
(standardised death rate per 100 000 inhabitants, three-year average)



(standardised death rate per 100 000 inhabitants, three-year average)

EU-28 = 273.6



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 06/2014



<sup>(1)</sup> Liechtenstein: 2010. Denmark and Iceland: 2007–09. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level.  
Source: Eurostat (online data codes: [hlth\\_cd\\_ysdr1](#) and [hlth\\_cd\\_asdr](#))

**Death rates from cancer in the capital regions of Bucharest and Vienna were higher than in any other Romanian or Austrian region**

Figure 2.4 shows the distribution of standardised death rates from cancer for the period 2008–10. The largest dispersion of rates was recorded across French regions, while there was also a relatively wide variation between the regions of Romania, Spain, Poland, Portugal and Greece. Capital regions were characterised as recording death rates from cancer that were generally close to their respective national averages. This pattern was reproduced across the majority of the EU Member States, with only Bucureşti – Ilfov and Wien displaying an atypical pattern: the capital regions of Romania and Austria recorded the highest regional death rates from cancer in these two countries.

**In the Czech region of Severozápad, the death rate for breast cancer fell by almost one third over the last decade ...**

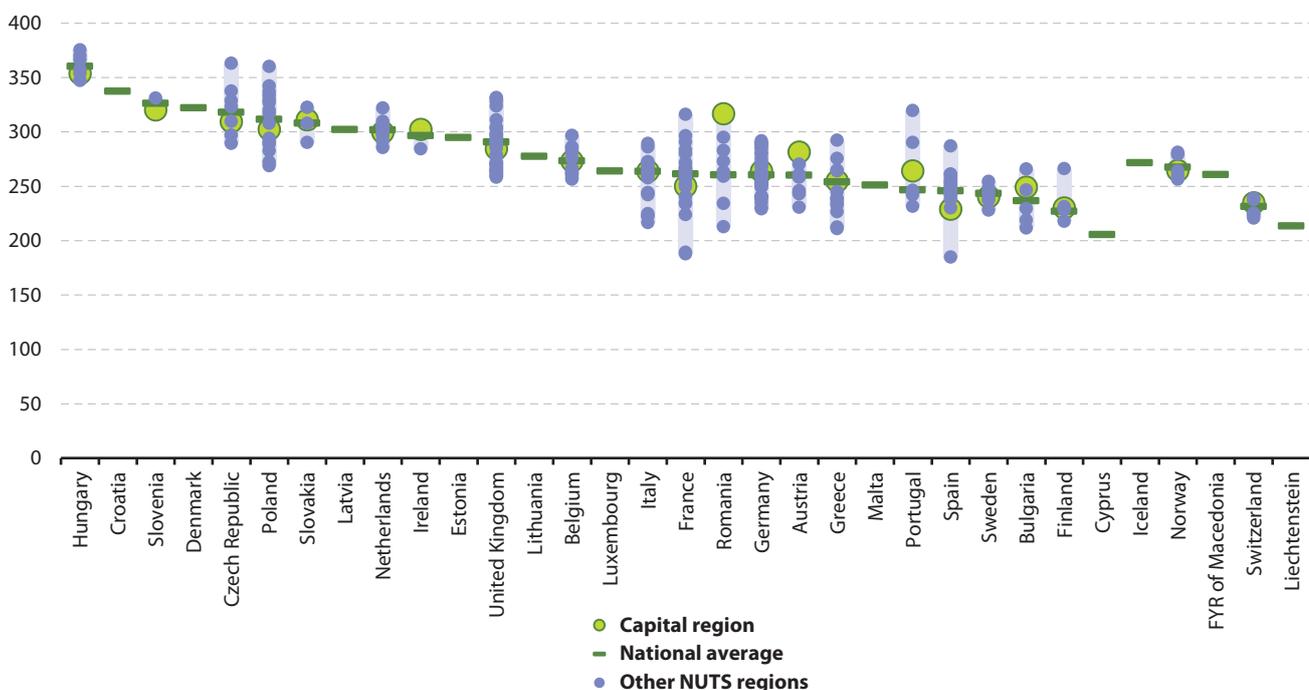
Figure 2.5 shows the development of death rates for two gender-specific cancers: namely, breast cancer for women and prostate cancer for men. Each part of the figure shows lines for the EU-28 average, the NUTS 2 region with the highest and lowest death rate in 2008–10, and the NUTS 2 region with the biggest increase and reduction in its death rates over the period 2000–10 (note that six regions are excluded from this analysis as they did not have a complete time series).

