Causes of death - monthly statistics

Statistics Explained

Highlights

" In 2022, the highest number of deaths in the EU (based on available data) was reported in January and the lowest in September. "

" In 2022, among the 23 EU countries for which data are available, the highest monthly standardised death rate from any cause was recorded in December in 11 countries, in January in 9 countries, in March in 2 countries and in February in 1 country. "

" There were more than 100 000 deaths from diseases of the circulatory system in each of January, March and December 2022 across the 23 EU countries for which data are available. The lowest monthly number was 78 700 in September 2022. "

This article presents data on monthly causes of death in the European Union (EU) . Eurostat began collecting monthly data on causes of death for reference year 2019; the latest data available are for reference year 2022. These data describe cause-specific mortality rates and trends, by providing an overview of the monthly number of deaths and standardised death rates for EU countries , with analyses by country of residence and age of the deceased. Most causes of death vary significantly by age and by sex, and some also vary by month or season. The use of standardised death rates facilitates comparisons both over time and between countries, independent of different population age-structures. Please note that data are only available for a maximum of 23 EU countries. The 'EU total' is an aggregate covering these 23 countries for 2022 (with no data available for Germany, the Netherlands, Poland and Sweden). For time series covering the period 2019 to 2022, the 'EU total' is based on a stable aggregate covering 21 EU countries (with data also not available for Latvia and Portugal). Data are also shown for 2 EFTA countries (Iceland and Norway) and for 2 candidate countries (Serbia and Türkiye). 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 .

Monthly deaths during the period 2019 to 2022

Across the 21 EU countries for which a time series of monthly mortality data from 2019 to 2022 are available, there were 3.22 million deaths in 2022[1].

Based on the 21 EU countries for which a time series of mortality data are available, the total number of deaths in 2022 was lower than in either 2020 or 2021, when the number of deaths resulting from COVID-19 had surged (especially during the initial stages of the pandemic and winter months). The total number of deaths in 2022 remained approximately 300 000 higher than pre-pandemic levels, as there were 2.92 million deaths in 2019.

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[1]European statistics in the domain of 'causes of death' cover all registered deaths and stillbirths occurring in each country, based on death certificates. Not all deaths are accompanied by a death certificate, therefore there may be differences compared with the total number of deaths reported under other data collections. In this article, 'total deaths' refers to all registered deaths from age 0 days.

In 2022, the highest number of monthly deaths was reported in January: 322 300 deaths across the 21 EU countries for which a time series of mortality data are available. The lowest number was recorded in September, at 232 200 deaths. This repeated the pattern observed pre-pandemic, as in 2019 the highest number of deaths had also been recorded in January (297 100) and the lowest number in September (215 100).

During the initial stages of the COVID-19 pandemic a different pattern was observed. In 2020, the highest number of deaths was reported in November and the lowest number was reported in June, whereas in 2021, the highest number of deaths was reported in January. The lowest number of deaths in 2021 was also reported in June.

