

Health

3





Health is an issue of paramount importance. Determining the health status of an entire population is not an easy task and there is no single measure to do so. Nevertheless, a picture can be built up using indicators such as average life expectancy, morbidity and mortality measures. Other indicators that may be used include the infant mortality rate (due to its association with education and economic development), the prevalence of preventable diseases and information relating to the availability of healthcare services. Eurostat compiles and publishes all of these statistics at regional and national levels and for the EU-27.

This chapter addresses some of the most common causes of death, notably cancer and diseases of the circulatory and respiratory systems. It also presents regional information concerning healthcare services through an analysis of the number of hospital beds and numbers of healthcare professionals (physicians).

Main statistical findings

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 biological or social elements, and living and working conditions — while individual factors, such as lifestyle, smoking, alcohol consumption, driving or sexual behaviour, may also play a role. As a general rule, mortality is higher among men than women for all age groups.

Provisional figures indicate that 4.84 million persons died in the EU-27 in 2008. Diseases of the circulatory system accounted for almost 40% of this total (43.3% among women and 36.2% among men). Cancer (malignant neoplasms) accounted for just over one quarter (25.7%) of the total number of deaths in the EU-27 in 2008, while the third most prevalent causes of death were diseases of the respiratory system (7.9%).

These pathologies generally affect the population at advanced ages — for example, over 80% of the deaths in the EU-27 in 2008 resulting from diseases of the circulatory or respiratory system occurred among people aged 70 years and above. In contrast, a higher proportion of relatively young persons died from cancer: more than one third (37.9%) of the total number of deaths from malignant neoplasms were recorded among those aged between 40 and 70.

Diseases of the circulatory system

Diseases of the circulatory system include cerebrovascular diseases, ischaemic heart diseases and other heart diseases; these pathologies accounted for 39.7% of deaths in the EU-27 in 2008. The average standardised death rate from diseases of the circulatory system between 2006 and 2008 was 239.0 per 100 000 inhabitants, with the rate for men (294.8) just over 50% higher than that recorded for women (193.7).

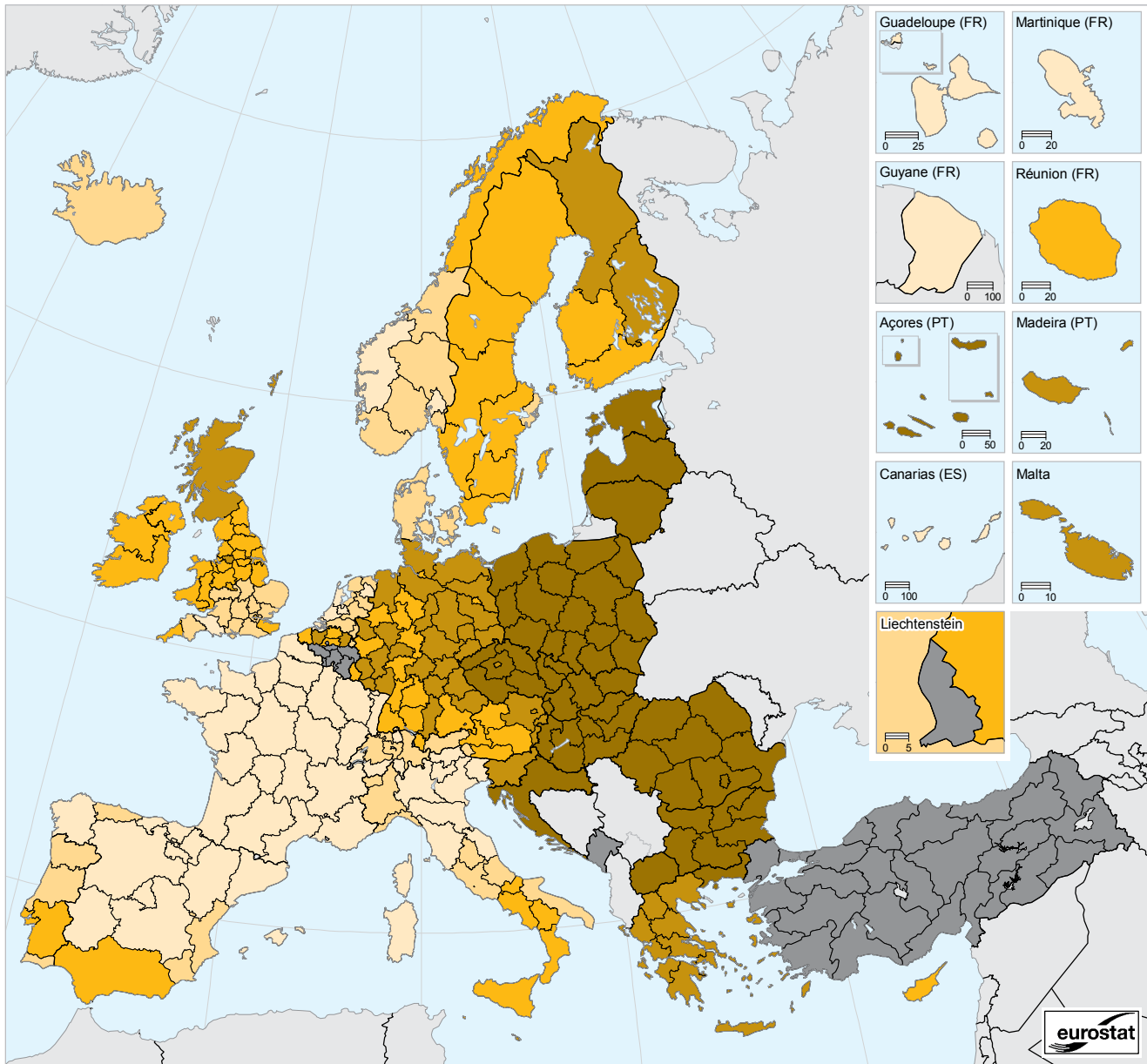
Diet is thought to play an important role in determining the death rates from diseases of the circulatory system, which tend to be higher in regions where people consume a large amount of saturated fats, dairy products and red meat.

