5.4. In-hospital mortality following acute myocardial infarction

Although coronary artery disease (CAD) remains the leading cause of death in most industrialised countries, mortality rates have declined since the 1970s (see Indicator 1.4 "Mortality from heart disease and stroke"). Much of the reduction can be attributed to lower mortality from acute myocardial infarction (AMI), due to better treatment in the acute phase. Care for AMI has changed dramatically in recent decades, with the introduction of coronary care units in the 1960s (Khush *et al.*, 2005) and with the advent of treatment aimed at rapidly restoring coronary blood flow in the 1980s (Gil *et al.*, 1999). This success is all the more remarkable as data suggest that the incidence of AMI has not declined (Goldberg *et al.*, 1999; Parikh *et al.*, 2009). However, numerous studies have shown that a considerable proportion of AMI patients fail to receive evidence-based care (Eagle *et al.*, 2005). AMI accounts for about half of the deaths from CAD, with the cost of care for CAD accounting for as much as 10% of health care expenditures in industrialised countries (OECD, 2003a).

Evidence links the processes of care for AMI, such as thrombolysis and early treatment with aspirin and beta-blockers, to survival improvements, suggesting that the case-fatality rate for AMI is a suitable measure of quality of care (Davies *et al.*, 2001). Given the variety of services and system devices that need to be mobilised to provide care for this illness, the AMI case-fatality rate is regarded as a good outcome measure of acute care quality. Currently, AMI case-fatality rates have been used for hospital benchmarking by the United States Agency for Healthcare Research and Quality (Davies *et al.*, 2001) and the United Kingdom's National Health Service. It has also been employed for international comparisons by the OECD Ageing-Related Diseases Project (OECD, 2003a) and the WHO Monica Project (Tunstall-Pedoe, 2003).

Figure 5.4.1 shows crude and age-sex standardised in-hospital case-fatality rates within 30 days of admission for AMI. The average standardised rate is just below 5%, with the rate being the highest in Korea (8.1%) and the lowest in Iceland (2.1%) and Sweden (2.9%). Other Nordic countries (Finland, Norway and Denmark) are also below the average. Differences in hospital transfers, average length of stay and emergency retrieval times can influence reported rates. In countries with highly specialised emergency services, more patients reach the hospital alive but can ultimately not be stabilised and die within hours of admission. In other countries, unstable cardiac patients are commonly transferred to tertiary care centres, possibly biasing case-fatality rates downward, if the transfer is recorded as a live discharge. Case-fatality rates for women with AMI are typically higher, but the difference is not statistically significant for all countries. This reflects the fact that, while coronary artery disease is much more common in men, it is usually more severe in women.

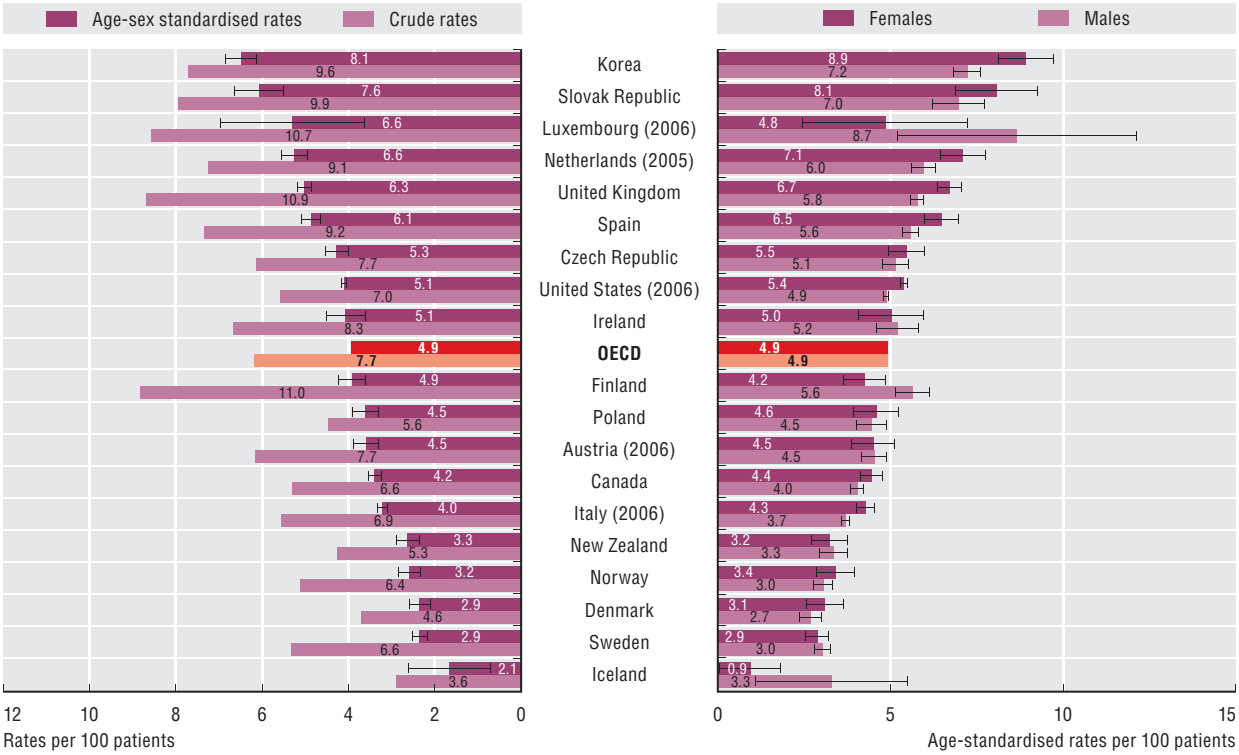
Figure 5.4.2 shows that case-fatality rates for AMI are decreasing over time in all reporting OECD countries, with the majority recording statistically significant reductions between 2003 and 2007. In Canada and other countries, improvements in AMI case fatality rates reflect advances in treatment such as the increased rates and timeliness of reperfusion therapy, which seeks to restore blood flow to that part of the heart muscle damaged during heart attack (Fox *et al.*, 2007 and Tu *et al.*, 2009).

