5.4. Mortality following stroke

Stroke and other cerebrovascular diseases accounted for over 8% of all deaths in OECD countries. Ischemic stroke represents around 85% of all cerebrovascular disease cases. It occurs when the blood supply to a part of the brain is interrupted, leading to a necrosis (i.e. the cells that die) of the affected part. Treatment for ischemic stroke has advanced dramatically over the last decade. Clinical trials have demonstrated clear benefits of thrombolytic treatment for ischemic stroke as well as receiving care in dedicated stroke units to facilitate timely and aggressive diagnosis and therapy for stroke victims (Hacke et al., 1995; Seenan et al., 2007). Despite their clear clinical benefit, there is widespread variability in access to stroke units across and within countries (AIHW, 2013; Kapral et al., 2011; Indredavik, 2009).

Figure 5.4.1 shows the age-sex standardised case-fatality rates within 30 days of admission for ischemic stroke as an indicator of the quality of acute care received by patients. The left-hand-side panel reports the in-hospital case-fatality rate when the death occurs in the same hospital as the initial stroke admission. The panel on the right shows the case-fatality rate where deaths are recorded regardless of whether they occurred in or out of hospital. The indicator on the right hand side is more robust because it captures fatalities more comprehensively. Although more countries can report the more partial same-hospital measure, an increasing number of countries are investing in their data infrastructure and are able to provide more comprehensive measures.

Across OECD countries, 8.5% of patients died within 30 days in the same hospital in which the initial admission for ischemic stroke occurred. The case-fatality rates were highest in Mexico (19.6%), Slovenia (12.8%) and Turkey (11.8%). Rates were less than 5% in Japan, Korea, Denmark and the United States. With the exception of Japan and Korea, countries that achieve better results for ischemic stroke also tend to report good case-fatality rates for acute myocardial infarction (AMI). This suggests that certain aspects of acute care may be influencing outcomes for both stroke and AMI patients. By contrast, Japan and Korea report the lowest rates for ischemic stroke but high case-fatality rates for AMI. This somewhat paradoxical result requires further investigation but may be associated with the severity of disease in these two countries that is not captured in the data (see Indicator 5.3 "Mortality following acute myocardial infarction" for more details).

Across the 15 countries that reported in- and out-of-hospital case-fatality rates, 11.2% of patients died within 30 days of being admitted to hospital for stroke. This figure is higher than the same-hospital based indicator because it captures deaths that occur not just in the same hospital but also in other hospitals and out of hospital. The cross-country variation is substantially smaller for the in- and out-of-hospital measure compared to the same-hospital measure. This may be due to systematic differences between countries in the way that patients are transferred between hospitals and rehabilitative care facilities following stroke.

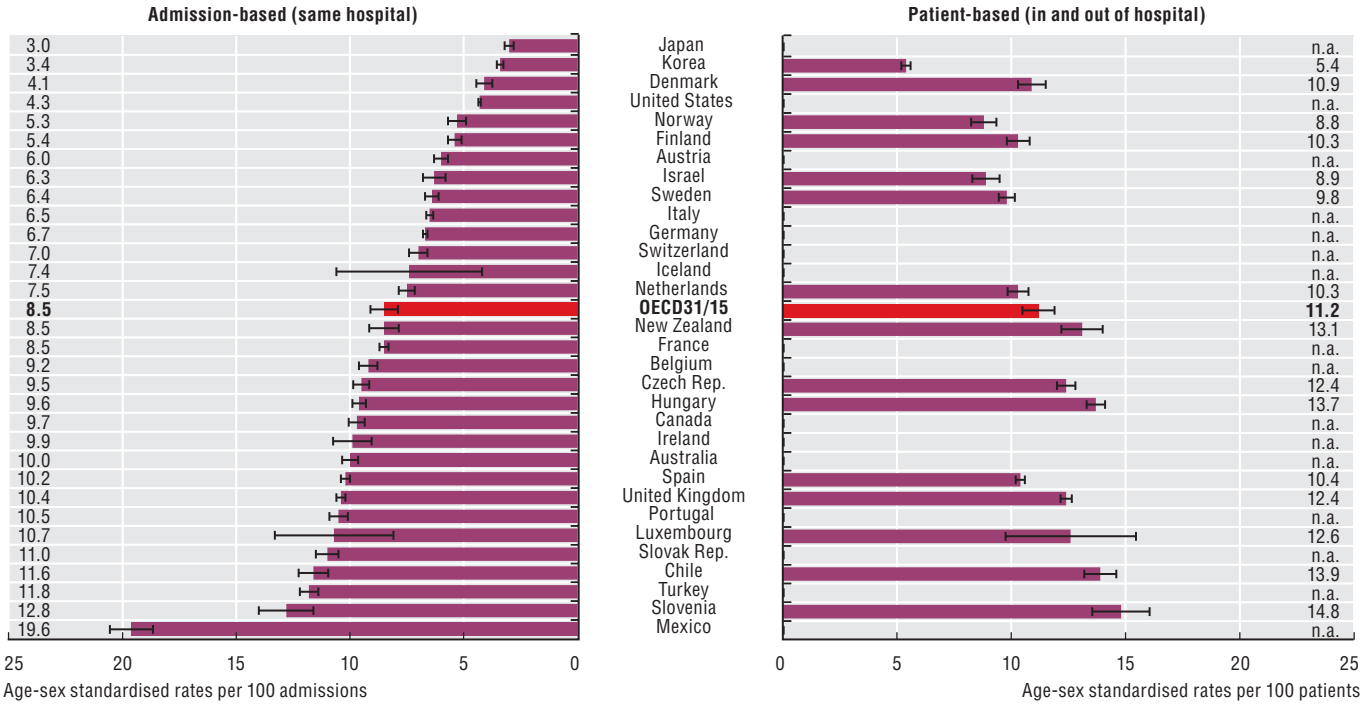
Between 2001 and 2011, same-hospital case-fatality rates for ischemic stroke declined by almost 25% across 19 OECD countries for which data were available over the entire period (Figure 5.4.2). However, the rate of decline was not uniform across countries. Between 2001 and 2011, improvements in case-fatality rates in Australia and Belgium, for example, were not as great as the OECD average. On the other hand, the Czech Republic, the Netherlands and Norway were able to reduce their case fatality rates in excess of 40% between 2001 and 2011. The improvements in case-fatality rates can at least be partially attributed to the degree of access to dedicated stroke units and the high quality of care provided there.

