Work-related Ill Health in Railway Operatives

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Background

This report presents the latest data available on work-related ill health in railway operatives.

We have restricted analysis to a sub-set of workers\(^1\) in the rail industry, namely train drivers, rail construction and maintenance operatives and rail transport operatives (referred to hereafter as railway operatives). Where appropriate, we have also included estimates for appropriate occupation or industry comparator groups.

Key facts

Evidence suggests:

- Annually around 2\%-6\% of railway operatives suffer an illness which they believe was caused or made worse by work. (Table 1)
  - Because of sampling uncertainty\(^2\) around this estimate, it is not possible to say whether this overall rate of work-related ill health in railway operatives is any more or less than in comparator occupation/industry groups or the overall rate seen across all occupations. However, it is reasonable to conclude that it is broadly comparable with operatives in the construction sector (3\%-5\%).

- Railway operatives suffer higher levels of respiratory diseases compared to all workers; the rate of skin diseases in railway operatives appears to be of a similar order to all workers. (Table 2)

- The risk for railway operatives due to past asbestos exposures is no higher than the risk for all workers.
  - There will be some workers in the railway industry as a whole in the occupational group ‘vehicle body builders and repair’. This occupational group has a greater number of deaths from mesothelioma compared to the average for all occupations. (Table 3)

- The estimated total annual costs of new cases of illness from current working conditions in railway operatives are in the order of £10million to £20million.
  - Somewhat over half of these costs fall to individuals (53\%), with the remainder shared between employers and government (24\% each).
  - Since this estimate aims to reflect the cost of illness resulting from current working conditions, it excludes the cost of long latency illness cases, such as cancer, which are generally caused by past working conditions.
  - The total costs presented above have been estimated by multiplying the unit cost of an average new case of work-related illness across all workers by the estimated annual number of new cases in railway operatives.
    - The unit cost estimate for an average case of work-related illness in 2012/13 (expressed in 2012 prices) is £17,400, with £9,100 falling to individuals, £4,100 to employers and £4,200 to government.

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\(^1\) Railway operatives are defined using the Standard Occupational Classification (SOC): for some data the 2010 classification has been used, (8143 rail construction and maintenance operatives; 8231 train and tram drivers; 8234 rail transport operatives), for other data the 2000 classification has been used (3514 train drivers; 8143 rail construction and maintenance operatives; 8216 rail transport operatives). The coverage of the SOC2010 and SOC2000 classification is largely the same.

\(^2\) See Annex 2, Section 1 (Labour Force Survey) for further explanation.
### Table 1

**Railways Ill Health Prevalence**

Estimated prevalence and rates of self-reported illness caused or made worse by current or most recent job, by occupation, for people working in the last 12 months, averaged 2006/07 - 2011/12 & 2013/14.

<table>
<thead>
<tr>
<th>Illness ascribed to their current/most recent job</th>
<th>Averaged estimated prevalence (thousands)</th>
<th>Averaged rate per 100 000 employed in the last 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>central</td>
<td>95% C.I.</td>
</tr>
<tr>
<td></td>
<td>lower</td>
<td>upper</td>
</tr>
<tr>
<td>Railway Operatives*</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Transport associate professionals (SOC 351)</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Construction operatives (SOC 814)</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Road transport drivers (SOC 821)</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>Transport (SIC: Section H)</td>
<td>56</td>
<td>51</td>
</tr>
<tr>
<td>All occupations (illness ascribed to current or most recent job)</td>
<td>1012</td>
<td>992</td>
</tr>
</tbody>
</table>

Source: Labour Force Survey

*Defined by the following Standard Occupational Classification (SOC) 2010 codes:
8143 Rail construction and maintenance operatives;
8231 Train and tram drivers; and
8234 Rail transport operatives.

Figures in italics are estimates based on fewer than 30 sample cases. The central estimates for these figures can be volatile because of the small sample sizes. The range around the central estimate (i.e. lower and upper 95% confidence intervals) should be quoted here, rather than the exact value.

No ill health data was collected in 2012/13.
Table 2

Annual average incidence rates (per 100 000 employed), rail workers versus all occupations, as reported to health specialist surveillance schemes

<table>
<thead>
<tr>
<th></th>
<th>Rail workers</th>
<th>All occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate</td>
<td>Rate¹</td>
</tr>
<tr>
<td>SWORD²</td>
<td>36</td>
<td>17</td>
</tr>
<tr>
<td>EPIDERM³</td>
<td>19</td>
<td>14</td>
</tr>
</tbody>
</table>

Defined by the following SOC2000 codes (3514, 8143, 8216)

¹ The rate has been adjusted to account for reporting and sampling factors.
² SWORD (respiratory disease) is based on reports from consultants specialising in respiratory disease. Annual average rate estimate based on reports received 2001-2013.
³ EPIDERM (skin) is based on reports from consultant dermatologists. Annual average rate estimate based on reports received 2001-2013.

