

## Mortality following stroke

Stroke is a leading cause of death, accounting for 8% of deaths across the EU in 2019 (see indicators “Main causes of mortality” and “Mortality from circulatory diseases” in Chapter 3). Stroke is a serious, potentially life-threatening event that occurs when the blood supply to a part of the brain is interrupted. Of the two types of stroke, about 85% are ischaemic and 15% are haemorrhagic.

Figure 6.16 shows mortality rates within 30 days of hospital admission for ischaemic stroke where the death occurred in the same hospital as the initial admission (unlinked data), whereas Figure 6.17 shows mortality rates where deaths are recorded regardless of where they occurred, including in another hospital or outside the hospital (linked data).

Using unlinked data, the mortality rates within 30 days of hospital admission for ischaemic stroke were highest in Latvia and Malta, with rates above 15% in 2019. Norway, Iceland and Denmark reported the lowest rates, at less than 5%. Generally, countries with lower 30-day mortality rates for ischaemic stroke than the EU average also had lower 30-day mortality rates for acute myocardial infarction (AMI) (see indicator “Mortality following acute myocardial infarction”). This suggests that certain characteristics of acute care delivery have an impact on both stroke and AMI patients’ outcomes.

Across countries that reported linked data, the case-fatality rates were highest in Latvia, with more than 25% of patients dying within 30 days of being admitted to hospital for stroke. They were lowest in the Netherlands and Norway, where case-fatality rates were less than 8%. These rates are higher than those based on unlinked data because they capture all deaths (in the hospital where the patient was initially admitted, after transfer to another hospital, or after being discharged). Generally, countries that show 30-day mortality rates for ischaemic stroke lower than the EU average also tend to show low 1-year mortality rates for ischaemic stroke (see indicator “Integrated Care”).

Treatment for ischaemic stroke has advanced substantially over the last decades, with systems and processes now in place in many European countries to identify suspected ischaemic stroke patients and to deliver acute reperfusion therapy quickly (OECD, 2015<sup>[1]</sup>). Between 2009 and 2019, 30-day case-fatality rates for ischaemic stroke decreased by about 20% on average across EU countries, based either on unlinked data or linked data.

However, between 2019 and 2020, case fatality rates increased in Lithuania, Portugal and Romania, while they remained stable in other countries such as Austria, Iceland, Ireland, the Slovak Republic and the United Kingdom. During the first year of the pandemic, the number of people admitted to hospital due to ischaemic stroke decreased in most of the above-mentioned countries – particularly in Portugal and Romania, where the reduction was also large for AMI (see indicator “Mortality following acute myocardial infarction”). Reductions in hospital admissions and procedures linked to stroke were also reported in France, Italy, Germany and Spain. These reductions have been attributed to stroke patients not seeking or receiving hospital care immediately due to a fear of becoming infected with COVID-19, or because pre-hospital triage and ambulance systems did not function as well and as promptly due to surges in demand. This has been evidenced by more severe presentations of stroke at hospitals in some countries, such as the United Kingdom (Padmanabhan et al., 2021<sup>[2]</sup>). To tackle resource constraints, countries such as France, Germany and Italy reorganised pathways for acute stroke care and sometimes concentrated stroke care in fewer hospitals (Bersano et al., 2020<sup>[3]</sup>).

