

# Healthcare in Europe: A review of healthcare data before COVID-19

The figures given in the present document provide the most up-to-date comparative picture of the situation of healthcare and hospitals

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Even before the COVID-19 crisis, European healthcare systems were facing numerous challenges: the long-term impacts of the financial and economic crises; the increasing demand of an ever-expanding ageing population; increasing numbers of chronic patients; increasing requests and availability of technological innovations; and new roles, new skills, and new responsibilities for the health workforce.

The figures in this document provide the most up-to-date comparative picture of the situation of healthcare and hospitals and aim to provide an overview of the healthcare systems within the European Union member states before the pandemic. This edition will not only focus on hospital care but also on long-term care, a sector greatly impacted by the COVID-19 pandemic and often over-looked in healthcare but increasingly important with the rising elderly population. It will also cover ambulatory care. Unfortunately, the data used for these two new additions are scarce, and the figures presented must be interpreted with caution, but at least they give a good indication of the pre-pandemic state of the health care systems.

The main source of data and figures is OECD Health Statistics (last update July 2021). Data on health expenditure as percentage of total general government expenditure and on hospital beds in public or private owned hospitals have been extracted from the Eurostat Database on Health (last update July 2021). All European Union member states belonging to OECD are considered, plus Switzerland, United Kingdom (UK) and Serbia (as HOPE has members in those countries), when data are available. In the text, these are reported as EU. When averages are reported, they result from our own calculation. The considered trends normally refer to the years 2016–2019. When data in 2016 or 2019 are not available, or they have not been gathered for enough countries, the closest year is considered.

## Financial resources for healthcare

The current health expenditure per capita shows huge diversity in Europe (Chart 1). The amount of total current health expenditure per capita in 2019 was encompassed in the EU between 2074 PPP\$ (purchasing power parity) in Latvia and 6518 PPP\$ in Germany, with an average of 4153 PPP\$. In Switzerland, this indicator even

reached 7138 PPP. Since 2016, the total health expenditure per capita has varied positively in all the countries of this analysis. Major increases have been seen in Lithuania (30%), Czechia (28%) and Latvia (29%). Smaller increases were registered in Greece (4%) and Switzerland (5%).

Current public health expenditure includes all schemes aimed at ensuring access to basic health care for the whole society, a large part of it, or at least some vulnerable groups. Included are government schemes, compulsory contributory health insurance schemes, and compulsory medical savings account. Current private health expenditure includes voluntary health care payments schemes and household out-of-pocket payments. The first component includes all domestic pre-paid health care financing schemes under which the access to health services is at the discretion of private actors. The second component corresponds to direct payments for health care goods and services from the household primary income or savings: the payment is made by the user at the time of the purchase of goods or use of service.<sup>1</sup>

In 2019, the percentage of public sector health expenditure to the total current health expenditure was higher than 70% in most countries, except for Latvia (61%), Greece (60%), Portugal (61%), Hungary (68%), Lithuania (66%) and outside the EU, in Switzerland (67%). In Luxembourg, Sweden and Germany, it was above 85%. The private share ranged from 40% in Greece to 15% in Germany, Sweden and Luxembourg.

In the last years, health expenditure of the public sector accounted on average for 77% of total health expenditure.

In 2019, the percentage of government expenditure devoted to health in the total health expenditure ranged from 11% in Greece to 19% in Ireland.

The average trends illustrated in Chart 2 are generally positive between 2008 and 2019. In some countries such as Greece, expenditure decreased until 2015, when it started to increase again.

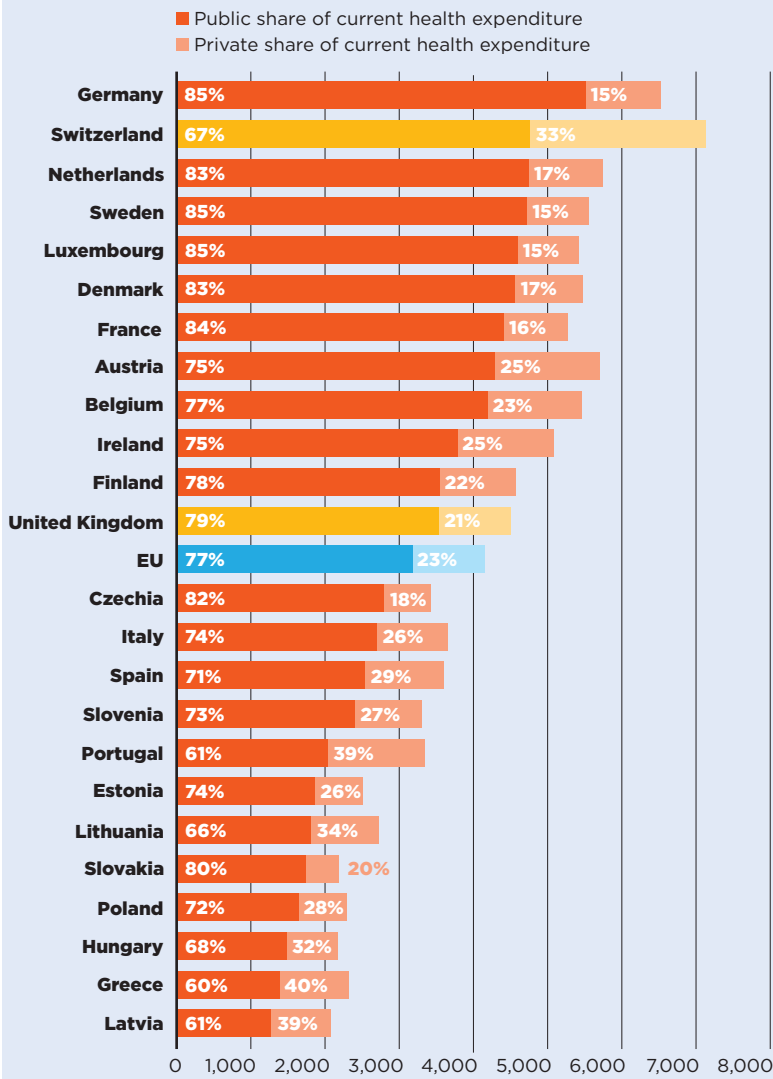
Out-of-pocket payments show the direct burden of medical costs that households bear at the time-of-service use.

In 2019, the household private contribution to healthcare spending in the EU accounted on average for 18% of total current health expenditure, a small decrease from



CHART 1

**Total current health expenditure in PPP\$ per capita, share of public and private: Year 2019**



the 20% in 2016.

In 2019, the private contribution to healthcare spending was around 18% in the EU, ranging from 9% in France to 37% in Latvia. The other lowest values were registered in Luxembourg (10%), the Netherlands (11%) and Slovenia (12%), while the other highest values were registered in Greece (35%) and Lithuania (32%). It is worth noting that Latvia, Lithuania, and Greece are among the countries with the lower current health expenditure on health in PPP\$ that year.

Between 2016 and 2019 the household out-of-pocket payments in PPP\$ per capita have increased in all the EU countries because of the increase in the demand of healthcare services and due to an increase in the total health expenditure. The exceptions were Switzerland (0%) and Luxembourg (-1%). The most relevant increases registered were in Estonia and Lithuania (30%). While the EU average was 11% increase.

Chart 3 illustrates the 2016–2019 trend of both the total current health expenditure per capita and the private households' out-of-pocket payments on health. The chart highlights the fast growth of both expenses in the countries of the upper right part of the graph, such as Lithuania, Czechia, and Estonia. For those in the lower-left of the chart, the out-of-pocket payments grew more slowly compared with the total current health expenditure.

In most of the EU member states, 30%–40% of current health expenditure (excluding investments and capital outlays) is devoted to hospital care.

More than 30%–40% of current health expenditure finances hospital care, whereas 18%–30% is devoted to ambulatory care and 4%–24% funds long-term care, showing a continued hospital-centric health system in 2019.

In 2019, current hospital expenditure represented about 41% of total current health expenditure, ranging from 28% in Germany, to

CHART 2

**Total health expenditure as percentage of total general government expenditure in the EU and some illustrative countries: Trend 2008 - 2019**

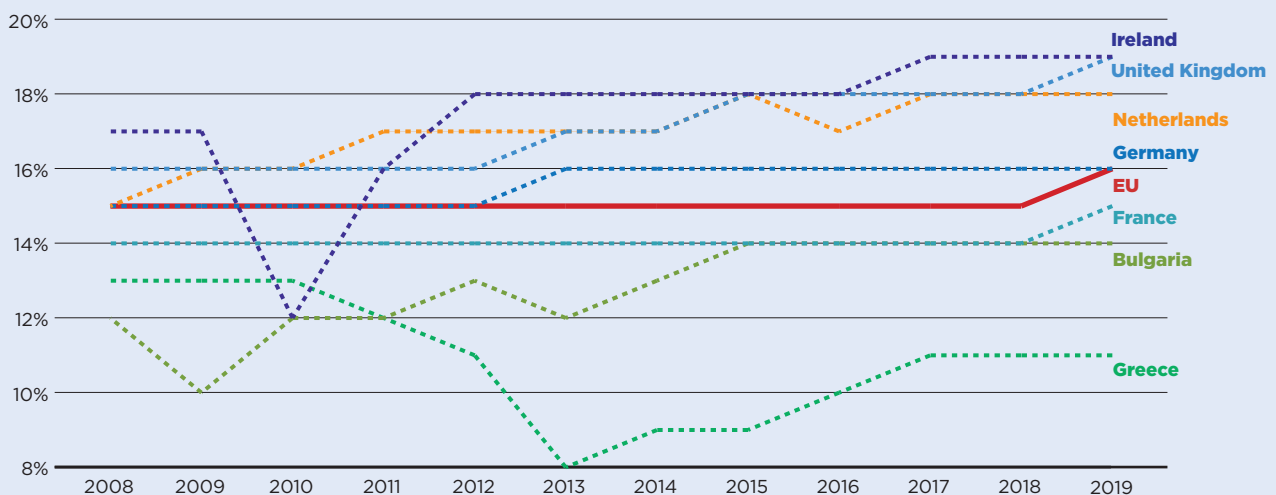


CHART 3

### Comparison between the variation in the total current expenditure on health and out-of-pocket payments on health: Years 2016-2019

