UK ASBESTOS WORKING PARTY UPDATE 2009

Working Party: Matthew Ball, Dan Beard, Robert Brooks, Naomi Couchman, Brian Gravelsons (chairman), Charlie Kefford, Darren Michaels, Patrick Nolan, Gregory Overton, Stephen Robertson-Dunn, Emiliano Ruffini, Graham Sandhouse, Jerome Schilling, Dan Sykes, Peter Taylor, Andy Whiting, Matthew Wilde, John Wilson.

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CONTENTS

Section

1. Introduction

In 2004 the UK Asbestos Working Party (the Working Party) produced a paper entitled "UK Asbestos – The Definitive Guide" (the 2004 paper). The paper contained background information and history in respect of asbestos use in the UK, a summary of regulations and legal principles, an Insurance Market survey and estimates of the potential cost to the UK Insurance Market of UK asbestos-related claims. The UK Insurance Market estimates relied on the population mesothelioma deaths projected by the Health and Safety Executive (HSE) as set out in their 2003 paper "Mesothelioma Mortality in Great Britain: Estimating the Future Burden" (HSE 2003). The HSE projections were subsequently published in detail in the paper "The expected burden of mesothelioma mortality in Great Britain from 2002 to 2050" (HSE 2005).

By 2007, evidence was emerging that the correspondence observed in the 2004 paper between the number of UK mesothelioma deaths and insurance claims was breaking down. The Working Party reformed in 2007 to investigate this and to report on developments in general since the release of the 2004 paper.

The Working Party reported in GIRO workshop presentations in 2007 and 2008 and produced a paper "UK Asbestos Working Party Update 2008" (the 2008 paper) outlining the trends, key issues and the important things to consider when estimating UK asbestos-related claims liabilities. At this time the HSE was commissioning its specialist modelling arm, the Health and Safety Laboratory (HSL), to update the HSE 2003 projections. Given that the original HSE study had been a key component in the original Working Party work, it would have given a false impression of certainty to update the Working Party estimates before the HSL update became available. Because of this, the 2008 paper did not contain an update of the 2004 estimates of the UK Insurance Market cost.

In August 2009, the HSL published its update, outlined in the paper "RR728 Projecting Mesothelioma Mortality in Great Britain" (HSL 2009). Separately, at a conference in Melbourne in April 2008, Professor Julian Peto, Cancer Research UK Chair of Epidemiology at the London School of Hygiene & Tropical Medicine, had presented projections of worldwide mesothelioma deaths "Asbestos-related cancer deaths – the past, present and future". These projections were based on an age, birth cohort model and included the UK. By 2009 two alternative approaches to the projection of future mesothelioma deaths were therefore in the public domain.

In order to compare these models and understand their implications for UK Insurance Market cost, the Working Party has been in dialogue with the HSE and Prof. Peto over the course of 2009. This paper sets out the Working Party's findings: a detailed discussion of the models used by the HSL and Prof Peto, a comparison with a simpler, latency-driven approach and a re-projection of the potential cost of asbestos-related claims to the UK Insurance Market.

The analysis of mesothelioma claim costs has been aided considerably by the collection, co-ordinated by the ABI, of financial data for an anonymous random sample of settled mesothelioma claims from a number of insurers.

This paper presents the results of a survey of aggregated asbestos-related claims numbers and costs for a large proportion (estimated to be around 80%) of the UK Insurance Market. As well as giving an insight into trends in claim development, this survey has facilitated the estimation of future costs for non-mesothelioma claims.

This paper addresses the "things to consider" that were highlighted in the 2008 paper. The Working Party recommends that the 2008 paper, which discusses the main reasons for the divergence between the actual and expected experience over the last few years, be read alongside this paper. For ease of reference, the 2004 estimates, as summarised in the 2008 paper, are reproduced in Appendix A.