Number of deaths, EU, 2019–2022

(thousands)
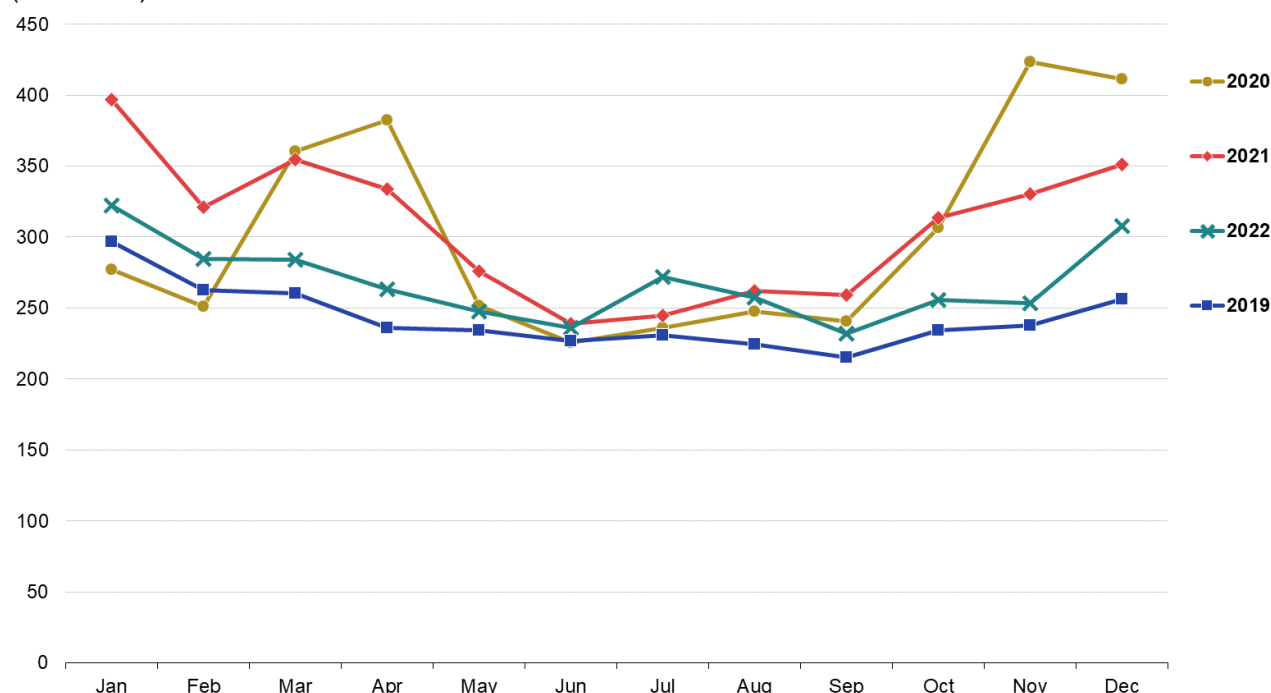
Note: EU total excluding Germany, Latvia, the Netherlands, Poland, Portugal and Sweden.
Source: Eurostat (online data code: hlth_cd_mro)

Figure 1: Number of deaths, EU, 2019–22 (thousands) Source: Eurostat (hlth_cd_mro)

Leading causes of death in 2022

Diseases of the circulatory system were the leading cause of death in 2022

Across the 23 EU countries for which data are available, diseases of the circulatory system were the leading cause of death in every month of 2022. There were 3 months when there were in excess of 100 000 deaths from diseases of the circulatory system: January (108 200 deaths), March (100 100 deaths) and December (106 300 deaths). The lowest number of deaths from diseases of the circulatory system was recorded in September, at 78 700.

In 2022, cancer accounted for the 2nd highest number of deaths in the EU, across the 23 countries for which data are available. Contrary to most other causes of death, there is no discernible seasonal pattern to the number of deaths from cancer.

From April 2022 through to the end of the year, respiratory diseases (chronic lower respiratory diseases, pneumonia and influenza; COVID-19 is not included in respiratory diseases) accounted for the 3rd highest number of deaths (in the 23 EU countries for which data are available). The highest number of monthly deaths from respiratory diseases was reported in December (31 200); this was approximately twice as high as the number in September (15 900), when the lowest count was recorded.

At the start of 2022, COVID-19 accounted for the 3rd highest number of deaths across the 23 EU countries for which data are available, with a peak of 43 000 deaths in January. The number of deaths attributed to COVID-19 fell at a rapid pace during the year, reaching a low of 6 300 deaths in September. Contrary to the patterns observed in 2020 and 2021, there was only a modest upturn in the number of COVID-19 deaths towards the end of 2022, reflecting – among other factors – widespread immunity (from vaccines and previous infection), better treatment and healthcare readiness, and less severe variants (Omicron).

