

Cardiovascular diseases statistics

Statistics Explained

*Data extracted in November 2019.
Planned article update: November 2020.*

This article presents an overview of [European Union \(EU\)](#) statistics related to cardiovascular diseases and focuses on the following aspects: cardiovascular health and mortality, cardiovascular healthcare and the availability of specialist healthcare equipment.

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 others, cholesterol or fatty substances — that is 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 one of a set of statistical articles concerning health status in the EU which forms part of an online publication on [health statistics](#) .

Deaths from cardiovascular diseases

There were 1.83 million deaths in the EU-28 from diseases of the circulatory system

Diseases of the circulatory system place a considerable burden on healthcare systems and government budgets. Indeed, in 2016 there were 1.83 million deaths resulting from diseases of the circulatory system in the [EU-28](#) , which was equivalent to 35.7 % of all deaths — considerably higher than the second most prevalent cause of death, [cancer](#) (malignant neoplasms; 26.0 %).

Causes of death — diseases of the circulatory system, residents, 2016

	Number of deaths (number)	Share of all deaths			Standardised death rates (per 100 000 inhabitants)				
		Total	Males	Females	Total	Males	Females	Persons aged < 65 years	Persons aged ≥ 65 years
		(%)							
EU-28	1 832 835	35.7	33.1	38.4	358.3	427.8	303.7	43.9	1 656.4
Belgium	30 175	28.1	26.2	29.9	268.8	325.9	225.9	29.1	1 258.6
Bulgaria	70 509	66.2	61.7	71.0	1 094.9	1 310.2	934.4	166.3	4 928.3
Czechia	47 700	44.4	40.8	48.1	569.9	692.5	483.2	57.9	2 683.7
Denmark	12 569	23.9	24.6	23.2	248.3	317.7	197.8	28.4	1 155.9
Germany	339 887	37.2	34.1	40.2	381.1	457.1	323.2	37.8	1 798.6
Estonia	8 019	52.4	44.5	59.5	643.0	836.6	529.2	83.0	2 954.7
Ireland	9 218	30.0	30.5	29.6	309.0	376.2	252.8	31.5	1 454.6
Greece	43 917	37.1	34.7	39.7	351.5	393.1	311.4	50.6	1 593.7
Spain	118 824	29.1	26.3	31.9	237.3	286.1	197.6	27.1	1 105.2
France	143 967	24.3	22.5	26.0	197.2	254.4	157.2	24.1	912.1
Croatia	23 221	45.0	39.7	50.1	630.7	733.3	553.2	64.7	2 967.3
Italy	220 749	35.9	32.5	39.1	296.2	356.8	253.5	25.1	1 415.3
Cyprus	1 802	32.9	32.2	33.8	331.6	372.8	293.1	36.1	1 551.4
Latvia	15 876	56.1	49.5	62.1	848.5	1 114.5	696.1	139.2	3 776.5
Lithuania	23 056	56.7	48.3	64.8	845.7	1 094.4	697.0	122.7	3 830.4
Luxembourg	1 263	31.8	29.3	34.3	298.2	360.1	251.5	24.2	1 429.1
Hungary	62 727	49.4	44.5	54.2	737.5	902.2	626.5	103.9	3 353.2
Malta	1 209	36.2	33.6	38.6	332.7	375.9	299.1	33.6	1 567.8
Netherlands	38 954	26.3	25.7	26.9	264.4	314.9	226.0	24.6	1 254.1
Austria	33 370	42.0	37.7	45.9	397.4	475.1	341.9	30.7	1 911.2
Poland	168 280	43.3	38.2	48.8	552.7	683.5	459.5	76.1	2 520.1
Portugal	32 685	29.5	26.3	32.8	296.7	350.7	255.7	32.9	1 385.9
Romania	148 619	58.2	51.8	65.2	898.9	1 044.9	786.4	114.4	4 137.7
Slovenia	7 952	40.5	33.5	47.4	431.7	495.3	379.6	32.4	2 080.0
Slovakia	23 038	44.1	39.9	48.6	620.2	735.2	533.5	80.8	2 846.9
Finland	19 687	36.6	36.4	36.7	360.2	474.9	279.5	40.6	1 679.4
Sweden	31 674	35.0	34.6	35.4	318.6	389.9	263.6	27.8	1 518.9
United Kingdom	153 888	25.6	26.9	24.4	253.3	314.2	204.3	37.4	1 144.6
Iceland	737	32.2	34.0	30.3	315.1	408.6	244.5	18.5	1 539.6
Liechtenstein	97	37.3	40.6	33.9	353.4	485.9	260.3	24.3	1 711.6
Norway	11 027	27.4	26.8	27.9	247.5	301.2	206.2	21.6	1 180.1
Switzerland	20 908	32.2	30.4	33.9	263.0	319.1	222.6	20.6	1 263.9
Serbia	52 162	51.8	47.1	56.6	858.1	929.1	794.0	92.9	4 016.8
Turkey	163 787	39.9	36.4	44.1	523.7	596.7	465.7	63.1	2 425.0

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



Table 1: Causes of death — diseases of the circulatory system, residents, 2016 Source: Eurostat (hlth_cd_aro) and (hlth_cd_asdr2)

Diseases of the circulatory system are one of the main causes of mortality in each of the EU Member States (as shown in Table 1): they accounted for 50-60 % of all deaths in the **Baltic Member States** and Romania, a share that rose to close to two thirds (66.2 %) of all deaths in Bulgaria. By contrast, one quarter or less of all deaths in Denmark (23.9 %) and France (24.3 %) were caused by diseases of the circulatory system.

Across the EU-28, a higher proportion of women (38.4 %) died from diseases of the circulatory system than men (33.1 %). The largest gaps between the sexes were recorded in the **Baltic Member States**, Slovenia and Romania, where the proportions of women dying from diseases of the circulatory system were between 12.6 and 16.5 **percentage points** higher than those for men; the gender imbalance was also relatively large in Poland and Croatia (10.6 and 10.5 percentage points). There were three EU Member States where a higher proportion of men (than women) died from diseases of the circulatory system: in the United Kingdom, the share of male deaths was 2.5 percentage points higher than that for women, while in Denmark this difference was 1.4 points and in Ireland it was 0.9 points.

