Mesothelioma mortality by occupation

Mesothelioma deaths in Great Britain for 2011-2015 and 2002-2010 by occupation

Contents

Introduction

The aim of this fact sheet is to present updated mesothelioma mortality statistics by last recorded occupation of the deceased within Great Britain from 2011-2015 and to examine time trends over the longer period of 2002-2015. This analysis updates previously published statistics for the period 2002-2010.

Background information about mesothelioma and statistics for mesothelioma deaths in Great Britain as a whole and by geographical area within Great Britain are available at
http://www.hse.gov.uk/statistics/causdis/mesothelioma/index.htm.


Methodology

The analyses are based on the last occupation of the deceased, as recorded on death certificates. The Proportional Mortality Ratio (PMR) presented for each occupation compares the frequency that the occupation is recorded for mesothelioma deaths with the frequency that it is recorded for deaths from all causes of death as a whole. PMRs thus provide a way of identifying occupations that are associated with a higher rate of mortality from mesothelioma than the average for all occupations combined.

The analyses of temporal trends in occupational PMRs within Great Britain should be interpreted in the context of increasing annual mesothelioma deaths in Great Britain as a whole. Time trends in PMRs for a particular occupation indicate whether rates for that occupation have increased relatively more or less rapidly than for all occupations combined. No change in the PMR for an occupation over time indicates that the mortality rates have increased in line with the trend for GB as a whole.

Overall deaths have increased more than 30% over the period of analysis (i.e. since 2002), and around 10-fold since the late 1960s when consistent recording in the British Mesothelioma Register began. A similar pattern of increase occurred in both males and females, though annual male deaths have consistently outnumbered female deaths by around five to one due to higher and more widespread past asbestos exposures often in occupational settings (Figure 1).

The PMR statistics are limited by the fact that only the last occupation of the deceased is recorded on death certificates which, given the typically long period that the disease takes to develop, may not always be the relevant occupation in terms of past exposure to asbestos. The analysis is restricted to deaths occurring at ages 16-74 years since occupations are routinely recorded on death certificates only for deaths in this range in England and Wales which form the majority of the data.

Figure 1: Male and female mesothelioma deaths 1968-2015
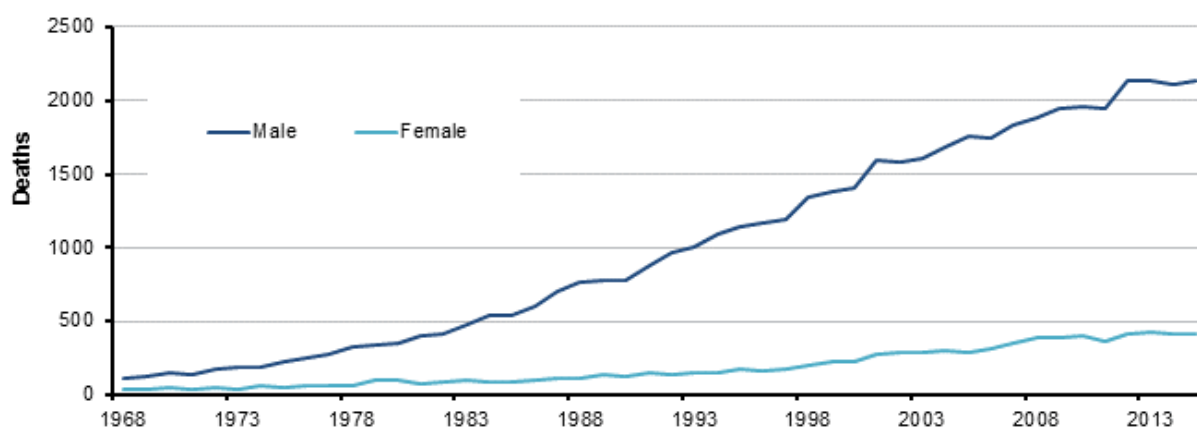
Results

Data tables

Full results of the PMR calculations by occupation in Great Britain are available in Excel tables at: www.hse.gov.uk/statistics/tables/mesooccupation.xlsx.

Tables show the number of mesothelioma deaths and PMRs for both males and females by Standard Occupational Classification (SOC) major (1-digit code), sub-major (2-digit code), minor (3-digit code) and unit (4-digit code) groups based on:

- SOC2010 codes for 2011-2015 deaths; and,
- SOC2000 codes for 2002-2010 deaths.

SOC codes form a nested hierarchy: the first digit of any full 4-digit *unit group* code gives its *major group*, the first two digits gives it *sub-major group* and the first three digits gives its *minor group*.

Tables include ranks from highest to lowest PMR within each 1 to 4 digit level separately, but only for groups with at least ten observed mesothelioma deaths or at least ten expected mesothelioma deaths.

Notes about interpretation and limitations

PMRs are expressed as a percentage: values higher or lower than 100 indicate mesothelioma rates that are higher or lower, respectively, than average for all occupations combined. The corresponding confidence interval should be used to assess whether such an effect is most likely to be due to random variation or a real effect that may be due to asbestos exposure associated with that occupation.

PMRs summarise mortality among occupational groups relative to the average level for Great Britain as a whole and do not represent absolute measures of risk. Occupations with the highest PMRs and where the lower limit of the associated Confidence Interval (CI) are above 100 constitute those that can most reliably be said to have an excess of mesothelioma deaths compared to the average for all occupations, and are, therefore, those most likely to be reflecting an effect due to occupational asbestos exposure. The observed number of deaths in a particular occupation does not represent the actual number of deaths that are attributable to asbestos exposures in that occupation.

The analyses are limited by the fact that death certificates record only the last occupation of the deceased. A case of mesothelioma caused by work in, say, the construction industry will only be assigned to the construction work category in this analysis if the individual is still in that kind of work when they retired (or died). The long latency period of mesothelioma means that individuals may move between occupations before the onset of the disease and thus there is considerable potential for dilution of the observed difference in risk between occupations. The dilution will be even stronger for those kinds of work where there have been substantial reductions in the relevant workforce (e.g. shipyards, railway rolling stock). The occupations with the highest PMRs will be those which are genuine sources of risk, but PMRs will understate the true relative risk level. PMRs of other occupations will overstate the level of risk (if any) associated with these occupations and occupations with the lowest PMRs will be those which do not entail asbestos exposure and which are unlikely to be the final full-time occupation for individuals with asbestos exposure.