Number of deaths from major causes of death, EU, 2022
(thousands)
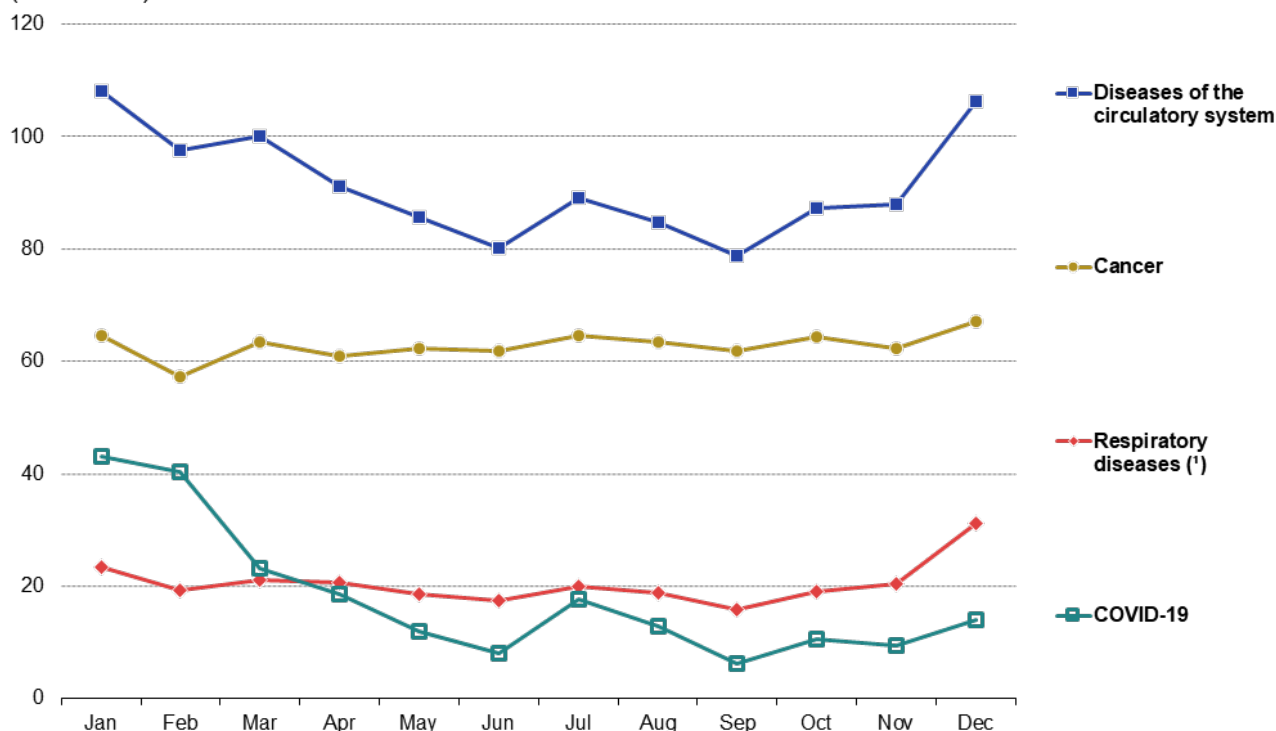
Note: EU total excluding Germany, the Netherlands, Poland and Sweden.
(¹) Does not include COVID-19.
Source: Eurostat (online data code: hlth_cd_mro)

Figure 2: Number of deaths from major causes of death, EU, 2022 (thousands) Source: Eurostat (hlth_cd_mro)

Diseases of the circulatory system accounted for close to a third of all deaths in the EU every month

The information presented in Figure 3 is similar to that in Figure 2. However, it shows the share of total deaths accounted for by the 4 principal causes of death, along with a residual category for all other causes. This information is presented for an aggregate based on data for 23 EU countries.

When looking at the share of deaths due to different causes, there is a visible seasonal pattern for respiratory diseases and for COVID-19, whereas there is a much subtle difference for deaths due to circulatory system or cancer.

During 2022, diseases of the circulatory system accounted for the highest share of deaths in the EU of any major cause. A peak share of 33.6% was recorded in March 2022 while the lowest share was 31.3% in July 2022.

The share of all deaths in the EU attributed to cancer was a little lower during the winter months and slightly higher during the summer months. This reflected a relatively uniform number of cancer deaths throughout the year (as shown in Figure 2) combined with greater seasonal variation in mortality rates for most of the other principal causes of death. Cancer accounted for around a quarter of all deaths in the EU in June (24.9%) and September (25.4%)

2022, whereas it accounted for less than a fifth of the total in January and February 2022 (both 19.2%).

The share of respiratory diseases in 2022, ranged from a low of 6.5% in February to a high of 9.7% in December.

There was a rapid decline in the number of COVID-19 deaths over the course of 2022 and this is reflected in the share of all deaths. In 2022, the share attributed to COVID-19 peaked in February at 13.6% across the 23 EU countries for which data are available. This was followed by a marked reduction in March 2022, with the share falling to 7.8%. The share of COVID-19 deaths continued to fall during the summer months and reached a low of 2.6% in September 2022. Compared with the 2 previous years, relatively modest increases of less than 2% were observed through to the end of the year.