Table 3

Mesothelioma proportional mortality ratios (PMRs) for males aged 16-74 in Great Britain by SOC 2000 occupation group, 2002-2010

<table>
<thead>
<tr>
<th>SOC 2000 Code</th>
<th>Occupation Description</th>
<th>Deaths</th>
<th>Expected Deaths</th>
<th>PMR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>3514</td>
<td>Train drivers</td>
<td>15</td>
<td>16.8</td>
<td>89.5</td>
<td>50.1</td>
<td>147.6</td>
</tr>
<tr>
<td>8143</td>
<td>Rail construction &amp;</td>
<td>3</td>
<td>7.6</td>
<td>39.5</td>
<td>8.1</td>
<td>115.3</td>
</tr>
<tr>
<td></td>
<td>maintenance operatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8216</td>
<td>Rail transport operatives</td>
<td>16</td>
<td>34.7</td>
<td>46.2</td>
<td>26.4</td>
<td>74.9</td>
</tr>
<tr>
<td>5232</td>
<td>Vehicle body builders &amp;</td>
<td>42</td>
<td>19.5</td>
<td>215.1</td>
<td>155.0</td>
<td>290.8</td>
</tr>
<tr>
<td></td>
<td>repairers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ A Proportional Mortality Ratio (PMR) is a summary measure used to compare mortality from a particular cause among a particular occupation, e.g. mesothelioma in train drivers, with the mortality of the general working population. If the PMR is greater than or less than 100 for a particular occupation, then the observed number of mesothelioma deaths in that occupation is relatively greater than or less than the average for all occupations.
Background notes and Caveats

It has been necessary to combine several years’ worth of data to produce sufficiently robust estimates of work-related illness in railway operatives. Because there is a large overlap in the data used in the analysis presented in this current report and the previous 2010 report, it is not possible to provide an indication of change over the period: instead this updated data should be viewed as revised baselines.

1. Labour Force Survey (LFS)

The Labour Force Survey (LFS) is a national survey of currently around 44,000 households each quarter which provides information on the UK labour market. The Health and Safety Executive commission annual questions in the LFS to gain a view of work-related illness and workplace injury based on individuals’ perceptions.

The LFS survey data is used to make inferences about the whole population. When data obtained from a sample is used in this way, there is an element of sampling error, or uncertainty, about the sample estimate. Confidence intervals represent the range of uncertainty resulting from the estimate being derived from a sample of people, not the entire population. They are calculated in such a way that the range has a 95% chance of including the true value in the absence of bias - that is the value that would have been obtained if the entire population had been surveyed.

The ill health estimates presented in this document are based on averages over the period 2006/07 - 2011/12 & 2013/14 (no ill health data was collected in 2012/13) to ensure that sample sizes are large enough to provide reliable estimates. Ill health prevalence estimates include long standing cases as well as those illnesses which first occurred in the last year.

2. THOR

THOR is a voluntary surveillance scheme for medical practitioners to report cases of illness, which they assess as being work-related.

- SWORD & EPIDERM: voluntary network of specialist doctors who undertake to systematically report all new cases that they assess as being work-related, that they see in their clinics. SWORD is based on reports from consultants specialising in respiratory disease; EPIDERM is based on reports from consultant dermatologists.

3. Mesothelioma Register

HSE publishes analyses of national mesothelioma deaths (one of the main and most serious asbestos related diseases) by last recorded occupation of the deceased, based on proportional mortality ratios (PMRs). These analyses compare levels of mortality due to mesothelioma across occupations with levels of mortality from all causes of death. PMRs provide a way comparing mortality between different occupations but are not an absolute measure of risk. The data for the occupational analysis are taken from death certificates which record the last known occupation of the deceased. This limits the analysis as the last occupation as recorded on the death certificate may not be the one in which asbestos exposure took place. The long latency period associated with the disease means that individuals may have moved into other jobs between the time of exposure and mesothelioma diagnosis.
4. Cost estimates

Work-related illness imposes costs on individuals, employers and government. HSE have developed a model to estimate the costs of injury and ill health complaints arising from current working conditions. The model estimates both the financial costs (actual monetary costs) and non-financial costs (monetary values given to individuals’ ‘pain, grief and suffering’) of these cases of injury and illness. The costs estimate for work-related illness in railway operatives has been calculated by taking the latest years’ estimate for the average cost of a work-related illness case (in 2012 prices) and multiplying it by an annual estimate of the number of new cases of work-related illness in railway operatives. This estimate should be considered indicative of the likely magnitude of costs, and is subject to a range of uncertainties, both in the estimated number of annual illness cases and the underpinning assumptions used to assign costs. For more details see [www.hse.gov.uk/statistics/sources.htm#hse-cost-model](http://www.hse.gov.uk/statistics/sources.htm#hse-cost-model)