It is also important to note that occupations are recorded on mesothelioma deaths certificates for deaths at ages 16-74 as a matter of course, regardless of whether the deaths was caused by occupational exposure to asbestos. Recent research suggests that, while still caused by asbestos, a majority of currently occurring mesotheliomas among women (and a similar absolute number among men, though these constitute a smaller proportion of the larger male total) are not attributable to occupational or domestic asbestos exposures. Such deaths are therefore likely to be attributed to other sources of "environmental" asbestos exposure[4].

This evidence about non-occupational exposures is particularly important to the interpretation of mesothelioma PMRs for women. Whilst some occupations are recorded as the last occupation on female mesothelioma deaths in appreciable numbers, very few occupations show evidence that the PMRs are increased among women. This suggests that many of these deaths will be a reflection of "environmental" rather than occupational asbestos exposure from direct handling of asbestos at work. Environmental exposures will include any exposure accrued indirectly during working hours, but the extent of this effect is not quantifiable.

Reliability of unit group coding

The coding of occupation is likely to be more reliable at the minor group (3-digit code) level than the unit group (4-digit code) level since the recorded information about the job title on death certificates does not always give sufficient information to accurately assign a 4 digit code.

Overall PMRs for 2011-2015 and time trends for 2002-2015

This section presents time trends in PMRs for selected occupations within different levels of the SOC hierarchy where occupations categories based on SOC2000 and SOC2010 were equivalent.

Trends for a particular occupation indicate whether rates for that occupation have increased relatively more or less rapidly than for all occupations combined. No change in the PMR for an occupation over time indicates that the mortality rates have increased in line with the trend for GB as a whole.

The charts show trend lines with solid **bold black lines** to indicate a statistically significant annual trend. Those with **green lines** indicate trends of borderline significance, and for those with **blue lines** trends were not significant. The dashed lines represent the 95% confidence intervals.

SOC major group (1-digit)

Among males major group *5 (Skilled trades occupations)* was the only major group with statistically significantly elevated mesothelioma mortality (PMR=161.5, 95% CI: 154.9,168.2), with 2275 deaths amongst those aged 16-74 for the period 2011-15.

This major group contains a number of more specific codes with significantly elevated PMRs, including the only two elevated 2-digit codes, six of the seven highest ranking 3-digit codes and the 1st (5315 *Carpenters and joiners*), 3rd (5314 *Plumbers and heating and ventilating engineers*), 5th (5216 *Pipe fitters*) and 6th (5241 *Electricians and electrical fitters*) highest ranking 4-digit codes.

**Figure 2: Mesothelioma PMRs by SOC major group, males, 2002-2015**
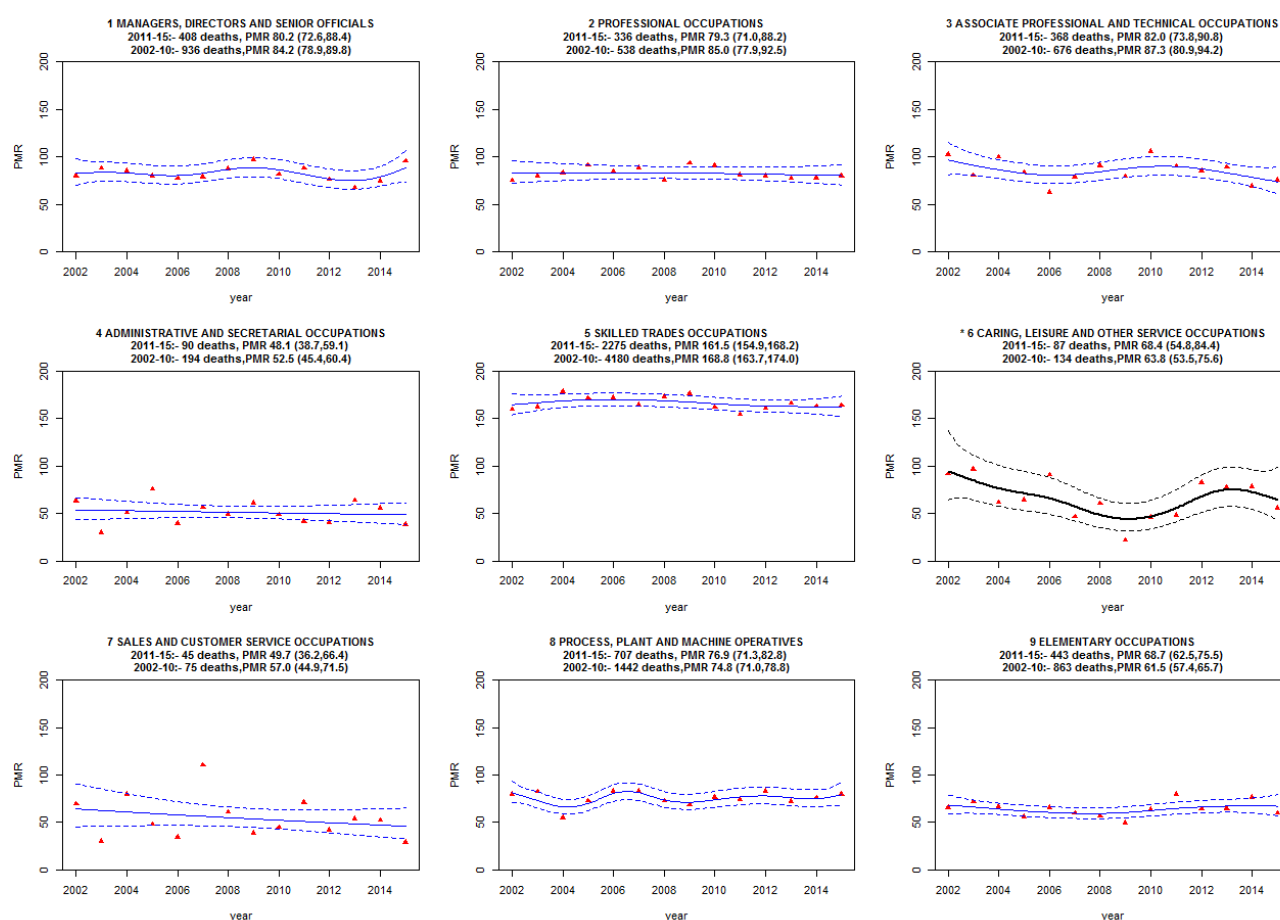
Major group 6 was called "Personal Service Occupations" in SOC2000.

