Cardiovascular diseases statistics

Statistics Explained

Skip to the content <!–<div class="ecl-inpage-navigation$_{title" id="ecl-inpage-navigation-default">Pagecontents</div>-->Contents

Highlights

Deaths from cardiovascular diseases

Cardiovascular healthcare

Source data for tables and graphs

Data sources

Context

Notes

Explore further

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Highlights

" The standardised death rate for diseases of the circulatory system in 2021 in Bulgaria was 7.1 times as high as that in France. "

" In 2021, across the EU, in-patients with diseases of the circulatory system spent a total of 69 million days in hospital. "

" In 2022, there were 65.4 heart bypasses per 100 000 inhabitants conducted in Cyprus and 500.1 coronary angioplasties per 100 000 inhabitants performed in Croatia "

This article presents an overview of European Union (EU) statistics related to cardiovascular diseases and focuses on cardiovascular mortality and cardiovascular health care. Cardiovascular diseases are the leading cause of death in the EU. They cover a broad group of medical problems that affect the circulatory system (the heart and blood vessels), often resulting from atherosclerosis, the abnormal build-up of plaque – that is made of, among other constituents, cholesterol or fatty substances – deposited on the inside walls of a person's arteries. Some of the most common diseases that affect the circulatory system include ischaemic heart disease (heart attacks) and cerebrovascular diseases (strokes). This article is 1 of a set of statistical articles concerning healthcare activities in the EU which forms part of an online publication on Health in the European Union – facts and figures .

Deaths from cardiovascular diseases

There were 1.71 million deaths in the EU from diseases of the circulatory system

Diseases of the circulatory system place a considerable burden on healthcare systems and government budgets. Indeed, in 2021 there were 1.71 million deaths in the EU resulting from diseases of the circulatory system, which

was equivalent to 32.4% of all deaths. This percentage was considerably higher than the 2nd most prevalent cause of death, cancer (malignant neoplasms; 21.6% of all deaths). The article causes of death statistics looks in more detail at the leading causes of death in the EU.

Causes of death – diseases of the circulatory system, residents, 2021

	Number of deaths	Share of all deaths			Standardised death rates				
		Total	Males	Females	Total	Males	Females	Persons aged < 65 years	Persons aged ≥ 65 years
	(number)	(%)			(per 100 000 inhabitants)				
EU	1 711 818	32.4	29.8	35.0	343.4	412.5	288.6	42.4	1 586.1
Belgium	26 576	23.9	22.3	25.4	217.0	265.3	180.6	23.7	1 014.9
Bulgaria	79 948	54.5	50.9	58.3	1 211.0	1 491.3	1 013.8	180.7	5 464.3
Czechia	47 939	34.4	31.4	37.6	525.6	649.9	437.7	57.3	2 459.1
Denmark	11 967	20.9	21.7	20.1	211.8	271.0	167.3	23.6	988.8
Germany	341 606	33.3	31.0	35.6	345.1	416.9	288.5	34.6	1 626.5
Estonia	8 391	45.6	37.9	52.4	599.4	774.5	495.4	71.6	2 778.5
Ireland	9 273	26.7	26.7	26.6	248.2	297.6	203.6	30.6	1 146.3
Greece	46 429	32.4	30.6	34.2	339.5	394.3	290.6	49.3	1 537.6
Spain	118 730	26.4	24.1	28.8	213.0	260.9	174.3	26.9	981.1
France	137 969	20.9	19.6	22.1	169.9	222.3	132.4	22.6	778.1
Croatia	23 127	36.8	31.9	41.7	601.3	684.9	532.4	59.6	2 837.3
Italy	216 951	30.8	27.7	33.7	266.9	317.7	229.1	22.4	1 276.4
Cyprus	1 835	25.4	25.4	25.4	280.8	323.2	242.6	36.0	1 291.7
Latvia	16 938	49.3	44.2	53.9	859.5	1 127.0	693.6	153.7	3 773.1
Lithuania	23 001	48.7	43.2	53.8	800.7	1 041.3	653.6	114.9	3 631.8
Luxembourg	1 051	24.3	22.9	25.7	213.2	259.8	176.9	19.8	1 011.5
Hungary	65 701	42.3	38.7	45.8	722.8	886.2	606.7	107.3	3 264.0
Malta	1 228	29.5	27.8	31.2	271.8	298.6	245.1	38.0	1 237.0
Netherlands	36 146	21.3	21.0	21.6	219.9	264.3	186.2	21.2	1 040.1
Austria	31 430	34.9	31.8	37.9	343.3	409.2	293.2	29.1	1 640.5
Poland	181 036	34.8	30.8	39.1	541.4	667.3	449.3	70.0	2 487.7
Portugal	31 396	25.1	22.3	28.0	247.9	296.5	211.7	30.1	1 147.2
Romania	172 745	52.0	47.0	57.4	1 005.4	1 208.7	855.8	132.0	4 610.9
Slovenia	7 651	33.5	28.0	39.2	361.2	422.0	311.9	27.1	1 740.5
Slovakia	26 274	35.8	33.1	38.7	641.2	765.9	543.0	86.9	2 929.7
Finland	18 856	32.8	33.3	32.3	304.0	406.7	231.6	36.8	1 406.9
Sweden	27 624	30.3	30.4	30.2	257.1	320.3	207.8	23.9	1 219.4
Iceland	679	29.6	30.5	28.6	252.4	303.9	210.0	22.6	1 201.4
Liechtenstein	85	32.1	29.4	34.9	266.6	290.0	234.9	18.5	1 291.0
Norway	10 184	24.9	25.1	24.6	208.1	250.2	173.2	18.5	991.2
Switzerland	19 751	27.8	26.3	29.4	220.6	267.2	185.5	17.7	1 058.2
Serbia	56 669	41.6	37.9	45.6	884.4	971.6	807.5	102.2	4 113.3
Türkiye (1)	187 038	33.3	30.8	36.4	528.0	617.0	461.9	60.8	2 456.9