Share of major causes of mortality, EU, 2022
(% of all deaths)
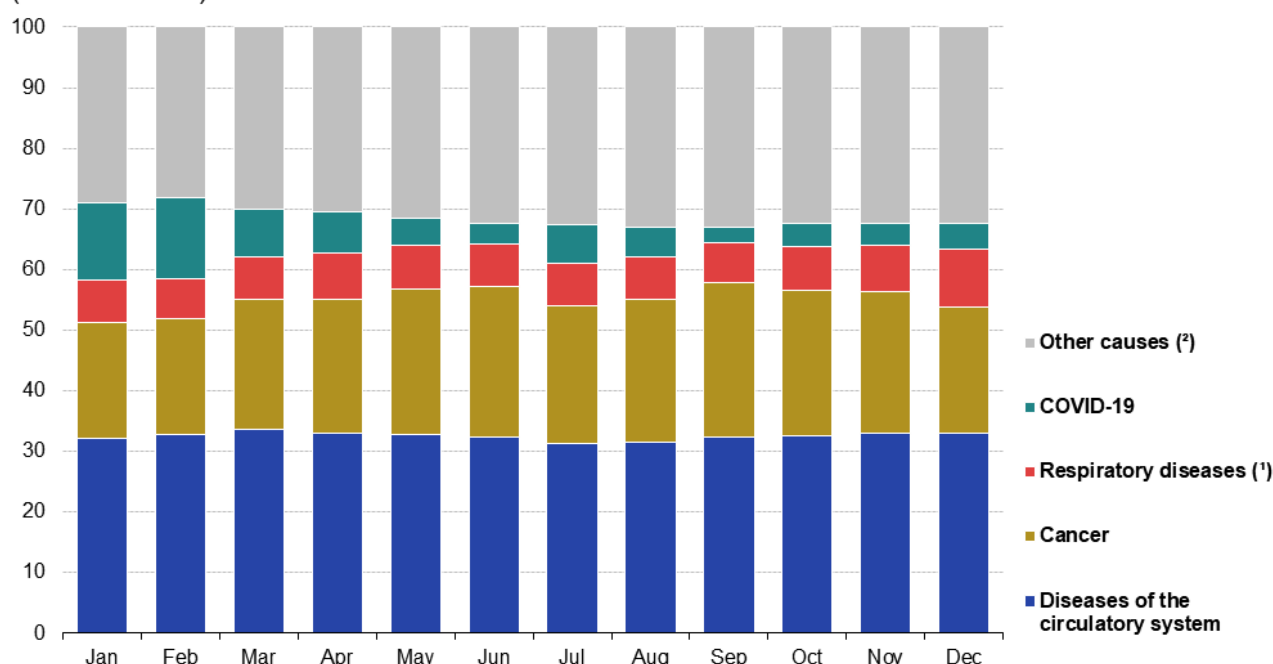
Note: EU total excluding Germany, the Netherlands, Poland and Sweden.
(¹) Does not include COVID-19.
(²) Other than diseases of the circulatory system, cancer, COVID-19 and respiratory diseases.
Source: Eurostat (online data code: hlth_cd_mro)

eurostat

Figure 3: Share of major causes of mortality, EU, 2022 (% of all deaths) Source: Eurostat (hlth_cd_mro)

Comparing respiratory diseases and COVID-19

The total number of deaths from COVID-19 was 2.1 times as high as the number of deaths from respiratory diseases in February 2022

Figure 4 shows the total number of deaths across 23 EU countries for which data are available for a range of respiratory diseases – including chronic lower respiratory diseases, pneumonia and influenza – as well as for COVID-19. In January 2022, there were 43 000 deaths attributed to COVID-19, compared with 23 400 deaths from all respiratory diseases. The relative gap widened in February 2022, when the number of deaths from COVID-19 was 2.1 times as high as the number of deaths from all respiratory diseases. In March 2022, there was a rapid fall in the number of deaths attributed to COVID-19 (down 42.4% compared with February 2022). Deaths from COVID-19 remained at a much lower level thereafter and a low of 6 300 deaths was recorded in September 2022.

By September 2022, the total number of deaths from respiratory diseases was 2.5 times as high as the number of deaths from COVID-19

Despite monthly increases in March and July, the number of deaths from all respiratory diseases (across the 23 EU countries for which data are available) fell from a relative high of 23 400 in January 2022 to a low of 15 900 deaths by September 2022. Thereafter, the number of deaths from respiratory diseases almost doubled before the end of the year, reaching 31 200 in December 2022.