The remaining eight major groups generally have consistently significantly lower PMRs compared to the average for all occupations.

Figure 2 shows the temporal trends in the mesothelioma PMRs for males for the nine SOC major groups. There was little evidence of any change in the PMRs over the period 2002-2015 at the major group level.

Figure 3: Mesothelioma PMRs by SOC major group, females, 2002-2015
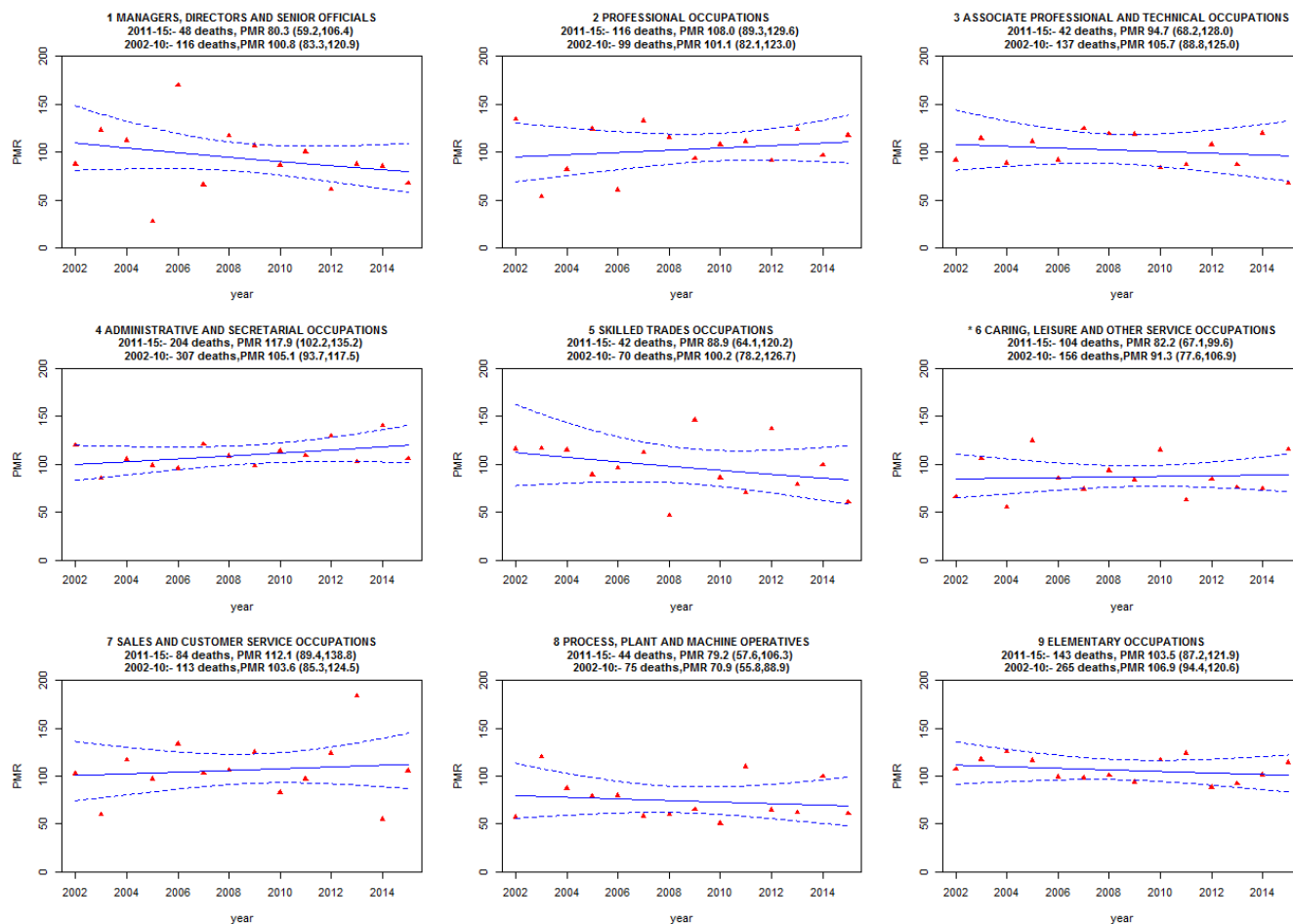
*Major group 6 was called "Personal Service Occupations" in SOC2000.

For females, none of the PMRs for SOC major groups were statistically significantly elevated, and there was no evidence of any change in the PMRs over the period 2002-2015 for these groups (Figure 3).

SOC sub-major group (2-digit)

There were two statistically significantly elevated sub-major occupational groupings in the period 2011-2015 for males:

- 53 *Skilled construction and building trades* (1300 deaths, PMR=241.3, 95% CI: 228.3, 254.8), and
- 52 *Skilled metal, electrical and electronic trades* (836 deaths, PMR=146.3 95% CI: 136.6, 156.6).

The corresponding SOC2000 codes for 2002-2010 were also similarly elevated.

Figure 4 shows the results of the trend analyses for these two sub-major groups. There is some evidence of a reduction in the PMR for sub-major group 52 over time, which implies that mortality has not increased to the same extent for this group as for all occupations combined.

Figure 4: Mesothelioma PMRs for SOC sub-major groups 52 and 53, males, 2002-2015

52 SKILLED METAL, ELECTRICAL AND ELECTRONIC TRADES
2011-15:- 836 deaths, PMR 146.3 (136.6,156.6)
2002-10:- 1709 deaths,PMR 172.0 (163.9,180.3)