Cyprus, Spain, Greece, Portugal, the Netherlands and France recorded the lowest gender differences 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-28's standardised death rate for diseases of the circulatory system was 358 deaths per 100 000 inhabitants in 2016, with the rate for men some 1.4 times as high as that for women.

Standardised death rates for diseases of the circulatory system were systematically higher for men than for women in 2016 across all of the EU Member States, although the differences between the sexes were relatively low compared with most other causes of death. The lowest absolute differences between men and women for

standardised death rates for diseases of the circulatory system were recorded in Malta, Cyprus, Greece, Spain, the Netherlands, Portugal and France — for each of these, the difference between the sexes was less than 100 deaths per 100 000 inhabitants.

Deaths in younger ages can be considered as premature. Indeed, Table 1 shows that deaths from diseases of the circulatory system become more prevalent 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-28 in 2016 was 38 times as high as the standardised death rate for persons 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 persons aged less than 65 years. Note that the risk of women dying from diseases of the circulatory system was relatively low before the age of 65 years and that the vast majority of deaths among women from these diseases occurred after the age of 65 years.

Within the EU-28, standardised death rates for men were consistently higher than those for women 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-28 standardised death rates for men in 2016 were higher than those for women for each of the six causes of death presented. Gender differences were most pronounced for ischaemic heart diseases (codes I20-I25) — where the standardised death rate for men in the EU-28 was 1.9 times as high as the corresponding rate for women; the difference between the sexes was less marked for other heart diseases (codes I30-I51), cerebrovascular diseases (codes I60-I69) and other diseases of the circulatory system (the remainder of codes I00-I99, not elsewhere covered).

Standardised death rates — diseases of the circulatory system, residents, 2016
(per 100 000 male/female inhabitants)

	Ischaemic heart diseases		of which:				Other heart diseases		Cerebrovascular diseases		Other diseases of the circulatory system	
	Males	Females	Acute myocardial infarction including subsequent myocardial infarction		Other ischaemic heart diseases		Males	Females	Males	Females	Males	Females
			Males	Females	Males	Females						
EU-28	162.2	86.7	60.8	28.7	101.5	58.1	102.8	77.4	87.6	73.2	75.2	66.4
Belgium	98.9	44.1	53.2	25.3	45.7	18.8	125.6	97.4	65.1	56.2	36.4	28.3
Bulgaria	245.5	144.9	97.9	43.4	147.6	101.5	485.7	340.6	348.6	271.3	230.5	177.5
Czechia	371.4	230.1	72.3	36.7	299.0	193.4	111.9	79.7	116.8	95.9	92.5	77.5
Denmark	105.3	49.6	39.6	18.3	65.7	31.3	81.3	51.7	73.4	58.8	57.7	37.8
Germany	194.2	96.8	76.9	36.7	117.4	60.2	116.1	92.5	67.8	57.1	79.0	76.8
Estonia	364.4	190.9	63.6	22.9	300.9	168.0	102.8	51.0	92.2	62.1	277.2	225.2
Ireland	200.1	102.3	80.9	45.5	119.2	56.8	73.2	56.5	64.7	59.5	38.2	34.5
Greece	133.6	62.4	71.2	32.5	62.4	29.9	94.9	98.5	107.4	107.1	57.3	43.4
Spain	95.5	40.7	44.2	19.0	51.3	21.8	83.9	67.0	60.1	48.1	46.7	41.8
France	73.6	28.0	30.5	12.4	43.0	15.6	89.2	60.0	51.1	39.4	40.5	29.9
Croatia	350.5	236.2	129.0	57.8	221.5	178.4	109.6	79.1	189.7	155.6	83.5	82.3
Italy	125.9	65.3	44.8	21.2	81.1	44.1	80.6	59.8	82.8	69.9	67.5	58.5
Cyprus	146.6	61.2	72.8	24.8	73.8	36.4	110.6	98.3	63.4	67.1	52.1	66.5
Latvia	571.6	307.0	92.1	36.5	479.5	270.5	102.1	44.9	335.0	259.5	105.9	84.7
Lithuania	749.3	454.5	58.6	27.2	690.7	427.2	47.4	14.2	230.7	183.6	67.1	44.8
Luxembourg	123.6	57.5	57.1	26.5	66.5	31.0	136.2	102.2	56.7	45.3	43.6	46.5
Hungary	469.3	301.8	93.6	41.9	375.7	259.9	108.9	69.9	150.4	106.2	173.6	148.6
Malta	214.1	149.3	110.2	75.4	103.8	73.9	55.7	53.4	75.7	70.1	30.4	26.3
Netherlands	83.7	39.8	46.1	24.7	37.7	15.1	123.6	95.6	67.6	61.5	40.0	29.1
Austria	226.7	127.9	79.5	37.2	147.2	90.7	104.3	82.0	60.1	50.7	84.1	81.3
Poland	174.4	91.6	56.7	25.0	117.6	66.6	230.6	150.7	110.0	81.3	168.5	135.9
Portugal	93.7	45.5	55.8	26.6	37.9	18.9	85.6	71.7	121.8	93.8	49.5	44.7
Romania	368.4	247.5	146.3	76.3	222.1	171.2	82.7	50.6	287.5	232.1	306.3	256.3
Slovenia	147.8	65.4	85.3	32.0	62.5	33.4	150.4	145.4	118.3	94.1	78.9	74.8
Slovakia	430.3	308.0	76.1	37.6	354.2	270.4	68.1	44.4	163.4	124.5	73.4	56.7
Finland	276.5	125.9	82.9	39.0	193.6	86.9	45.4	25.9	87.8	72.7	65.3	55.0
Sweden	163.6	82.7	71.6	36.5	92.0	46.1	104.1	78.5	69.2	55.5	53.1	46.9
United Kingdom	158.0	72.0	59.5	28.5	98.4	43.5	46.4	37.2	66.1	59.4	43.8	35.7
Iceland	197.3	79.1	73.1	29.8	124.2	49.3	112.5	74.0	59.8	49.6	39.1	41.9
Liechtenstein (*)	86.9	28.4	28.49	6.03	58.4	28.4	340.5	184.6	52.5	30.9	58.5	16.4
Norway	122.6	60.2	71.5	38.0	51.1	22.1	85.2	67.0	59.0	51.3	34.4	27.8
Switzerland	128.3	61.7	40.3	18.4	88.0	43.3	84.4	61.7	46.0	41.7	60.4	57.6
Serbia	174.6	113.0	87.9	45.4	86.7	67.5	395.8	345.3	186.2	169.6	172.6	166.1
Turkey	258.4	162.3	178.6	117.9	79.8	44.4	136.5	115.3	133.3	118.5	68.5	69.7