Among the 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 2007; this was particularly true with respect to regions in Bulgaria and Romania, as each of these countries accounted for six of the 12 regions with the highest standardised death rates from diseases of the circulatory system. The highest death rates were recorded in the three Bulgarian regions of Severozapaden (733.0 per 100 000 inhabitants during the period 2006–08, which was more than three times as high as the EU-27 average), Yugoiztochen (678.6) and Severen tsentralen (665.6). Relatively high standardised death rates from diseases of the circulatory system were also recorded in the candidate countries of the former Yugoslav Republic of Macedonia and Croatia.

At the other end of the range, the lowest death rates from diseases of the circulatory system were systematically recorded across France and Spain, as 33 regions from these two countries were located at the bottom of the ranking. A range of studies suggest that there may be beneficial effects from moderate red wine consumption (particularly with meals) and a Mediterranean diet (particularly olive oil), and that these two factors could (at least in part) explain the lower death rates observed in southern Europe and France. Another factor that may explain (to some degree) regional patterns of death rates is the speed with which hospital treatment can be made available to somebody suffering a heart attack or a stroke. For example, the lowest death rates from diseases of the circulatory system in France and Spain were registered in the two regions containing the capital cities (Île de France and Comunidad de Madrid); both these regions have a high level of population density, and patients in need of medical assistance could expect to travel relatively short distances to receive the necessary attention. The lowest standardised death rates from diseases of the circulatory system during the period 2006–08 were recorded in the three French regions of Île de France (104.3 per 100 000 inhabitants), Rhône-Alpes (116.9, which contains Lyon) and Provence-Alpes-Côte d'Azur (118.1, which contains Marseille).

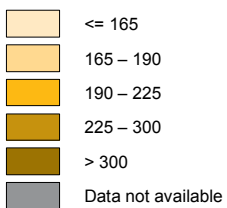


Map 3.1: Deaths from diseases of the circulatory system, by NUTS 2 regions, 2006–08 ⁽¹⁾
(standardised death rate per 100 000 inhabitants)

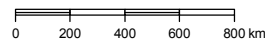


(standardised death rate per 100 000 inhabitants)

EU-27 = 239



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Cartography: Eurostat — GISCO, 04/2012



⁽¹⁾ EU-27 and Ireland, provisional; Malta, the United Kingdom and Switzerland, 2005–07; Belgium, 2000–02; Scotland (UKM), by NUTS 1 regions; Denmark, Slovenia and Croatia, national level.
Source: Eurostat (online data code: [hlth_cd_ysdr1](#))



A higher number of men than women died from diseases of the circulatory system in each of the regions of the EU-27 in 2008. The Baltic Member States recorded the largest differences between standardised death rates for men and women, while there were generally wide disparities between the sexes in many of the other Member States that joined the EU in 2004 or 2007, as well as in France and Finland. On the other hand, there was a relatively low difference between male and female death rates from diseases of the circulatory system in all Greek regions, as well as in selected regions of Spain, Portugal and southern Italy; this pattern was also repeated in the former Yugoslav Republic of Macedonia.

The three Bulgarian regions with the highest overall standardised death rates were also the three EU-27 regions with the highest male death rates from diseases of the circulatory system — Severozapaden (893.6 per 100 000 male inhabitants), Severen tsentralen (907.4) and Yugoiztochen (831.7); they were followed by the Nord-Vest region of Romania and Latvia. At the other end of the range, the regions with the lowest male death rates from diseases of the circulatory system were in France and Spain: Île de France (137.0 per 100 000 male inhabitants), the Comunidad de Madrid (150.6) and Rhône-Alpes (152.7).

The pattern for women was similar (although rates were at a lower level), as the five regions with the highest female death rates during the period 2006–08 included the three Bulgarian regions of Severozapaden (599.8 per 100 000 female inhabitants), Yugoiztochen (554.9) and Severen tsentralen (551.5), as well as the Romanian regions of Sud-Vest Oltenia and Nord-Vest. The lowest death rates for women were recorded in the French regions of Île de France (80.4 per 100 000 female inhabitants), Provence-Alpes-Côte d'Azur (89.1) and Rhône-Alpes (90.1).

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. As noted above, malignant neoplasms were the second most common cause of death in 2008, accounting for 25.7% of deaths in the EU-27. The standardised death rate from cancer between 2006 and 2008 was 176.0 per 100 000 inhabitants, with the rate for men (234.4) around 75% higher than that for women (133.9).