53 SKILLED CONSTRUCTION AND BUILDING TRADES
2011-15:- 1300 deaths, PMR 241.3 (228.3,254.8)
2002-10:- 2216 deaths,PMR 236.8 (227.1,246.9)
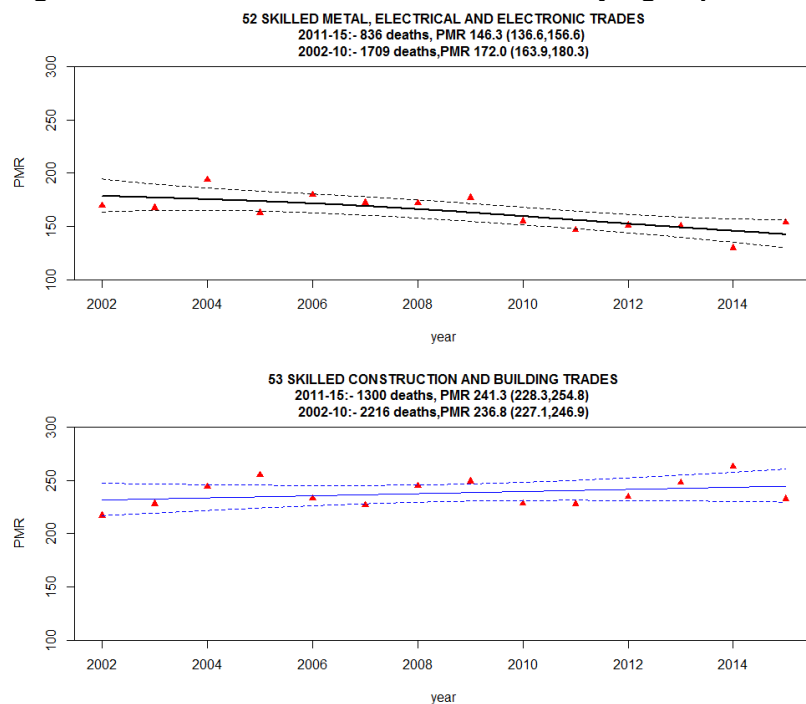
For females two of the sub-major groups were statistically significantly elevated during the period 2011-2015:

- 91 *Elementary trades and related occupations* (33 deaths, PMR=145.3, 95% CI: 100.0, 204.0). The PMR for the corresponding SOC2000 code for 2002-2010 was also similarly elevated.
- 41 *Administrative occupations* (138 deaths, PMR=133.3, 95% CI: 112.0, 157.5). The PMR for the corresponding SOC2000 code for 2002-2010 was not elevated.
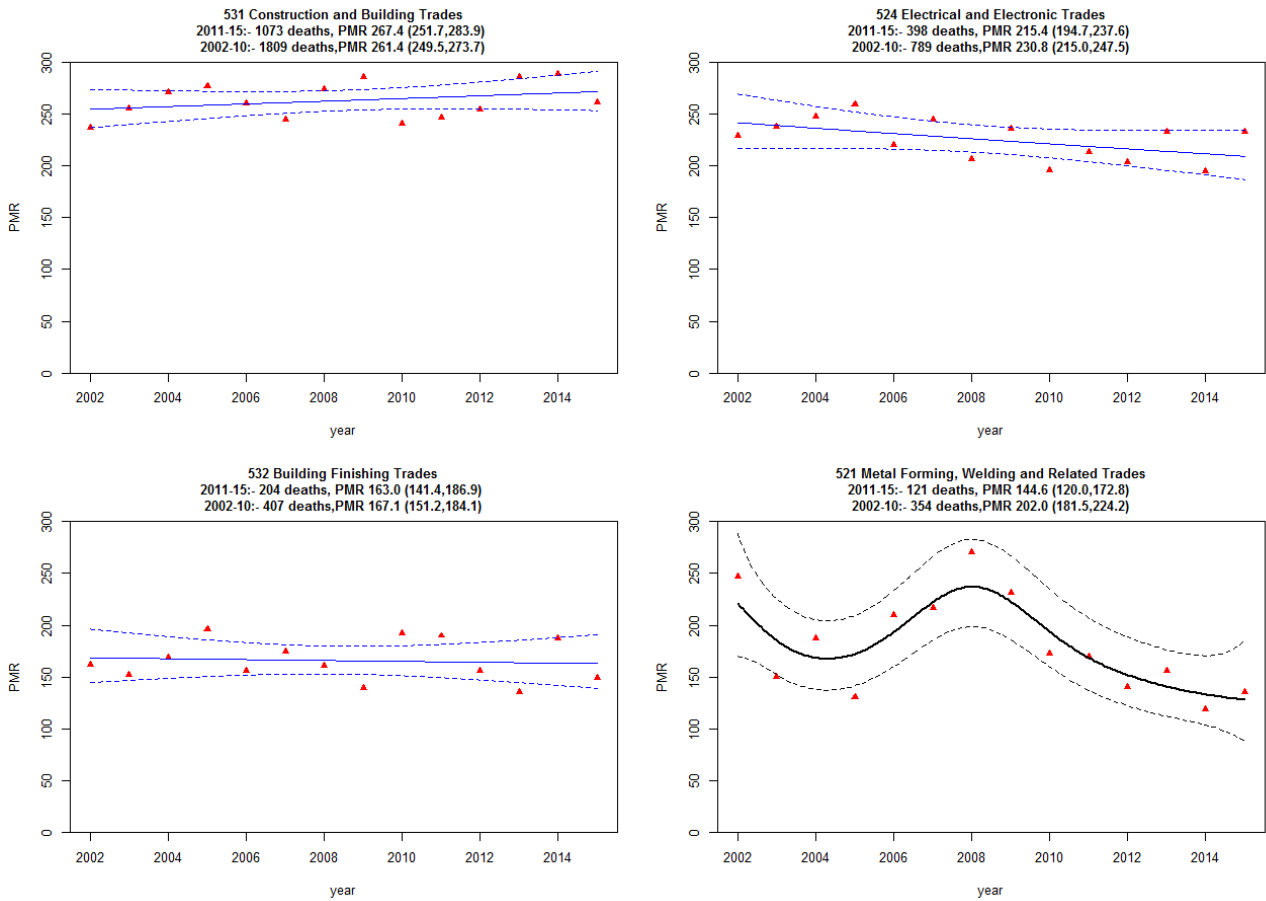
SOC minor group (3-digit)

For males, mesothelioma PMRs for 9 SOC minor groups were statistically significantly elevated for the period 2011-2015, six of which have at least some association with building-related activities:

- 531 *Construction and building trades* (1073 deaths, PMR=267.4, 95% CI: 251.7, 283.9)
- 524 *Electrical and electronic trades* (398 deaths, PMR=215.4, 95% CI: 194.7, 237.6)
- 533 *Construction and building trades supervisors* (23 deaths, PMR=185.4, 95% CI: 117.6, 278.2)
- 532 *Building finishing trades* (204 deaths, PMR=163.0, 95% CI: 141.4, 186.9)
- 814 *Construction operatives* (99 deaths, PMR=154.1, 95% CI: 125.2, 187.6)
- 521 *Metal forming, welding and related trades* (121 deaths, PMR=144.6, 95% CI: 120.0, 172.8)
- 212 *Engineering professionals* (79 deaths, PMR=130.6, 95% CI: 103.4, 162.8)
- 812 *Plant and machine operatives* (241 deaths, PMR=123.7, 95% CI: 108.6, 140.4)
- 522 *Metal machining, fitting and instrument making trades* (213 deaths, PMR=115.8, 95% CI: 100.8, 132.5)

There is some evidence of a reduction in the PMR for minor group 521(*Metal forming, welding and related trades*) since 2008 (Figure 5A), which implies that, since then, mortality has not increased to the same extent for this group as for all occupations combined.