For breast cancer, there was a 9.5 % reduction in the EU-28 death rate among women during the last decade. The biggest reduction was recorded for the Severozápad region of the Czech Republic, where death rates fell by almost one third (-32.7 %) and dropped below the EU-28 average in 2007–09. The highest death rate for breast cancer was recorded in the northerly Belgian region of the Province/Provincie Oost-Vlaanderen, at 47.7 female deaths per 100 000 female inhabitants in 2008–10, some 1.4 times as high as the EU-28 average. The biggest increase in death rates from breast cancer over the period 2000–10 was a rise of almost one third (32.2 %) in the autonomous island region of Åland (Finland); its death rate for breast cancer rose above the EU-28 average in 2007–09.

**... while that for prostate cancer fell by nearly 50 % in the Italian region of Bolzano/Bozen**

For prostate cancer, the EU-28 death rate among men fell by 14.1 % over the period 2000–10. Death rates were almost halved (-49.0 %) in the northerly Italian region of the Provincia Autonoma di Bolzano/Bozen; its death rate for prostate cancer fell below the EU-28 average in 2007–09. The highest death rate from prostate cancer was recorded in Åland — the same region that recorded the highest increase in breast cancer — at 97.3 male deaths per 100 000 male inhabitants in 2008–10; this was 2.3 times as high as the EU-28 average. The biggest increase in the death rate for

**Figure 2.4:** Regional disparities in deaths from cancer (malignant neoplasms), by NUTS 2 regions, 2008–10<sup>(1)</sup> (standardised death rate per 100 000 inhabitants, three-year average)



<sup>(1)</sup> The light purple shaded bar shows the range of the highest to lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Liechtenstein: 2010. Denmark and Iceland: 2007–09. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level.