(1) Definition differs for standardised death rates (other than for persons aged < 65 years).

Source: Eurostat (online data codes: hlth_cd_aro and hlth_cd_asdr2)

eurostat

Table 1: Causes of death – diseases of the circulatory system, residents, 2021 Source: Eurostat (hlth_cd_aro) and (hlth_cd_asdr2)

Diseases of the circulatory system are among the main causes of mortality in each of the EU countries (as shown in Table 1): in 2021, they accounted for more than half of all deaths in Bulgaria and Romania. By contrast, less than a quarter of all deaths in France, Denmark, the Netherlands, Belgium and Luxembourg were caused by diseases of the circulatory system; France had the lowest share, at 20.9%.

The largest gaps between the sexes in relation to the share of people dying from diseases of the circulatory system were recorded in the 3 Baltic countries as well as Slovenia, Romania and Croatia. In these EU countries, the proportions of females dying from diseases of the circulatory system in 2021 were between 9.7 and 14.5 percentage points (pp) higher than those for males; these were the only EU countries to report an imbalance in excess of 9.0 points. There were only 4 EU countries where a higher proportion of males died from diseases of the circulatory system compared to females: in Denmark and Finland, the shares of male deaths were, respectively, 1.6 and 1.0 pp higher than those for females; smaller differences were observed in Sweden and Ireland. In Cyprus, the shares were the same for males and for females.

Malta recorded the narrowest gender difference in standardised death rates for diseases of the circulatory system

Standardised death rates are calculated as a weighted average of age-specific death rates and therefore improve comparability both over time and between countries. The EU's standardised death rate for diseases of the circulatory system was 343.4 deaths per 100 000 inhabitants in 2021, with the rate for males some 1.4 times as high as that for females. In the same year the standardized death rate for cancer in the EU was 235.

Standardised death rates for diseases of the circulatory system were systematically higher for males than for females in 2021 across all of the EU countries, although the differences between the sexes were relatively low compared with many other causes of death. The lowest absolute difference between males and females for standardised death rates for diseases of the circulatory system was recorded in Malta, at 54 deaths per 100 000 inhabitants; the next smallest differences (around 80 deaths per 100 000 inhabitants) were reported in the Netherlands and Cyprus. The largest difference was recorded in Bulgaria (478 deaths per 100 000 inhabitants).

Table 1 shows that deaths from diseases of the circulatory system become more common at advanced ages. While this was true for the vast majority of causes of death, the standardised death rate for diseases of the circulatory system among those aged 65 years and over in the EU in 2021 was 37 times as high as the standardised death rate for people aged less than 65 years; this can be compared with the same ratio for all causes of death, where the standardised death rate for those aged 65 years and over was 21 times as high as for people aged less than 65 years. Note that the risk of females dying from diseases of the circulatory system before the age of 65 years was particularly low.

Within the EU as a whole, standardised death rates for males were consistently higher than those for females for all forms of diseases of the circulatory system

A more detailed analysis of causes of death for diseases of the circulatory system is presented in Table 2. EU standardised death rates for males in 2021 were higher than those for females for each of the 6 causes of death presented. For ischaemic heart diseases (International Classification of Diseases, 10 revision (ICD-10) codes I20 to I25), the standardised death rate for males in the EU was 1.9 times as high as the corresponding rate for females. The difference between the sexes was less marked for other heart diseases (ICD-10 codes I30 to I51), cerebrovascular diseases (ICD-10 codes I60 to I69) and other diseases of the circulatory system (the remainder of ICD-10 codes I00 to I99, not elsewhere covered).