(*) Acute myocardial infarction including subsequent myocardial infarction, females: 2014. Cerebrovascular diseases, males: 2015.
Source: Eurostat (online data code: hlth_cd_asdr2)

eurostat 

Table 2: Standardised death rates — diseases of the circulatory system, residents, 2016(per 100 000 male/female inhabitants)Source: Eurostat (hlth_cd_asdr2)

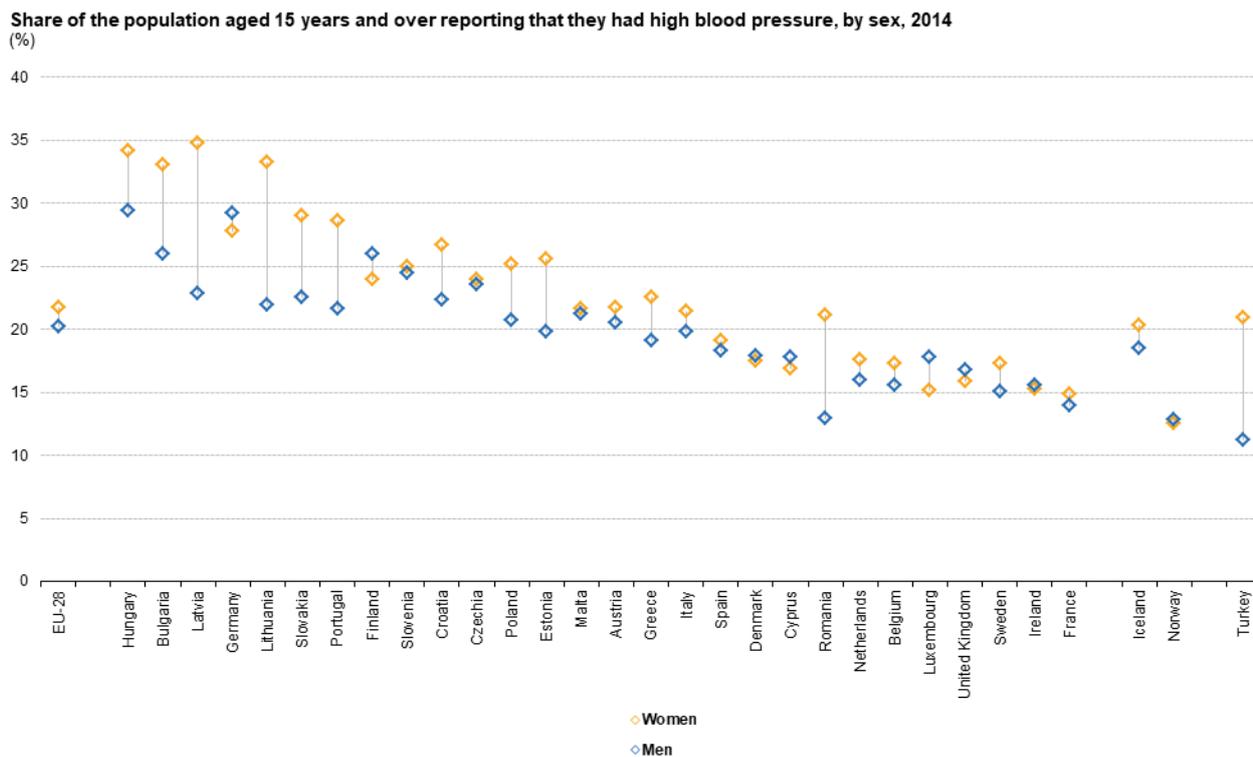
Some of the highest standardised death rates for ischaemic heart diseases were recorded in the Baltic Member States: Lithuania had the highest rate in 2016 for men (749 per 100 000 inhabitants) and for women (454 per 100 000 inhabitants), followed — in different orders for men and women — by Latvia, Hungary, Slovakia, Czechia, Romania, Estonia and Croatia. By contrast, the lowest standardised death rates were recorded in France, followed — again in different orders for men and women — by the [Benelux Member States](#), Portugal, Spain and Denmark.

Standardised death rates for cerebrovascular diseases in Bulgaria were nearly seven times as high as in France

In 2016, the highest standardised death rates for cerebrovascular diseases were recorded in Bulgaria, Latvia, Romania, Lithuania and Croatia. By contrast, the lowest rates were recorded in France, Luxembourg, Spain and Austria; very low death rates were recorded in Liechtenstein and Switzerland and relatively low rates in Iceland and Norway. As for all diseases of the circulatory system, there were large variations in standardised death rates for cerebrovascular diseases across the EU Member States, with death rates for both men and women in Bulgaria (where the highest rates were recorded) just under seven times as high as those in France (where the lowest rates were registered).

Self-reporting of hypertensive diseases

The persistent effect of high blood pressure in arteries may lead to chronic failure of vital organs such as the heart, kidneys or brain. The data presented in Figure 1 are derived from the second wave of the [European health interview survey \(EHIS\)](#) which was conducted between 2013 and 2015 and which covered the population aged 15 years and over. The survey included questions on self-assessment of an individual's health and data on hypertension which are available for all EU Member States, Iceland, Norway and Turkey. The next wave of the survey was conducted in 2019 and it will be run at regular five-year intervals afterwards.