Among the regions of the EU-27, standardised death rates from malignant neoplasms were highest in the Hungarian region of Észak-Alföld (258.1 deaths per 100 000 inhabitants) and lowest in the French overseas department of Guyane (113.2). All seven Hungarian NUTS level 2 regions were present among the top 10 regions with the highest standardised death rates from malignant neoplasms over the 3-year period 2006–08; the other three regions were also located in central or eastern Europe, with two from Poland

(Kujawsko-pomorskie and Pomorskie) and one from the Czech Republic (Severozápad).

The lowest regional death rates from cancer were recorded in the French overseas regions, southern Europe, a cluster of regions in southern Germany and Austria, as well as most of the regions in Finland and Sweden; low death rates from cancer were also recorded throughout Switzerland.

An analysis by sex shows that standardised death rates from malignant neoplasms for men ranged from 378.5 per 100 000 male inhabitants in Észak-Alföld down to 135.8 in Guyane; whereas for women the range was narrower, peaking at 188.6 per 100 000 female inhabitants in Közép-Magyarország (Hungary) and falling to a low of 88.6 in Ipeiros (Greece).

The highest death rates for different types of cancer in the EU were recorded for malignant neoplasms of the larynx, trachea, bronchus and lung. Across the whole of the EU-27, standardised death rates for cancers of the larynx, trachea, bronchus and lung averaged 40.0 per 100 000 inhabitants; however, there was a considerable difference between the sexes, as the male death rate (66.8 per male 100 000 inhabitants) was more than three times as high as the corresponding figure among women (19.1).

The EU-27 standardised death rate (for women) from breast cancer (24.2 per female 100 000 inhabitants over the period 2006–08) was higher than that recorded for cancers of the larynx, trachea, bronchus and lung. Indeed, breast cancer was the leading cause of death among women in most regions of the EU: the highest rates were recorded in Friesland in the Netherlands (35.9), Trier in Germany (31.7) and București - Ilfov in Romania (31.3), while the lowest rates were found in the French overseas department of Réunion (14.1), Cantabria in Spain (15.2) and Ionia Nisia in Greece (15.3).

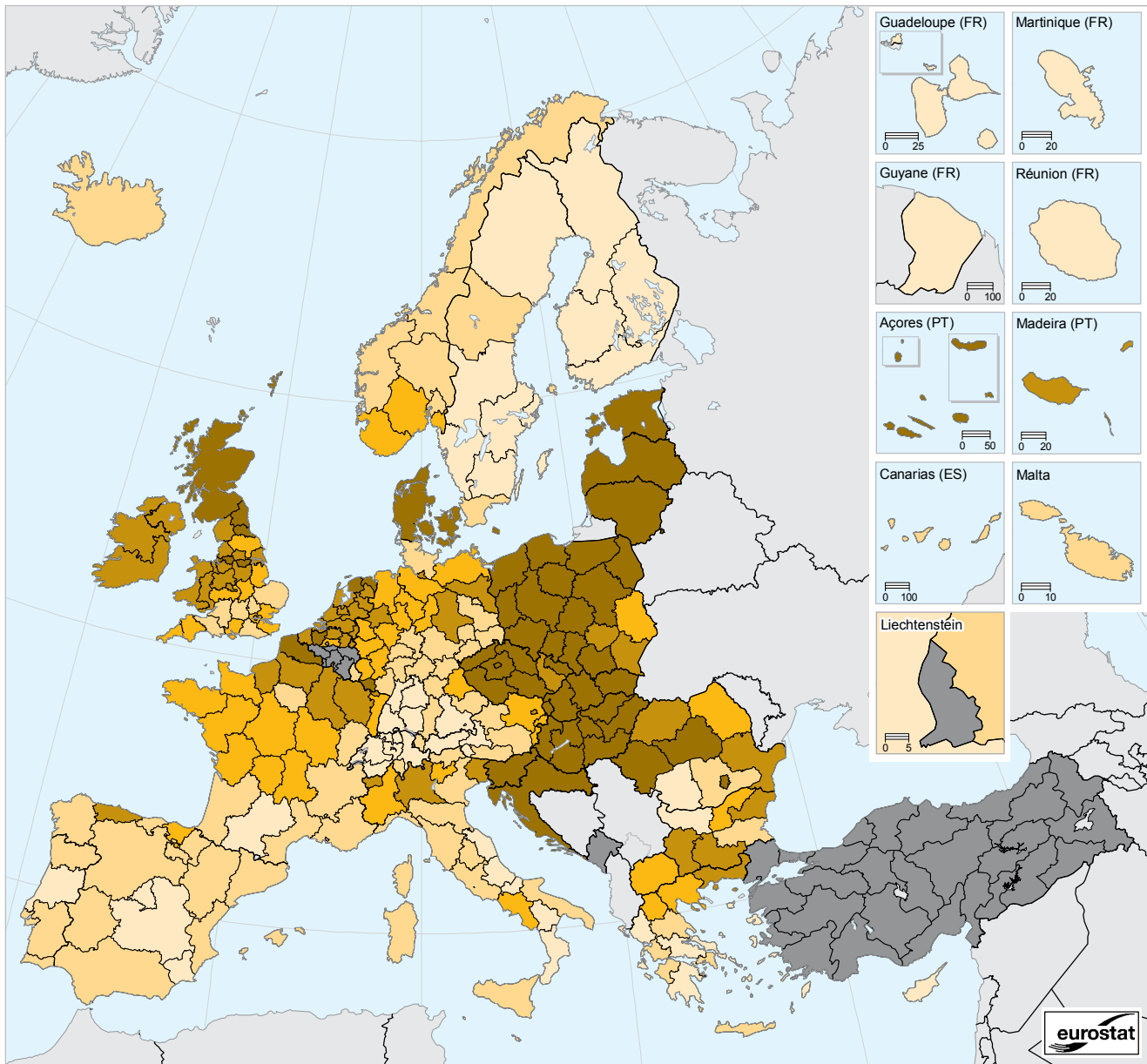
Malignant neoplasm of the prostate is another gender-specific cancer. Its standardised death rate (22.1 per 100 000 male inhabitants for the EU-27) was broadly comparable with the death rate recorded for women from breast cancer. Prostate cancer was generally the second most common cause of death from cancers among men, behind deaths from malignant neoplasms of the larynx, trachea, bronchus and lung. The highest standardised death rates from prostate cancer were recorded for the French overseas regions of Martinique (47.0) and Guadeloupe (41.1), the Finnish island region of Åland (44.2) and the Border, Midland and Western region of Ireland (41.3 for the period 2007–09). The lowest death rates from prostate cancer were recorded in the Romanian regions of Sud-Vest Oltenia (10.2) and Sud - Muntenia (10.8) and the Spanish Ciudad Autónoma de Melilla (10.5).

