COVID-19 mortality and excess mortality

While the vast majority of people who have been infected with COVID-19 have survived, the number of deaths related to the pandemic is striking. Over 1.1 million people have died from COVID-19 as of October 2022 across the 27 EU countries. Most deaths from COVID-19 (over 90%) have been among people aged over 60.

In absolute number, COVID-19 mortality up to the end of October 2022 in the EU was highest in Italy (179 000 deaths), France (171 000), Germany (154 000), Poland (117 000) and Spain (115 000). Outside the EU, over 200 000 died from COVID-19 in the United Kingdom. Relative to population size, COVID-19 mortality rates have been the highest in Bulgaria, Hungary, Croatia, the Czech Republic and Slovenia. They have been the lowest in Iceland and Norway (Figure 3.5). Cross-country differences generally reflect variations in the population age structure, the timing and effectiveness of containment strategies, the take-up of COVID-19 vaccination in 2021 and 2022, and differences in the capacity of health systems to treat COVID-19 patients.

Many Southern and Western European countries were hit hard from the outset of the pandemic in the spring 2020, while the impact started to be felt more strongly only in the fall 2020 in many Central and Eastern European countries. All EU countries experienced peaks in infections and deaths in late 2020 and early 2021. Mortality rates went up again in late 2021 and early 2022 in many countries, but have decreased afterwards in most countries.

The indicator of excess mortality suggests that data on COVID-19 mortality in many countries underestimate the mortality impact of the pandemic because of limited testing capacity (particularly at the beginning of the pandemic) and death recording practices. Excess mortality, defined as deaths from all causes over and above what could be expected based on mortality trends from previous years, is not affected by COVID-19 testing and recording practices. It can also account for deaths both directly and indirectly related to the pandemic. However, it also captures other events that can have a significant impact on mortality either in the years before the pandemic or during the pandemic, such as severe or mild flu seasons and heat waves. As time goes on, excess mortality also excludes older frail people who have died from COVID-19 but who would have died from another cause since the beginning of the pandemic (resulting in an under-estimation of deaths from COVID-19 in these cases).

In the EU, excess mortality since the beginning of the pandemic up to the end of June 2022 was 26% higher than reported COVID-19 deaths (Figure 3.6). This translates to about 300 000 additional deaths compared with the reported number of COVID-19 deaths that may be due either to the direct or indirect impact of the pandemic, or to other events. The difference between excess mortality and reported COVID-19 deaths was particularly large in Bulgaria, Romania, Poland, the Slovak Republic and Estonia, indicating that COVID-19 mortality data reported by these countries substantially undercounted the impact of the pandemic.

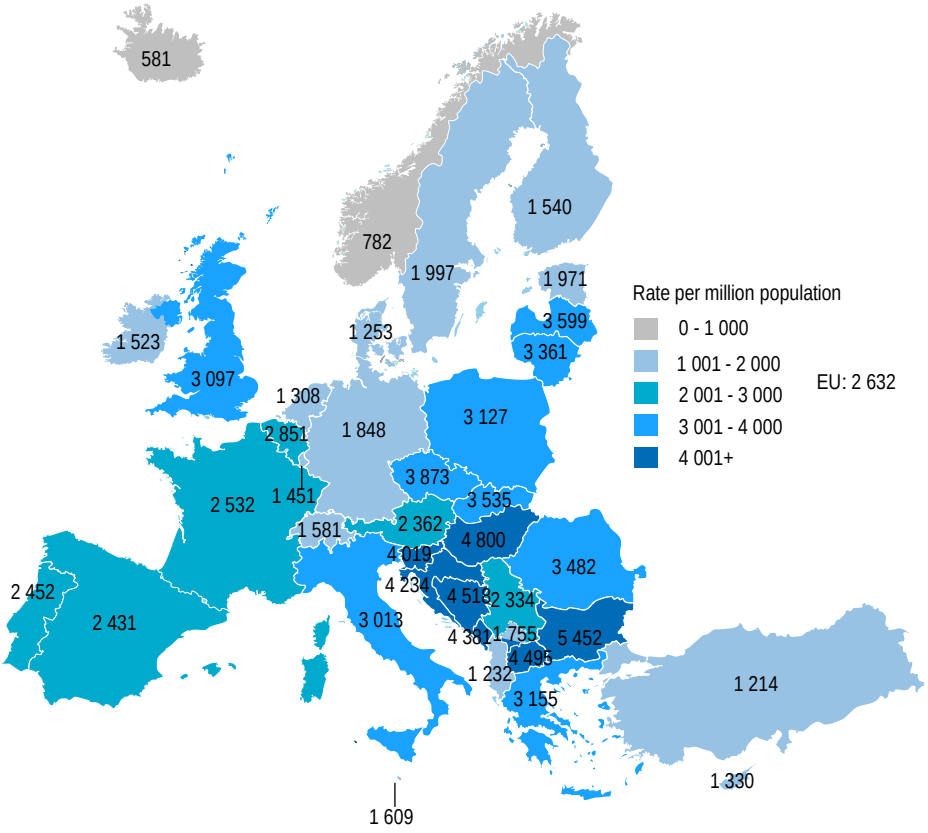
In some countries (e.g. Belgium, France, Hungary and Sweden), the gap between excess mortality and reported COVID-19 deaths is negative – meaning that the number of reported COVID-19 deaths is greater than the number of excess mortality. This indicates a more accurate reporting of COVID-19 deaths in these countries but also that deaths related to all causes besides COVID-19 have been lower during the pandemic than expected based on trends from previous years, for example because of fewer deaths from regular flu and road traffic accidents during confinement periods.