Note: the figure is ranked on the share of the total population reporting that they had high blood pressure.
Source: Eurostat (online data code: hlth_ehis_cd1e)

eurostat

Figure 1: Share of the population aged 15 years and over reporting that they had high blood pressure, by sex, 2014(%)Source: Eurostat (hlth_ehis_cd1e)

A higher proportion of women reported that they had hypertensive diseases

The highest shares of self-reported hypertensive diseases among the population aged 15 years and over were recorded in Hungary (31.9 %), Bulgaria (29.6 %), Latvia (29.4 %), Germany (28.5 %) and Lithuania (28.1 %). By contrast, the lowest shares were recorded in France (14.4 %), Ireland (15.5 %), Sweden (16.2 %), the United Kingdom (16.4 %) and the Benelux countries (between 16.5 % and 16.8 %); Norway (12.7 %) and Turkey (16.1 %) also reported relatively low shares.

An analysis by sex reveals that in most EU Member States a higher proportion of women (than men) reported that they had high blood pressure. The gender difference was often considerable, especially in the [Baltic Member States](#) , Romania, Portugal, Bulgaria and Slovakia, as well as in Turkey.

There were substantial age differences in the prevalence of hypertensive diseases, as the share of the population reporting high blood pressure increased dramatically from the age group 25-34 years onwards. In the EU-28, only 3.3 % of the population aged between 25 and 34 years reported hypertensive diseases, while this share rose to more than half (52.1 %) of the population among those aged 75 years and over.

Cardiovascular healthcare

There has, in recent years, been a reduction in the number of deaths associated with diseases of the circulatory system across several EU Member States. These changes may have occurred, at least in part, through the introduction of increased screening and new surgical procedures, the introduction of new forms of medication, as well as lifestyle changes for patients (for example, a reduction in the number of smokers).

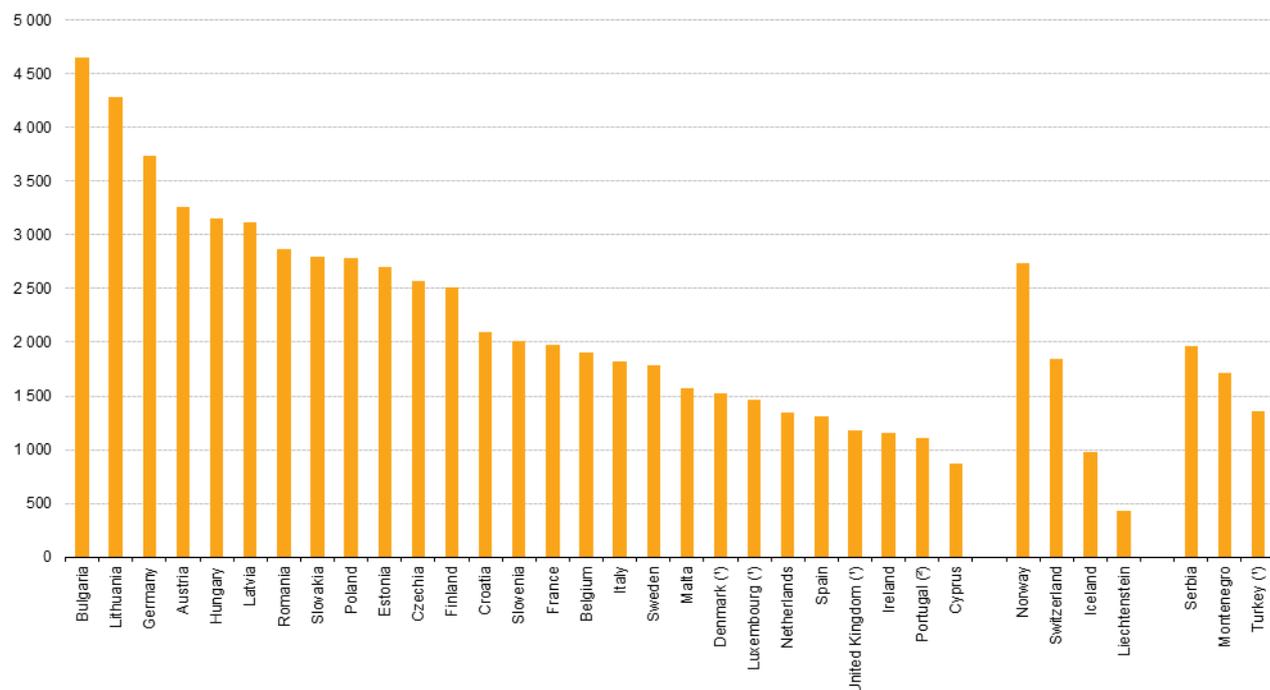
The number of in-patients with diseases of the circulatory system discharged from hospitals across the EU was 11.3 million in 2017

Hospital discharges of in-patients treated for diseases of the circulatory system show a very large variation across the EU Member States. While absolute figures for discharges are clearly linked to the number of inhabitants in each country, the level of discharges may, among others, also reflect the incidence of each disease and differences in healthcare systems, for example, screening, the balance between day care and in-patient treatment, or the availability of surgeons or hospital beds. In 2017, there were 11.3 million in-patients with diseases of the circulatory system discharged from hospitals across the EU (2016 data for Denmark, Luxembourg and the United Kingdom; 2015 data for Portugal; no recent data for Greece).

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

Bulgaria, Lithuania, Germany, Austria, Hungary and Latvia each reported more than 3 000 in-patient discharges per 100 000 inhabitants among those treated for diseases of the circulatory system in 2017. Among these, Bulgaria and Lithuania recorded, by far, the highest ratios, 4 300 in-patient discharges per 100 000 inhabitants in Lithuania and 4 600 per 100 000 inhabitants in Bulgaria (see Figure 2). Cyprus recorded the lowest ratio, some 875 in-patient discharges per 100 000 inhabitants, while Portugal (2015 data), Ireland and the United Kingdom (2016 data) were the only other EU Member States with less than 1 200 discharges per 100 000 inhabitants.