Diseases of the respiratory system

Respiratory diseases include infectious acute respiratory diseases (such as influenza and pneumonia) and chronic lower



Map 3.2: Deaths from malignant neoplasms, by NUTS 2 regions, 2006–08 ⁽¹⁾
(standardised death rate per 100 000 inhabitants)



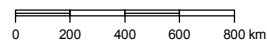
(standardised death rate per 100 000 inhabitants)

EU-27 = 176

- <= 150
- 150 – 165
- 165 – 175
- 175 – 190
- > 190
- Data not available

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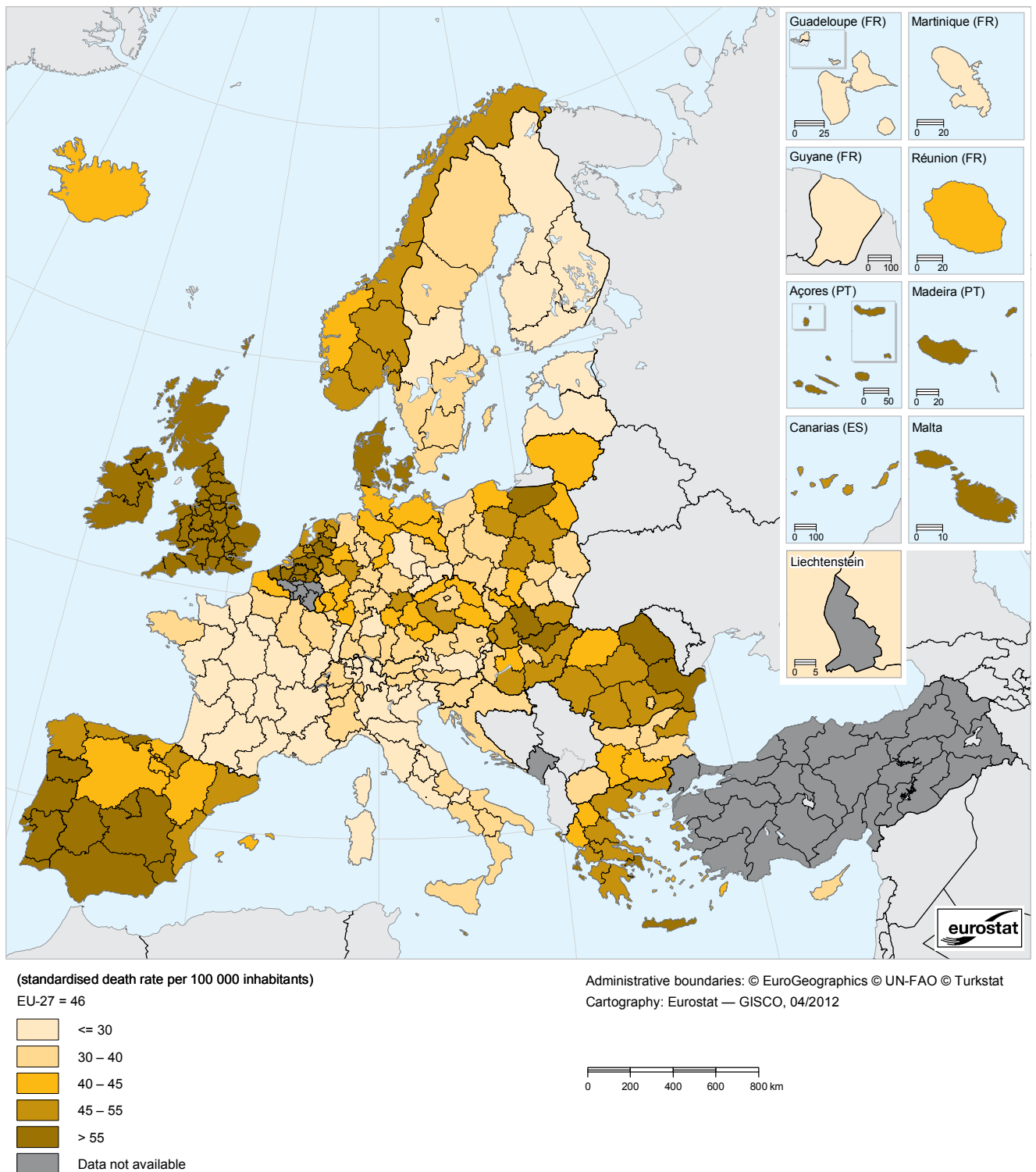
Cartography: Eurostat — GISCO, 04/2012



