

MORTALITY FOLLOWING ACUTE MYOCARDIAL INFARCTION (AMI)

Mortality due to coronary heart diseases has declined substantially over the past few decades (see indicator “Mortality from circulatory diseases” in Chapter 3). Important advances in both public health policies, including reductions in smoking and improved treatment for heart diseases, have contributed to these declines (OECD, 2015). Clinical practice guidelines such as those developed by the European Society of Cardiology have helped optimise treatment. Despite these advances, acute myocardial infarction (AMI or heart attack) remains the leading cause of cardiovascular deaths across European countries, making further improvements a priority.

A good indicator of acute care quality is the 30-day AMI mortality rate after hospital admission. The measure reflects the processes of care, such as timely transport of patients and effective medical interventions. However, the indicator is influenced not only by the quality of care provided in hospitals but also differences in hospital transfers, average length of stay and AMI severity.

Figure 6.9 shows mortality rates within 30 days of admission to hospital for AMI using unlinked data to measure where the death occurs in the same hospital. Across EU countries, the lowest rates (below 4.5%) are found in Denmark and Sweden. The rate is also low in Poland but this is because the data refer mainly to patients admitted to cardiology wards while about 65% of patients with AMI are admitted to other wards. The highest rates are in Latvia and Estonia.

Using linked data, Figure 6.10 shows 30-day mortality rates where fatalities are recorded regardless of where they occur (in the hospital where the patient was initially admitted, after transfer to another hospital or after discharge). This is a more robust indicator because it records deaths more widely than the same-hospital indicator, but it requires a unique patient identifier and linked data which are not available in all countries. Using linked data, the AMI mortality rates range from less than 8% in Italy, Denmark and Sweden to over 14% in Latvia and Estonia.

Thirty-day mortality rates for AMI have decreased substantially between 2005 and 2015. Across the 20 EU countries for which data are available, they fell by 30% (from 9.7% to 6.8%) when considering deaths occurring only in the hospital where patients were initially admitted and by over 25% (from 12.8% to 9.5%) in the smaller group of countries providing data on deaths occurring in and out of hospital. Better access to high-quality acute care for heart attack, including timely transportation of patients, evidence-based medical interventions and specialised health facilities such as percutaneous catheter intervention-capable centres have helped to reduce 30-day mortality rates (OECD, 2015).

Figure 6.11 presents the differences in dispersion of AMI 30-day mortality rates across hospitals within countries based on data which include deaths occurring outside of these hospitals where patients

were initially admitted. The differences between upper and lower quartile rates are largest in Latvia (over 7 deaths per 100 admissions between different hospitals) and the smallest in Sweden (about 2 deaths per 100 admissions).

Multiple factors contribute to variations in outcomes of care across hospitals, including hospital structure, processes of care and organisational culture. In Sweden, a system of evaluating and reporting quality and outcomes of care is likely to have contributed to the small variation in mortality of patients after an AMI (Chung et al., 2015).

Definition and comparability

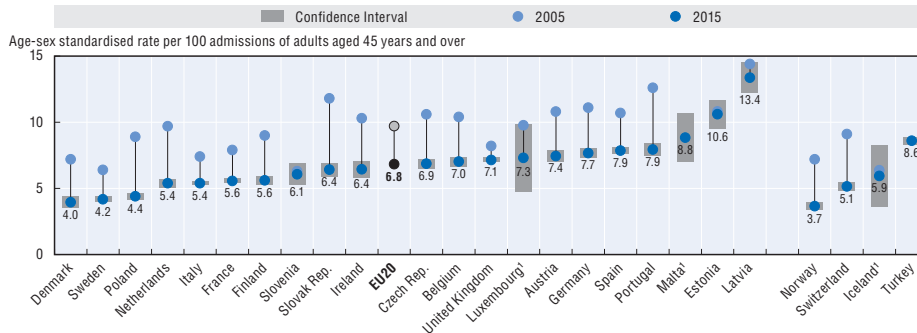
The thirty-day mortality rate measures the percentage of people aged 45 and over who died within 30 days following admission to hospital for an AMI (heart attack). Rates based on unlinked data refer to a situation where the death occurred in the same hospital as the initial admission. Rates based on linked data refer to a situation where the death occurred in the same hospital, a different hospital, or out of hospital. Rates are age-sex standardised to the 2010 OECD population aged 45+ admitted to hospital for AMI (ICD-10 I21, I22).