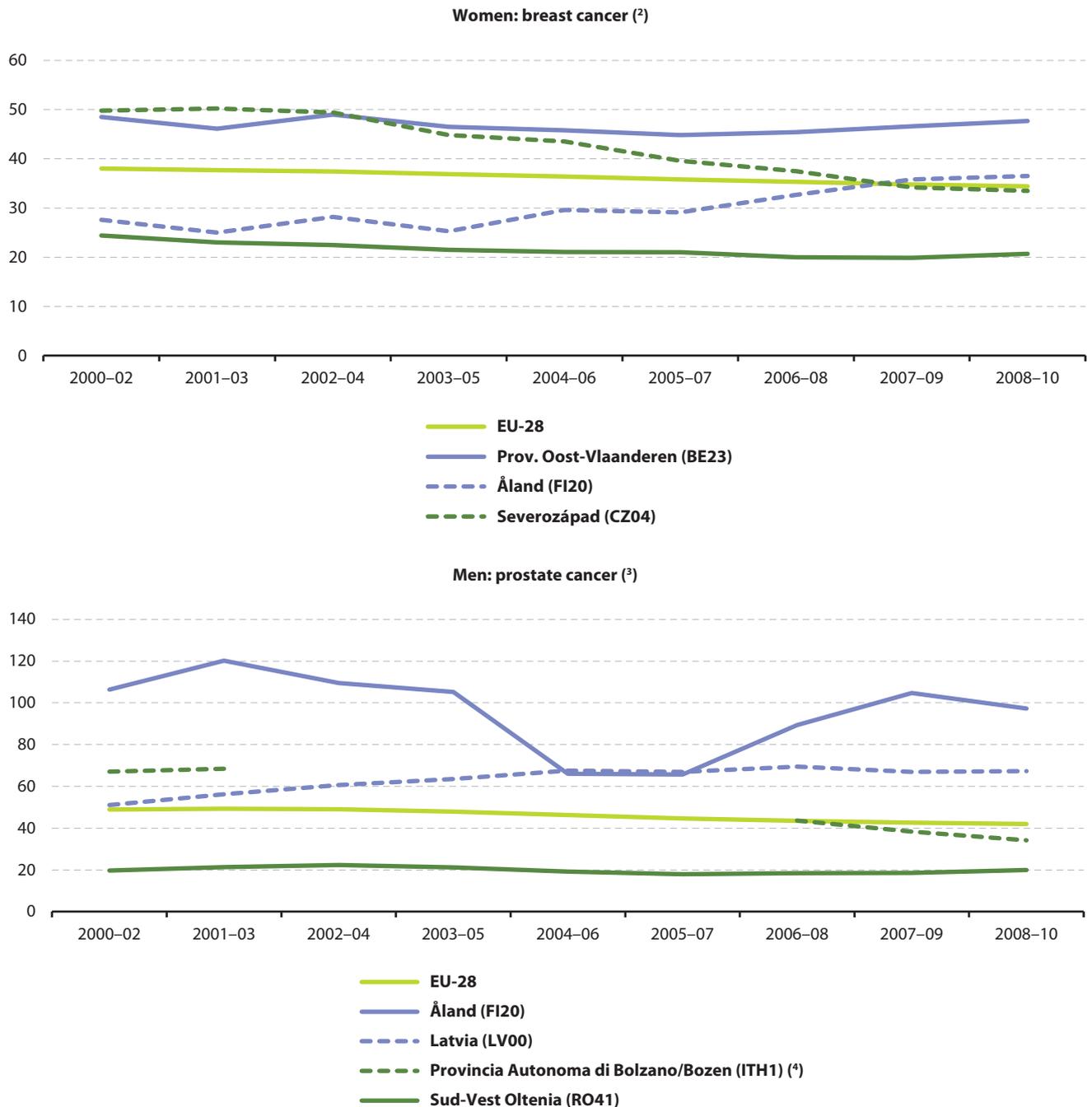
Source: Eurostat (online data codes: [hlth\\_cd\\_ysdr1](#) and [hlth\\_cd\\_asdr](#))



prostate cancer during the period 2000–10 was recorded in Latvia (which is covered by a single region at this level of analysis) with an overall increase of 31.7 %: note that the

death rate for prostate cancer peaked in 2006–08, more than one third (35.8 %) higher than it had been in 2000–02.

**Figure 2.5:** Deaths from selected cancers (malignant neoplasms), selected NUTS 2 regions in the EU-28, 2000–10 <sup>(1)</sup> (standardised death rates per 100 000 inhabitants, three-year averages)



<sup>(1)</sup> Note: the y-axis is different in the two parts of the figure. Scotland (UKM): by NUTS 1 region. Denmark and Croatia: national level. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Lancashire (UKD4) and Cheshire (UKD6): not available.

<sup>(2)</sup> The figure shows the EU-28 average, the highest (BE23) and lowest (FR94) regions for 2008–10, the region with biggest increase (FI20) from 2000–10 and the region with biggest reduction (CZ04) from 2000–10 (subject to data availability).

<sup>(3)</sup> The figure shows the EU-28 average, the highest (FI20) and lowest (RO41) regions for 2008–10, the region with biggest increase (LV00) from 2000–10 and the region with biggest reduction (ITH1) from 2000–10 (subject to data availability).

<sup>(4)</sup> 2003–05 to 2005–07: not available.

Source: Eurostat (online data code: [hlth\\_cd\\_ysdr1](#))



## Healthcare resources

### Hospital beds

For many years, the number of hospital beds across the EU-28 has decreased. During the last decade this pattern continued, as the number of available beds in [hospitals](#) fell by an estimated 10.9 % between 2002 and 2012. The total number of available hospital beds in the EU-28 was estimated at 2.70 million in 2012.