The Working Party defines the UK Insurance Market as all direct (including London Market) insurers, Lloyd's syndicates and captive insurance regardless of whether the entities are now currently solvent or insolvent. It does not include central Government, nor local authorities except to the extent they are covered by commercial insurance.

The estimates in this paper cover UK asbestos-related claims covered by employers' liability insurance policies written by the UK Insurance Market. They do not include asbestos-related claims that may fall to public liability insurance policies, or non-UK asbestos-related insurance claims.

The estimates in this paper do not include any amounts in relation to pleural plaques. As clarified in the House of Lords ruling on 17 October 2007, asymptomatic pleural plaques are not compensable in England and Wales. Legislation has been passed in Scotland that means asymptomatic pleural plaques are compensable there, but this is currently undergoing a judicial review process. Northern Ireland has announced its intention to make asymptomatic pleural plaques compensable but no bill has yet been put forward.

There is a large amount of uncertainty in respect of the future cost of UK asbestos-related claims to the UK Insurance. The 2004 paper quoted a central ("medium/medium") estimate of the cost together with low and high estimates. However, we believe, particularly in relation to the number of mesothelioma sufferers who make insurance claims, that there is insufficient evidence on which to base a single best estimate of the future cost. Instead, this paper presents scenarios that provide alternative approaches to the modelling of, amongst other things, future deaths, the proportion of sufferers who claim and future claim inflation. Using this information, the paper reports on a range of reasonable best estimates, given current knowledge, for each asbestos-related disease.

It is possible that the actual cost of UK asbestos-related claims turns out to be outside the range of the estimates contained in this paper. For example, changes in the law or in medical technology could have profound implications. It remains vital to monitor closely actual experience over time against prediction: suggestions on the main areas to monitor are discussed later.

The ubiquity of asbestos and the danger it poses to human health have had, and will continue to have, profound consequences. It is estimated that mesothelioma has been responsible for over two hundred thousand deaths to date worldwide; many more are likely to die in the future. This paper deals with one aspect: the financial impact of UK asbestos-related claims. Whilst this paper focuses on the financial cost of claims it is by no means intended to treat the real human issues lightly. The wider social and human aspects are rightly examined elsewhere.

2. Executive Summary

The Working Party has estimated that the undiscounted cost of UK mesothelioma-related claims to the UK Insurance Market for the period 2009 to 2050 could be around £10bn. Of this figure, over £8bn relates to the period 2009 to 2040, which is approximately double the estimate of £4bn for the same period that was presented in the 2004 paper. The estimate made in 2004 did not include periods after 2040.

The updated estimate is highly uncertain, and it is possible that the actual outcome could be appreciably more or less than this amount. For example, alternative scenarios give a cost of around £5bn or over £20bn for the period 2009 to 2050.

Whilst there have been some changes to the model adopted as described elsewhere in this paper, the increase in the Insurance Market estimate has been driven by the increase in the observed number of mesothelioma insurance claims since 2004. This experience has led the Working Party to revisit the assumptions and methodology that were adopted in 2004. It is not possible to draw any conclusions from the change in the Insurance Market estimates regarding the current level of insurance company reserves as insurers will already have factored the observed experience into their reserve estimates to some degree.

Mesothelioma-related claims give rise to the vast proportion (over 90%) of the estimated total UK asbestos-related claims cost for the UK insurance industry. Including the potential cost of asbestos-related lung-cancer, pleural thickening and asbestosis claims, the total UK Insurance Market future cost of UK asbestos-related claims could be around £11bn. This compares to the estimate of £4.7bn presented in the 2004 paper. The estimate made in 2004 did not include periods after 2040.

The Insurance Market estimates do not include any amounts in relation to pleural plaques. As clarified in the House of Lords ruling on 17 October 2007, asymptomatic pleural plaques are not compensable in England, Wales and Northern Ireland. Legislation has been passed in Scotland that means pleural plaques are compensable in Scotland, but this is currently undergoing a judicial review process. This is discussed further in Section 8.

