6. QUALITY AND OUTCOMES OF CARE

Hospital mortality rates

Variations in acute myocardial infarction (AMI) 30-day case fatality rates at the national level are influenced by the level of within-country variation in rates across hospitals. Most OECD countries have established national hospital performance measurement and public reporting programmes to monitor efforts to improve the cost, quality and access of hospital care.

Figure 6.20 plots the AMI 30-day case fatality rates (where the death occurs in the same hospital as the initial AMI admission). Rates are presented according to the caseload for each hospital and identifies where the rates are higher or lower than expected. While most hospitals have rates no different than expected, all countries (except Norway) had at least one outlier hospital.

The total number of hospitals and proportion of hospitals by number of AMI admissions varies across countries (Table 6.1). Countries with a large number of hospitals are likely to have more outlier hospitals than countries with fewer hospitals. Figure 6.21 presents the differences in dispersion of AMI 30-day case fatality rates across hospitals within countries. The interquartile range of rates within countries varies markedly. For example, the difference between the upper and lower rates for Israel is 1.8 deaths per 100 admissions, and 4.9 deaths per 100 admissions for Latvia (based on unlinked data). Using linked data, the results are slightly different, with Sweden rather than Israel having the least within-country variation.

Multiple factors contribute to variations in outcomes of care including hospital structure, processes of care and organisational culture. Significant variation in adherence to guideline recommendations for cardiac care is observed across countries and within countries (OECD, 2015, p. 174). In Sweden, a comprehensive national programme of quality improvement that includes public reporting, rapid diffusion of technology, use of evidence-based practice and a system of evaluating and reporting quality and outcomes of care is likely to have contributed to a reduced variation in hospital care of patients after an AMI (Chung et al., 2015, p. 7).

The specific methodology used to calculate the hospital case fatality rates presented here differs from that used for the indicator “Mortality following acute myocardial infarction” and is likely to vary from the methods used by participating countries for national monitoring and reporting purposes. Key methodological choices include: unit of measurement, type of hospital, patient risk adjustment variables, selection of reference population, method of standardisation and data issues.

Different analytical methods can result in quite different rates for and rankings of organisations and countries, making direct comparison between rates problematic. The specific analytical method used here is one of several valid options considered during the development work of the OECD. For more details on the methodology used to calculate these indicators see Brownwood et al. (forthcoming).

Figure 6.20 is a funnel plot and reflects that the precision of indicator rates increases as the caseload increases. All rates within the 99.7% control limits are considered to be no different than expected, whereas those outside the 99.7% control limits are considered higher or lower than expected. The reference population rate was calculated from pooled data from selected countries and used to calculate the standardised rates. Figure 6.21 is a turnip plot that graphically represents the relative dispersion of rates but does not give an indication of statistical significance of the variations in rates. Countries are ordered according to ascending level of dispersion as measured by the interquartile range (between the 25th percentile and the 75th percentile) of rates. Hospitals with less than 50 AMI admissions were excluded from both figures to improve data reliability.

Definition and comparability

The case-fatality rate measures the percentage of people aged 45 and over who die within 30 days following admission to hospital for a specific acute condition. Rates based on unlinked data refer to situations where the death occurred in the same hospital as the initial admission. Rates based on linked data include all deaths irrespective of where they occur. While the linked data method is considered more robust, it requires a unique patient identifier to link the data across the relevant datasets, which is not available in all countries.

References


6.20. Thirty-day mortality after admission to hospital for AMI based on linked data, 2013-2015 (or nearest years)

Note: Each dot in the figure represents a single hospital, unless otherwise stated. Results for Canada do not include deaths outside of acute care hospitals. UK data are limited to England and is presented at trust-level (i.e. multiple hospitals).
Source: OECD Hospital Performance Data Collection 2017.

Table 6.1. Number of hospitals by AMI admissions based on unlinked data, 2013-2015 (or nearest years)

<table>
<thead>
<tr>
<th>AMI admissions</th>
<th>CAN</th>
<th>DNK</th>
<th>FIN</th>
<th>ISR</th>
<th>IRE</th>
<th>ITA</th>
<th>KOR</th>
<th>LVA</th>
<th>NOR</th>
<th>SVN</th>
<th>SWE</th>
<th>GBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 300</td>
<td>151</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>20</td>
<td>336</td>
<td>67</td>
<td>6</td>
<td>35</td>
<td>3</td>
<td>62</td>
<td>142</td>
</tr>
<tr>
<td>50-300</td>
<td>158</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>8</td>
<td>160</td>
<td>83</td>
<td>11</td>
<td>17</td>
<td>7</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>261</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>328</td>
<td>155</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>59</td>
</tr>
</tbody>
</table>

6.21. Thirty-day mortality after admission to hospital for AMI based on linked and unlinked data, 2013-2015 (or nearest years)

Note: The width of each line in the figure represents the number of hospitals (frequency) with the corresponding rate. Data for Canada not linked to death statistics. UK data are limited to England and presented at trust level (i.e. multiple hospitals). Ordered by inter quartile range of admission-based data. Rates based on linked data are also standardised for previous AMI.
Source: OECD Hospital Performance Data Collection 2017.