Figure 5A: Mesothelioma PMRs for selected SOC minor groups, males, 2002-2015

531 Construction and Building Trades
2011-15:- 1073 deaths, PMR 267.4 (251.7,283.9)
2002-10:- 1809 deaths,PMR 261.4 (249.5,273.7)

524 Electrical and Electronic Trades
2011-15:- 398 deaths, PMR 215.4 (194.7,237.6)
2002-10:- 789 deaths,PMR 230.8 (215.0,247.5)

532 Building Finishing Trades
2011-15:- 204 deaths, PMR 163.0 (141.4,186.9)
2002-10:- 407 deaths,PMR 167.1 (151.2,184.1)

521 Metal Forming, Welding and Related Trades
2011-15:- 121 deaths, PMR 144.6 (120.0,172.8)
2002-10:- 354 deaths,PMR 202.0 (181.5,224.2)

Figure 5B: Mesothelioma PMRs for selected SOC minor groups, males, 2002-2015

531 Construction and Building Trades
2011-15:- 1073 deaths, PMR 267.4 (251.7,283.9)
2002-10:- 1809 deaths,PMR 261.4 (249.5,273.7)

524 Electrical and Electronic Trades
2011-15:- 398 deaths, PMR 215.4 (194.7,237.6)
2002-10:- 789 deaths,PMR 230.8 (215.0,247.5)

532 Building Finishing Trades
2011-15:- 204 deaths, PMR 163.0 (141.4,186.9)
2002-10:- 407 deaths,PMR 167.1 (151.2,184.1)

814 Construction Operatives
2011-15:- 99 deaths, PMR 154.1 (125.2,187.6)
2002-10:- 173 deaths,PMR 151.2 (129.5,175.5)

For females, mesothelioma PMRs for two SOC minor groups were statistically significantly elevated for the period 2011-2015:

- 242 *Business, research and administrative professionals* (8 deaths, PMR=268.2, 95% CI: 115.7, 528.4)
- 415 *other administrative occupations* (48 deaths, PMR=154.5, 95% CI: 113.9, 204.8)

These do not map directly to equivalent SOC2000 codes, preventing direct comparison with PMRs for the earlier period.

SOC unit group (4-digit)

For males, PMRs were statistically significantly elevated for 25 of the 133 SOC unit groups with at least 10 observed or expected mesothelioma deaths. Results for these groups are listed below. Again, a substantial proportion of these unit groups were associated with building activities.

Unit groups with the highest PMRs (higher than 300):

- 5315 *Carpenters and joiners* (520 deaths, PMR=469.9, 95% CI: 430.3, 512.0)
- 2123 *Electrical engineers* (11 deaths, PMR=373.3, 95% CI: 186.3, 667.9)
- 5314 *Plumbers and heating and ventilating engineers* (247 deaths, PMR=359.1, 95% CI: 315.7, 406.7)
- 8124 *Energy plant operatives* (20 deaths, PMR=311.4, 95% CI: 190.2, 480.9)
- 5216 *Pipe fitters* (31 deaths, PMR=304.0, 95% CI: 206.5, 431.5)

Unit groups with high PMRs (PMR of 200 to 300):

- 5241 *Electricians and electrical fitters* (322 deaths, PMR=277.1, 95% CI: 247.6, 309.1)
- 2424 *Business and financial project management professionals* (19 deaths, PMR=264.0, 95% CI: 159.0, 412.3)
- 1259 *Managers and proprietors in other services n.e.c.* (100 deaths, PMR=236.9, 95% CI: 192.7, 288.1)
- 5236 *Boat and ship builders and repairers* (35 deaths, PMR=236.6, 95% CI: 164.8, 329.1)
- 5322 *Floorers and wall tilers* (29 deaths, PMR=232.3, 95% CI: 155.5, 333.6)
- 5213 *Sheet metal workers* (32 deaths, PMR=222.9, 95% CI: 152.5, 314.7)
- 5442 *Furniture makers and other craft woodworkers* (25 deaths, PMR=210.2, 95% CI: 136.0, 310.2)

Other unit groups with elevated PMRs (PMRs of 100 to 200):