In 2011, the highest density of available hospital beds was recorded in the north-eastern German region of Mecklenburg-Vorpommern (1 273 beds per 100 000 inhabitants; information is only available for NUTS 1 regions for Germany), followed by its neighbouring Polish region of Zachodniopomorskie (1 239) and the central German region of Thüringen (1 002); these three regions were the only ones in the EU-28 to record ratios above 1 000 beds per 100 000 inhabitants. There were four additional regions where the availability of hospital beds stood above the level of 900 beds per 100 000 inhabitants, they were: the Romanian capital region of Bucuresti -- Ilfov, two more German regions (Saarland and Schleswig-Holstein), and the Austrian region of Salzburg.

### *Healthcare resources tend to be concentrated in regions with high population density, especially capital regions*

**Map 2.4** shows the highest ratio of hospital beds to population in 2011 was often recorded in the capital region of each EU Member State; this may be due to capital cities often having specialised hospital services (for the treatment of rare diseases or new types of intervention and care). More generally, regional disparities may result from the distribution of medical facilities in major cities and agglomerations, with these facilities not only being used by the local population but also people from a wider catchment area that extends into neighbouring regions. Berlin (Germany), Helsinki-Uusimaa (Finland) and Stockholm (Sweden) were the three main exceptions to this pattern, as each of these capital regions reported the lowest density of available hospital beds in their respective countries. Stockholm (239 beds) and the Comunidad de Madrid (295 beds) were both present among the 24 regions in the EU which had less than 300 beds per 100 000 inhabitants; while the figure for Madrid was below the national average for Spain, although there were five other Spanish regions with lower ratios.

Among the 24 EU regions where the density of hospital beds per 100 000 inhabitants was below 300 beds (as shown by the lightest shade in **Map 2.4**), seven regions were located in each of Spain and Sweden and three in southern Italy. Note that data for the United Kingdom are only available at the national level, but that the United Kingdom was one of only three EU Member States — along with Ireland and Sweden — to record an average density of hospital beds below 300 per 100 000 inhabitants in 2011.

Among the multi-regional Member States, those regions with the lowest number of hospital beds per 100 000

inhabitants were often characterised as being rural areas with relatively low levels of population density, for example, the central Greek region of Sterea Ellada, Alentejo in Portugal, or Andalucía in southern Spain — each of these featured among the five EU regions with the lowest numbers of hospital beds per 100 000 inhabitants in 2011.

### Healthcare professionals

Regional data on healthcare professionals provides an alternative measure for studying the availability of healthcare resources. **Map 2.5** shows the number of [physicians](#) per 100 000 inhabitants in 2011. As with the data presented for hospital beds, the capital region in each Member State generally reported the highest concentration of physicians. In those multi-regional Member States for which data are available the exceptions to this rule included: the provinces of Brabant Wallon and Vlaams-Brabant which had higher ratios than the Belgian capital region; Severozapaden in Bulgaria; Bremen and Hamburg in Germany (data are only available for NUTS 1 regions); the Ciudad Autónoma de Ceuta, the Comunidad Foral de Navarra and the País Vasco in Spain; Provence-Alpes-Côte d'Azur in France; and Groningen and Utrecht in the Netherlands.

Given there are considerable differences in the definition of physicians that are used in the EU Member States, there is no overall figure for the number of physicians in the EU-28. Data are collected for three different concepts: namely, those of practising physicians, professionally active physicians and licensed physicians. The regional analysis that follows is based exclusively on what is considered to be the most important of these concepts in view of access to healthcare: that of practising physicians who provide services directly to patients.