Definition and comparability

In ICD-10, COVID-19 mortality includes codes U07.1 when COVID-19 has been confirmed by laboratory testing and U07.2 when COVID-19 has been diagnosed clinically or epidemiologically but laboratory test is inconclusive or not available. The comparability of data on COVID-19 mortality is limited by differences in testing and death recording practices.

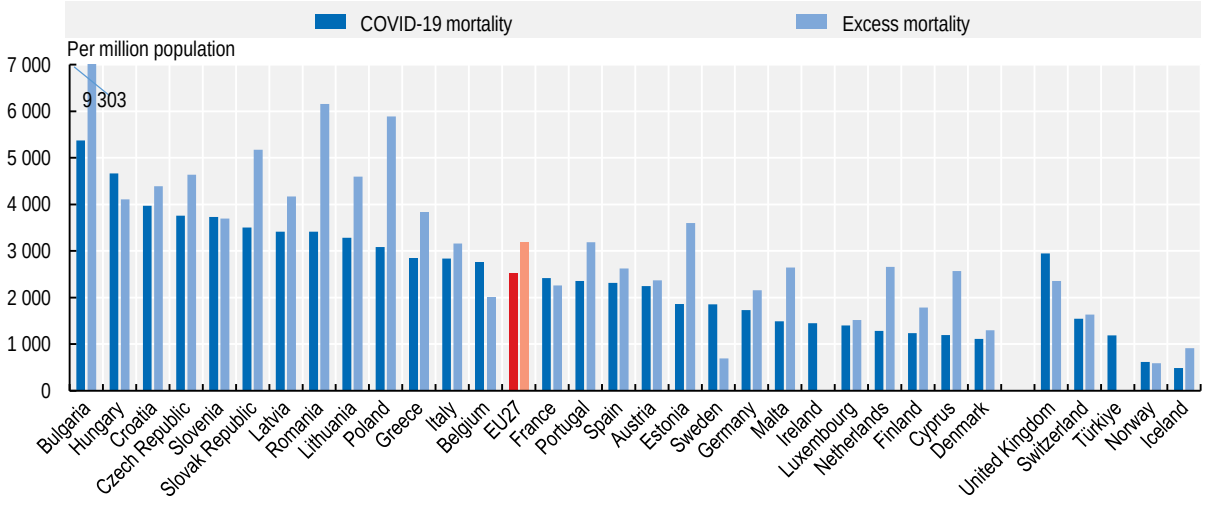
Excess mortality is defined and calculated by the OECD as the total number of deaths from all causes compared to the average annual number of deaths over the previous five years before the pandemic. In most countries, data to calculate excess mortality are available a few months later than the data on COVID-19 deaths.

Figure 3.5. COVID-19 mortality, March 2020 to October 2022



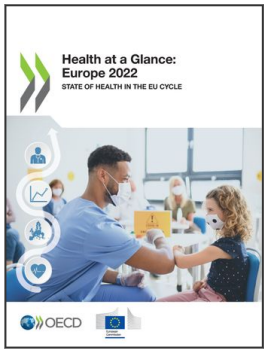
Note: Data are affected by countries' capacity to detect COVID-19 infections and recording and registration practices.
Source: ECDC.

Figure 3.6. COVID-19 mortality and excess mortality, March 2020 to June 2022



Note: The EU average is weighted. Data on COVID-19 mortality are affected by countries' capacity to detect COVID-19 infections and recording and registration practices.
Source: ECDC for COVID-19 mortality and OECD based on Eurostat data for excess mortality (data for Ireland and Türkiye not available).

StatLink https://stat.link/9oucd8



From:

Health at a Glance: Europe 2022

State of Health in the EU Cycle

Access the complete publication at:
https://doi.org/10.1787/507433b0-en

Please cite this chapter as:

OECD/European Union (2022), "COVID-19 mortality and excess mortality", in *Health at a Glance: Europe 2022: State of Health in the EU Cycle*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/da81eb89-en