Standardised death rates – diseases of the circulatory system, residents, 2021
(per 100 000 male/female inhabitants)

	Ischaemic heart diseases		of which: Acute myocardial infarction including subsequent myocardial infarction		Other ischaemic heart diseases		Other heart diseases		Cerebrovascular diseases		Other diseases of the circulatory system	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
EU	154.9	83.3	54.1	24.1	100.8	59.2	95.0	68.8	79.9	64.4	82.6	72.1
Belgium	78.0	32.1	40.8	18.4	37.2	13.7	104.8	81.5	52.9	44.2	29.7	22.9
Bulgaria	318.0	181.9	124.9	52.6	193.1	129.3	513.2	350.9	419.3	309.6	240.9	171.4
Czechia	324.5	187.2	50.2	21.3	274.3	165.8	138.4	95.1	86.1	69.6	100.9	85.9
Denmark	87.1	38.6	29.1	12.4	58.0	26.2	66.4	39.3	59.1	49.6	58.3	39.8
Germany	176.8	84.1	66.8	30.2	110.0	54.0	103.6	81.1	59.3	48.0	77.2	75.3
Estonia	233.7	113.5	55.2	22.0	178.5	91.5	140.5	80.0	99.1	63.6	301.3	238.2
Ireland	160.4	73.8	62.0	27.7	98.4	46.1	59.9	53.2	41.7	40.2	35.6	36.4
Greece	153.4	76.1	78.8	33.2	74.6	42.9	83.3	76.2	92.8	85.6	64.9	52.7
Spain	80.6	32.0	36.7	15.6	43.9	16.4	81.7	62.0	51.6	39.3	47.0	40.9
France	64.6	23.1	26.8	10.5	37.7	12.6	76.6	49.2	45.1	34.1	36.1	26.1
Croatia	259.9	161.2	105.4	47.0	154.5	114.2	107.1	81.0	132.7	115.4	185.3	174.8
Italy	105.1	51.9	35.6	16.3	69.5	35.7	70.9	53.7	71.6	60.8	70.0	62.7
Cyprus	118.3	45.3	62.8	20.4	55.5	24.9	87.9	85.6	58.5	48.8	58.5	62.9
Latvia	518.4	266.8	71.3	26.8	447.1	240.0	142.9	63.5	305.5	243.6	160.2	119.7
Lithuania	660.3	389.2	64.7	21.6	595.6	367.6	47.8	17.0	207.7	160.2	125.5	87.2
Luxembourg	78.2	30.0	34.3	14.4	43.9	15.6	95.7	71.7	51.5	36.5	34.4	38.8
Hungary	445.5	288.2	90.3	43.8	355.2	244.3	90.6	51.0	144.0	98.4	206.1	169.2
Malta	168.4	111.3	86.1	61.4	82.4	49.9	48.7	55.1	52.7	45.2	28.8	33.4
Netherlands	70.9	31.2	40.7	19.3	30.2	12.0	99.6	75.3	57.3	52.4	36.6	27.3
Austria	190.5	97.5	69.8	29.6	120.7	67.9	91.2	75.0	54.4	45.5	73.2	75.3
Poland	283.4	173.3	54.1	22.0	229.3	151.3	116.6	74.3	109.0	80.3	158.3	121.4
Portugal	76.7	36.1	45.5	21.5	31.2	14.6	78.1	63.2	87.5	66.1	54.1	46.3
Romania	422.4	268.3	169.6	83.6	252.7	184.8	96.3	55.9	293.1	212.1	397.0	319.5
Slovenia	133.1	56.7	85.4	32.7	47.8	24.1	107.7	102.1	100.5	78.3	80.7	74.8
Slovakia	471.9	338.4	79.2	30.5	392.6	307.9	88.3	58.9	140.5	99.4	65.2	46.4
Finland	216.7	89.4	50.4	21.7	166.2	67.7	39.6	21.1	71.0	57.6	79.5	63.5
Sweden	127.1	58.8	50.1	22.6	77.0	36.2	91.3	62.5	53.2	42.7	48.7	43.8
Iceland	146.9	61.7	49.1	16.7	97.8	45.0	84.9	62.5	44.4	50.6	27.8	35.1
Liechtenstein	99.9	95.4	23.6	14.5	76.3	80.9	68.2	62.2	61.7	33.7	60.2	43.6
Norway	98.4	48.7	44.1	23.0	54.3	25.6	64.5	51.2	47.0	39.1	40.3	34.2
Switzerland	104.0	47.7	36.8	16.0	67.2	31.7	65.9	50.2	40.6	34.4	56.7	53.1
Serbia	164.2	103.3	84.2	41.5	79.9	61.8	412.1	342.8	155.9	132.4	239.5	229.0
Türkiye (1)	279.5	172.5	192.8	124.7	86.8	47.8	138.5	110.9	110.7	93.7	88.2	84.8

(1) Definition differs.

Source: Eurostat (online data code: hlth_cd_asdr2)

eurostat

Table 2: Standardised death rates – diseases of the circulatory system, residents, 2021 (per 100 000 male/female inhabitants) Source: Eurostat (hlth_cd_asdr2)

Some of the highest standardised death rates for ischaemic heart diseases were recorded in 2 of the Baltic countries: Lithuania had the highest rate in 2021 for males (660.3 per 100 000 male inhabitants) and for females (389.2 per 100 000 female inhabitants), followed by Latvia and Slovakia for males, and Slovakia and Hungary for females. By contrast, the lowest standardised death rates for males were recorded in France, followed by the Netherlands and Portugal. For females the lowest standardised rates were recorded in France followed by Luxembourg and Netherlands.