- 8125 *Metal working machine operatives* (166 deaths, PMR=197.1, 95% CI: 168.2, 229.5)
- 8141 *Scaffolders, stagers and riggers* (30 deaths, PMR=195.5, 95% CI: 131.9, 279.1)
- 8149 *Construction operatives n.e.c.* (59 deaths, PMR=192.1, 95% CI: 146.2, 247.8)
- 5214 *Metal plate workers, and riveters* (15 deaths, PMR=190.3, 95% CI: 106.6, 313.9)
- 5330 *Construction and building trades supervisors* (23 deaths, PMR=185.4, 95% CI: 117.6, 278.2)
- 1139 *Functional managers and directors n.e.c.* (21 deaths, PMR=184.8, 95% CI: 114.4, 282.5)
- 1122 *Production managers and directors in construction* (51 deaths, PMR=184.3, 95% CI: 137.1, 242.4)
- 3563 *Vocational and industrial trainers and instructors* (18 deaths, PMR=177.4, 95% CI: 105.2, 280.5)
- 5232 *Vehicle body builders and repairers* (18 deaths, PMR=173.5, 95% CI: 102.8, 274.2)
- 2122 *Mechanical engineers* (23 deaths, PMR=173.1, 95% CI: 109.8, 259.8)
- 5319 *Construction and building trades n.e.c.* (234 deaths, PMR=170.9, 95% CI: 149.7, 194.2)
- 5323 *Painters and decorators* (145 deaths, PMR=161.4, 95% CI: 136.2, 189.9)
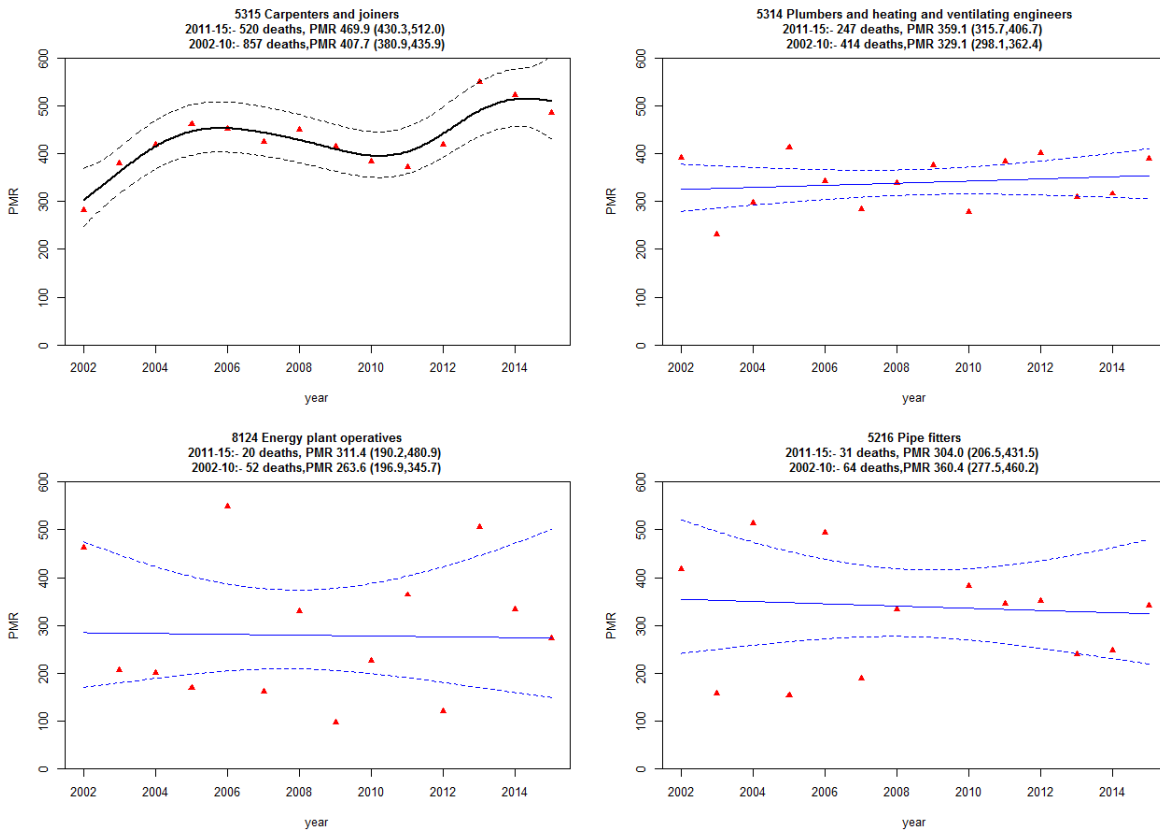- 5223 *Metal working production and maintenance fitters* (171 deaths, PMR=131.1, 95% CI: 112.1, 152.2)

(n.e.c.= Not Elsewhere Classified)