The total change in the estimated cost of asbestos-related claims to the UK Insurance Market compared to that estimated in 2004 is explained in the following table and discussed in more detail below.

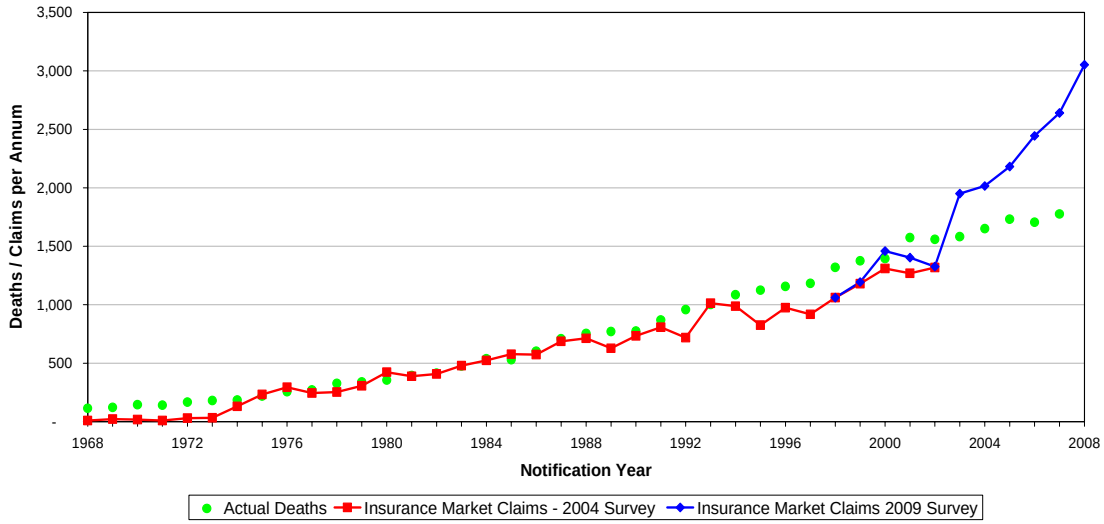
Table 1: Summary of the Changes in the UK Insurance Market Estimate

	Impact on UK Insurance Market Cost (£bn)
2004 Estimate (2009 to 2040)	**4.7**
Change due to Projection of Population Mesothelioma Deaths	**0.6**
Change due to Proportion of Deaths that Result in a Claim	**3.7**
Change due to Average Cost	**0.7**
Change due to Inflation	**(0.6)**
Change due to Extension of Projection Period to 2050	**1.7**
Change due to Non-Mesothelioma Claim Types	**0.5**
2009 Estimate (2009 to 2050)	**11.3**

Recent Experience

Since the Working Party paper in 2004, there has been an increase in experience in relation to mesothelioma claims. Asbestos-related lung cancer claims have also been higher than previously expected. Asbestosis claims have been broadly in line with expectations, whilst pleural thickening and pleural plaques claims have been less than expected following legal developments affecting asymptomatic pleural plaques. The main impact on the UK Insurance Market from mesothelioma claims is illustrated by the graph below:

Figure 1: Mesothelioma Insurance Claims Experience 1968-2008



This graph highlights how the claims experience has deviated from the previous consistency with the actual number of mesothelioma deaths. The number of insurance claims has been increasing faster than the level of population mesothelioma deaths for the last few years.

This has given rise to an increase in the actual incurred costs of mesothelioma claims for the period 2004-2008 compared to that expected within the projection made in 2004. The 2004 paper gave a range of £396m - £437m, compared to the current incurred costs of £924m for the period 2004-2008. This observed experience is the main reason why the future projection (post 2009) has been reassessed.

Population Mesothelioma Deaths

Revised mesothelioma population death projections have an impact of increasing the Insurance Market cost for the period between 2009 and 2040 by around £0.6bn.