The standardised death rate for cerebrovascular diseases in Bulgaria was 9.1 times as high as the rate in France

In 2021, the highest standardised death rates for cerebrovascular diseases were recorded in Bulgaria, Latvia, Romania and Lithuania. By contrast, the lowest rates were recorded in France and Ireland. As for all diseases of the circulatory system, there were large variations across the EU countries in standardised death rates for cerebrovascular diseases in 2021, with the death rate in Bulgaria (where the highest rate was recorded) 9.1 times as high as that in France (where the lowest rate was registered).

Cardiovascular healthcare

Changes in the number of deaths associated with diseases of the circulatory system may occur for a variety of reasons, including preventive measures such as, among others, lifestyle changes in the population (for example, a reduction in the number of smokers), the improvement of screening for risk factors, as well as new surgical procedures and forms of medication.

The number of in-patients with diseases of the circulatory system discharged from hospitals across the EU was 8.6 million in 2021

Hospital discharges of in-patients treated for diseases of the circulatory system show a very large variation across the EU countries. While absolute figures for discharges are clearly linked to the number of inhabitants in each country, the level of discharges may, among other influences, also reflect the incidence of each disease and differences in healthcare systems, for example, the balance between day care and in-patient treatment, as well as the availability of surgeons, hospital beds, or emergency interventions and care facility at hand. In 2021, there were 8.6 million in-patients with diseases of the circulatory system discharged from hospitals across the EU (2020 data for Malta; no recent data for Denmark, Greece or Luxembourg).

Bulgaria recorded the highest ratio per inhabitant of hospital discharges for in-patients with diseases of the circulatory system

Bulgaria and Germany both reported more than 3 000 in-patient discharges per 100 000 inhabitants among those treated for diseases of the circulatory system in 2021 (see Figure 1). Malta (2020 data), Ireland and Portugal recorded the lowest ratios; they were the only EU countries with fewer than 1 100 discharges per 100 000 inhabitants.

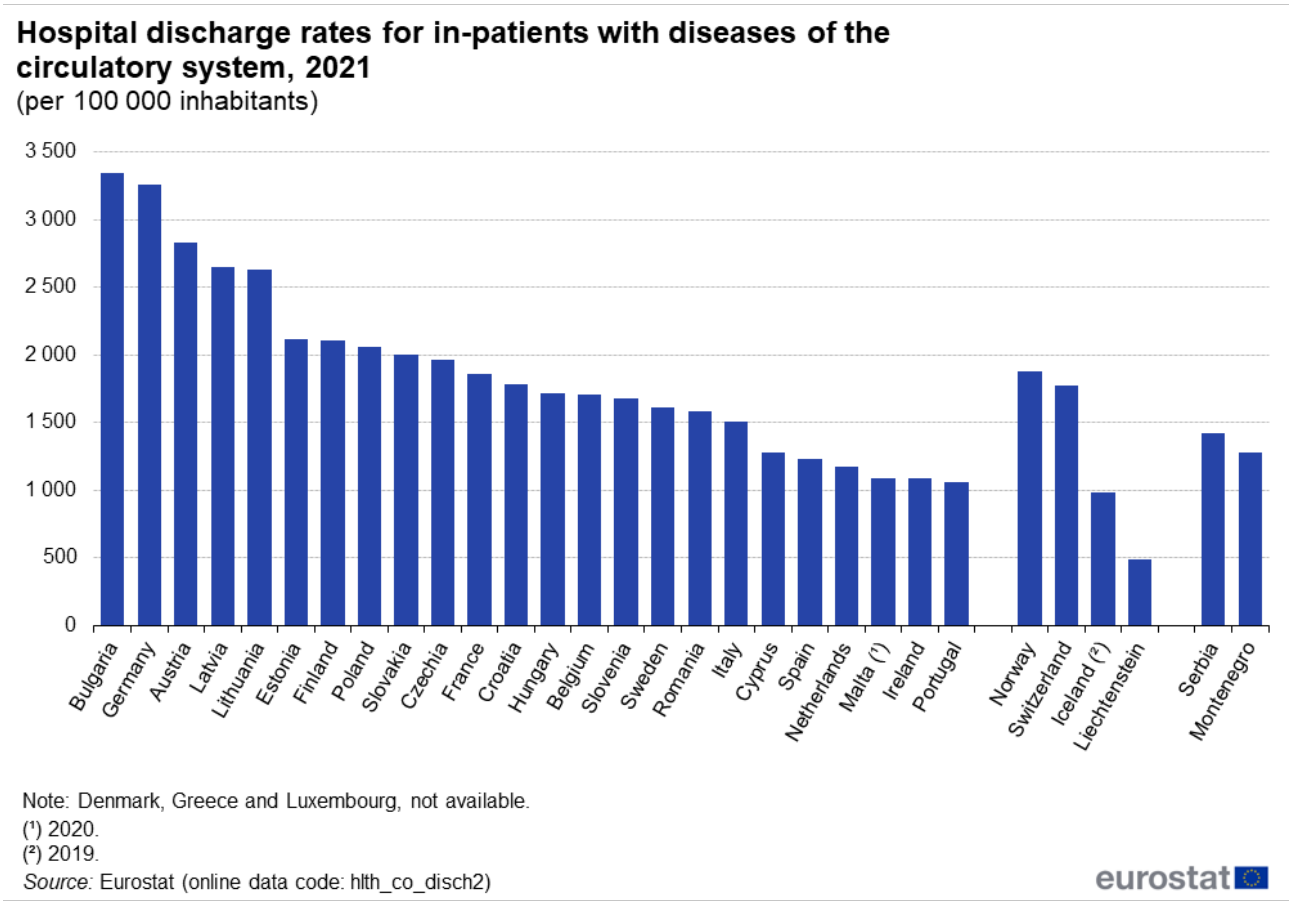

Figure 1: Hospital discharge rates for in-patients with diseases of the circulatory system, 2021 (per 100 000 inhabitants) Source: Eurostat (hlth_co_disch2)