⁽¹⁾ EU-27 and Ireland, provisional; Malta, the United Kingdom and Switzerland, 2005–07; Belgium, 2000–02; Scotland (UKM), by NUTS 1 regions; Denmark, Slovenia and Croatia, national level.
Source: Eurostat (online data code: [h1th_cd_ysdr1](#))



Map 3.3: Deaths from diseases of the respiratory system, by NUTS 2 regions, 2006–08 ⁽¹⁾
(standardised death rate per 100 000 inhabitants)



⁽¹⁾ EU-27 and Ireland, provisional; Malta, the United Kingdom and Switzerland, 2005–07; Belgium, 2000–02; Scotland (UKM), by NUTS 1 regions; Denmark, Slovenia and Croatia, national level.
Source: Eurostat (online data code: [hlth_cd_ysdr1](#))



respiratory diseases (such as asthma). They were the third most frequent cause of death in the EU-27 in 2008, accounting for 7.9% of all deaths. Diseases of the respiratory system mainly affected older people, as nine out of 10 deaths from these diseases occurred after the age of 65. Chronic lower respiratory diseases (40.9% of all deaths from respiratory diseases) and pneumonia (33.5%) were responsible for the highest number of deaths from respiratory diseases in the EU-27 in 2008; while asthma (1.9%) and influenza (0.3%) accounted for relatively few deaths.

The average standardised death rate (2006–08) from diseases of the respiratory system in the EU-27 was 45.9 per 100 000 inhabitants, with the rate for men (65.9) almost double that recorded for women (33.2). Some of the highest death rates were recorded in Denmark (data only available at the national level), Ireland, Portugal and the United Kingdom, as well as many regions of Belgium and Spain. The highest death rates from diseases of the respiratory system were reported in the Portuguese island region of Madeira (144.6 deaths per 100 000 inhabitants during the period 2006–08), while several metropolitan areas in the north and centre of the United Kingdom — for example, Greater Manchester, Merseyside, West Yorkshire and the West Midlands — also recorded relatively high death rates; there were many regions in central and northern parts of the United Kingdom that reported a standardised death rate from respiratory diseases of more than 80 deaths per 100 000 inhabitants during the period 2005–07.

At the other end of the scale, the regions with the lowest death rates from respiratory diseases were all island regions of France, including the overseas regions of Martinique and Guadeloupe, and Corse. Otherwise, the regions with the lowest death rates were often located in predominantly rural areas of France, the north-eastern EU (Estonia, Latvia and Finland) and several regions in Germany, central and northern Italy and Austria.

On the basis of a comparison of NUTS level 2 regions, the widest divergences in death rates between the sexes was recorded in the Baltic Member States, where standardised death rates for men were more than four times as high as those for women in each of Estonia, Latvia and Lithuania. The difference in death rates was much lower in Denmark (national level), as well as in the three Greek regions of Attiki, Ionia Nisia and Thessalia, as male death rates were no more than 30% higher than the corresponding female rates.

Hospital beds

For many years, the number of hospital beds across the EU has been decreasing. During the last decade this pattern has continued, as the number of available beds in hospitals fell by a further 10.7% in the EU-27 between 2000 and 2009. The total number of available hospital beds in the EU-27 was 2.76 million in 2009; equivalent to one bed for every

181.5 persons, or 550.9 hospital beds per 100 000 inhabitants. Sweden (277.1 available hospital beds per 100 000 inhabitants), Spain (319.3), the United Kingdom (330.2) and Portugal (334.9) had the lowest number of beds in relation to their respective populations, while the highest ratios were reported for a group of central European countries: Germany (822.9), Austria (765.0), Hungary (715.0) and the Czech Republic (710.1).