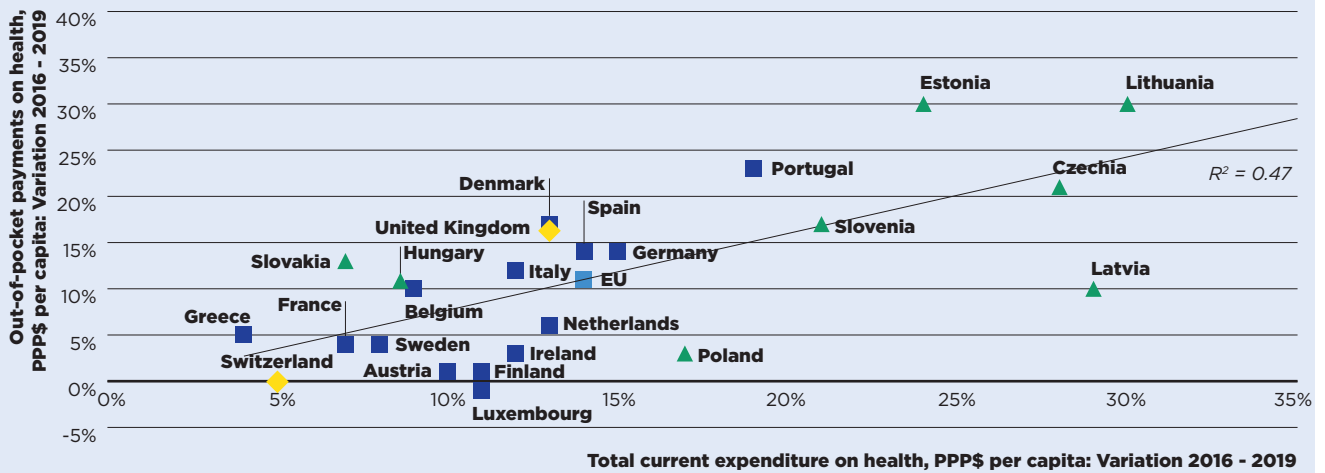
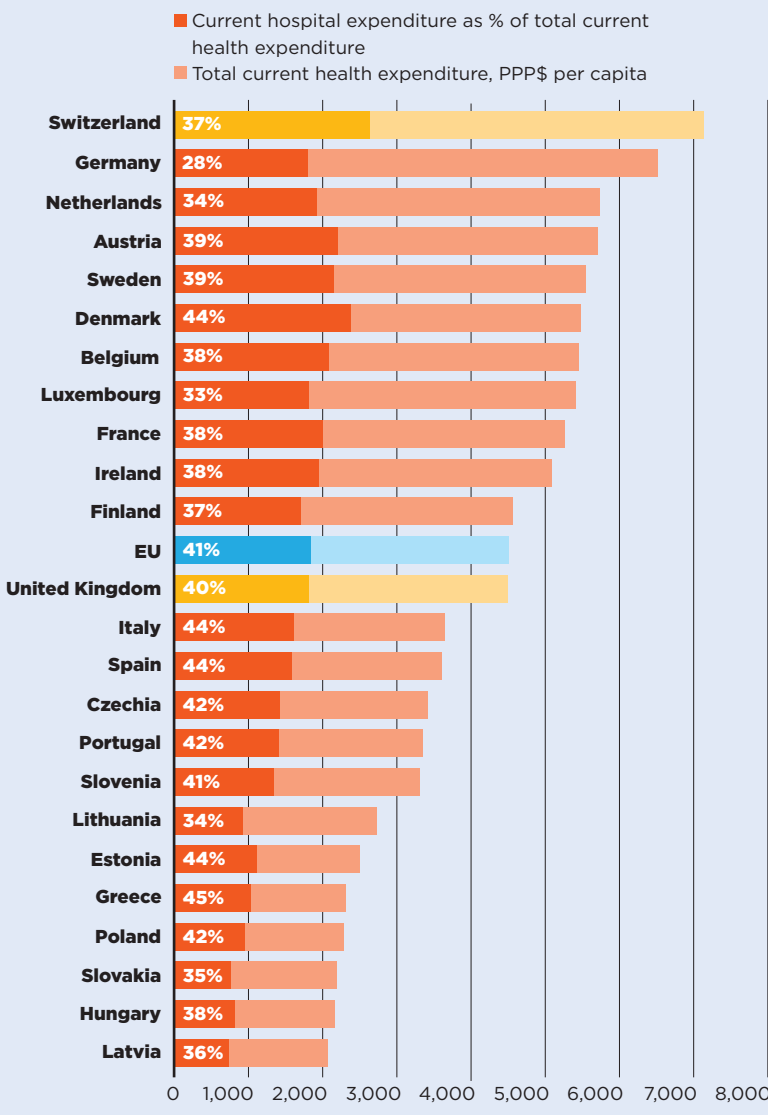


CHART 4

### Current hospitals expenditure as percentage of total current health expenditure, PPP\$ per capita: Year 2019



45% in Greece and 44% in Estonia, Spain, Italy, and Denmark, respectively. In all countries, even if a part of the total health expenditure is always funded by private insurances and out-of-pocket payments, almost the entire amount of inpatient health expenditure is financed publicly. The total expenditure on inpatient care (PPP\$ per capita) in the EU follows a growing trend.

Although reforms have tried to make systems emphasise primary care more, the data from 2019 still show major differences between countries. Ambulatory care is defined as establishments that are primarily engaged in providing health care services directly to outpatients who do not require inpatient services. This includes both offices of general medical practitioners and medical specialists and establishments specialising in the treatment of day-cases and in the delivery of home care services.

The EU average expenditure on ambulatory care is 25% of the total healthcare expenditure compared with 41% invested in hospitals. This situation is observed in most EU countries. The biggest differences between the two can be found in Greece (45% hospital, 19% ambulatory care), Spain (44% hospital, 22% ambulatory care), and Estonia and Italy (44% hospital, 23% ambulatory care). The smallest differences are in Luxembourg (33% hospital, 30% ambulatory care) and Belgium (38% hospital, 32% ambulatory care). The only EU country that spent more on ambulatory care than hospital care was Germany (28% hospital, 31% ambulatory care).

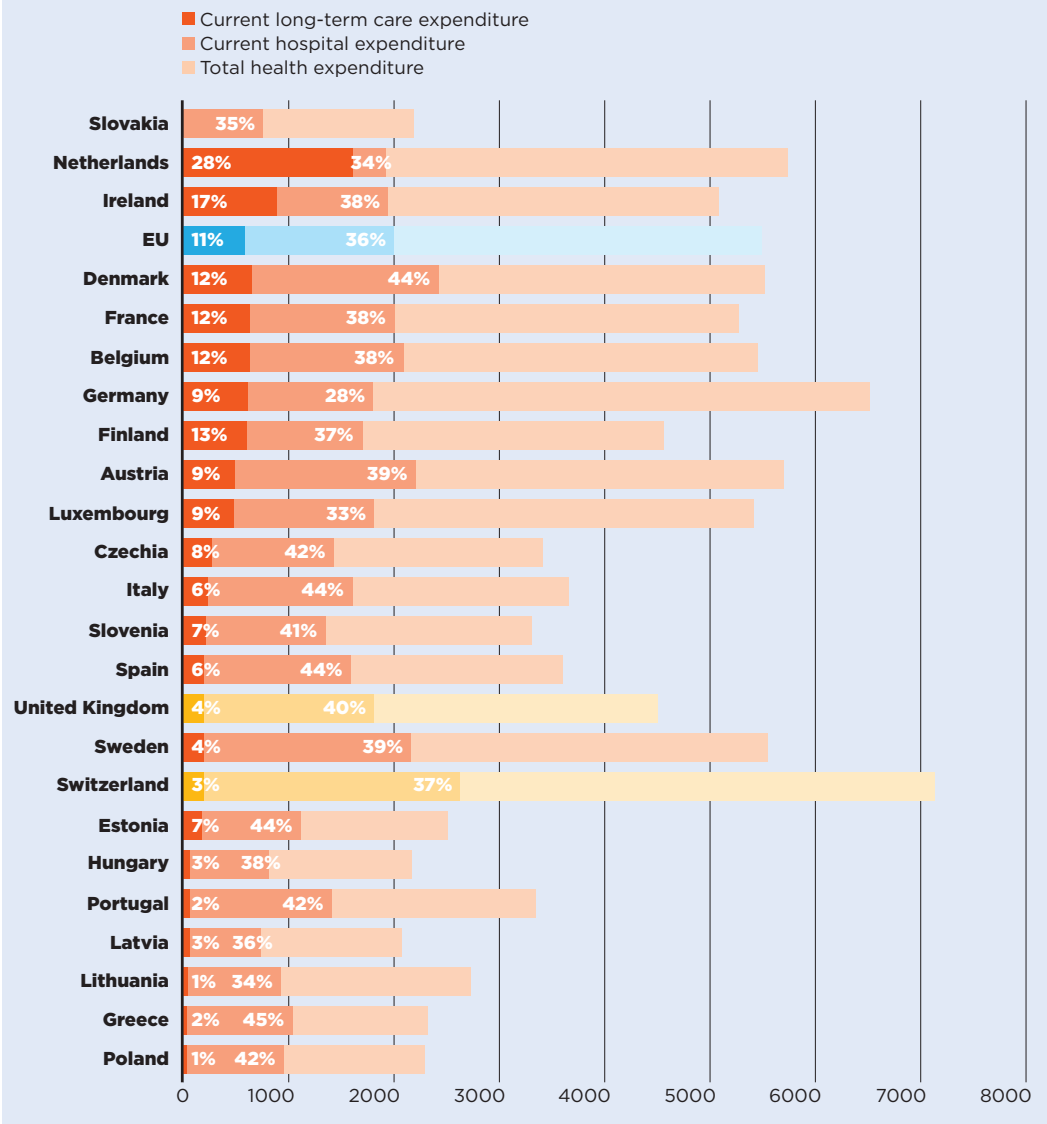
Furthermore, the lowest expenditure on ambulatory care is observed in the Netherlands (18%), Greece (19%) and Ireland (20%), whereas the highest was observed in Belgium (32%), Germany (31%) and Finland (31%).