In 2021, across the EU, in-patients with diseases of the circulatory system (ICD-10 codes I00 to I99) spent a total of 69 million days in hospital (2020 data for Malta; no recent data for Denmark, Greece or Luxembourg). By far the highest share – more than a third of the total (34.9%) – was accounted for by in-patients in Germany, while Italy (12.1%) and France (11.6%) were the only other EU countries recording double-digit shares[1].

In-patients with diseases of the circulatory system in Hungary spent, on average, 11.1 days in hospital per stay

When patients are treated for a disease of the circulatory system, they tend to spend a relatively lengthy period of time in hospital, reflecting the seriousness of some of these conditions. Table 3 presents an analysis of the average length of hospital stays for in-patients treated for a disease of the circulatory system in 2016 and 2021. The average length of stay in 2021 ranged from 4.1 days in Bulgaria up to 11.1 days in Hungary. Relatively lengthy average stays in hospital for in-patients treated for diseases of the circulatory system were also recorded in Austria and Estonia (10.4 and 10.3 days, respectively).

[1] For more information please see this table: hlth_co_hosday .

In-patient average length of stay for diseases of the circulatory system, 2016 and 2021
(days)

	Diseases of the circulatory system		of which: Pulmonary heart disease and diseases of pulmonary circulation		Heart failure		Cerebrovascular diseases		Atherosclerosis	
	2016	2021	2016	2021	2016	2021	2016	2021	2016	2021
Belgium	7.6	6.9	9.1	7.8	12.0	10.7	13.9	12.6	5.5	4.8
Bulgaria	4.2	4.1	6.1	5.3	4.7	4.6	5.2	5.3	3.8	3.5
Czechia	11.2	10.0	9.8	8.0	11.7	10.6	21.9	18.8	15.4	15.2
Denmark	4.8	:	5.6	:	6.0	:	5.5	:	9.2	:
Germany	9.3	8.9	9.6	8.5	10.4	10.0	16.2	16.0	10.3	9.5
Estonia	9.9	10.3	:	:	:	:	14.7	15.0	:	:
Ireland	7.8	7.8	8.2	7.9	10.3	10.1	16.4	15.6	14.3	14.6
Greece	:	:	:	:	:	:	:	:	:	:
Spain	8.3	8.5	9.3	8.8	9.0	9.6	11.7	12.9	11.1	11.4
France	6.7	6.3	7.9	7.1	9.3	9.0	9.8	9.2	7.0	6.3
Croatia	8.1	7.1	11.3	8.8	10.1	8.6	11.6	10.2	9.3	8.0
Italy	9.4	9.3	10.8	10.5	10.3	10.3	14.3	14.2	8.5	7.9
Cyprus	6.3	5.3	6.0	7.5	6.4	7.0	9.0	8.9	6.2	2.6
Latvia	6.9	8.2	9.0	7.6	7.8	9.1	10.0	10.0	10.1	8.6
Lithuania	7.6	8.5	10.0	8.5	8.9	9.0	10.9	13.3	8.8	9.1
Luxembourg	8.9	:	9.4	:	11.9	:	14.5	:	10.3	:
Hungary	12.5	11.1	12.1	10.5	14.8	12.2	13.6	12.8	27.4	26.6
Malta (1)	9.8	9.3	9.8	8.4	10.0	8.7	24.4	24.9	17.8	7.5
Netherlands	5.5	5.3	4.6	4.5	7.7	7.4	6.5	6.1	5.6	4.7
Austria	10.4	10.4	9.5	9.3	11.2	10.8	18.9	18.9	9.1	9.5
Poland	6.5	6.7	9.2	8.5	8.3	8.1	11.4	11.2	7.1	6.7
Portugal (2)	9.8	9.5	10.4	10.3	10.5	10.4	13.6	13.2	14.4	12.0
Romania	7.5	7.4	7.9	8.1	7.4	7.4	8.5	9.2	8.7	8.4
Slovenia	8.0	7.4	9.5	7.9	10.7	9.9	16.0	14.5	7.5	5.2
Slovakia	7.2	6.5	8.9	7.5	8.7	7.9	10.5	8.8	8.6	6.6
Finland	9.7	8.0	7.2	5.8	8.8	8.1	20.5	15.1	10.0	8.3
Sweden	5.7	5.1	5.1	4.6	6.2	5.7	9.3	7.5	7.2	6.2
Iceland (3)	9.0	8.7	5.4	7.3	10.3	10.5	15.6	15.4	9.9	11.8
Liechtenstein (4)	4.8	4.4	9.6	4.2	9.9	9.5	8.0	1.8	10.8	7.7
Norway	4.6	4.3	4.6	4.2	5.7	5.5	7.2	6.9	5.4	5.0
Switzerland	8.7	8.3	7.7	7.0	11.3	10.1	15.5	14.2	8.8	7.5
Montenegro	8.0	7.1	11.4	10.8	8.7	7.9	12.1	10.2	12.8	9.9
Serbia	8.4	7.7	13.0	9.8	9.4	9.7	10.8	9.5	8.2	7.3
Türkiye	5.3	:	10.4	:	7.7	:	11.7	:	5.5	:

(1) 2020 instead of 2021.
(2) 2018 instead of 2016.
(3) 2019 instead of 2021.
(4) Atherosclerosis: 2017 instead of 2016.
Source: Eurostat (online data code: hlth_co_inpst)

eurostat

Table 3: In-patient average length of stay for diseases of the circulatory system, 2016 and 2021 (days)
Source: Eurostat (hlth_co_inpst)

Among the 24 EU countries for which data are available (see Table 3), a majority (17) recorded a fall between 2016 and 2021 in the average length of a hospital stay for people who were treated for a disease of the circulatory system. The largest decrease – 1.7 fewer days in hospital – was recorded in Finland, while decreases of 1.4 days and 1.2 days, respectively, were recorded in Hungary and Czechia; these were the only EU countries to record falls of more than 1.0 days. By contrast, the average length of a hospital stay for people who were treated for a disease of the circulatory system rose by 1.3 days and 0.9 days in Latvia and Lithuania, respectively, with smaller increases in Estonia, Spain and Poland; there was no change in Ireland and Austria.

Table 3 also provides a more detailed analysis of the average length of hospital stays for in-patients treated for 4 different types of circulatory disease. On average, in both 2016 and 2021, in-patients with cerebrovascular diseases (ICD-10 codes I60 to I69) spent the highest number of days in hospital, followed by those treated for heart failure (ICD-10 code I50) or atherosclerosis (ICD-10 code I70). While it could be assumed from Table 3, that patients with more serious conditions require a longer stay in hospital, this is not always the case. For example, the average length of stay for acute myocardial infarction, (also known as heart attack) (ICD-10 codes I21-I22), in 2021, ranged from 9.1 in Lithuania to 3.9 in Sweden; only Latvia was above this range with 16.3 days. On average, patients with acute myocardial infarction spent fewer days in hospital than for the circulatory diseases presented in Table 3.

Transluminal coronary angioplasty was a common form of intervention for patients treated for cardiovascular diseases

Table 4 provides an overview of the rates (number of surgical operations and procedures conducted, both for in-patients and day cases, in hospitals per 100 000 inhabitants) for 2 procedures related to cardiovascular diseases. The more common of the 2 was transluminal coronary angioplasty, which is a non-surgical procedure used to treat coronary arteries that have narrowed; a deflated balloon is fed through blood vessels until it reaches the site of the blockage before inflating the balloon to open up the artery (allowing blood to flow normally).

Surgical operations and procedures performed related to diseases of the circulatory system, 2017 and 2022
(per 100 000 inhabitants)

	Coronary artery bypass graft		Transluminal coronary angioplasty	
	2017	2022	2017	2022
Belgium	63.6	57.3	257.1	276.4
Bulgaria	42.6	37.4	191.8	378.4
Czechia	45.3	41.2	216.6	206.2
Denmark (1)	59.1	26.8	200.3	156.0
Germany	58.5	44.3	413.2	379.3
Estonia	35.2	30.0	222.0	215.2
Ireland (1)	20.3	34.9	131.5	191.4
Greece	:	:	:	:
Spain	16.8	15.4	123.2	125.9
France	28.9	25.7	267.2	292.2
Croatia	64.3	39.9	395.7	500.1
Italy	34.0	29.5	215.6	224.3
Cyprus (2)	36.9	*65.4*	145.2	*264.8*
Latvia	:	22.6	:	341.7
Lithuania	55.2	41.9	297.0	295.9
Luxembourg	20.3	*19.3*	142.2	*118.7*
Hungary	28.7	*21.4*	233.5	*237.4*
Malta (3)	25.9	19.9	198.3	189.0
Netherlands (4)	53.1	43.5	225.6	219.6
Austria	39.2	35.4	292.3	299.4
Poland	30.7	24.6	121.6	144.3
Portugal	22.2	21.2	118.1	107.1
Romania	22.2	22.1	120.7	133.7
Slovenia	39.2	36.3	221.6	216.9
Slovakia	46.1	42.6	:	:
Finland	31.6	24.6	194.3	235.2
Sweden	30.4	25.0	205.1	173.2
Iceland (5)	22.4	17.5	236.8	182.5
Liechtenstein (6)	0.0	0.0	234.4	0.0
Norway (5)	28.6	22.5	223.9	203.9
Switzerland	43.8	38.5	298.8	295.7
North Macedonia (5)	32.4	36.8	210.9	172.2
Serbia (7)	78.5	72.6	231.9	299.9
Türkiye (8)	50.9	57.8	246.1	332.1