Definition and deviations

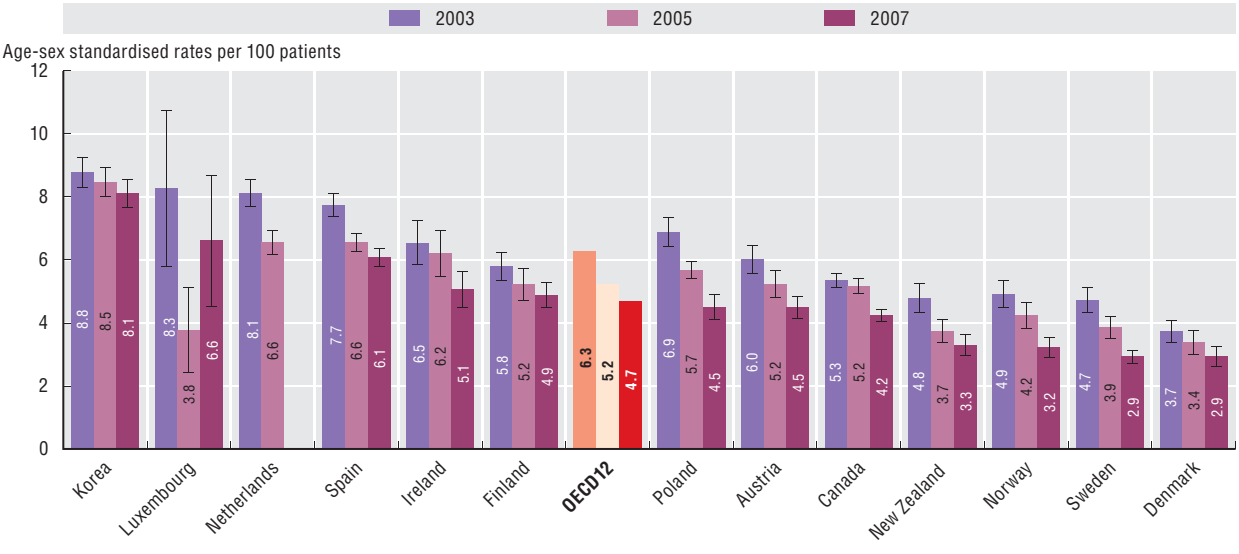
The in-hospital case-fatality rate following AMI is defined as the number of people who die within 30 days of being admitted (including same day admissions) to hospital with an AMI. Ideally, rates would be based on individual patients, however, not all countries have the ability to track patients in and out of hospital, across hospitals or even within the same hospital because they do not currently use a unique patient identifier. Therefore, this indicator is based on individual hospital admissions and restricted to mortality within the same hospital. Differences in practices in discharging and transferring patients may influence the findings.

Both crude and age-sex standardised rates are presented. Standardised rates adjusts for differences in age (45+ years) and sex and facilitate more meaningful international comparisons. Crude rates are likely to be more meaningful for internal consideration by individual countries and enable a more direct comparison with the crude rates presented for this indicator in *Health at a Glance 2007*.

5.4.1 In-hospital case-fatality rates within 30 days after admission for AMI, 2007

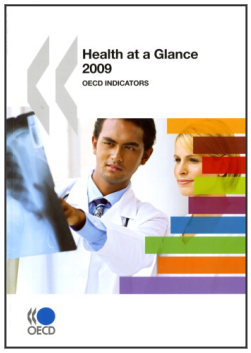


5.4.2 Reduction in in-hospital case-fatality rates within 30 days after admission for AMI, 2003-07 (or nearest year available)



Source: OECD Health Care Quality Indicators Data 2009. Rates are age-sex standardised to 2005 OECD population (45+). 95% confidence intervals are represented by ⊢⊣.

StatLink http://dx.doi.org/10.1787/718746461517



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