Another increasingly important area of healthcare is long-term care. Owing to the increasingly ageing population in Europe and the significant impact of the pandemic, it is important to revise its state before COVID-19. The spending in long-term care is also



CHART 5

### Current hospital expenditure and long-term care expenditure as a percentage of total current health expenditure in PPP\$ per capita: Year 2019



In 2019, the household private contribution to healthcare spending in the EU accounted, on average, for 18% of total current health expenditure, which represents a small decrease from 20% in 2016

extremely low compared with hospital expenditure. Long-term care (health and social) consists of a range of medical care, personal care and assistance services that are provided with the primary goal of alleviating pain and reducing or managing the deterioration in health status for people with a degree of long-term dependency.

The EU average is 10%, with the lowest expenditure found in Poland, Lithuania (1%), Greece (2%), Switzerland, Latvia, and Hungary (3%). The highest expenditure was in the Netherlands (28%), and Ireland (17%). The country with the smallest difference in expenditure between hospital care and long-term care was the Netherlands, while Poland and Greece had the biggest difference, as well as the smallest expenditure (Charts 4-6).

From 2016 to 2019, the amount of expenditure on hospitals from the total healthcare expenditure increased by an average of 14% in the EU; the biggest increases in expenditure took place in Latvia (31%), Czechia

(24%) and Poland (22%). There were no decreases in any of the EU countries with available data showing an overall positive trend. Greece (4%), France (6%) and Switzerland (5%) had the smallest increases among the EU.

When comparing the variation of hospital expenditure with ambulatory care there is also a positive trend, with an average EU increase of 11%, except in Poland (-15%), Finland (-8%), Switzerland (-6%). The biggest increase was observed in Latvia (66%).

Long-term care expenditure also follows a positive trend with a 13% average increase in the EU and no decreases in any of the countries with available data. The biggest increases were observed in Estonia (106%), and the lowest in Sweden, Luxembourg (6%), Ireland (7%) and Switzerland (5%).

#### Healthcare capacity and delivery of care

In recent years, healthcare reforms or other initiatives implemented all over Europe have aimed at rationalising the use and provision of

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hospital care, improving its quality and appropriateness, and reducing its costs.

The number of hospital facilities decreased in most countries while the number of hospital beds dropped off on average. These reforms and initiatives also resulted in a broad reduction of acute care admissions and length of stay, as well as in improvements in the occupancy rate of acute care beds.

This was made possible thanks to a package of financial and organisational measures addressed to improve coordination and integration between the different levels of care, increase the use of day-hospital and day-surgery and introduce new and more efficient methodologies of hospital financing to incentivise appropriateness (e.g., the replacement of per diem payments – known to encourage longer hospitalisation – by prospective payment).

In most European countries, these policies led to changes in the management of patients within hospitals and offered the possibility to

reduce the number of acute care hospital beds.

However, the bed-occupancy rates registered more disparate trends across Europe, depending also on the demographic and epidemiological structure of population and from the specific organisation of local, social and healthcare systems, i.e., the structure of primary care, the presence and the efficiency of a gate keeping system, the modality of access to secondary care, availability of home care and development of community care.

Between 2016 and 2019 the number of hospitals decreased in most of the countries, with the number of hospital beds decreasing to about 2%.

The total number of hospitals barely decreased in 2019 compared to a decrease ranging between 9% and 41% during 2006–2016. Barely any changes happened in 2016–2019 in Ireland, Estonia, Slovenia (0%) and Lithuania (+1%). The biggest decrease took place in Luxembourg (-17%) and the biggest increase in Poland (+16%) (Chart 7).

CHART 6

**Current hospital expenditure and ambulatory care expenditure as a percentage of total current health expenditure in PPP\$ per capita: Year 2019**