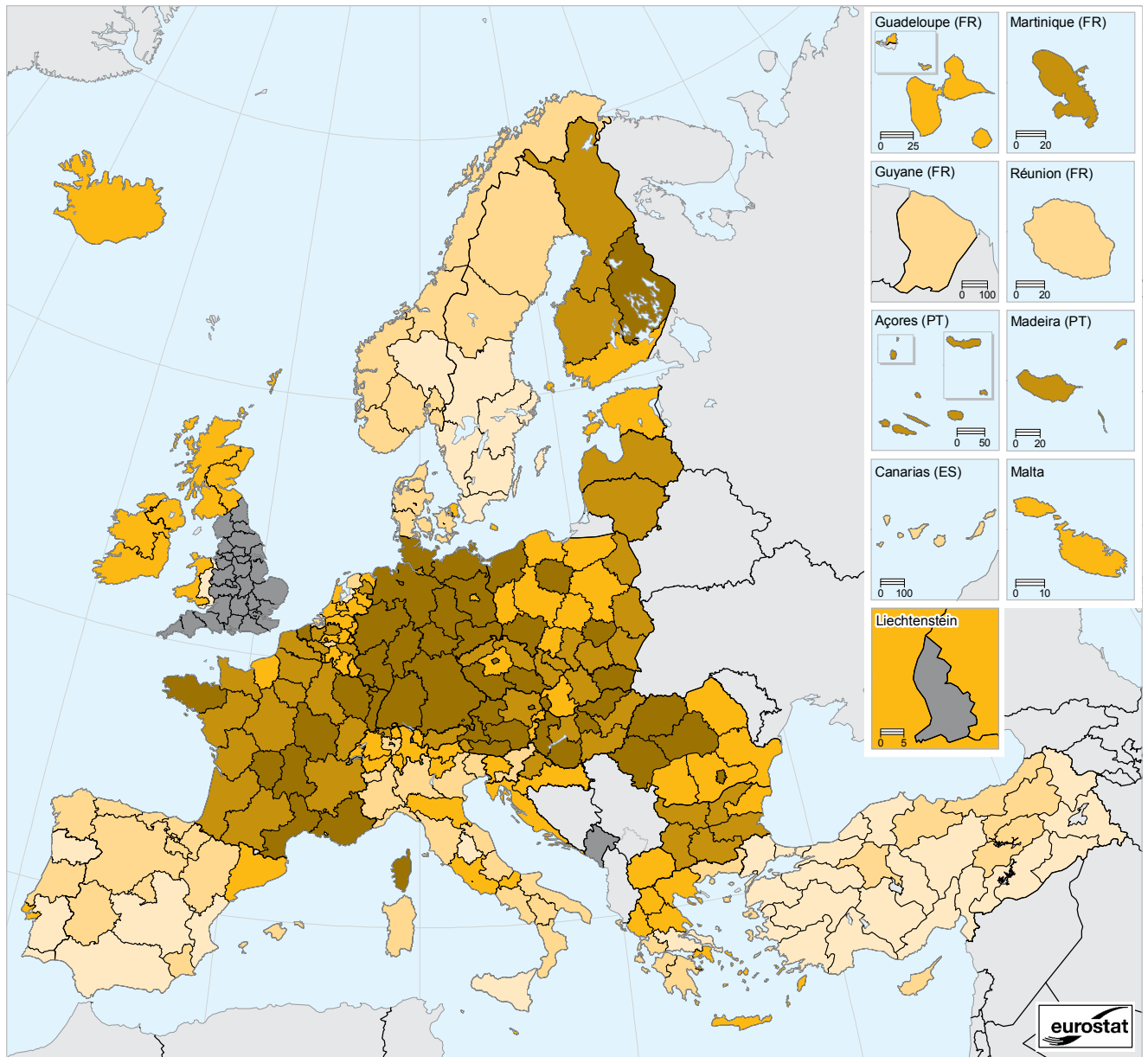
The EU-27 regions with the lowest number of hospital beds were generally in those countries that reported a low ratio of hospital beds relative to their national populations — often, the regions at the lower end of the ranking were rural areas with relatively low levels of population density, for example, Alentejo in Portugal, East Wales in the United Kingdom, Andalucía in Spain, or Sterea Ellada in Greece. One of the main exceptions to this rule was Flevoland (Netherlands) which had 159.2 hospital beds per 100 000 inhabitants, the lowest number of hospital beds in relation to its population across all NUTS level 2 regions in the EU in 2009; this was less than half the next lowest value in a Dutch region. At the other end of the ranking, the highest number of available hospital beds was recorded in the north-eastern German region of Mecklenburg-Vorpommern (1 247.7 beds per 100 000 inhabitants), followed by its neighbouring Polish region of Zachodniopomorskie (1 124.5); these were the only regions in the EU-27 to record ratios above the level of 1 000 beds.

The density of hospital beds varied considerably between regions in some Member States. As already indicated, this was particularly the case in the Netherlands, where there were, on average, 630 hospital beds per 100 000 inhabitants in Drenthe in 2009 compared with only 159 beds per 100 000 inhabitants in Flevoland. A similar pattern was observed in Greece where there were 584 hospital beds per 100 000 inhabitants in Attiki (which includes Athens) compared with 189 in Sterea Ellada. At the other end of the range, the density of hospital beds was relatively homogeneous across Hungarian regions — from 777 beds per 100 000 inhabitants in Közép-Magyarország (which includes Budapest) to 638 beds in Dél-Alföld — as well as in Denmark — from a high of 413 beds in Hovedstaden (the region that includes Copenhagen) to 316 beds in Midtjylland.

The highest ratio of hospital beds to population was often recorded in the capital city region of each Member State; this may be due to capital cities often having specialist 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) and Stockholm (Sweden) were the two main exceptions to this rule, as each of these capital city regions reported the lowest number of available hospital beds in

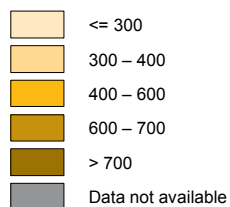


Map 3.4: Hospital beds, by NUTS 2 regions, 2009 ⁽¹⁾
(per 100 000 inhabitants)



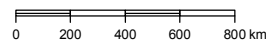
(per 100 000 inhabitants)

EU-27 = 551



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Cartography: Eurostat — GISCO, 04/2012



⁽¹⁾ Ireland, Spain, Cyprus, Lithuania and Luxembourg, 2008; Iceland, 2007; Estonia, 2006; the former Yugoslav Republic of Macedonia, 2004; the Netherlands, 2002 and estimates; Germany, by NUTS 1 regions.