Hospital discharge rates for in-patients with diseases of the circulatory system, 2017
(per 100 000 inhabitants)



Note: Greece, not available.

(*) 2016.

(†) 2015.

Source: Eurostat (online data code: hlth_co_disch2)



Figure 2: Hospital discharge rates for in-patients with diseases of the circulatory system, 2017 (per 100 000 inhabitants) Source: Eurostat (hlth_co_disch2)

In 2017, across the EU (2016 data for Denmark, Luxembourg and the United Kingdom; 2015 data for Portugal; no recent data for Greece), in-patients with diseases of the circulatory system (ICD codes I00-I99) spent a total of 93.3 million days in hospital. By far the highest share was accounted for by in-patients in Germany (30.5 % of the total), while Italy was the only other EU Member State recording a double-digit share (11.0 %).

In-patients with diseases of the circulatory system could expect to spend, on average, 12.6 days in hospital in Hungary 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 gravity 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 2012 and 2017. The average length of stay in 2017 ranged from 4.3 days in Bulgaria up to 12.6 days in Hungary. Czechia, Austria, Malta and Estonia also recorded relatively lengthy average stays in hospital for in-patients treated for diseases of the circulatory system (between 9.8 and 11.0 days).

In-patient average length of stay for diseases of the circulatory system, 2012 and 2017
(days)

	Diseases of the circulatory system		of which:							
			Pulmonary heart disease and diseases of pulmonary circulation		Heart failure		Cerebrovascular diseases		Atherosclerosis	
	2012	2017	2012	2017	2012	2017	2012	2017	2012	2017
Belgium	7.6	7.4	10.5	9.0	12.4	11.6	13.5	13.9	6.2	5.6
Bulgaria	4.6	4.3	7.9	5.8	5.2	4.7	5.7	5.2	4.9	4.1
Czechia	12.0	11.0	11.7	9.6	11.0	11.7	23.2	21.5	18.7	15.2
Denmark (*)	5.0	4.8	7.5	5.6	6.6	6.0	6.9	5.5	10.1	9.2
Germany	9.5	9.2	10.9	9.4	10.9	10.3	16.2	16.2	11.2	10.2
Estonia	10.8	9.8	:	:	:	:	15.9	14.6	:	:
Ireland	8.4	7.7	8.9	8.0	11.7	10.1	18.2	15.3	13.2	14.6
Greece (*)	5.9	:	9.7	:	6.8	:	9.5	:	7.0	:
Spain	7.7	8.8	9.5	9.4	8.6	9.3	10.4	13.5	11.7	11.9
France	6.9	6.6	9.0	7.6	9.6	9.2	10.5	9.6	6.7	6.9
Croatia	9.4	7.7	12.0	10.5	10.6	9.3	12.3	11.0	11.6	8.8
Italy	9.2	9.3	11.5	10.5	10.1	10.2	13.8	14.1	9.0	8.2
Cyprus	6.8	6.7	7.9	7.3	7.0	6.7	8.8	9.8	4.1	8.6
Latvia	6.7	6.9	9.6	8.8	9.1	8.0	9.3	9.7	10.0	10.5
Lithuania	8.0	8.1	10.2	9.9	8.5	8.9	11.5	11.8	10.1	9.2
Luxembourg (*)	8.5	8.9	11.0	9.4	10.9	11.9	16.6	14.5	9.7	10.3
Hungary	12.3	12.6	12.0	11.7	14.3	14.8	13.1	14.2	25.4	29.0
Malta	10.8	10.1	12.0	8.8	11.6	10.5	21.4	28.2	17.1	8.9
Netherlands	6.0	5.5	6.4	4.5	8.7	7.7	8.7	6.5	6.3	5.7
Austria	9.9	10.5	10.1	9.5	11.8	12.3	17.8	19.4	9.4	9.3
Poland	6.8	6.6	10.4	9.0	8.5	8.3	11.7	11.4	8.3	7.1
Portugal (*)	8.4	8.9	11.6	11.3	9.6	9.9	11.1	12.2	14.0	13.7
Romania	7.5	7.4	7.9	7.9	7.2	7.3	8.5	8.4	9.4	8.6
Slovenia	8.0	7.9	11.4	10.2	10.3	10.5	15.4	15.2	7.0	6.8
Slovakia	7.6	7.1	9.3	8.9	8.8	8.6	11.1	10.5	8.6	8.1
Finland	13.4	8.6	9.3	6.0	11.6	8.1	30.1	17.7	12.7	8.8
Sweden (*)	5.7	5.6	5.8	4.9	6.4	6.1	9.5	9.3	7.6	7.0
United Kingdom (*)	9.3	9.2	8.6	7.7	11.9	11.5	18.0	17.5	11.7	11.9
Iceland (*)	8.8	9.1	9.0	8.5	9.9	11.1	14.8	15.3	10.4	9.8
Liechtenstein	:	6.8	:	9.5	:	11.9	:	5.6	:	10.8
Norway (*)	4.7	4.5	5.9	4.5	5.8	5.7	8.2	7.2	5.3	5.0
Switzerland	8.8	8.6	8.2	7.6	11.1	11.1	16.5	15.2	9.7	8.4
Montenegro	:	7.8	:	10.8	:	9.7	:	11.4	:	12.5
Serbia (*)	8.5	8.5	13.2	12.8	9.4	9.4	11.0	11.0	8.5	8.9
Turkey (*)	4.2	5.3	7.6	10.4	5.5	7.7	7.7	11.7	4.9	5.5

(*) 2016 instead of 2017.

(*) 2013 instead of 2012.

(*) 2015 instead of 2017.

(*) 2014 instead of 2012.