(1) Break in series.
(2) Break in series. Public sector (incomplete coverage) only. Includes procedures recorded during discharge. Excludes outpatients.
(3) 2021 instead of 2022. Excluding some small private hospitals.
(4) 2021 instead of 2022. Transluminal coronary angioplasty: break in series.
(5) 2021 instead of 2022.
(6) Transluminal coronary angioplasty: break in series.
(7) Public sector only.
(8) 2018 instead of 2017.
Source: Eurostat (online data code: hlth_co_proc3)

eurostat

Table 4: Surgical operations and procedures performed related to diseases of the circulatory system, 2017 and 2022 (per 100 000 inhabitants) Source: Eurostat (hlth_co_proc3)

A relatively common operation for patients treated for cardiovascular diseases was a bypass anastomosis for heart revascularisation – also referred to as a coronary artery bypass graft or heart bypass. This is a surgical procedure whereby arteries to the heart are replaced by blood vessels from another part of the body. In 2022, there were 136 100 heart bypass operations conducted across the EU (2021 data for Malta and the Netherlands; no recent data for Greece), over 26 000 operations lower than in 2017. In relative terms, the number of heart bypasses per 100 000 inhabitants decreased in all but 2 EU countries (Ireland and Cyprus; note there in a break in series) between 2017 and 2022.

Germany recorded the highest number of operations (37 100) and had the 3rd highest frequency when taking account of population size (44.3 per 100 000 inhabitants), behind Cyprus (65.4 times per 100 000 inhabitants; data for the public sector only) and Belgium (57.3 times per 100 000 inhabitants). This procedure was least common in Spain, where it was performed on average 15.4 times per 100 000 inhabitants.

317 800 coronary angioplasties were conducted in Germany in 2022

Across the 25 EU countries for which data are available (2021 data for Malta and the Netherlands; no recent data for Greece or Slovakia), there were 1.06 million transluminal coronary angioplasty procedures conducted in 2022. This was over 3 500 procedures higher than in 2017. In relative terms, the number of transluminal coronary angioplasty procedures per 100 000 inhabitants increased in 13 EU countries. The highest increase was recorded in Bulgaria, where the number of transluminal coronary angioplasty procedures increased by 189.7 procedures per 100 000 inhabitants between 2017 and 2022. The biggest decrease was recoded in Denmark; down 44.3 procedures per 100 000 inhabitants.

Germany accounted for around 30% (317 800) of the procedures that took place in the EU in 2022, which was considerably higher than in any of the other EU countries; France and Italy were the only other EU countries to report in excess of 100 000 procedures. Not only did Germany report the largest number of such operations, but also the 2nd highest ratio when taking account of the size of its population (see Table 4): 379.3 transluminal coronary angioplasty procedures were performed in Germany per 100 000 inhabitants. The highest ratio was 500.1 per 100 000 inhabitants in Croatia. This procedure was least common in Portugal where it was conducted 107.1 times per 100 000 inhabitants, while relatively low ratios were also recorded in Luxembourg, Spain and Romania.

Source data for tables and graphs

* Cardiovascular diseases: tables and figures

Data sources

Key concepts

An in-patient is a patient who is formally admitted (or 'hospitalised') to an institution for treatment and/or care and stays for a minimum of 1 night in the hospital or other institution providing in-patient care.

A day case refers to a patient who receives planned medical and paramedical services delivered in a healthcare facility and who is formally admitted for diagnosis, treatment or other types of healthcare and is discharged on the same day. Day care is the care of a day case.

An in-patient or day care patient is discharged from hospital when formally released after a procedure or course of treatment (episode of care). A discharge may occur because of the finalisation of treatment, signing out against medical advice, transfer to another healthcare institution, or because of death.

The number of deaths from a particular cause of death can be expressed relative to the size of the population. A standardised (rather than crude) death rate can be compiled which is independent of the age and sex structure of a population: this is done as most causes of death vary significantly by age and according to sex and the standardisation facilitates comparisons of rates over time and between countries.

Healthcare resources and activities

Statistics on healthcare resources (such as personnel and medical equipment) and healthcare activities (such as information on surgical operations and procedures and hospital discharges) are documented in this Health in the European Union – facts and figures which provides information on the scope of the data, its legal basis, the methodology employed, as well as related concepts and definitions.

For hospital discharges and the length of stay in hospitals, the International Shortlist for Hospital Morbidity Tabulation (ISHMT) is used to classify data from 2000 onwards; Chapter IX covers diseases of the circulatory system

- hypertensive diseases (0901)
- angina pectoris (0902)
- acute myocardial infarction (0903)
- other ischaemic heart disease (0904)
- pulmonary heart disease and diseases of pulmonary circulation (0905)
- conduction disorders and cardiac arrhythmias (0906)
- heart failure (0907)
- cerebrovascular diseases (0908)
- atherosclerosis (0909)
- varicose veins of lower extremities (0910)
- other diseases of the circulatory system (0911)

For surgical operations and procedures, the International Classification of Diseases – clinical modification (ICD-9-CM) is used

- operations on the cardiovascular system (35 to 39)
- transluminal coronary angioplasty (36.01, 36.02 and 36.05)
- bypass anastomosis for heart revascularisation (36.1)

For country specific notes on these data collections, please refer to the annexes at the end of the national metadata reports accessible from links at the beginning of the European metadata report .