Number of deaths from respiratory diseases and COVID-19, EU, 2022
(thousands)
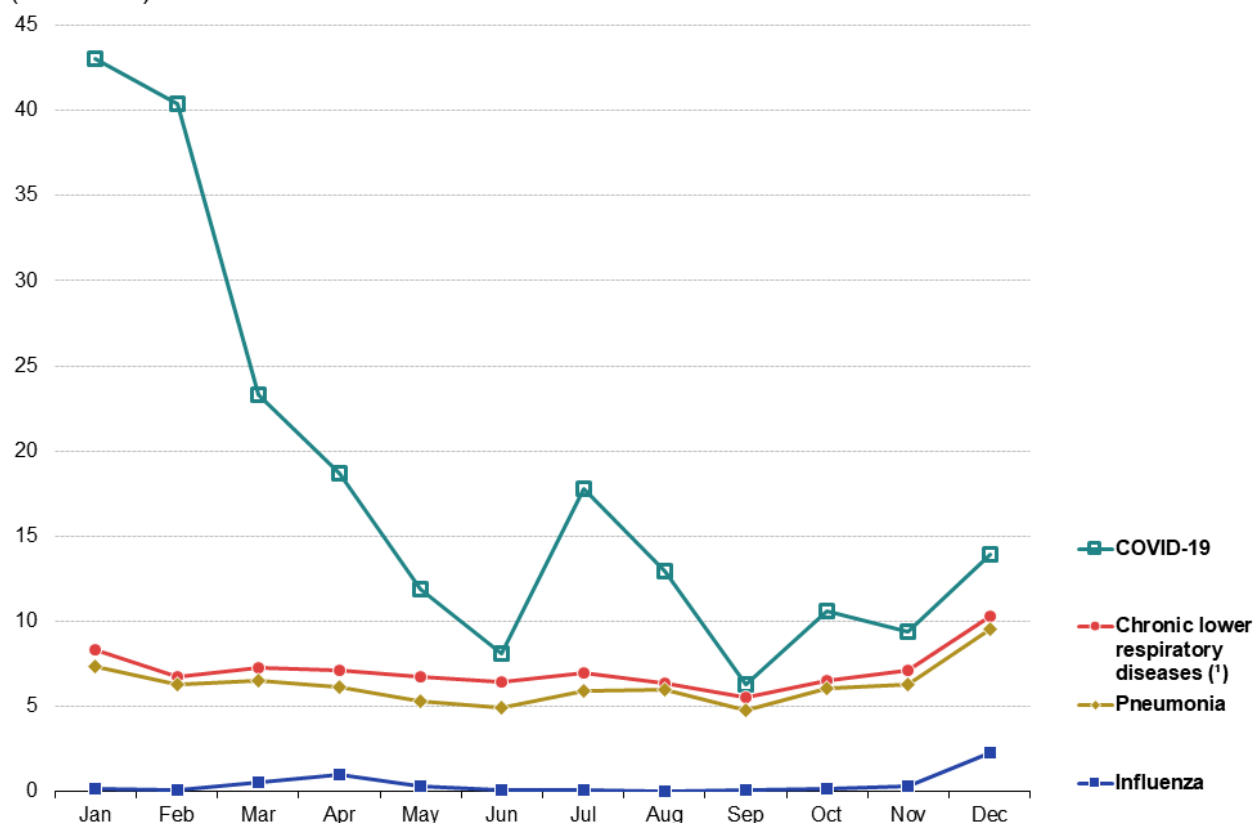
Note: EU total excluding Germany, the Netherlands, Poland and Sweden.
(¹) Includes asthma and status asthmaticus.
Source: Eurostat (online data code: hlth_cd_mro)

eurostat

Figure 4: Number of deaths from respiratory diseases and COVID-19, EU, 2022 (thousands) Source: Eurostat (hlth_cd_mro)

The highest numbers of deaths from chronic lower respiratory diseases, which includes bronchitis, emphysema, asthma and status asthmaticus, were recorded in January and December 2022, at 8 300 and 10 300, respectively. Although the number of deaths from chronic lower respiratory diseases was lower during the intervening months, it consistently exceeded the counts for both pneumonia and influenza throughout the year.