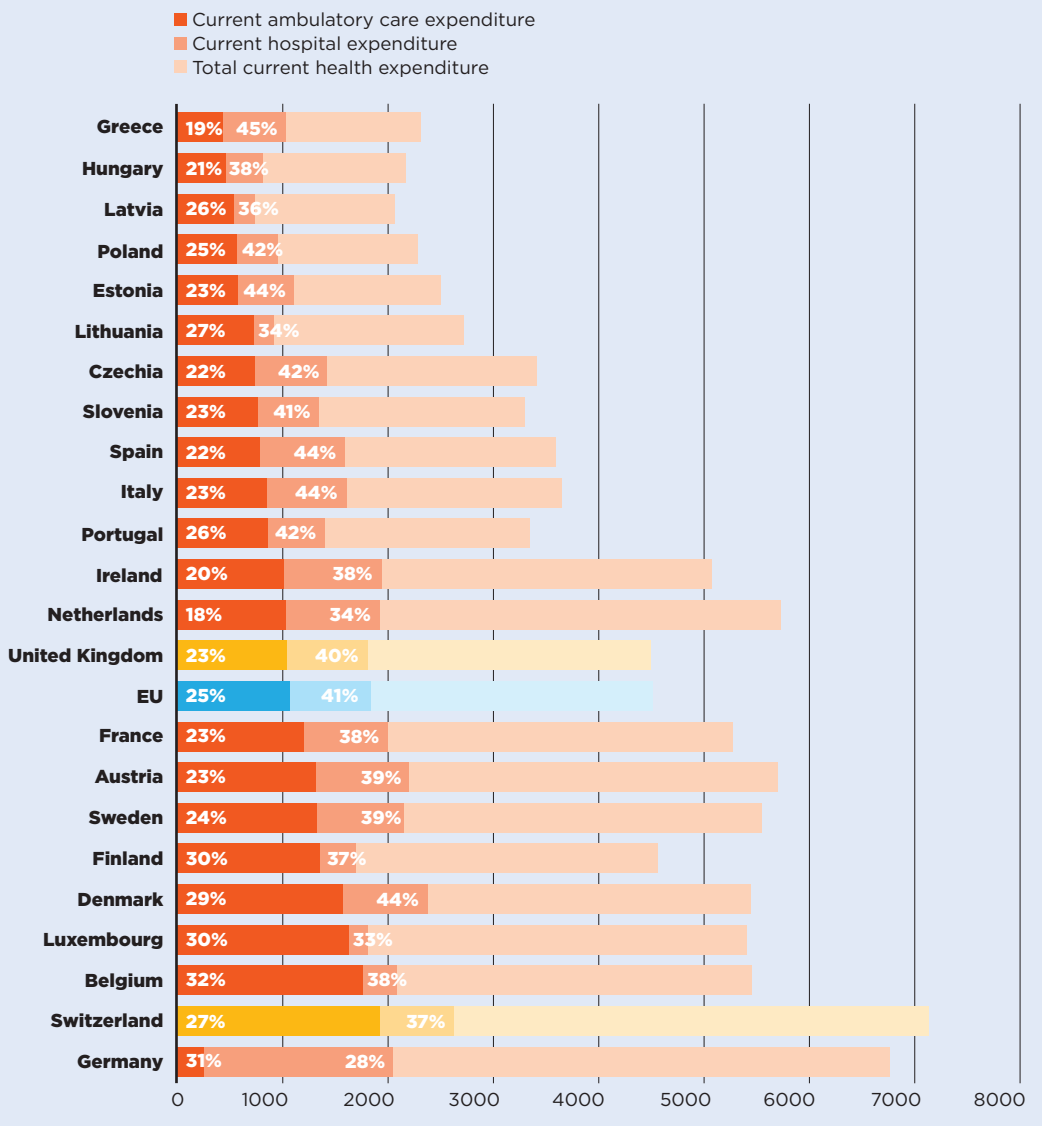
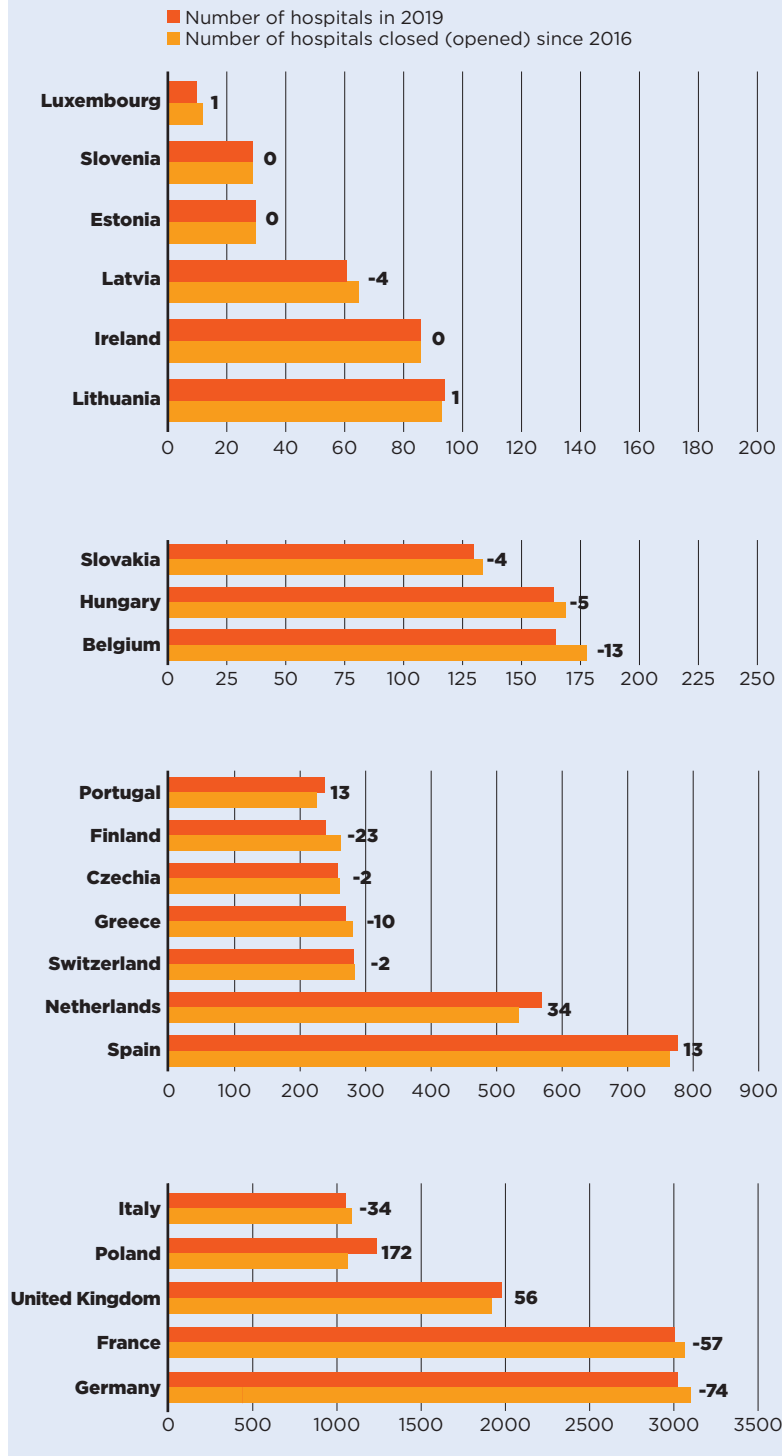


CHART 7

**Number of hospitals in 2019 and number of hospitals closed (opened) since 2016. The four clusters are grouped considering the total number of hospitals in 2016: <100; 100>200; 200>500; >500**



In the same period, few changes in the number of hospitals beds were registered in Slovenia, Switzerland, Slovakia, and Czechia (0%) The biggest increase was 3% in Portugal. Major decreases were registered in Finland (-15%), Sweden and the Netherlands (-8%) (Chart 8).

Moreover, there were on average 466 hospital beds for 100,000 inhabitants in the EU in 2019, ranging from 207 in Sweden to 791 in Germany (Chart 9).

Between 2008 and 2016, there was a decrease in the total number of beds which was in many countries accompanied by a slight increase in the number of private inpatient beds. The biggest increases during this time were in Romania (+560%) and Bulgaria (+154%). However, in 2019 there were few increases in private beds, with only some countries (such as Romania and Lithuania) showing an increase (28%). There was even a decrease in some countries. In 2019, countries with the highest percentage of private beds were Belgium (74%) and Germany (60%). Those with the lowest were Slovenia, Lithuania (1%) and Croatia (2%) (Chart 10).

The rate of acute care hospital beds for 100,000 inhabitants in 2019 in the EU ranged from 234 in Sweden to 791 in Germany. The other highest figures were in Austria (719) and Hungary (691) while the other lowest figures were in the UK (245), Denmark (259) and Ireland (288).

Between 2016 and 2019, the number of acute care hospital beds per 100,000 populations registered an average reduction by 4% in EU. The most significant decreases were in Finland (-16%), Sweden (-12%) and Luxembourg (-11%). The only exception was Portugal (4%), and Slovakia, Greece, Italy, and Denmark showed no significant changes (Chart 11).

Residential long-term care facilities are establishments primarily engaged in providing residential long-term care that combines nursing, supervisory or other types of care as required by the residents. In these establishments, a significant part of the production process and the care provided is a mix of health and social services, with the health services being largely at the level of nursing care, in combination with personal care services. They include long-term nursing care facilities and other residential long-term care facilities.

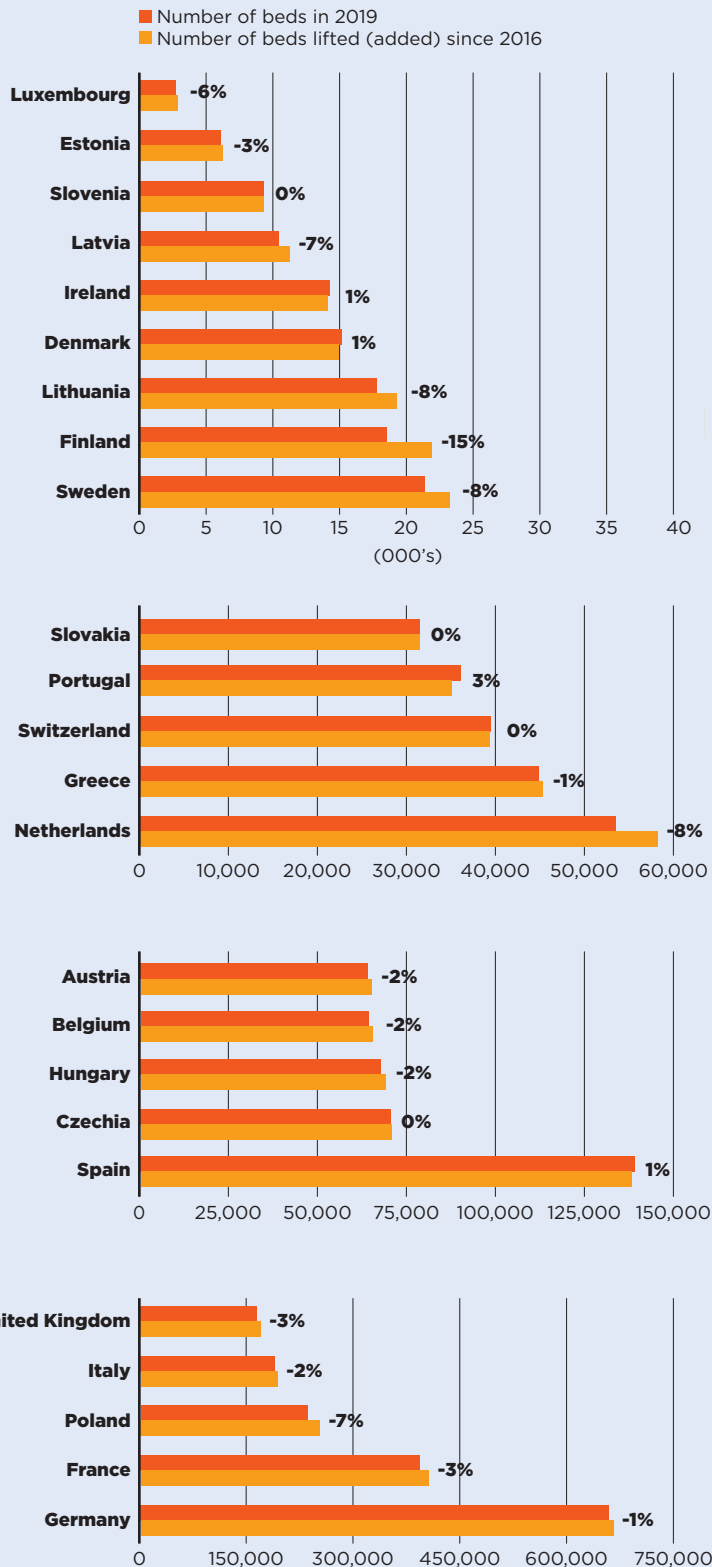
The number of long-term beds per 100,000 inhabitants in 2019 in the EU was 768, ranging from 27 in Bulgaria to 1378 in the Netherlands. On average there was a 2% increase in the number of beds per 100,000 inhabitants from 2016 to 2019, with a few countries having a bigger than average increase such as Serbia (+20%) and Austria (+12%). Although most countries show a positive increase a few had a decrease in the number of beds per 100,000 inhabitants: Croatia (-8%), Bulgaria (-11%) and Denmark (-17%).