There is some evidence of an increase in the PMR for unit group 5315 (*Carpenters and joiners*) over the period (Figure 6A), which implies that mortality has increased more rapidly for this group than for all occupations combined.
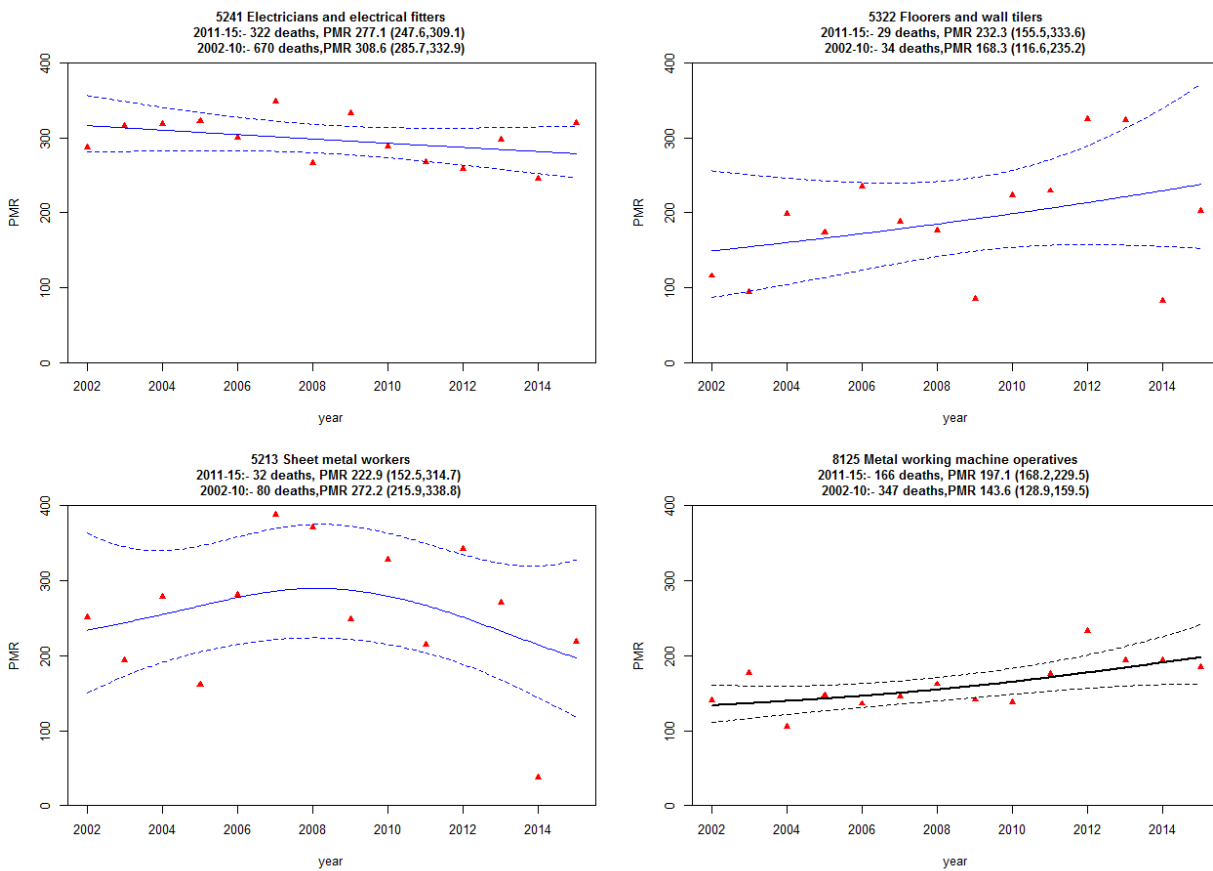
There some suggestion of a reduction in the PMR for unit group 8149 (Construction operatives not elsewhere classified) (Figure 6C), however some of the reduction can be explained by the change in composition from SOC2000 to SOC2010, the main effect of which was the removal of 6 maintenance supervisors mesothelioma deaths to code 5330.
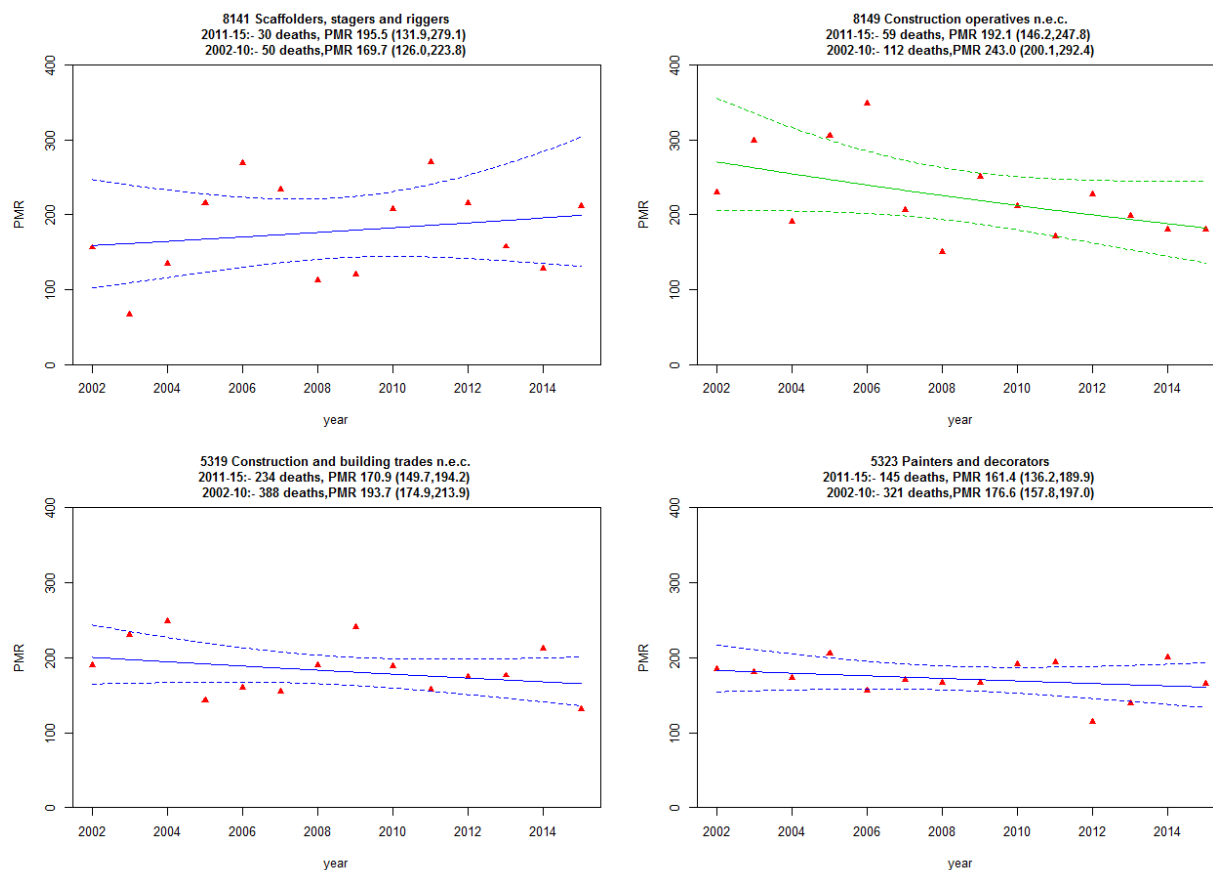
Figure 6A: Mesothelioma PMRs for selected SOC unit groups, males, 2002-2015

5315 Carpenters and joiners
2011-15:- 520 deaths, PMR 469.9 (430.3,512.0)
2002-10:- 857 deaths,PMR 407.7 (380.9,435.9)

5314 Plumbers and heating and ventilating engineers
2011-15:- 247 deaths, PMR 359.1 (315.7,406.7)
2002-10:- 414 deaths,PMR 329.1 (298.1,362.4)

8124 Energy plant operatives
2011-15:- 20 deaths, PMR 311.4 (190.2,480.9)
2002-10:- 52 deaths,PMR 263.6 (196.9,345.7)

5216 Pipe fitters
2011-15:- 31 deaths, PMR 304.0 (206.5,431.5)
2002-10:- 64 deaths,PMR 360.4 (277.5,460.2)

Figure 6B: Mesothelioma PMRs for selected SOC unit groups, males, 2002-2015

5241 Electricians and electrical fitters
2011-15:- 322 deaths, PMR 277.1 (247.6,309.1)
2002-10:- 670 deaths,PMR 308.6 (285.7,332.9)

5322 Floorers and wall tilers
2011-15:- 29 deaths, PMR 232.3 (155.5,333.6)
2002-10:- 34 deaths,PMR 168.3 (116.6,235.2)

5213 Sheet metal workers
2011-15:- 32 deaths, PMR 222.9 (152.5,314.7)
2002-10:- 80 deaths,PMR 272.2 (215.9,338.8)

8125 Metal working machine operatives
2011-15:- 166 deaths, PMR 197.1 (168.2,229.5)
2002-10:- 347 deaths,PMR 143.6 (128.9,159.5)

Figure 6C: Mesothelioma PMRs for selected SOC unit groups, males, 2002-2015

For females, PMRs were statistically significantly elevated for 5 of the 20 SOC unit groups with at least 10 observed or expected mesothelioma deaths:

- 4131 *Records clerks and assistants* (11 deaths, PMR=314.4, 95% CI: 156.9, 562.4)
- 2315 *Primary and nursery education teaching professionals*[1] (38 deaths, PMR=181.2, 95% CI: 128.2, 248.7)
- 4159 *Other administrative occupations* (48 deaths, PMR=158.7, 95% CI: 117.0, 210.4)
- 4123 *Bank and post office clerks* (16 deaths, PMR=184.1, 95% CI: 105.3, 299.0)
- 6125 *Teaching assistants* (13 deaths, PMR=196.3, 95% CI: 104.5, 335.6)

For females, none of the unit groups showed statistically significant trends over the period 2002-2015.