There was a similar pattern in terms of deaths from pneumonia, insofar as the highest numbers of monthly deaths were recorded at either end of the calendar year, with peaks of 7 400 and 9 500 deaths in January and December 2022, respectively, and the lowest in September, with 4 800 deaths from pneumonia.

There were relatively few deaths from influenza at the start of 2022, with a peak of 2 300 recorded at the end of the year.

Deaths from heart attacks, dementia, intentional self-harm and transport accidents

Throughout the year, there were more than 8 000 deaths per month due to heart attacks, except in June and September

For most causes of death, there is a seasonal component with the number of deaths varying from month to month. Figure 5 shows the total number of deaths each month for 4 leading causes of death: heart attacks, dementia, intentional self-harm and transport accidents.
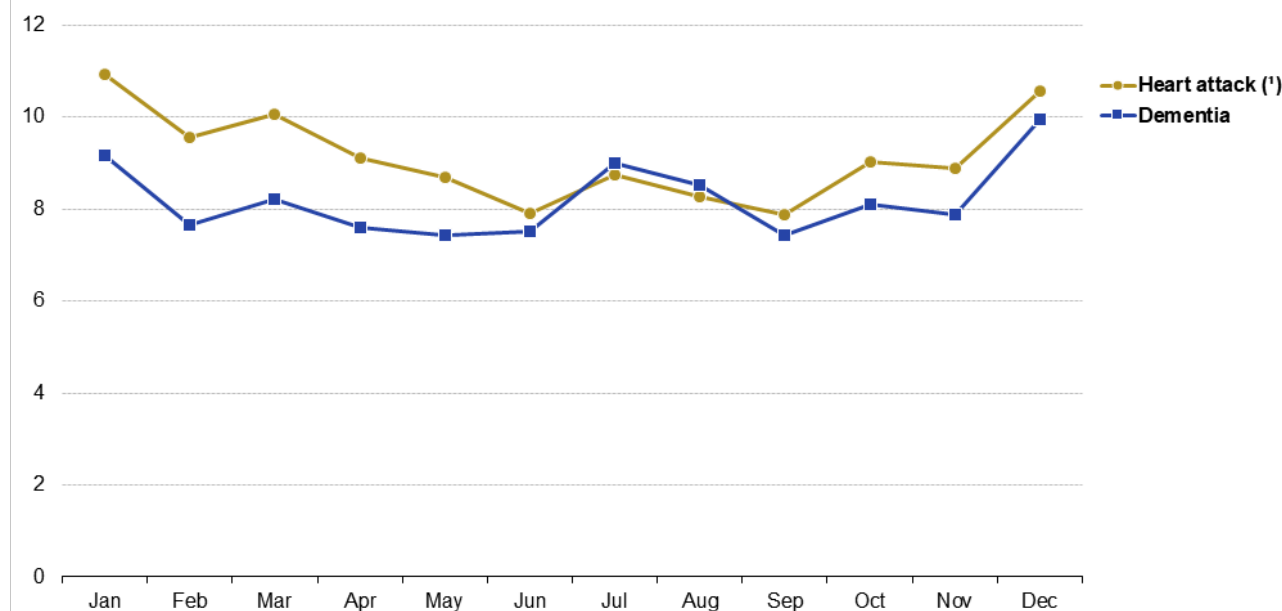
Across the 23 EU countries for which data are available heart attacks were the most frequent of these 4 causes of death, with more than 10 000 deaths in each of January, March and December 2022. By contrast, the lowest number of deaths from heart attacks was recorded in September (7 900).

The number of deaths from dementia ranged from a low of 7 400 in September up to a peak of just under 10 000 in December 2022. Although the number of deaths from heart attacks was generally higher than the number of deaths from dementia, there were slightly more deaths from dementia in July and August 2022.

Contrary to the seasonal patterns observed for most of the principal causes of death (with the highest number of deaths during the winter months), for intentional self-harm, the highest number of deaths was recorded in May 2022 (the only month that the number reached 3 000 deaths), while the lowest number of deaths was reported in December 2022, at 2 300 deaths.

For transport accidents, a peak of 1 700 deaths was observed in July, while the lowest number of deaths was in February 2022, at just over 1 000.