To better understand the state of the healthcare system in the EU we also need to look at the number of primary healthcare units, however there is hardly any data available or from recent years. The countries with available data from 2000 to 2009 (most recent years



CHART 8

**Number of hospital beds in 2019 and number of beds lifted (added) since 2016. The four clusters are grouped considering the total number of hospital beds in 2014: <25,000; 25,000>50,000; 50,000>150,000; >150,000**



available) are Bulgaria, Croatia, Czechia, Estonia, Hungary, Lithuania, Latvia, Finland, Portugal, Slovenia, Slovakia, Sweden, and Romania. They show minimal increases, with the biggest increase taking place in Latvia (from 116 to 121) and the biggest decrease in Croatia (from 79 to 73) (Chart 12).

The number of acute care discharges involves the entire pathway of hospitalisation of a patient, who usually stays in hospital for at least one night and then is discharged, returns home, is transferred to another facility, or dies. Curative care comprises health care contacts during which the principal intent is to relieve symptoms of illness or injury, to reduce the severity of an illness or injury, or to protect against exacerbation and/or complication of an illness or injury that could threaten life or normal function. Curative care includes all components of curative care of illness (including both physical and mental/psychiatric illnesses) or treatment of injury, diagnostic, therapeutic and surgical procedures, and obstetric services. It excludes rehabilitative care, long-term care, and palliative care.

The average length of stay measures the total number of occupied hospital bed-days, divided by the total number of discharges. In 2019, the average length of stay in acute care hospitals ranged from 10 bed-days in Hungary and in Czechia to 6 bed-days in Sweden, Ireland, and Belgium.

In 2019, the rates of inpatient discharges in the European countries were quite dissimilar, ranging from 25 discharges per 100 in Germany to 11 discharges per 100 in Italy.

The average length of stay is around 8 days in the EU.

The link between the rate of admissions and the length of stay can be a very sensitive issue for hospitals, as it is commonly acknowledged that too short a length of stay might increase the risk of re-admissions, with a consequent waste of resources both for the hospital and for the patients and their careers. At the same time, staying too long in a hospital might indicate inappropriate settlements of patients, also causing a waste of resources.

Chart 13 compares the rate of hospital discharges and the average length of stay for acute care hospitals in 2019. The last updated data show that the average European figures corresponds to a mean rate of discharges by 17% and a mean length of stay of 8 days for acute care hospitals. Chart 13 shows that both indicators are higher than the EU average in France, Latvia, Czechia, Hungary, Austria, and Germany.

The bed occupancy rate represents the average number of days when hospital beds are occupied during the whole year and generally mirrors how intensively hospital capacity is used.

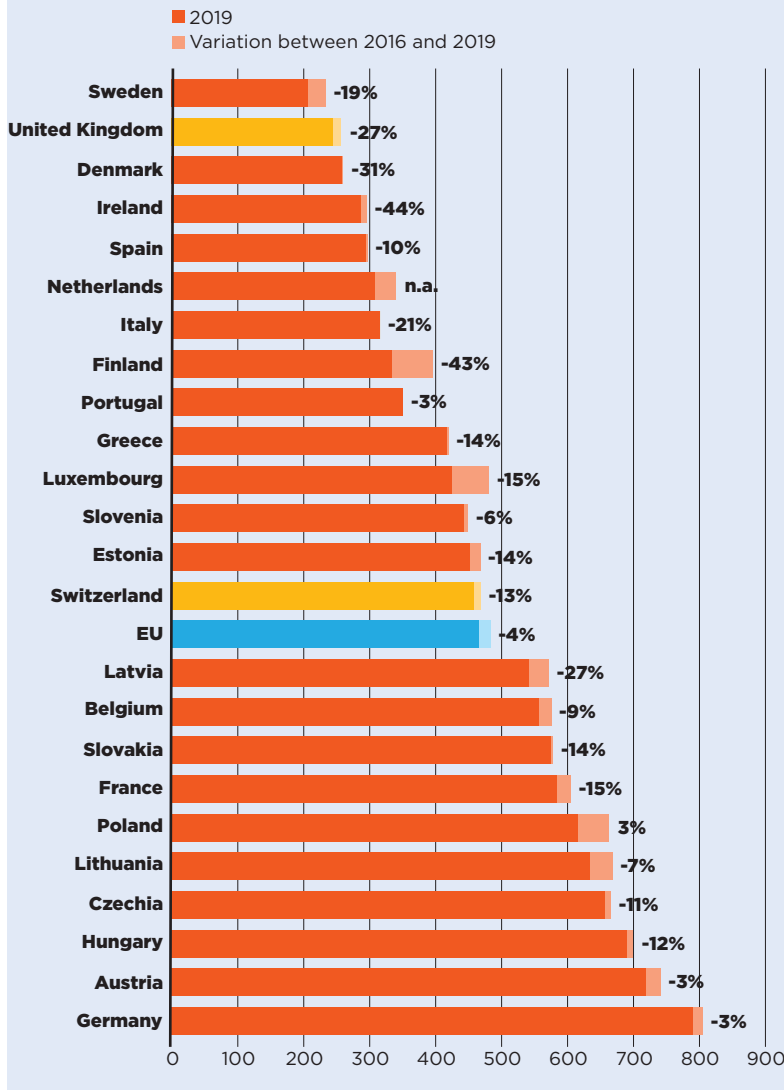
In 2019, the average acute care occupancy rate in Europe was equal to 75%, but the gap between the highest and the lowest rate was 16 percentage points (p.p.).

Between 2008 and 2019, the average rate of acute bed occupancy decreased in Europe. The biggest reductions were in Hungary (-4,7), Slovakia (-3,20) and Czechia (-3,20). A



CHART 9

### Number of hospital beds per 100,000 inhabitants in 2019 and percentage of beds per 100,000 lifted since 2016



particularly big increase was observed in Luxembourg (6,90). These large variations are usually due to changes in the number of admissions, average length of stay and the extent to which alternatives to full hospitalisation have been developed in each country (Chart 14).

#### Healthcare workforce

Despite the growing interest in self-treatment and the growing role of digital health, especially during the pandemic, health workers remain the crucial component of health systems, providing health services to the population. Despite health workers numbers tending to grow in the last 15 years, policy makers are raising issues about the upcoming retirement of the 'baby-boom' generation of doctors and nurses, exacerbating the workforce shortage in the health field. Health workforce concerns shifted from worries on shortages towards issues related to the right skill-mix, to better respond to evolving population health needs. The financial constraints, are leading in most European countries to a decrease in the resources available for healthcare professionals, reducing the possibilities of hiring new staff. Additionally, several countries, especially in central and Eastern Europe, are experiencing migrations of their healthcare workforce.

European countries, European organisations and EU institutions are discussing possible impacts and achievable solutions to these issues. Interestingly, several countries are shifting competences from doctors to nurses, creating new educational pathways and bachelors' degrees addressed to nurses. In many cases, nurses and general practitioners acquire new skills and competences, relieving the burden of hospital care by enforcing primary care institutions and community services (Chart 15).

The trends described above are likely to have major impacts on the hospital sector, since inpatient care alone absorbs about a third of the