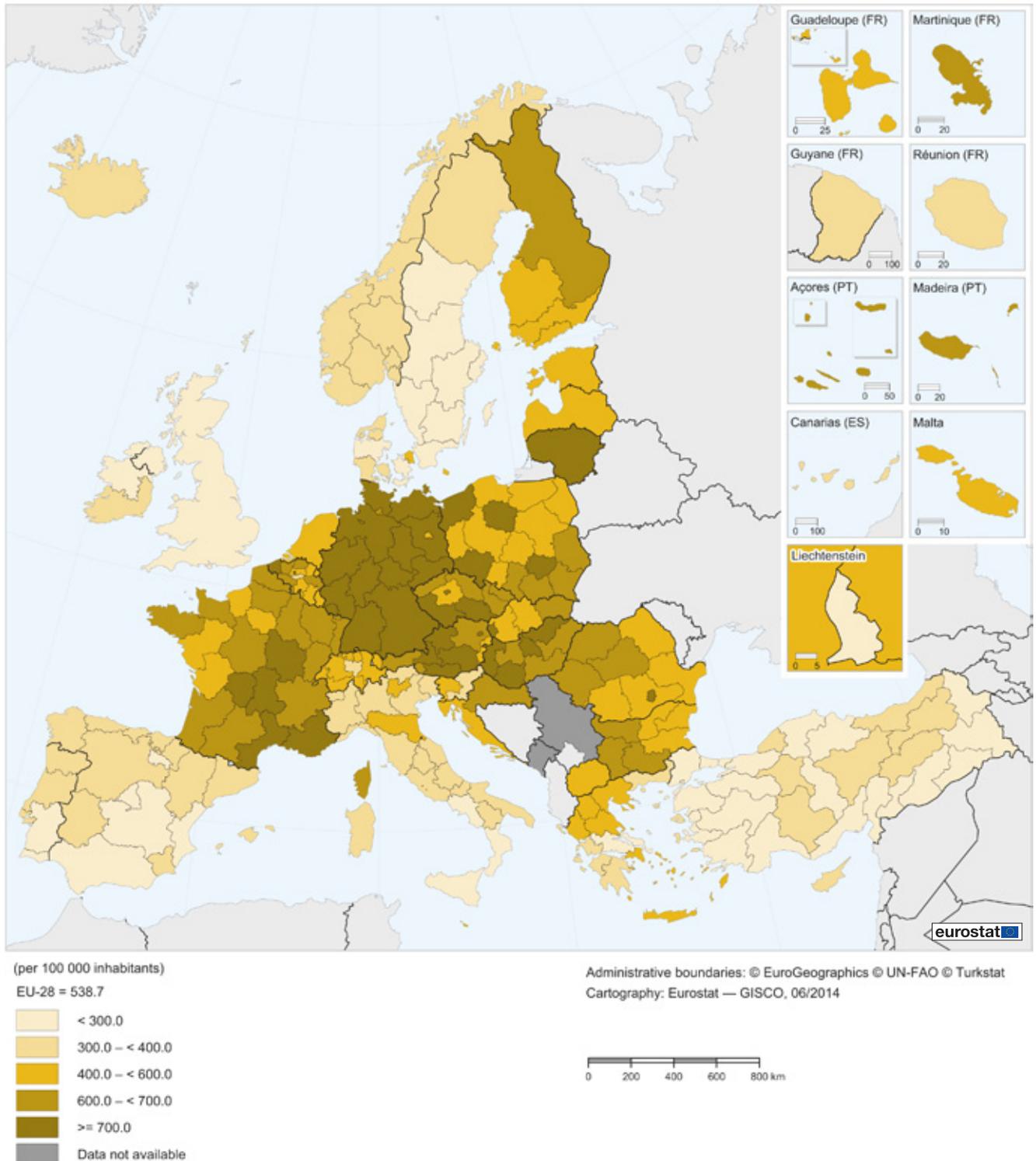
### *High density of practising physicians in the capital regions of neighbouring Austria, the Czech Republic and Slovakia*

The highest regional density of practising physicians across NUTS 2 regions in 2011 was recorded for the Spanish overseas region of the Ciudad Autónoma de Ceuta (1 048 practising physicians per 100 000 inhabitants), followed by another Spanish region — the Comunidad Foral de Navarra — and the Czech, Slovakian and Austrian capital regions of Praha, Bratislavský kraj and Wien. These were the only five regions in the EU where upwards of 600 practising physicians existed per 100 000 inhabitants (although in two Greek regions there were more than 600 active physicians per 100 000 inhabitants).