Source: Eurostat (online data code: [hlth_rs_bdsrg](#))



their respective countries; German data are only available by NUTS level 1 regions.

Healthcare professionals

Regional data on healthcare professionals provide an alternative measure (compared with that for hospital beds) in order to study the availability of healthcare resources; Map 3.5 shows the rate of practising physicians per 100 000 inhabitants in 2009.

Given the differences in the concept of physicians between the Member States, there is no overall figure for the number of physicians in the EU-27. The analysis that follows is based on the most common concept employed among the Member States, namely, that of practising physicians. Across those regions for which data are available, the highest ratio of practising physicians per 100 000 inhabitants was recorded for the Italian region of Liguria (807 in 2009), followed by Ciudad Autónoma de Ceuta (Spain), Praha (the Czech Republic) and Wien (Austria) — the only other regions to report a ratio above 650 physicians per 100 000 inhabitants. At the other end of the range, there was only one region in the EU that reported fewer than 150 practising physicians per 100 000 inhabitants in 2009; this was the Sud - Muntenia region of Romania. There were fewer than 200 practising physicians per 100 000 inhabitants in six Polish regions, three additional Romanian regions and one region each in Slovenia and Finland.

As with the data presented for hospital beds, the capital city region often reported some of the highest concentrations of physicians; this was the case, for example, for Praha and Wien, as well as Berlin, the Comunidad de Madrid and Hovedstaden (Denmark).

Data sources and availability

Regulation (EC) No 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 is the legal framework for compiling statistics on: causes of death; healthcare; health status and health determinants; accidents at work; occupational diseases and other work-related health problems. The regulation is seen as a key statistical element that should help contribute towards a sustainable health monitoring system across the EU.

Causes of death

Cause of death statistics 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 for causes of death are provided at national and regional levels. Regional data are provided in the form of 3-year averages, along with yearly crude death rates for some age groups. 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 3 years for which information is available is used to moderate these effects; for this publication, such averages are based upon the period 2006–08.

The crude death rate indicates mortality in relation to the total population. It is expressed per 100 000 inhabitants; in other words, it is calculated as the number of deaths in the population over a given period, divided by the population during the same period. The crude death rate may be strongly influenced by population structure. Because mortality is higher among older age groups, a regional population considered to be relatively old will probably experience more deaths than a population that is considered to be relatively young.

The standardised death rate is a weighted average of age-specific mortality rates. The weighting factor is the age distribution of a standard reference population. The standard European population defined by the World Health Organisation (WHO) is used for this purpose. 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. Causes of death are classified as one of 65 diseases that form part of a European shortlist, which is based on the international statistical classification of diseases and related health problems that has been developed and maintained by the WHO.