Definition and comparability

The admission-based case-fatality rates is defined as the number of people aged 45 and over who died within 30 days of being admitted to hospital for ischemic stroke, where the death occurs in the same hospital as the initial stroke admission. The in- and out-of-hospital case-fatality rate is defined as the number of people who die within 30 days of being admitted to hospital with a stroke, where the death may occur in the same hospital, a different hospital or out of hospital.

Rates were age-sex standardised to the 2010 OECD population aged 45+ admitted to hospital for stroke. The change in the population structure in this edition of *Health at a Glance* compared with previous editions (where rates were standardised using the 2005 OECD population of all ages) has led to a general increase in the standardised rates for all countries.

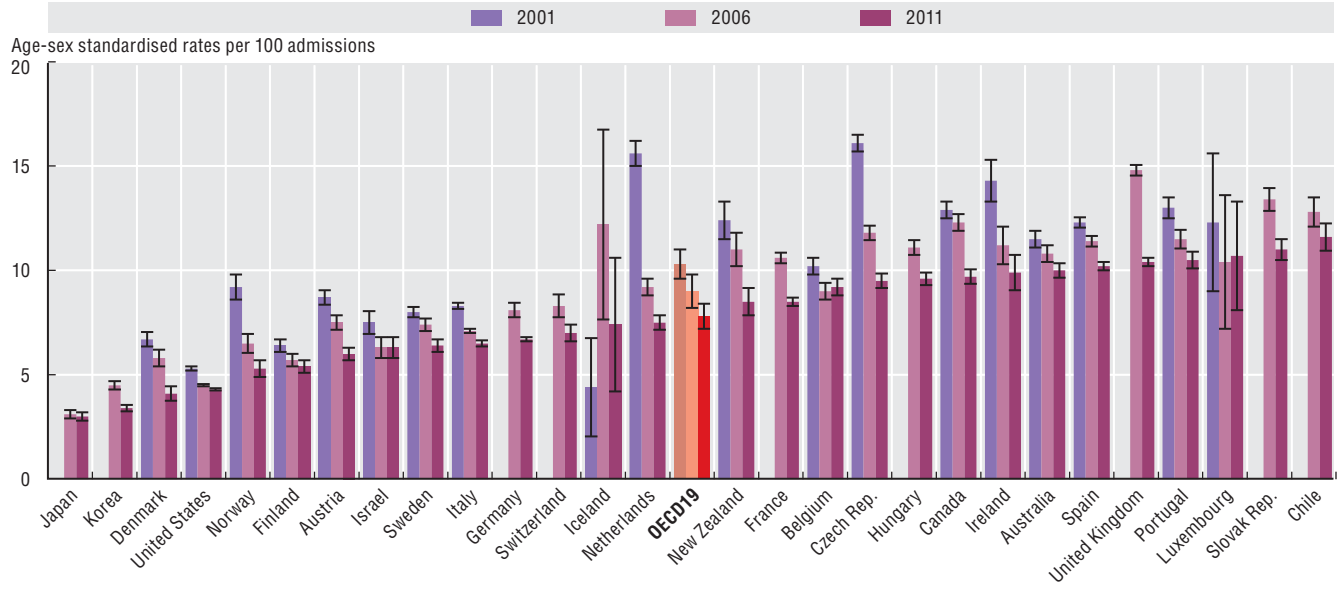
5.4.1. Case-fatality in adults aged 45 and over within 30 days after admission for ischemic stroke, 2011 (or nearest year)



Note: 95% confidence intervals represented by |—|.
Source: OECD Health Statistics 2013, http://dx.doi.org/10.1787/health-data-en.

StatLink http://dx.doi.org/10.1787/888932917940

5.4.2. Reduction in admission-based (same hospital) case-fatality in adults aged 45 and over within 30 days after admission for ischemic stroke, 2001-11 (or nearest year)



Note: 95% confidence intervals represented by |—|.
Source: OECD Health Statistics 2013, http://dx.doi.org/10.1787/health-data-en.

StatLink http://dx.doi.org/10.1787/888932917959