Among the 21 NUTS 2 regions where the number of practising physicians fell below 225 per 100 000 inhabitants in 2011 (shown by the lightest shade in **Map 2.5**), there were 10 out of the 16 regions in Poland, four out of eight Romanian regions, two regions each from Belgium, France (both overseas regions) and Hungary, and a single Slovenian region. The southerly Romanian region of Sud - Muntenia and the central Polish region of Wielkopolskie (which includes the city of Poznań) were the only regions where the number of practising physicians fell below 150 per 100 000 inhabitants.



**Map 2.4:** Hospital beds, by NUTS 2 regions, 2011 <sup>(1)</sup>  
(per 100 000 inhabitants)

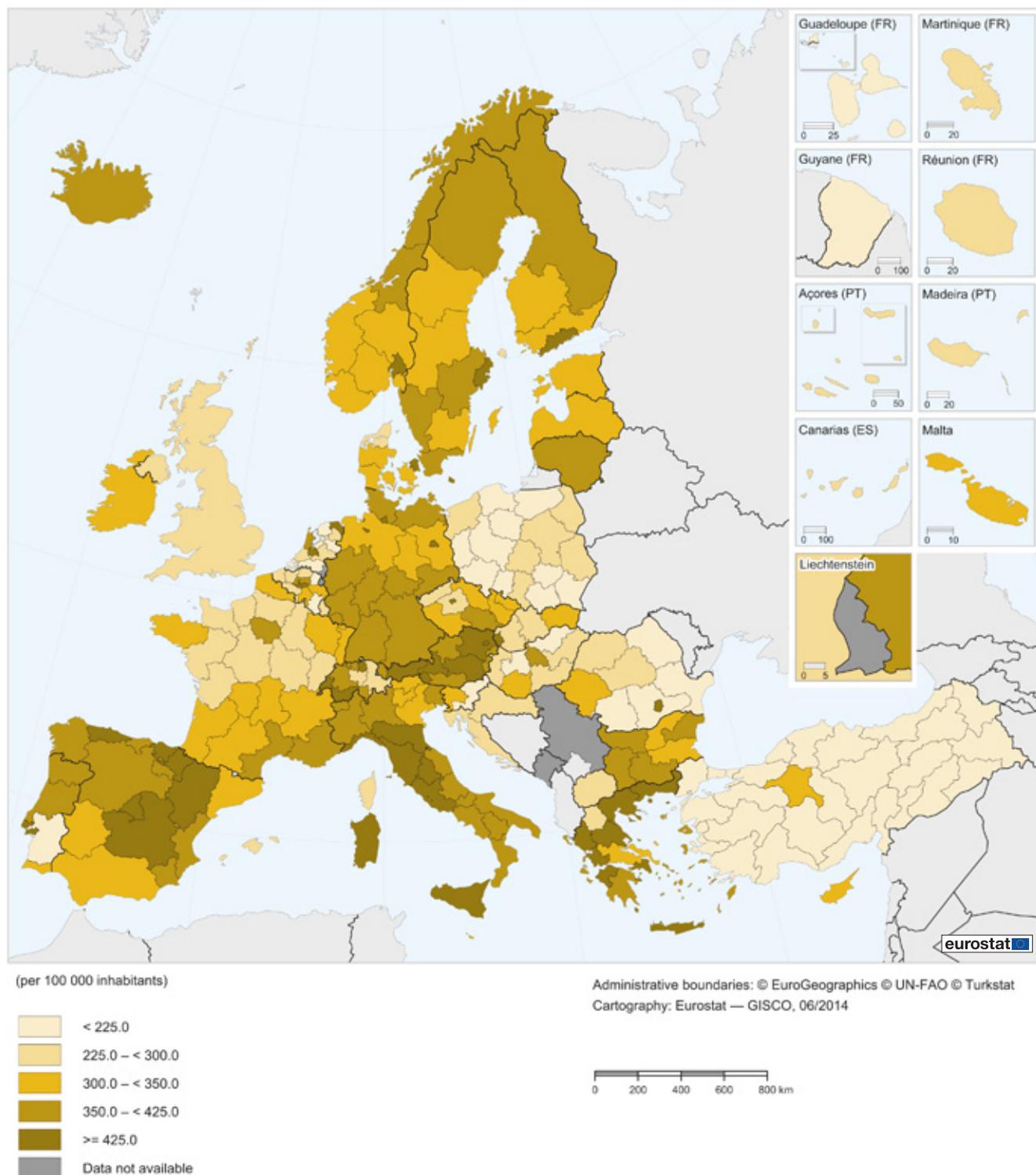


<sup>(1)</sup> EU-28, Denmark, Luxembourg and Sweden: 2010. Greece and the Netherlands: 2009. Germany: by NUTS 1 region. The Netherlands and the United Kingdom: national level. Portugal: estimates.

Source: Eurostat (online data code: [hlth\\_rs\\_bdsrg](#))



**Map 2.5:** Healthcare personnel — number of practising physicians, by NUTS 2 regions, 2011 <sup>(1)</sup>  
(per 100 000 inhabitants)



<sup>(1)</sup> The Netherlands and Sweden: 2010. Denmark: 2009. Croatia: 2008. Germany: by NUTS 1 region. Ireland and the United Kingdom: national level. Greece, the Netherlands, Slovakia, Finland, the former Yugoslav Republic of Macedonia and Turkey: active physicians. Ireland and Portugal: licensed physicians.

Source: Eurostat (online data code: [hlth\\_rs\\_prsrg](#))



## Data sources and availability

Eurostat compiles and publishes health statistics for EU regions, the individual EU Member States, as well as the EU-28 aggregate; in addition, a subset of information is available for EFTA and candidate countries. The data presented on causes of death is usually available for NUTS 2 regions, averaged over the three-year period from 2008–10; for Scotland (the United Kingdom) these statistics are only available for a single NUTS 1 region, while for Denmark and Croatia the data are available at the national level. Statistics presented for healthcare resources (hospital beds and the number of physicians) are also generally available for NUTS 2 regions with the exception of Germany (NUTS 1 regions for both indicators), Ireland (national level for the number of physicians), the Netherlands (national level for hospital beds) and the United Kingdom (national level for both indicators).