The specific methodology used to calculate the hospital mortality rates presented in Figure 6.11 differs from that used for Figure 6.9 and Figure 6.10 and is likely to vary from the methods used by country for national monitoring and reporting purposes. Different analytical methods can result in quite different rates for and rankings of organisations and countries, limiting the comparability of results. For more details on the methodology used to calculate data presented in Figure 6.11, see Brownwood et al. (forthcoming).

References

- Brownwood, I. et al. (forthcoming), “OECD Hospital Performance Project: Methodological Development of International Measurement of Acute Myocardial Infarction 30-Day Mortality Rates at the Hospital Level”, *OECD Health Working Papers*, OECD Publishing, Paris.
- Chung, S.C. et al. (2015), “Comparison of Hospital Variation in Acute Myocardial Infarction Care and Outcome between Sweden and United Kingdom: Population Based Cohort Study Using Nationwide Clinical Registries”, *British Medical Journal*, Vol. 351, <http://doi.org/10.1136/bmj.h3913>.
- OECD (2015), *Cardiovascular Disease and Diabetes: Policies for Better Health and Quality of Care*, OECD Health Policy Studies, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264233010-en>.

6.9. Thirty-day mortality after admission to hospital for AMI based on unlinked data, 2005 and 2015 (or nearest years)



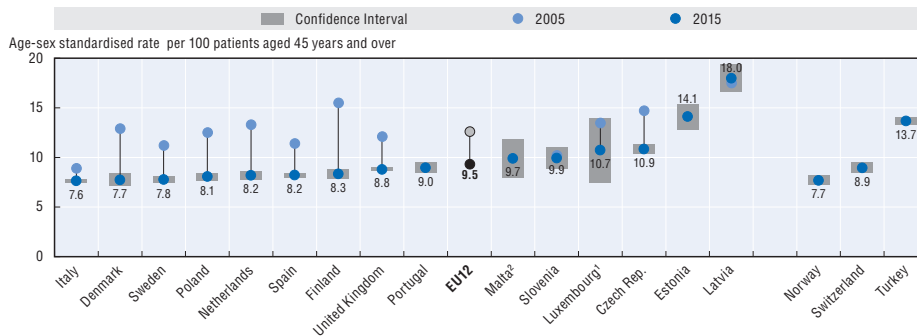
1. Three-year average.

Note: 95% confidence intervals for the latest year are represented by grey areas. The EU average is unweighted and only includes countries with data covering the whole time period.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink <http://dx.doi.org/10.1787/888933835782>

6.10. Thirty-day mortality after admission to hospital for AMI based on linked data, 2005 and 2015



1. Three-year average.

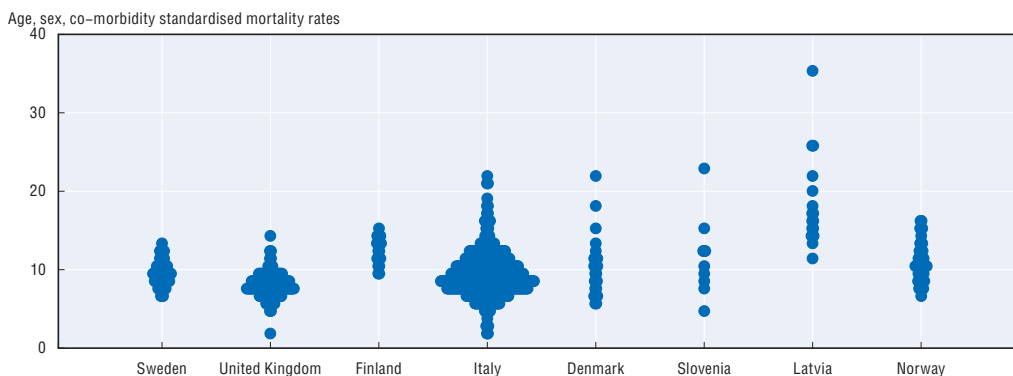
2. Two-year average.

Note: 95% confidence intervals for the latest year are represented by grey areas. The EU average is unweighted and only includes countries with data covering the whole time period.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink <http://dx.doi.org/10.1787/888933835801>

6.11. Thirty-day mortality after admission to hospital for AMI based on linked data, 2013-15 (or nearest years)



Note: The width of each line in the figure represents the number of hospitals (frequency) with the corresponding rate. The data for the United Kingdom relate to England only and are presented at trust-level (i.e. multiple hospitals). The countries are ranked by interquartile range of mortality rate.

Source: OECD Hospital Performance Data Collection 2017.

StatLink <http://dx.doi.org/10.1787/888933835820>



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