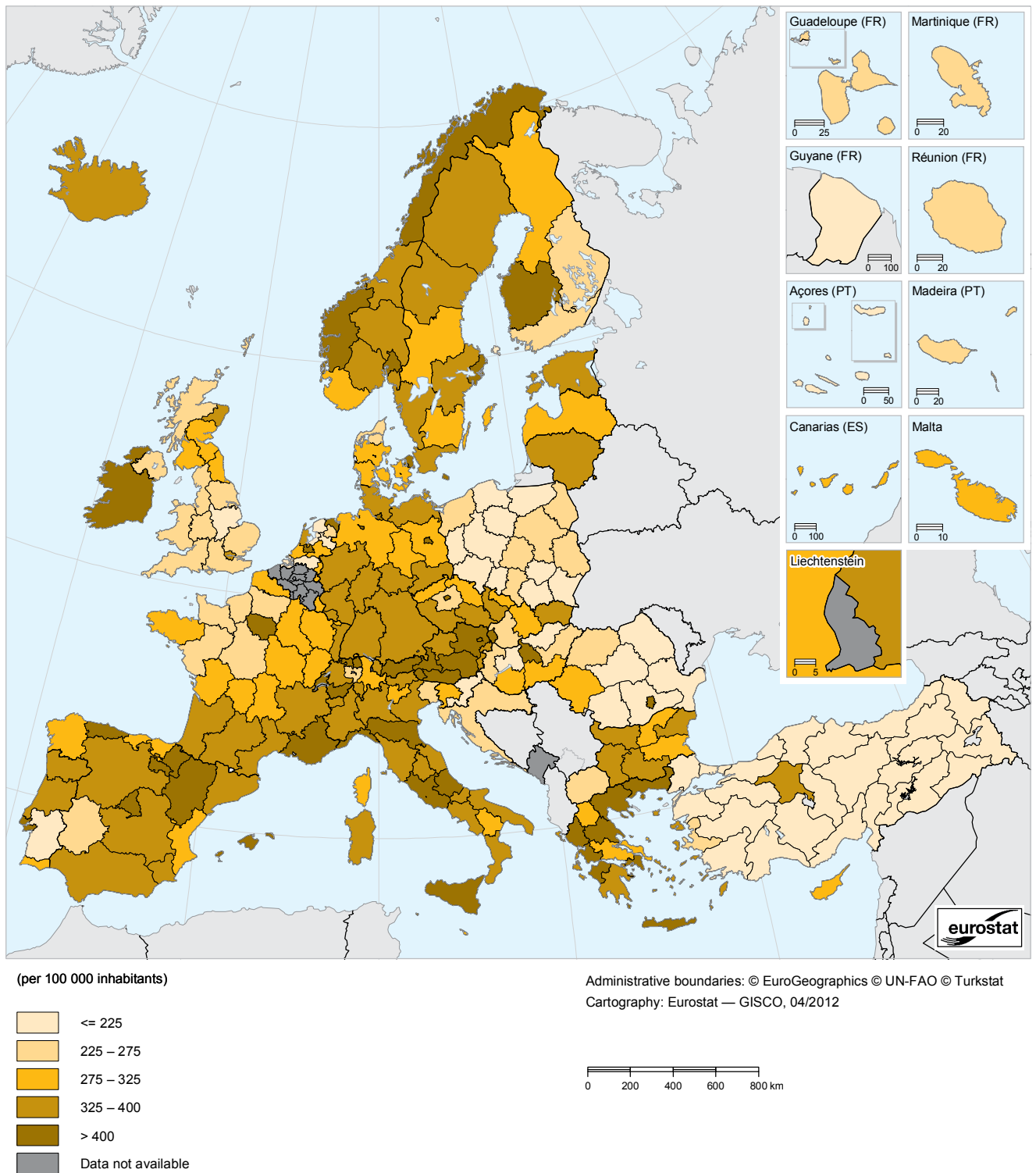
Healthcare

Non-expenditure healthcare data are mainly based on administrative sources; a few countries compile this information from surveys. As a consequence, the information collected is not always comparable. Resource-related healthcare data concern human, physical and technical resources, including staff (such as physicians, dentists, nursing and caring professionals, pharmacists and physiotherapists) and hospital beds. In addition, regional data are available for output-related data that focus on hospital patients and their treatment(s), in particular for inpatients (although these statistics are not shown in this edition of the publication). As well as data in absolute numbers, density rates are used to indicate the availability of resources or the frequency of services rendered, expressed per 100 000 inhabitants.

Hospital bed numbers provide information about healthcare capacities; in other words, on the maximum number of



Map 3.5: Healthcare personnel — number of practising physicians, by NUTS 2 regions, 2009 ⁽¹⁾
(per 100 000 inhabitants)



⁽¹⁾ Greece, France, the Netherlands, Slovakia, the former Yugoslav Republic of Macedonia and Turkey, professionally active physicians; Ireland and Portugal, licensed physicians; Denmark, Estonia, Cyprus, Lithuania, the Netherlands and Sweden, 2008; Luxembourg, 2007; the former Yugoslav Republic of Macedonia, 2006; the Netherlands and the United Kingdom, estimates; Germany, Ireland, England and Wales, by NUTS 1 regions; Croatia, national level.

Source: Eurostat (online data code: [hlth_rs_prsrg](#))



patients who can be treated in hospitals. Available hospital beds (occupied or unoccupied) are those which are regularly maintained and staffed and 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 specialty hospitals. The statistics should include public as well as private sector establishments — although some Member States provide data only for the public sector.

Data on healthcare staff are provided irrespective of the sector of employment (in other words, regardless of whether the personnel are independent, employed by a hospital or any other healthcare provider). Three main concepts are used for health professionals: practising, professionally active and licensed to practise. Practising physicians provide services directly to patients; professionally active physicians include those who practise as well as those working in administration and research with their medical education being a prerequisite for the job they carry out; physicians licensed to practise are those entitled to work as physicians plus, for example, those who are retired. To interpret Map 3.5, which presents data for the number of practising physicians per 100 000 inhabitants, it is necessary to consider that the statistics for Greece, France, the Netherlands, Slovakia, 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 data for regions in these countries are somewhat over-estimated (when compared with information for the number of practising physicians).

Further information

For further information about health statistics please consult Eurostat's website at <http://epp.eurostat.ec.europa.eu/portal/page/portal/health/introduction>.

Context

Health is an important priority for Europeans, who expect to have a long and healthy life, to be protected against illnesses and accidents and to receive appropriate healthcare. Health issues cut across a range of topics — including consumer protection (food safety issues), workplace safety and

environmental or social policies. The policy areas covered by these health-related issues fall under the remits of the [Directorate-General for Health and Consumers](#) and of the [Directorate-General for Employment, Social Affairs and Inclusion](#).

The competence for the organisation and delivery of health services and [healthcare](#) is largely held by the Member States, while the [European Union \(EU\)](#) complements the Member States' health policies through launching actions such as those in relation to cross-border health threats or patient mobility.

A first programme for Community action in the field of public health covered the period 2003–08. On 23 October 2007, the [European Commission](#) adopted a new strategy 'Together for health: a strategic approach for the EU 2008–2013' (COM(2007) 630). In order to bring about the changes identified within this new strategy, the [second programme of Community action in the field of health](#) came into force from 1 January 2008. It puts in place an overarching, strategic framework for policy developments relating to health in the coming years; it has four main principles and three strategic themes for improving health in the EU. The four principles are:

- taking a value-driven approach;
- recognising the links between health and economic prosperity;
- integrating health in all policies;
- strengthening the EU's voice in global health issues.

The three strategic themes are:

- fostering good health in an ageing Europe;
- protecting citizens from health threats;
- looking to develop dynamic health systems and new technologies.

Within this strategy there is a strong need for comparable data on health and health-related behaviour, diseases and health systems which need to be based on common EU health indicators for which there is Europe-wide agreement regarding definitions, data collection and use — the latter includes the development of indicators relating to [healthy life years \(HLY\)](#) and [European Community health indicators \(ECHI\)](#).