CHART 10

### Beds in private owned hospitals as % of beds in all hospitals: Years 2008, 2016, 2019

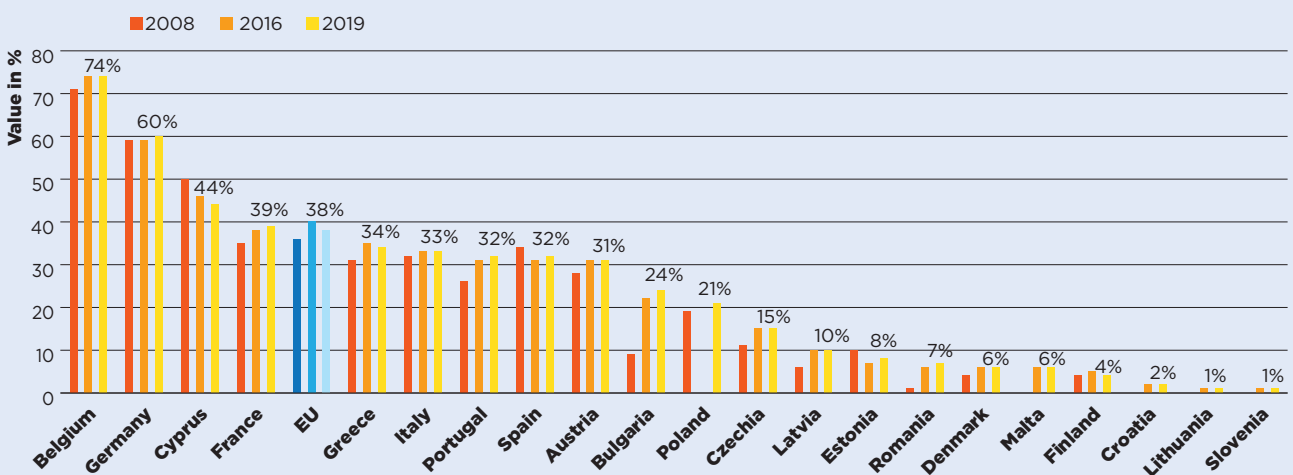
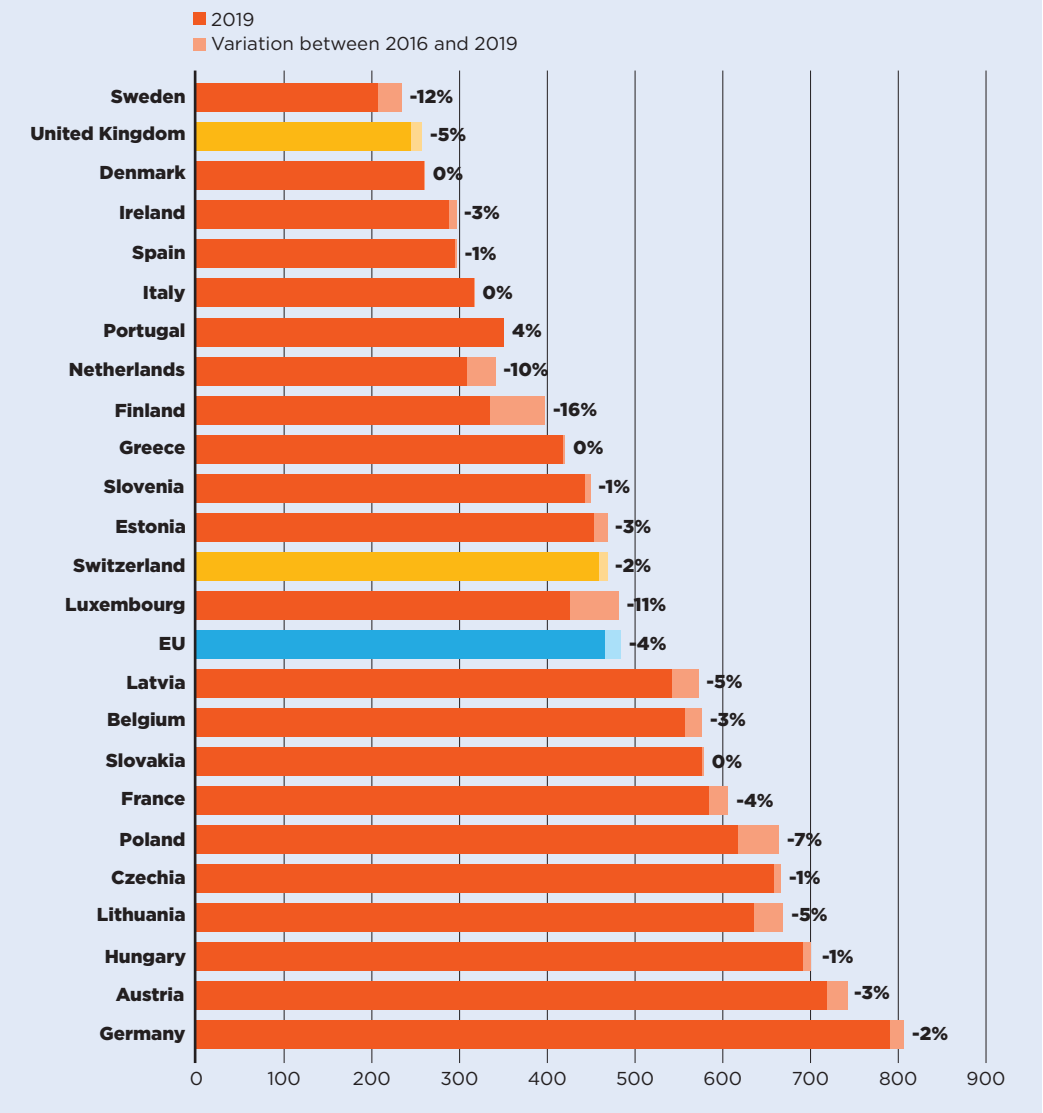




CHART 11

**Number of acute care hospital beds per 100,000 inhabitants in 2019 and percentage of beds per 100,000 lifted (or added) since 2016**



“ An overview of the composition of the European healthcare workforce in 2019 shows an average rate of about 2.5 nurses per physician



healthcare resources and because the hospital sector gives work to more than half of active physicians.

An overview of the composition of the European healthcare workforce in 2019 shows an average rate of about 2.5 nurses per physician.

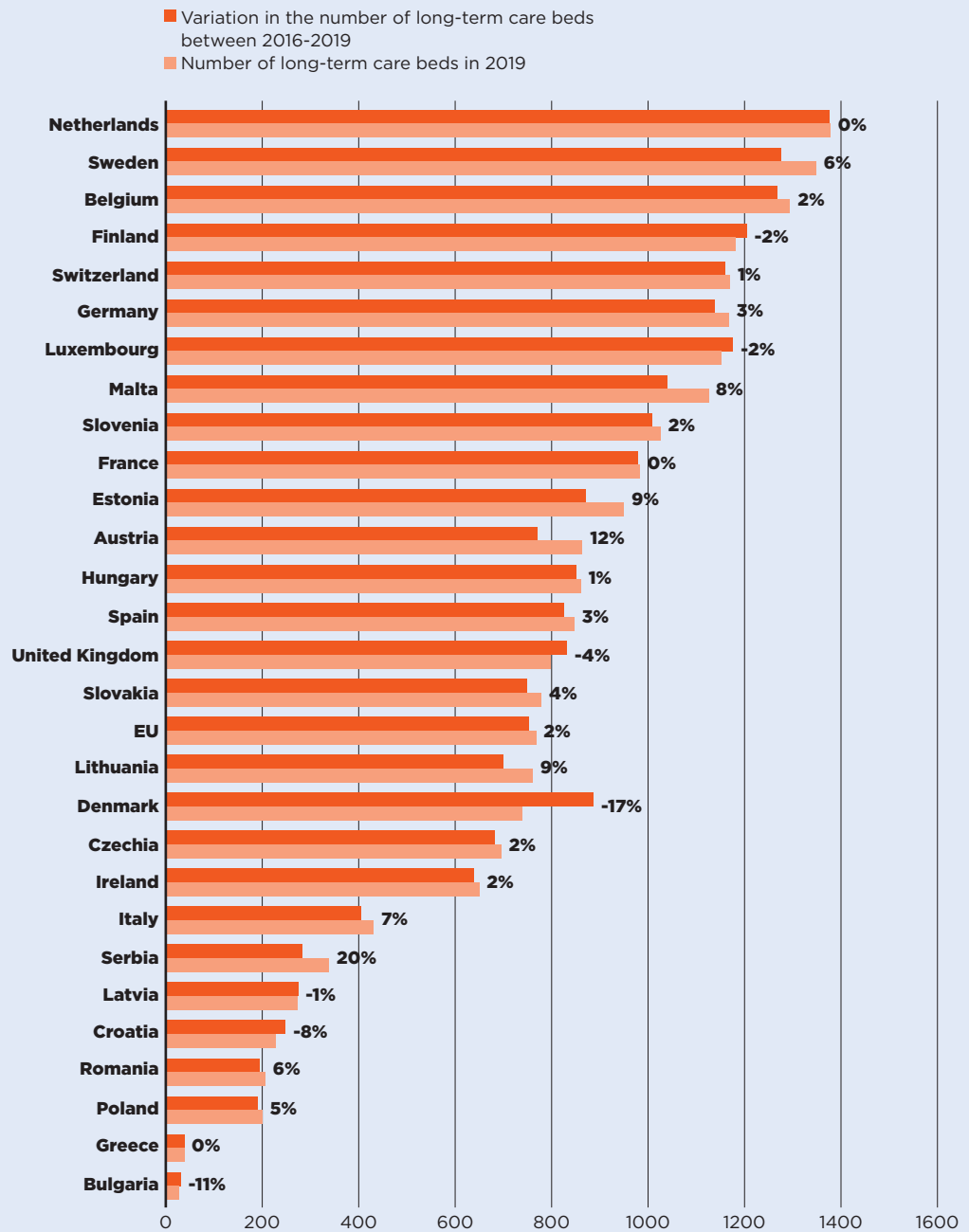
In 2019, the share of practising nurses per 100,000 inhabitants was lowest in Greece (338), Latvia (439), Poland (510) and Spain (589) (Chart 16). The highest values belong to Germany (1395), Belgium (1107), Sweden (1085) and Switzerland (1796). For the same year, the lowest share of practising physicians was registered in Poland (238), the UK (295), Belgium (316) and France (317) whereas the highest values were in Austria (532), Lithuania (457) and Germany (439) (Chart 17).