Figure 5A: Number of deaths from dementia and heart attacks, EU, 2022 (thousands) Source: Eurostat (hlth_cd_mro)

Number of deaths from intentional self-harm and transport accidents, EU, 2022
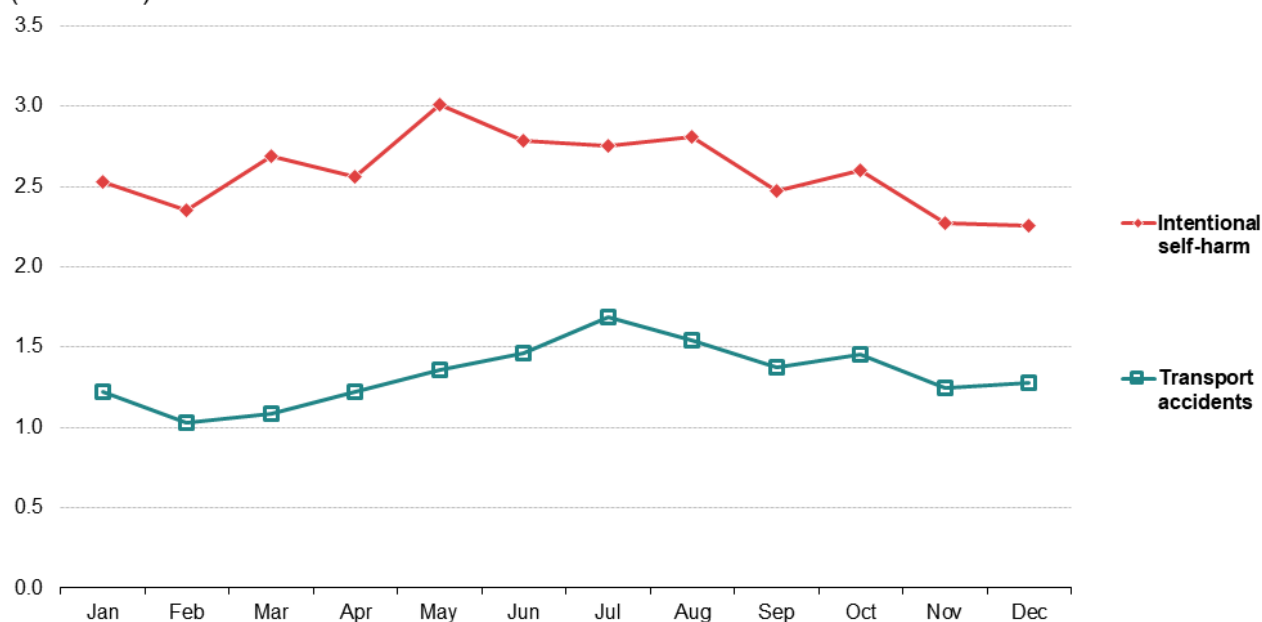
(thousands)

Note: EU total excluding Germany, the Netherlands, Poland and Sweden.
Source: Eurostat (online data code: hlth_cd_mro)

eurostat

Figure 5B: Number of deaths from intentional self-harm and transport accidents, EU, 2022 (thousands) Source: Eurostat (hlth_cd_mro)

Source data for tables and graphs

- Monthly causes of death statistics: tables and figures

Data sources

Statistics on the underlying causes of death provide information on mortality patterns. This source is documented in more detail in a background article on the methodology of causes of death statistics . This provides information on the scope of the data, its legal basis, the methodology employed, as well as related concepts and definitions.

Legal basis for the data collection

Since the 2011 reference year, reporting countries have submitted data to Eurostat based on the requirements of Regulation (EC) No 1338/2008 on Community statistics on public health and health and safety at work , and Regulation (EU) No 328/2011 on statistics on causes of death .

There are currently 33 countries submitting data on causes of death to Eurostat

- all 27 EU countries

- 4 EFTA countries (Iceland, Liechtenstein, Norway and Switzerland)

- 2 candidate countries (Serbia and Türkiye).

Following a consultation on the potential use of public health data collections for tracing COVID-19 developments, in 2021 Eurostat invited countries to provide causes of death statistics according to the month of death (starting with reference years 2019 and 2020). Initially, there were 21 EU countries that provided monthly data (Germany, Latvia, the Netherlands, Poland, Portugal and Sweden were unable to do so); as of reference year 2022, Latvia and Portugal started to provide these monthly statistics Data are also provided by 2 EFTA countries (Iceland and Norway) and 2 candidate countries (Serbia and Türkiye).