(*) Break in series.

(*) 2011 instead of 2012.

Source: Eurostat (online data code: hlth_co_inpst)

Table 3: In-patient average length of stay for diseases of the circulatory system, 2012 and 2017(days)Source: Eurostat (hlth_co_inpst)

Among the EU Member States for which data are available (no recent data for Greece), the average length of a hospital stay for those treated for a disease of the circulatory system generally fell between 2012 and 2017; the largest reduction — 4.8 fewer days in hospital — was recorded in Finland, while a reduction of 1.7 days was recorded for Czechia. By contrast, the average time spent in hospital rose by 1.1 days in Spain, by 0.6 days in Austria and 0.5 days in Portugal (2012-2015), with smaller increases in Luxembourg (2012-2016), Hungary, Latvia, Italy and Lithuania; these were the only Member States to record an increase in the average time spent in hospital by those treated for diseases of the circulatory system.

The remainder of Table 3 provides a more detailed analysis of the average length of hospital stays for in-patients treated for four different types of circulatory disease. On average, in-patients with cerebrovascular diseases (codes I60-I69) spent the highest number of days in hospital, followed by those treated for atherosclerosis (code I70).

Transluminal coronary angioplasty was the most 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 in hospitals per 100 000 inhabitants) for those treated for cardiovascular diseases. By far the most common was transluminal coronary angioplasty, a non-surgical procedure used to treat coronary arteries that have been narrowed, by feeding a deflated balloon 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, 2010, 2012, 2015 and 2017
(per 100 000 inhabitants)

	Transluminal coronary angioplasty		Bypass anastomosis for heart revascularisation		Carotid endarterectomy		Femoropopliteal bypass		Infrarenal aortic aneurysm repair	
	2012	2017	2012	2017	2010	2015	2010	2015	2010	2015
Belgium (*)	224.0	257.7	64.5	63.6	.	30.3	.	30.3	.	5.8
Bulgaria	.	191.8	.	42.6	.	.	.	.	.	.
Czechia	212.4	216.6	50.1	45.3	26.4	.	8.9	.	11.2	.
Denmark (*)	176.4	197.4	68.0	64.8	8.4	8.5	9.1	7.0	16.1	15.5
Germany	361.6	413.2	68.4	58.5	32.5	30.8	23.4	19.8	4.9	3.0
Estonia (*)	228.0	222.0	32.7	35.2	.	14.7	.	17.0	.	8.4
Ireland	106.1	131.5	21.6	20.3	8.2	7.2	2.8	3.6	3.9	3.1
Greece	.	.	.	.	.	.	.	.	.	.
Spain (*)	118.0	125.8	17.7	17.9	5.4	5.1	12.2	12.6	7.0	10.4
France (*)	208.5	267.4	29.6	28.9	25.7	25.1	13.1	11.3	12.3	12.6
Croatia (*)	183.3	387.7	53.4	63.0	20.9	21.3	12.0	15.3	7.3	7.2
Italy	202.8	215.6	37.8	34.0	31.9	27.4	14.1	11.5	18.4	20.9
Cyprus (*)	74.8	145.2	36.6	36.9	3.3	5.8	0.0	2.7	0.0	4.6
Latvia	.	.	.	.	.	.	.	.	.	.
Lithuania	213.5	297.0	62.1	55.2	5.2	7.6	24.2	28.5	2.8	3.0
Luxembourg (*)	236.4	193.5	44.3	20.3	1.7	1.8	32.0	33.4	19.0	20.0
Hungary	184.8	233.5	28.0	28.7	20.1	21.3	16.5	13.8	2.1	2.4
Malta (*)	202.1	198.3	45.2	25.9	3.6	2.5	19.8	35.7	4.5	8.3
Netherlands	247.8	.	66.7	.	10.1	.	11.8	.	16.4	.
Austria (*)	238.5	292.3	43.5	39.2	33.0	32.2	11.1	9.9	14.0	15.6
Poland	138.8	273.2	54.6	50.0	.	13.3	.	10.7	.	7.3
Portugal (*)	109.5	121.3	38.0	35.4	5.7	6.0	10.4	11.1	4.1	6.3
Romania	82.7	120.7	22.8	22.2	2.2	4.0	9.7	8.6	0.7	1.1
Slovenia	185.9	221.6	40.6	39.2	12.2	18.1	11.9	10.3	3.2	4.3
Slovakia	.	.	37.4	46.1	.	.	.	.	.	.
Finland	167.6	194.3	47.5	31.6	10.6	12.3	11.3	11.6	7.0	4.4
Sweden	199.2	204.7	34.9	30.4	11.6	9.2	5.0	4.4	9.7	6.7
United Kingdom	123.7	127.7	28.8	24.4	8.6	6.6	6.1	5.4	5.3	5.9
Iceland	194.6	236.8	44.0	21.6	.	.	.	.	.	.
Liechtenstein (*)	0.0	234.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway (*)	212.1	223.9	44.0	28.6	.	8.4	.	3.7	.	19.2
Switzerland (*)	250.8	298.4	47.0	43.8	.	.	.	.	.	.
North Macedonia	154.7	210.9	33.3	32.4	2.0	10.1	6.9	29.7	0.9	3.2
Serbia (*)	193.4	231.9	73.3	78.5	.	20.9	.	6.2	.	10.7
Turkey	114.0	.	67.0	.	.	.	.	.	.	.

(*) Carotid endarterectomy, femoropopliteal bypass and infrarenal aortic aneurysm repair: 2014 instead of 2015.

(*) Transluminal coronary angioplasty and bypass anastomosis for heart revascularisation: 2016 instead of 2017.

(*) Bypass anastomosis for heart revascularisation, 2012: definition differs.

(*) Transluminal coronary angioplasty and bypass anastomosis for heart revascularisation: 2015 instead of 2017.

(*) Carotid endarterectomy, femoropopliteal bypass and infrarenal aortic aneurysm repair: 2012 instead of 2010.

(*) Break in series.