These figures provide evidence the trends for the management of healthcare professionals, especially concerning the allocation of resources and responsibilities between physicians and nurses. In the EU, the average



CHART 12

**Number of long-term care beds per 100,000 inhabitants in 2019 and percentage of beds per 100,000 lifted (or added) since 2016**



“ In 2019, according to available data, physicians working in hospital (full or part time) were around over 50% of the total, with the EU average reaching 67%

rate of nurses per physicians is about 2.4 points. In 2019, the highest values were in Germany (5.4), Luxembourg (4.0), Belgium (3.5) and Switzerland (4.0). In these countries, there is a high shift of competencies from physicians to nurses. Conversely, in countries where the values are lowest - such as Lithuania (1.7), Latvia (1.4), Spain (1.4) and Italy (1.4) - physicians continue to perform most of the clinical activities.

In 2019, according to available data, physicians working in hospital (full or part time) were around over 50% of the total, with the EU average reaching 67%

The highest rates registered are in Belgium (209%), France (83%) and Switzerland (77%).

On the other side, the lowest values are the Netherlands (36%), Latvia (45%), Spain (54%), Ireland and Austria (55%).

The long-term workforce can be categorised as formal and informal, as there is not much data available for informal workers, this focuses on the formal workers exclusively. These include nurses and personal care workers. Moreover, we will focus on long-term workers working with the 65 years old and over population.

Data for long-term care formal workers per 100,000 population aged 65 years old and over in 2016-2019 were only available in a few countries; Portugal; Spain; Germany; Switzerland; Austria; Netherlands; Estonia,



CHART 13

### Comparison between the rate of inpatient discharges per 100 and average length of stay in acute care hospitals: Year 2019

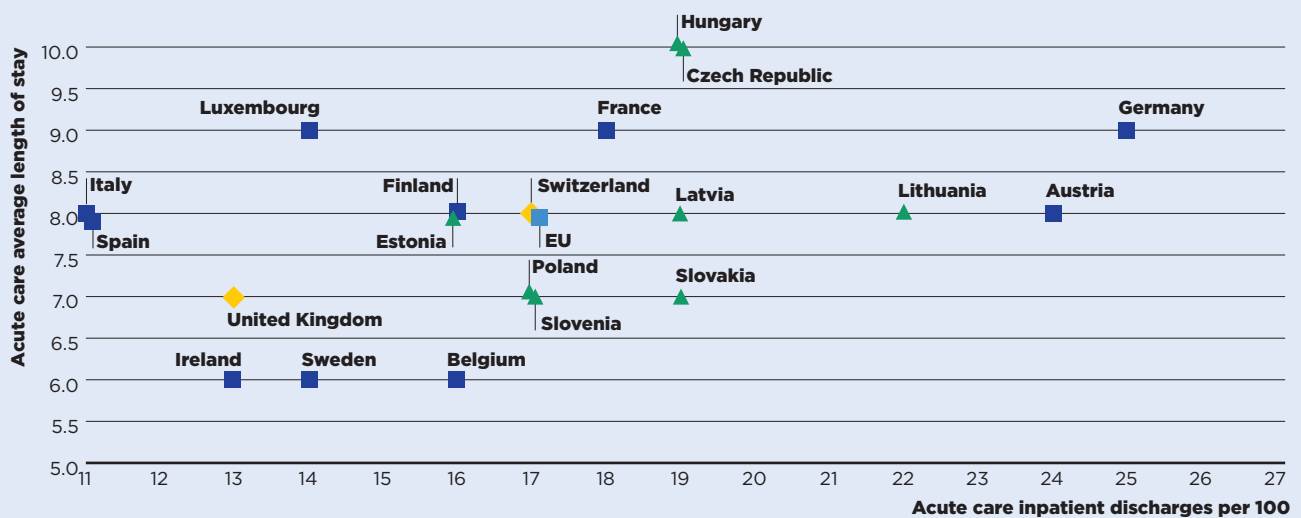
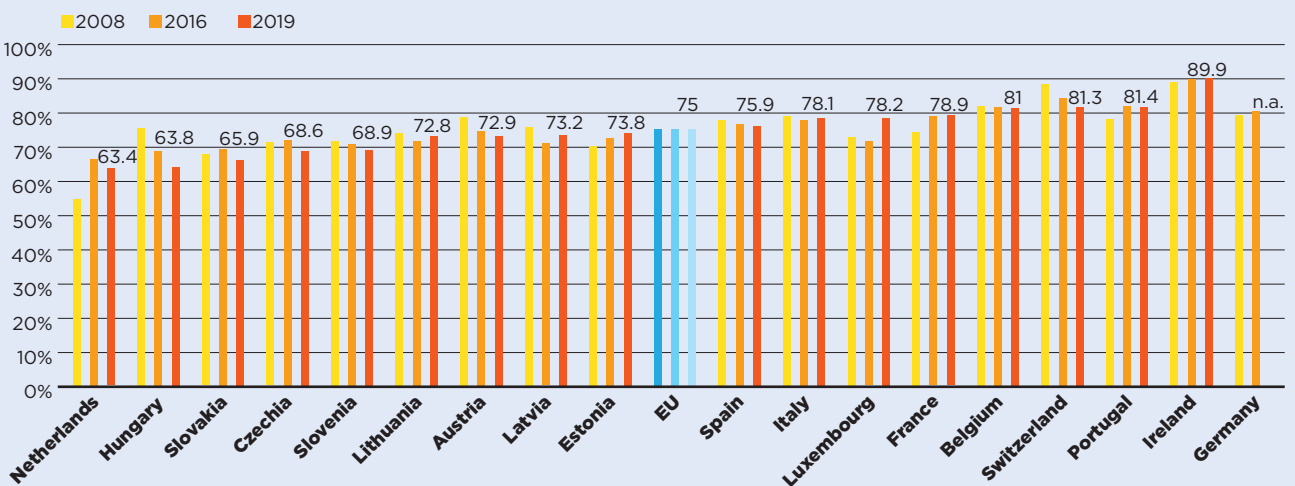


CHART 14

### Bed occupancy rate for acute care hospitals: Years 2008, 2016, 2019



Denmark; Sweden; Luxembourg; Slovakia; Ireland; and Hungary. In 2019, Sweden had the highest number of formal workers per 100,000 population aged 65 years old and over (11,900), while the lowest was found in Portugal (800). From 2016 to 2019, Portugal (+14%), Spain (+7%), Germany (+6%), Switzerland and Austria (+2%) had an increase in the number long-term care formal workers per 100,000 population aged 65 years old and over, whereas Estonia (-2%), Denmark (-3%), Sweden (-4%), Luxembourg (-5%), Slovakia, Ireland (-7%), and Hungary (-14%) had a decrease in the number for workers. There was no significant change in the Netherlands.

Long-term workforce is also categorised as those working in institutions and those working at patients' homes. Long-term care at home is provided to people with functional restrictions who mainly reside at their own home. It also applies to the use of institutions on a temporary basis to support continued living at home

– such as in community care and day care centres and respite care. Home care also includes specially designed or adapted living arrangements (for instance, sheltered house) for persons who require help on a regular basis while guaranteeing a high degree of autonomy and self-control, and supportive living arrangements. Long-term care institutions herein refer to nursing and residential care facilities which provide accommodation and long-term care as a package. They refer to specially designed institutions or hospital-like settings where the predominant service component is long-term care, and the services are provided for people with moderate to severe functional restrictions.

For this, data are only available for a handful of countries: Estonia, Denmark, Hungary, Germany, Netherlands, Luxembourg, Austria, Portugal, and Switzerland. In countries where data are available, there is a higher percentage of workers working in institutions than at