The Healthcare non-expenditure statistics manual provides an overview of the classifications, both for mandatory variables and variables provided on a voluntary basis.

Eurostat is in the process of updating the technical requirements for countries to submit hospital discharge data in line with Commission Regulation (EU) 2294/2022 . Therefore, the hospital discharge data in this article refer to reference year 2021.

Causes of death

Statistics on causes of death provide information on mortality patterns, supplying information on developments over time in the underlying causes of death. This source is documented in more detail in this background article which provides information on the scope of the data, its legal basis, the methodology employed, as well as related concepts and definitions. Under Commission Regulation (EU) 0328/2011 countries provide causes of death data to Eurostat within 24 months (T+24) after the end of the reference year.

Causes of death are classified according to the 86 causes in the European shortlist , which is based on the International Statistical Classification of Diseases and Related Health Problems (ICD). Chapter IX of the ICD covers diseases of the circulatory system

- I00 to I02 acute rheumatic fever
- I05 to I09 chronic rheumatic heart diseases
- I10 to I15 hypertensive diseases
- I20 to I25 ischaemic heart diseases
- I26 to I28 pulmonary heart disease and diseases of pulmonary circulation
- I30 to I52 other forms of heart disease

- I60 to I69 cerebrovascular diseases
- I70 to I79 diseases of arteries, arterioles and capillaries
- I80 to I89 diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified
- I95 to I99 other and unspecified disorders of the circulatory system

Symbols

Tables in this article use the following notation

Value in*italics*	estimate or provisional data
Value is :	not available

Context

Statistics concerning cardiovascular diseases are of particular significance because these diseases are the principal cause of death within the EU. Increased prevention, especially for heart disease and strokes, has resulted in decreases across most EU countries concerning the number of people who face disability, reduced quality of life and premature death. Nevertheless, cardiovascular diseases continue to touch the lives of millions of Europeans each year.

According to the World Heart Federation , modifiable risk factors for cardiovascular diseases include hypertension, diabetes, obesity, hypercholesterolemia, tobacco and related products use, stress, sleep disorders, sedentary lifestyle, harmful alcohol consumption and unhealthy eating.

Cardiovascular diseases are included as 1 of the 5 main strands covered by the European Commission's Healthier together – EU non-communicable diseases (NCD) initiative . The initiative was launched in December 2021 and aims to support EU countries in identifying and implementing effective policies and actions to reduce the burden of major NCDs and improve citizens' health and well-being.

Notes

Explore further

Other articles

Online publications

- Health in the European Union – facts and figures
- Disability statistics

Causes of death

- Causes of death
- Causes of death statistics by age group

Healthcare activities

- Hospital discharges and length of stay
- Surgical operations and procedures

Methodology

- Healthcare non-expenditure statistics
- Causes of death statistics

General health statistics articles

- Health statistics introduced
- Regional health statistics

Database

- Health (hlth), see

Health status (hlth_state)

Self-reported chronic morbidity (hlth_srcm)

Persons reporting a chronic disease, by disease, sex, age and educational attainment level (hlth_ehis_cd1e)

Health care (hlth_care)

Health care activities (hlth_act)

Hospital discharges - national data (hlth_hosd)
Length of stay in hospital (hlth_hostay)
Operations, procedures and treatment (hlth_oper)

Causes of death (hlth_cdeath)

General mortality (hlth_cd_gmor)

Causes of death - deaths by country of residence and occurrence (hlth_cd_aro)
Causes of death - standardised death rate by NUTS 2 region of residence (hlth_cd_asdr2)

Dedicated section

- Health

Publications

Atlas

- Health statistics – Atlas on mortality in the European Union

News releases

- Circulatory disease deaths: majority among people over 65
- Main cause of death for people under 65 years: cancer
- Circulatory diseases, cancer: 54% of all EU deaths in 2021
- Angioplasty surgeries rise in majority of EU countries

Main tables

- Health (t_hlth), see

Causes of death (t_hlth_cdeath)

Death due to other ischaemic heart diseases, by sex (tps00119)
Death due to ischaemic heart diseases by NUTS 2 regions (tgs00059)

Methodology

Manuals and guidelines

- Healthcare non-expenditure statistics manual – Guidelines for completing the Joint questionnaire on non-monetary healthcare statistics – 2023 edition

Metadata

- Causes of death (SIMS metadata file – hlth_cdeath_sims)
- Health care resources (ESMS metadata file – hlth_res_esms)

External links

- European Commission – Public health , see
  - European Commission – Non-communicable diseases
  - European Commission – European core health indicators (ECHI)
- European heart health charter – 2023 revision
- OECD / European Commission report 'Health at a Glance'
- OECD – The future of health systems
- World Health Organization (WHO) , see
  - WHO – Global Health Observatory (GHO) – Global health estimates: life expectancy and leading causes of death and disability
  - WHO – Health system governance
  - WHO – Cardiovascular diseases