Silicosis and coal workers’ pneumoconiosis 2017

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Summary

Silicosis and coal workers’ pneumoconiosis

- **Silicosis in Great Britain, 2012-2016**

  - New cases\(^1\) of silicosis per year: 20-50
  - New cases\(^2\) of coal workers’ pneumoconiosis per year: 200-300

Silicosis

- Available sources are likely to substantially underestimate the annual incidence of silicosis.
- Annual new cases assessed for Industrial Injuries Disablement Benefit (IIDB) have reduced during the last 10 years with 30 cases in 2016 compared with 90 in 2007.\(^3\)
- Chest physicians have typically identified around 20 estimated new cases each year, although numbers were somewhat higher in both 2014 and 2015 with over 50 estimated cases.
- There have typically been between 10 and 20 annual deaths from silicosis over the last 10 years.

Coal workers’ pneumoconiosis

- Since 2007 there have typically been 200-300 new cases per year assessed for IIDB.
- Estimated numbers of annual new cases identified by specialist chest doctors have fluctuated substantially year-on-year averaging around 25 per year.
- Annual deaths from pneumoconiosis have remained relatively constant over the last 10 years with an average of around 140 deaths per year.

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1. Based on reports by chest physicians in the THOR (SWORD) scheme and new cases assessed for Industrial Injuries Disablement Benefit (IIDB)
2. Based on new cases assessed for Industrial Injuries Disablement Benefit (IIDB)
3. *Deaths not yet available for 2016*
Introduction

Pneumoconiosis is a serious lung disease caused by inhaling various forms of dust in certain kinds of occupations.

The most common forms are coal workers’ pneumoconiosis (due to coal dust), silicosis (due to respirable crystalline silica (RCS)), and asbestosis (due to asbestos). The different forms of disease are usually identified based on assessment of an occupational history of exposure to one of these dusts.

This report describes available statistics for forms of pneumoconiosis other than asbestosis, which is covered in a separate report available at http://www.hse.gov.uk/statistics/causdis/asbestosis/index.htm.

Pneumoconiosis is a “long latency” disease which typically develops gradually over a number of decades following exposure to these dusts and can eventually be fatal. Current and recently occurring cases and deaths therefore largely reflect the effect of past working conditions.

Statistics based on individual cases of pneumoconiosis occurring in Britain are available from the three sources:


 cases identified by specialist chest doctors within the Health and Occupation Reporting (THOR) scheme (main source table THORR01 www.hse.gov.uk/statistics/tables/thorr01.xlsx).

 deaths recorded with pneumoconiosis as the underlying cause (Table DC01 www.hse.gov.uk/statistics/tables/dc01.xlsx).

Silicosis

Figure 1: Silicosis in Great Britain, 2005-2016

*Deaths not yet available for 2016
The majority of IIDB cases that are not due to coal or asbestos are silicosis*. Annual new cases assessed for Industrial Injuries Disablement Benefit (IIDB) have reduced during the last 10 years with 30 cases in 2016 compared with 90 in 2007.

16 estimated new cases of silicosis were identified by specialist chest doctors in 2016 compared to over 50 in both 2014 and 2015. Prior to this annual estimated cases fluctuated between 10 and 30 cases per year.

There have typically been between 10 and 20 annual deaths from silicosis over the last 10 years, with 11 deaths in 2015.

Given the different patterns suggested and the limitations of these data sources it is difficult to draw any firm conclusions about an overall trend in silicosis incidence during the period.

Both the IIDB and THOR data sources are likely to substantially underestimate the incidence of silicosis. Estimates of annual lung cancer cases due to past exposures to silica (nearly 800 deaths per year)1 imply that the extent of underestimation of silicosis by IIDB and THOR was substantial, since many such lung cancers would be expected to develop from among highly exposed workers who were also developing silicosis. Estimates of the risk of silicosis following long-term exposure2, together with information about the likely extent of past exposures in Britain, also suggest that silicosis incidence could be much higher than recorded in the available IIDB and THOR statistics.

The following industries and occupations were most commonly associated with silicosis cases reported within the THOR scheme during the 10-year period 2006-2015:

- Stonemasons and bricklayers (26% of actual reported cases)
- Other construction-related occupations (25% of actual reported cases)
- Mining and quarrying (20% of actual reported cases)
- Foundry-related occupations (13% of actual reported cases)

There are no female IIDB cases of non-asbestos related pneumoconiosis. Around 70% cases of other agent (mainly silica) pneumoconiosis occur in men over retirement age (see table IIDB07 www.hse.gov.uk/statistics/tables/iidb07.xlsx ).

The THOR scheme indicates that around 5% of silicosis cases are female and 10% of other (non-asbestos and not coal related) pneumoconiosis cases are female. THORR02 www.hse.gov.uk/statistics/tables/thorr02.xlsx indicates that for all types of pneumoconiosis (including asbestosis) over 90% of female and 83% of male cases are aged 65 or over.

The role of silica exposure in work-related respiratory disease is also supported by information about how individuals currently with “breathing or lung problems” thought that work had caused or made their illness worse, according to the Labour Force Survey (LFS).

The most recent estimate of the annual prevalence of work-related respiratory disease (based on data from the LFS in 2014/15, 2015/16 and 2016/17) suggests that around 130,000 people who had ever worked currently had breathing or lung problems caused or made worse by work (95% Confidence Interval: 100,000 – 150,000) [see lfsilltyp Table-1 www.hse.gov.uk/statistics/lfs/lfsilltyp.xlsx]. Based on questions about what respondents thought was the cause of their work related illness in the 2009/10, 2010/11, and 2011/12 surveys, “Dusts from stone, cement, brick or concrete” contributed in 19% of estimated cases of breathing and lung problems.

* Causal agents other than coal or asbestos are not recorded in the IIDB scheme, but details of the industrial setting in which cases occurred suggest that the majority of other cases are in fact silicosis.
Coal workers’ pneumoconiosis

Figure 2: Coal workers’ pneumoconiosis in Great Britain, 2005-2016

Since 2007 there have typically been 200-300 annual new cases assessed for IIDB per year, with 210 in 2016, the most recent year.

Estimated numbers of annual new cases identified by specialist chest doctors fluctuated year-on-year with an average of around 25 cases per year. There were an estimated 37 cases in 2016 and 2 cases in 2015.

Annual deaths from pneumoconiosis other than silicosis and asbestosis (which are mainly coal workers pneumoconiosis) have remained relatively constant over the last 10 years with an average of around 140 deaths per year, and 130 deaths in 2015.

Current numbers of annual coal workers’ pneumoconiosis cases and deaths are now lower than in previous decades and this reflects an overall reduction in exposure to coal dust over time driven, at least in part, by the substantial reduction in the size of the coal mining industry since the 1980s.

There are no IIDB and THOR cases of female coal workers’ pneumoconiosis. Both the IIDB and THOR schemes indicate that most cases of pneumoconiosis occur in men over retirement age (see table IIDB07 www.hse.gov.uk/statistics/tables/iidb07.xlsx and THORR02 www.hse.gov.uk/statistics/tables/thorr02.xlsx).

For example, around 80% of coal pneumoconiosis IIDB cases assessed in the ten years to 2016 were over 65 years of age.

References


National Statistics

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

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An account of how the figures are used for statistical purposes can be found at www.hse.gov.uk/statistics/sources.htm.

For information regarding the quality guidelines used for statistics within HSE see www.hse.gov.uk/statistics/about/quality-guidelines.htm

A revisions policy and log can be seen at www.hse.gov.uk/statistics/about/revisions/

Additional data tables can be found at www.hse.gov.uk/statistics/tables/.

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