Health statistics collected during the period up to and including reference year 2010 were submitted by EU Member States to Eurostat on the basis of a gentleman's agreement. Regulation 1338/2008 of the European Parliament and of the Council of 16 December 2008 on [Community statistics on public health and health and safety at work](#) provides the legal basis for compiling statistics on: causes of death; healthcare; health status and health determinants; accidents at work; occupational diseases and other work-related health problems. Within the context of this regulation, an implementing regulation on [Community statistics on public health and health and safety at work, as regards statistics on causes of death](#) (328/2011) was adopted by the European Parliament and the Council on 5 April 2011; it provides a legal basis for the collection of statistics in each EU Member State from reference year 2011 onwards and will result in a broader range of statistics being collected.

A wide range of comparable statistics, for example, on healthcare systems, health-related behaviour, diseases and causes of death and a common set of EU health indicators, upon which there is EU-wide agreement regarding definitions, data collection and use is in the process of being established within the framework of the open method of coordination for health issues (see the Context section for more details).

### Causes of death

Statistics relating to causes of death provide information about diseases (and other eventualities, such as suicide or transport accidents) that lead directly to death; this information can be used to help plan health services. Many factors determine mortality patterns — intrinsic ones, such as age and sex, as well as extrinsic ones, such as environmental or social factors and living and working conditions — while individual factors, such as lifestyle, smoking, diet, alcohol consumption or driving behaviour, may also play a role.