(*) Transluminal coronary angioplasty and bypass anastomosis for heart revascularisation: 2013 instead of 2012.

(*) Infrarenal aortic aneurysm repair: 2014 instead of 2015.

(*) Transluminal coronary angioplasty and bypass anastomosis for heart revascularisation: 2014 instead of 2012.

Source: Eurostat (online data code: hlth_co_proc2)

Table 4: Surgical operations and procedures performed related to diseases of the circulatory system, 2010, 2012, 2015 and 2017(per 100 000 inhabitants)Source: Eurostat (hlth_co_proc2)

Across the 24 EU Member States for which data are available, there were 1.2 million transluminal coronary angioplasty procedures conducted in 2017 (2016 data for Denmark; 2015 data for Spain and Portugal; 2014 data for the Netherlands; no recent data for Greece, Latvia or Slovakia). Around 29 % (342 000 procedures) of these took place in Germany, which was considerably higher than in any of the other EU Member States; France, Italy and Poland were the only other Member States to report in excess of 100 000 procedures. Not only did Germany report the largest number of such operations, but also the most when taking account of the size of population (see Table 4): 413 transluminal coronary angioplasty procedures were performed in Germany per 100 000 inhabitants, more than in Croatia (388 per 100 000 inhabitants) and considerably more than in Lithuania (297 per 100 000 inhabitants) and Austria (292 per 100 000 inhabitants) which had the next which had the next highest ratios. This procedure was less common in Portugal (2015 data) and Romania where it was conducted around 121 times per 100 000 inhabitants.

Around 48 000 heart bypasses were conducted in Germany in 2017

The next most common operation for patients treated for cardiovascular diseases was a bypass anastomosis for heart revascularisation — commonly referred to as a heart bypass — a surgical procedure whereby arteries to the heart are replaced by blood vessels from another part of the body. There were 189 000 heart bypass

operations in 2017 (2016 data for Denmark; 2015 data for Spain and Portugal; 2014 data for the Netherlands) in the 26 EU Member States for which data are available (no recent data for Greece or Latvia). Germany again recorded the highest number of operations, around 48 000 and this was the fourth highest frequency when taking account of the population size (58.5 per 100 000 inhabitants), behind Croatia, Belgium and Denmark (2016 data). This procedure was least common in Spain, where it was performed on average 17.9 times per 100 000 inhabitants (2015 data), and was also relatively uncommon in Ireland, Luxembourg and Romania.

A carotid endarterectomy is an operation which aims to remove plaque from the inner lining of the carotid artery which extends from the aorta (the main artery leaving the heart) to the base of the skull, supplying blood to the brain. When taking account of the size of the population, this procedure was most common in 2015, among the 22 EU Member States for which recent data are available, in Austria, Germany and Belgium (2014 data), at 32.2, 30.8 and 30.3 per 100 000 inhabitants respectively, while it was least common in Luxembourg (1.8 per 100 000 inhabitants).

A femoropopliteal bypass is surgery conducted to bypass a diseased blood vessel around the knee. Malta, Luxembourg, Belgium (2014 data) and Lithuania reported the highest frequencies for this procedure in 2015, in all cases more than 28.0 such procedures per 100 000 inhabitants.

An abdominal aortic aneurysm is a weakened area in the wall of the aorta, which can result in a ballooning of the artery. The most common location for this complaint is in the abdominal region, especially the segment of the abdominal aorta below the kidneys (an infrarenal aneurysm). Relative to population size, this procedure to repair this condition was most frequently performed in 2015 in Italy, Luxembourg, Austria (2014 data), Denmark, France (2014 data) and Spain, all with rates above 10.0 per 100 000 inhabitants.

Healthcare equipment

Luxembourg and Croatia had the highest angiography equipment rates

An angiography is similar to an X-ray and shows the internal condition of blood vessels or arteries; it is generally used to determine if patients have any abnormalities such as narrowing, blockages or bleeding. Among those EU Member States for which data are available for 2015 (2013 data for Greece; no recent data for Denmark, Ireland, the Netherlands, Austria or the United Kingdom; note that data for Belgium, Germany, France, Portugal and Sweden refer only to equipment in hospitals), the availability of angiography equipment in hospitals and providers of ambulatory (out-patient) health care ranged from a low of 0.4 pieces of equipment per 100 000 inhabitants in Romania and 0.5 pieces of equipment per 100 000 inhabitants in Estonia to highs of 1.6 pieces of equipment per 100 000 inhabitants in Croatia and Luxembourg.

Angiography equipment, 2010 and 2015

(per 100 000 inhabitants)

	2010	2015
Belgium (*)	1.2	1.1
Bulgaria (*)	1.0	1.1
Czechia	0.8	0.9
Denmark	.	.
Germany (*)	1.0	1.1
Estonia	0.6	0.5
Ireland	.	.
Greece (*)	1.0	1.1
Spain	0.5	0.6
France (*)	0.8	0.7
Croatia	0.6	1.6
Italy	1.2	1.4
Cyprus	0.7	0.8
Latvia	0.6	0.6
Lithuania (*)	0.7	0.9
Luxembourg	1.6	1.6
Hungary	0.4	0.6
Malta	1.0	0.9
Netherlands (*)	1.0	.
Austria	.	.
Poland (*)	0.9	1.2
Portugal (*)	0.9	1.1
Romania	0.2	0.4
Slovenia	0.9	0.8
Slovakia	0.9	0.9
Finland	2.4	1.5
Sweden (*)	.	1.3
United Kingdom	.	.
Iceland	1.6	2.1
Liechtenstein	2.8	2.7
Switzerland (*)	2.6	3.0
North Macedonia (*)	0.3	0.3
Albania (*)	0.1	0.1
Serbia (*)	0.4	0.3
Turkey	0.4	0.5

(*) Hospitals only.

(*) 2011 instead of 2010.

(*) 2013 instead of 2015.

(*) Break in series.

(*) Includes digital and non-digital subtraction angiography units.

(*) 2009 instead of 2010.