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[1]**Note**: the elevated PMR for *Primary and nursery education teaching professionals* is unlikely to reflect a genuinely higher mesothelioma risk relative to all occupations combined, or other teaching-related occupations, given:

1. that the majority (33/38) of the observed deaths were in fact not specified as either primary, nursery or secondary teachers, but rather assigned to code 2315 under a coding rule that is based on the assumption that female teachers are more likely to be primary or nursery than secondary teachers;

2. the contrasting result for female *Secondary education teaching professionals* (code 2314) where the PMR was statistically significantly lower than 100;

3. that the PMR for the minor group for all teachers combined (231 *Teaching and educational professionals*) is not statistically significantly higher than 100;

4. no evidence from the results for males of any difference in the PMRs for *Primary and nursery education teaching professionals* vs *Secondary education teaching professionals*.

Annex 1 – Technical notes

This analyses is based on the 52% of male and 43% of female mesothelioma deaths on the mesothelioma register for the period 2002-2015, mainly due to the age restriction of 16-74 years (the age range for which last occupation of the deceased is routinely recorded on deaths certificates in England and Wales), but also due to missing or invalid occupation codes for some deaths below age 75 years (1.5% of male and 9.2% of female deaths).

Death data for all causes of death combined required for the calculation of PMRs from 2011-15 for England and Wales was supplied by ONS. For deaths registered after 1 April 2011, occupations have been classified according to the Standard Occupational Classification 2010 (SOC2010), and for deaths occurring during 2002-2010 occupations have been classified according to the Standard Occupational Classification 2000 (SOC2000).

For a small number of deaths in this analysis, that occurred before the end of 2010 but were registered after 1 April 2011, occupations were recoded from SOC2010 to SOC2000 using a probability matching algorithm provided by the Office for National Statistics (ONS) combined with additional checks made against the job description.

The recorded occupations for deaths occurring prior to 2002 were classified according to the Standard Occupational Classification 1990 (SOC1990). At the time of analysis, it was not possible to create a consistent set of occupational categories between this classification and SOC2000. This updated analysis is therefore restricted to the nine-year period 2002-2010.

Information about the Standard Occupational Classification is available from the Office for National Statistics: www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc

In this analysis, mortality in the different occupational groups is represented by Proportional Mortality Ratios (PMRs) and associated 95% confidence intervals. A PMR for a particular occupation is the ratio of the observed number of deaths for that occupation to the expected number of deaths, with that ratio expressed as a percentage (i.e. multiplied by 100).

The expected number of deaths is calculated as the number of mesothelioma deaths that would have been recorded for that occupation if the proportion of mesothelioma deaths was equal to the proportion of total deaths from all causes in that occupation. Since mesothelioma incidence is also strongly related to age, the calculation also takes account of differences in the distribution of ages between occupational groups. A worked example of how the PMR is calculated for a particular occupation is given in Appendix 1.

Statistics have been calculated for 1 to 4 digit codes i.e. major, sub-major, minor, and unit groups of SOC2010 for the period 2011-15 and SOC2000 for the period 2002-10.

The statistical models, shown in the graphs, involved fitting a smoothed term for the year in a Poisson Generalized Additive model (GAM) to identify annual trends. In a most cases a Poisson error term was assumed; for a small number of cases a Negative Binomial or Normal (Gaussian) error term was assumed.

Example PMR calculation

The table below illustrates the calculation of a PMR for men in "occupation X". Column 3 gives the proportion of all mesothelioma deaths by age (=column 2 divided by column 1). This proportion is applied to the number of deaths from all causes by age in occupation X, given in column 4, to give expected number of deaths from mesothelioma in this occupation in column 5. The total observed number of mesothelioma deaths in occupation X was 500 (not shown in table). Dividing this by the total expected number of deaths (sum of column 5 = 230 deaths) expressed as a percentage gives a PMR of 217 in this case.

Age group	Deaths All men			Men in occupation X	
	All causes	Mesothelioma deaths	Proportion from mesothelioma	All cause deaths	Expected deaths
	(1)	(2)	(3) = (2) / (1)	(4)	(5) = (3) * (4)
16-24	16500	1	0.000061	6400	0.388
20-24	21,732	1	0.000046	7,833	0.360
25-29	18,072	5	0.000277	7,907	2.188
30-34	20,544	16	0.000779	7,770	6.051
35-39	27,300	76	0.002784	6,443	17.937
40-44	42,576	199	0.004674	6,222	29.082
45-49	61,236	402	0.006565	6,243	40.984
50-54	102,900	705	0.006851	6,391	43.787
55-59	187,416	1,145	0.006109	6,269	38.300
60-64	308,988	1,436	0.004647	5,367	24.943
65-69	433,956	1,499	0.003454	4,997	17.261
70-74	550,296	1,315	0.002390	3,729	8.911
All ages 16-74	1791516	6800		75571	230

Confidence intervals and statistical significance

A PMR calculated for an occupational group may be greater or less than 100 by chance. Confidence intervals are used to give an indication of the uncertainty associated with each PMR due to this random variation. A 95% confidence interval is such that, if the calculation could be repeated many times with different samples of the events, then 95% of the time, the confidence interval will contain the true value of the PMR. If the lower confidence limit is greater than 100 then the PMR is said to be statistically significantly elevated at the 2.5% level. Likewise, if the upper confidence interval that is presented is lower than 100 then the PMR is said to be statistically significantly lower at the 2.5% level. In this analysis, confidence intervals are calculated assuming Poisson variability in the mesothelioma count for each occupation.

National Statistics

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

All official statistics should comply with the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is Health and Safety Executive's responsibility to maintain compliance with the standards expected by National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

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/.

Last updated: November 2017

General enquiries: Statistician Andrew.Darnton@hse.gov.uk

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