CHART 15

**Rate of practising nurses per physician: Years 2008, 2016, 2019**

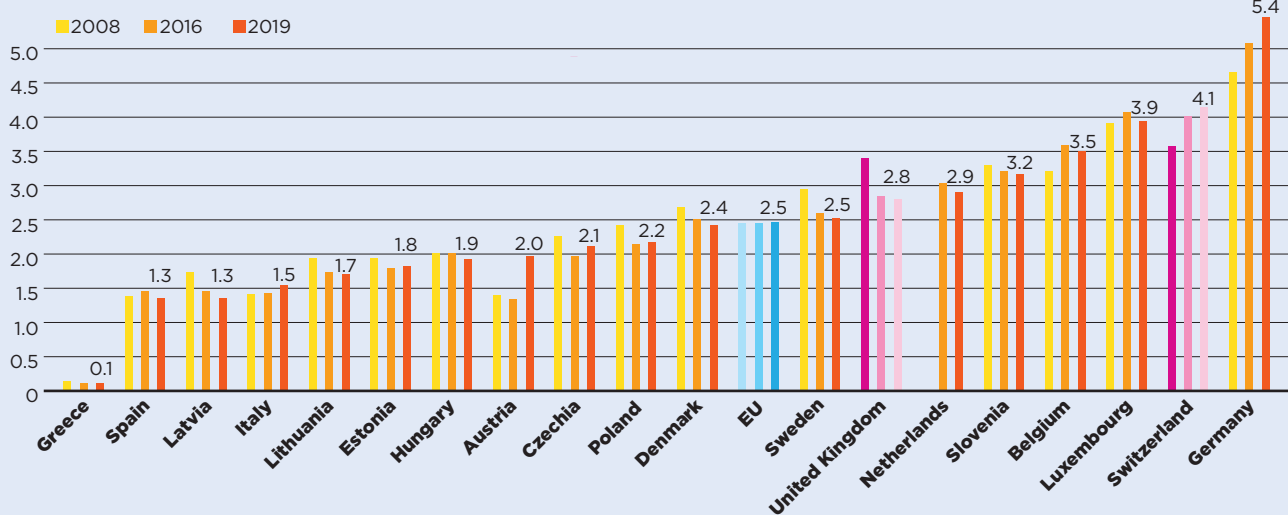
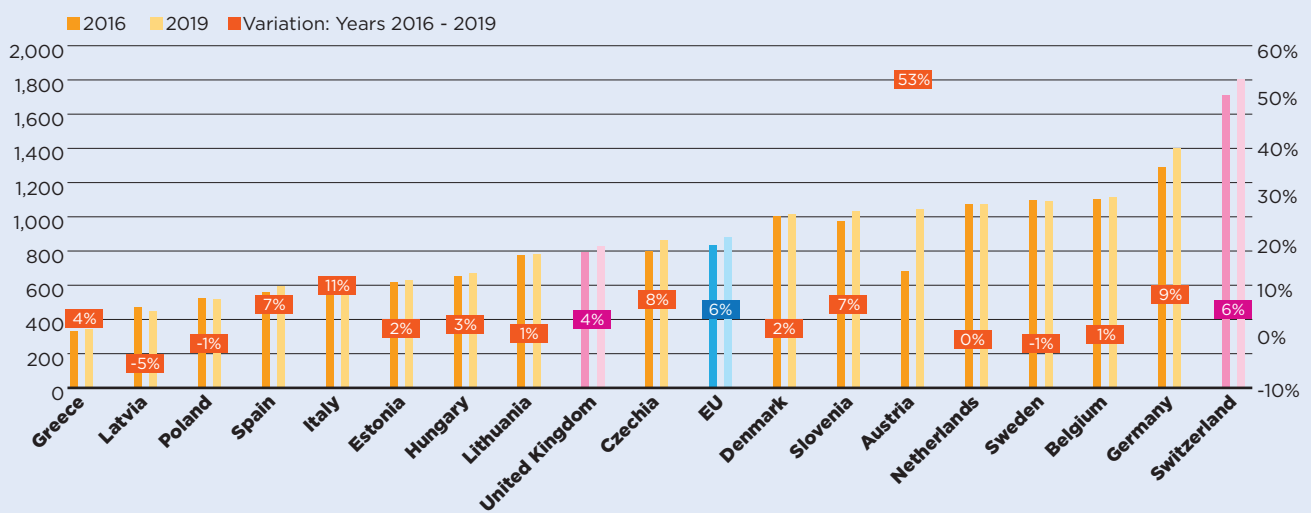


CHART 16

**Number of practising nurses per 100,000 inhabitants: Years 2016–2019**



patients' homes. The percentage of long-term care workers working at an institution varied from 83% in Portugal to 21% in Estonia, while for those at home, it ranged from 79% in Estonia to 17% in Portugal.

In 2019, the average number of physicians and nurses graduated for every 100,000 inhabitants were, respectively, about 15 and 41 in the EU. However, the values across countries were quite different. The number of medical graduates per 100,000 inhabitants ranged from 10 in France and Estonia to 24 and 25 in Latvia and Ireland, respectively. The number of nurses graduated per 100,000 inhabitants ranged from 11 and 18 in Luxembourg and Italy to 82 and 108 in Finland and Switzerland.

Compared to 2016, the number of medical graduates per 100,000 inhabitants in the EU registered an overall positive variation (Chart 18). The countries that registered the highest increases were Latvia (+44%), Italy (+33%), Lithuania (+27%), Greece and Belgium (+23%). Minor positive variations were seen in

Switzerland, Sweden (+12%), and Hungary (+11%), where as there were decreases in Slovenia (-12%), Estonia (-6%), Portugal (-4%), the Netherlands and Finland (-1%). The number of nurses graduated per 100,000 inhabitants showed different trends across the EU (Chart 19). Major positive variations were registered in Czechia (81%), the Netherlands (35%), Latvia (34%) and Poland (33%), whereas minor positive variations were registered in Denmark (2%), and Portugal (8%). The most relevant decreases were registered in Belgium (-44%) and Slovakia (-27%).

**Reference**

1 A System of Health Accounts 2011, Revised edition - March 2017:166-81. OECD.



CHART 17

### Number of physicians per 100,000 inhabitants and number and % of physicians per 100,000 inhabitants working in hospitals: Year 2019

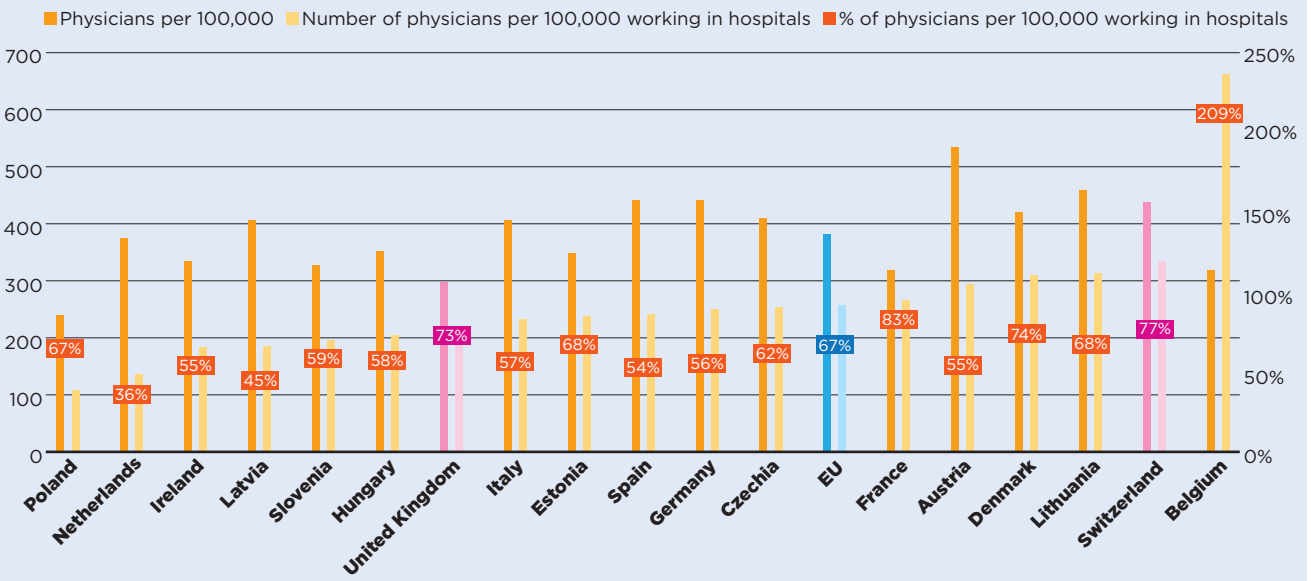


CHART 18

### Number of medical graduates per 100,000 inhabitants: Years 2016–2019

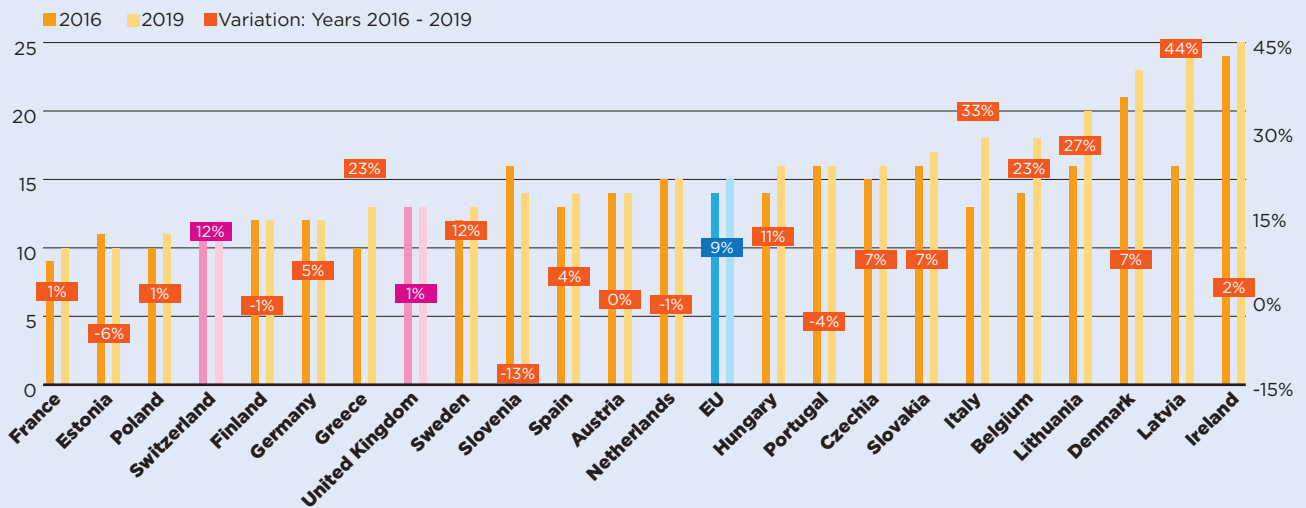


CHART 19

### Number of nurses graduated per 100,000 inhabitants: Years 2016–2019