(*) 2014 instead of 2015.

(*) 2012 instead of 2010.

Source: Eurostat (online data code: hlth_rs equip)

eurostat 

Table 5: Angiography equipment, 2010 and 2015(per 100 000 inhabitants)Source: Eurostat (hlth_rs equip)

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 one night or more than 24 hours in the hospital or other institution providing in-patient care. 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 the background article [Healthcare non-expenditure statistics — methodology](#) which provides information on the scope of the data, its legal basis, the methodology employed, as well as related concepts and definitions.

For surgical operations and procedures the [International Classification of Diseases — clinical modification \(ICD-9-CM\)](#) is used:

- Operations on the cardiovascular system (35-39);
- Transluminal coronary angioplasty (36.01, 36.02 and 36.05);
- Bypass anastomosis for heart revascularisation (36.1);
- Carotid endarterectomy (38.12);
- Femoropopliteal bypass (39.29);
- Infrarenal aortic aneurysm repair (39.71-39.74).

For country specific notes on this data collection, please refer to the background information document [Eurostat – Health care activities: Surgical Procedures \(shortlist\) — 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 country specific notes on this data collection, please refer to this background information document [Eurostat — Health care activities: Hospital discharges by diagnostic categories — Definitions](#) .

Health status

Self-reported statistics covering the health status of the population for a range of chronic diseases are provided by the European health interview survey (EHIS). This source is documented in more detail in the background article [European health interview survey — methodology](#) which provides information on the scope of the data, its legal basis, the methodology employed, as well as related concepts and definitions. The data presented in this article refer to the share of the population aged 15 years and over reporting that they had been diagnosed by a medical doctor with high blood pressure (hypertension) which occurred in the 12 months prior to the survey.

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 the background article [Causes of death statistics — methodology](#) which provides information on the scope of the data, its legal basis, the methodology employed, as well as related concepts and definitions.

Causes of death are classified according to the [European shortlist](#) (86 causes), 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-I02 Acute rheumatic fever;
- I05-I09 Chronic rheumatic heart diseases;
- I10-I15 Hypertensive diseases;
- I20-I25 Ischaemic heart diseases;
- I26-I28 Pulmonary heart disease and diseases of pulmonary circulation;
- I30-I52 Other forms of heart disease;
- I60-I69 Cerebrovascular diseases;
- I70-I79 Diseases of arteries, arterioles and capillaries;
- I80-I89 Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified;
- I95-I99 Other and unspecified disorders of the circulatory.

For country specific notes on this data collection, please refer to the background information document [Annex: country-specific metadata for causes of death data collection](#) .

Symbols

Note on tables:

- a colon ':' is used to show where data are not available;
- a dash '-' is used to show where data are not applicable/relevant.

Context

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

The [European Commission](#) convened a conference in June 2005 to discuss the implementation of a set of [Council conclusions](#) on heart health, adopting the [Luxembourg declaration](#) . This established an agreement to pursue or strengthen cardiovascular disease prevention plans and to ensure that effective measures, policies, and interventions were put in place across all European countries, giving priority to lifestyle oriented interventions to reduce the burden of these diseases, including:

- avoidance of tobacco consumption (zero tolerance);
- adequate physical activity (at least 30 minutes per day);
- healthy food choices;
- avoidance of being overweight;
- maintenance of blood pressure below 140/90 mmHg (millimetres of mercury);

- maintenance of blood cholesterol below 5 mmol/l (millimoles per litre).

As part of this work, the European Commission and the [World Health Organisation \(WHO\)](#) requested the assistance of the [European society of cardiology](#) and the [European heart network](#) to set-up the [European heart health charter](#) , which was launched in June 2007. It states that cardiovascular disease is estimated to cost the EU economy EUR 169 billion per year (or an average of EUR 372 per inhabitant). The charter aims to substantially reduce the burden of cardiovascular disease in the EU and the WHO European region and to reduce inequities in disease burden within and between countries, by informing Europeans about the risk factors and costs associated with cardiovascular diseases.

Other articles

Online publications

- [Health in the European Union — facts and figures](#)
- [Disability statistics](#)

Causes of death

- [Causes of death](#)
- [Causes of death of the elderly](#)

Methodology

- [Healthcare non-expenditure statistics](#)
- [European health interview survey](#)
- [Causes of death statistics](#)

General health statistics articles

- [Health statistics introduced](#)
- [Health statistics at regional level](#)
- [The EU in the world — health](#)

Publications

- [Health statistics — Atlas on mortality in the European Union](#)

Main tables

- [Health \(t_hlth\)](#), see:

[Health care \(t_hlth_care\)](#)

[Causes of death \(t_hlth_cdeath\)](#)

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 resources (hlth_res)
 - Health care facilities (hlth_facil)
 - Health care activities (hlth_act)
 - Hospital discharges and length of stay for inpatient and curative care (hlth_co_dischls)
 - 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 residence (hlth_cd_asdr2)

Dedicated section

- [Health](#)

Methodology

- [Causes of death](#) (ESMS metadata file — hlth_cdeath_esms)
- [European health interview survey](#) (ESMS metadata file — hlth_det_esms)
- [Healthcare activities](#) (ESMS metadata file — hlth_res_esms)
- [Healthcare resources](#) (ESMS metadata file — hlth_res_esms)

External links

- [European Commission — Directorate-General for Health and Food Safety — Public health](#) , see:
- [European Commission — Directorate-General for Health and Food Safety — Non-communicable diseases](#)
 - [European Commission — Directorate-General for Health and Food Safety — European core health indicators \(ECHI\)](#)
- [European heart health charter](#)
- [OECD — Health policies and data](#)
- [WHO Global Health Observatory \(GHO\) — Mortality and global health estimates](#)
- [World Health Organisation \(WHO\) — Health systems](#)
- [World Health Organisation \(WHO\) — Cardiovascular diseases](#)

View this article online at https://ec.europa.eu/eurostat/statistics-explained/index.php/Cardiovascular_diseases_statistics