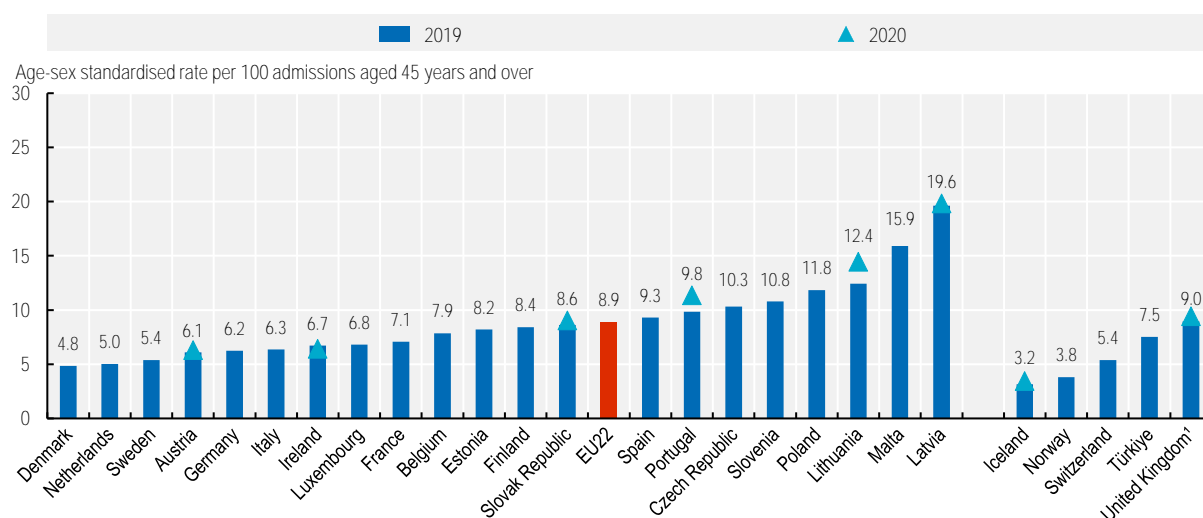
### Definition and comparability

Case fatality rates are defined in indicator “Mortality following acute myocardial infarction”. Case fatality rates for ischaemic stroke refer to ICD-10 codes I63-I64.

### References

- Bersano, A. et al. (2020), “Stroke care during the COVID-19 pandemic: experience from three large European countries”, *European Journal of Neurology*, Vol. 27/9, pp. 1794-1800, <https://doi.org/10.1111/ene.14375>. [3]
- OECD (2015), *Cardiovascular Disease and Diabetes: Policies for Better Health and Quality of Care*, OECD Health Policy Studies, OECD Publishing, Paris, <https://doi.org/10.1787/9789264233010-en>. [1]
- Padmanabhan, N. et al. (2021), “Impact of COVID-19 on stroke admissions, treatments, and outcomes at a comprehensive stroke centre in the United Kingdom”, *Neurological Sciences*, Vol. 42/1, p. 15, <https://doi.org/10.1007/S10072-020-04775-X>. [2]

Figure 6.16. Thirty-day mortality after admission to hospital for ischaemic stroke based on unlinked data, 2019 (or nearest year) and 2020

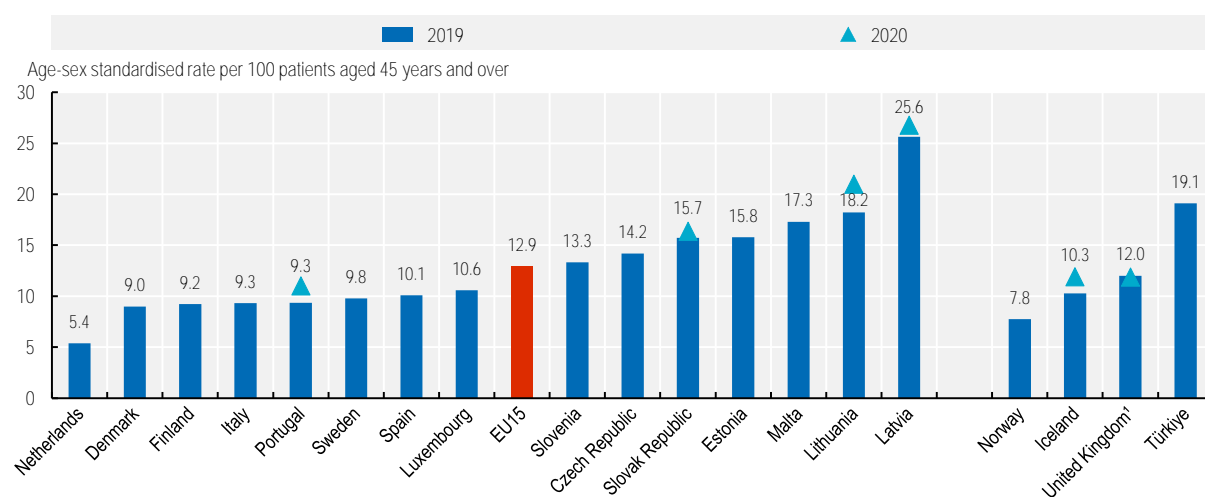


Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.

Source: OECD Health Statistics 2022.

StatLink  <https://stat.link/1z69xh>

Figure 6.17. Thirty-day mortality after admission to hospital for ischaemic stroke based on linked data, 2019 (or nearest year) and 2020



Note: The EU average is unweighted. 1. 2020 data are provisional and include England only.

Source: OECD Health Statistics 2022.

StatLink  <https://stat.link/95zn2s>



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