Statistics on causes of death are based on information from death certificates. These statistics record the underlying cause of death: the definition adopted by the [World Health Assembly](#) is 'the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury'.

In addition to absolute numbers, [crude death rates](#) and [standardised death rates](#) are calculated for causes of death. Regional data are provided in the form of averages, as one-off events — for example, a flu epidemic or a terrorist attack — may result in particularly high numbers of deaths for a specific cause of death for a single reference period. As such, the average value of the latest three years for which information are available is used to moderate these effects; the latest reference period for such averages is generally 2008–10.

The crude death rate indicates mortality in relation to the total population, in other words, it is calculated as the number of deaths in the population over a given period divided by the number of inhabitants during the same period; it is expressed per 100 000 inhabitants. The crude death rate may be strongly influenced by population structure, as mortality is generally higher among older age groups. As such, a region with a population that is considered to be relatively old will probably experience more deaths than a region that is considered to be relatively young. In order to account for these differences in the structure of populations, the analysis presented is based on standardised death rates, which are weighted averages of age-specific mortality rates; the weighting factor is the age distribution of a standard reference population. Standardised death rates are expressed per 100 000 inhabitants and are calculated for the 0–64 age group (premature death), as well as for persons aged 65 and above, and for persons of all ages.

Deaths are classified to one of the 86 diseases (and other causes) that form part of the [European shortlist for causes of death \(2012\)](#), which is based on the [International statistical classification of diseases](#) and related health problems that is developed and maintained by the [World Health Organisation \(WHO\)](#).

Note that the standard reference population used in the compilation of Eurostat's standardised death rates was re-computed during the course of 2013. The new European standard population is the unweighted average of the individual populations of EU and EFTA countries for five-year age bands calculated on the basis of 2010 population projections, averaged over the period 2011–30. This process of recalculation may explain the sometimes considerable differences if comparing the data presented here to data that has been previously published in earlier editions of this publication.



## Healthcare

Non-expenditure healthcare data are mainly based on administrative sources, although a few countries compile this information from surveys; as a consequence, the information collected is not always comparable. Work is ongoing to improve this situation and it is anticipated that this will lead to legislative developments to provide a more coherent and robust set of statistics for healthcare resources in the future.

Regional statistics on healthcare resources concern human, physical and technical resources, including staff (such as physicians, dentists, nursing and caring professionals, pharmacists and physiotherapists) and equipment (such as hospital beds). Data are also available for output-related indicators that focus on hospital patients and their treatment(s), in particular for inpatients (although these statistics are not shown in this publication). As well as figures in absolute numbers, density ratios are provided to help analyse the availability of resources or the frequency of services rendered; generally these rates are expressed per 100 000 inhabitants.

Hospital bed numbers provide information about healthcare capacities; in other words, on the maximum number of patients who can be treated in hospitals. Available hospital beds (occupied or unoccupied) are those which are regularly maintained and staffed and are immediately available for the care of admitted patients. This indicator should ideally cover beds in all hospitals, including general hospitals, mental health and substance abuse hospitals, and other specialised hospitals. This statistic should include public as well as private sector establishments — although some EU Member States only provide data for the public sector.

Data on healthcare staff are provided regardless of whether the personnel are independent, employed by a hospital, or any other healthcare provider. Three main concepts are used for healthcare professionals: practising, professionally active and licensed to practise. Practising physicians provide services directly to patients; professionally active physicians include those who practice as well as those working in administration and research with their medical education being a pre-requisite for the job they carry out; physicians licensed to practice are those entitled to work as physicians plus, for example, those who are retired. To interpret **Map 2.5**, which generally presents data for the number of practising physicians per 100 000 inhabitants, it is necessary to consider that the statistics for Greece, the Netherlands, Slovakia, Finland, the former Yugoslav Republic of Macedonia and Turkey relate to professionally active physicians, while those for Ireland and Portugal relate to licensed physicians. As such, it is likely that the information shown for regions in these countries is somewhat over-estimated (when compared with those regions where the data refer to the number of practising physicians).