Classification of the causes of death

Statistics on the causes of death are based on medical information provided in death certificates . Causes of death are classified by the 86 causes in the European shortlist which is based on the International Classification of Diseases and Related Health Problems .

When the COVID-19 pandemic started, the WHO introduced emergency codes in the ICD version 10 (ICD-10) that countries could use to report deaths from COVID-19. In Eurostat's dissemination database, the codes are available as follows:

- U071 – COVID-19, virus identified (deaths where COVID-19 has been confirmed by laboratory testing)

- U072 – COVID-19, virus not identified (COVID-19 virus not identified)

- U_COV19_OTH – COVID-19 other (COVID-19 death not elsewhere defined).

The data for COVID-19 reported in this article were calculated by adding the data for these 3 codes. However, the data disseminated in Eurostat's dissemination database are for each separate code. More information about ICD-10 codes can be found on the WHO's website .

Standardised death rate

The number of deaths from a particular cause of death can be expressed relative to the size of the population. A standardised death rate is adjusted to a standard age distribution. This facilitates comparisons of rates over time and between countries. The population used for the standardisation of crude rates is based on the European Standard Population , in use since summer 2013.

Context

Statistics on causes of death are among the oldest medical statistics available. They provide information on developments over time and differences between countries in causes of death. These statistics play a key role in the general information system relating to the state of health in the EU. They may be used to determine which preventive and medical-curative measures or which investments in research might increase the life expectancy of the population.

Data on causes of death are often used as a tool for evaluating health systems in the EU and policy makers may use them for evidence-based health policy. The EU promotes a comprehensive approach to tackling major and chronic diseases , including Europe's Beating Cancer Plan , through integrated action on risk factors across sectors and combined with efforts to strengthen health systems towards improved prevention and control.

COVID-19 pandemic

The COVID-19 pandemic highlighted the need to prioritise public health and strengthen healthcare systems across the EU and globally. In response to the pandemic, the European Commission took a series of actions to contain the spread of the coronavirus, support national health systems and counter the socio-economic impact of the pandemic, both across the EU and nationally. This included:

- supporting research and development in vaccines, and implementing an EU vaccines strategy

- launching the European Health Emergency preparedness and Response Authority (HERA) , which aims to prevent, detect and rapidly respond to health emergencies

- participating in COVAX , a global facility for fair and universal access to COVID-19 vaccines

- laying the foundations for establishing a European Health Union .

Mental health

The European Commission President announced her intention to present a new initiative on mental health in her State of the Union speech in 2022. In June 2023, after extensive consultation with countries, stakeholders and citizens, the Commission adopted a 2023 Communication on a comprehensive approach to mental health

(COM(2023) 298 final) .

This new approach recognises that mental health is about more than just health and, therefore, strongly involves areas such as education, digitalisation, employment, research, urban development, environment and the climate.

In case you or somebody you know is struggling with mental health issues, you can find information about helplines and other services on the following Mental Health Europe page .

Explore further

Other articles

Online publications

- Health in the European Union – facts and figures

- Disability statistics

Causes of death

- Causes of death statistics

- Causes of death statistics by age group

- Preventable and treatable mortality statistics

Health status

- Healthy life years statistics

- Mortality and life expectancy statistics

Specific health conditions

- Accidents and injuries statistics

- Cardiovascular diseases statistics

- Cancer statistics

- Cancer statistics – specific cancers

- Respiratory diseases statistics

- Mental health and related issues statistics

Methodology

- Causes of death statistics – methodology

General health statistics articles

- Health statistics introduced

- Regional health statistics – causes of death

Database

- Health (hlth)

  Causes of death (hlth_cdeath)

Thematic section

- Health

- Population and Demography overview

Selected datasets

- Health (t_hlth)

Causes of death (t_hlth_cdeath)

Methodology

- Causes of death statistics (ESMS metadata file – hlth_cdeath_sims)

- Causes of death statistics manual – 2025 edition

- Revision of the European Standard Population – Report of Eurostat's task force – 2013 edition

External links

- European Commission – Directorate-General for Health and Food Safety , see

    - Non-communicable diseases

    - European Commission European Core Health Indicators (ECHI), Health Status indicators,*Disease-specific mortality*

- Joint OECD / European Commission report – Health at a Glance: Europe

- World Health Organization (WHO) – Global Health Observatory (GHO) – global health estimates: life expectancy and leading causes of death and disability