The level of population mesothelioma deaths has not been too different to that expected during the period 2004 to 2008 and hence this is not the main reason for the deviation in experience over this period. However, there is a large level of uncertainty surrounding the future number of people in Great Britain that will be diagnosed with mesothelioma. The HSE[1], Prof. Peto[2], and the HSL[3], have made projections of the number of mesothelioma deaths expected in Great Britain in the future. Both the HSE and Prof. Peto agree that the models used are only reliable in the short term e.g. over the next 10 years. Beyond this period there is considerable uncertainty.

We have considered a number of different model structures - a simple "latency" model, a birth cohort model, and the HSE / HSL model structure - to project the future level of population mesothelioma deaths. These are discussed in detail in Section 4 of the paper. Each of the models used are shown to fit the past data well, yet they produce materially different future projections. This is the main reason why there is a large range around the estimate of the future cost of mesothelioma-related claims.

We consider that the model structure used by the HSE / HSL appears to be the most appropriate model structure to use to project future mesothelioma deaths. The Working Party has, however, used different assumptions to those used by the HSL 2009 to estimate the future number of mesothelioma deaths within its estimate of the total cost to the UK Insurance Market.

Specifically, we have adjusted the probability of developing mesothelioma at older ages, as this gives a better fit to the past data. The future mesothelioma incidence rate in the population by year of birth cohort is difficult to model. The future mesothelioma incidence rates in the population may turn out to be very different to that currently assumed.

Another departure from the HSL 2009 assumptions is that we have assumed a different exposure profile post 1978. The exposure profile assumed post 1978 does not directly impact the fit of the model to the past experience, but it does impact the projected level of future mesothelioma deaths. We believe that the exposure post 1978 should fall more in line with asbestos imports.

We have adopted other assumption changes compared to the HSL 2009 projections and these are discussed in more detail in Section 4.5 of the paper.

The different models give widely different results. Even within one model structure, slightly different assumptions can be used that continue to give a good fit to the past data but lead to materially different future projections. This gives rise to considerable uncertainty in relation to the future number of mesothelioma deaths both from the uncertainty in the correct model structure to use (model error) and the correct assumptions to use (parameter error). A number of alternative scenarios have been considered in this paper to illustrate the sensitivity of the results to this uncertainty. It is these scenarios that give rise to the wide range of results.

[1] "The expected burden of mesothelioma mortality in Great Britain from 2002 to 2050" (HSE 2005)

[2] "The European mesothelioma epidemic" (Peto et al, 1999)

[3] "RR728 – Projecting Mesothelioma mortality in Great Britain" (HSL 2009)

Proportion of Mesothelioma Deaths that Result in a Compensation Claim

Revised assumptions for the proportion of mesothelioma sufferers that will make a claim for compensation from their former employer have an impact of increasing the Insurance Market cost for the period between 2009 and 2040 by around £3.7bn.

In 2004 there seemed to be a close correspondence between the number of deaths due to mesothelioma and the number of insurance claims being notified. It was observed that around one third of deaths resulted in an insurance claim and this relationship was assumed to continue. The 2004 paper made the observation: *"In our projections…we have assumed there is no change in the proportion of people claiming. If this were to increase then the projections could be understated."*

Since 2004 it has been observed that the proportion of mesothelioma deaths that result in an insurance claim has almost doubled. This is the main reason why the Insurance Market claims experience has been worse than expected in the period 2004 to 2008, and why the Insurance Market estimates for the period post 2008 have increased compared with those outlined in 2004.

The Working Party has investigated, by communicating with the various parties involved in the mesothelioma claim process, what the key drivers are behind this increase. The Working Party found that there is no single explanation but all of the following have had an influence:

- Publicity. With the various legal cases that have taken place over the last few years, compensation for mesothelioma has often been in the news headlines, and hence public awareness of the availability of compensation is likely to have increased.

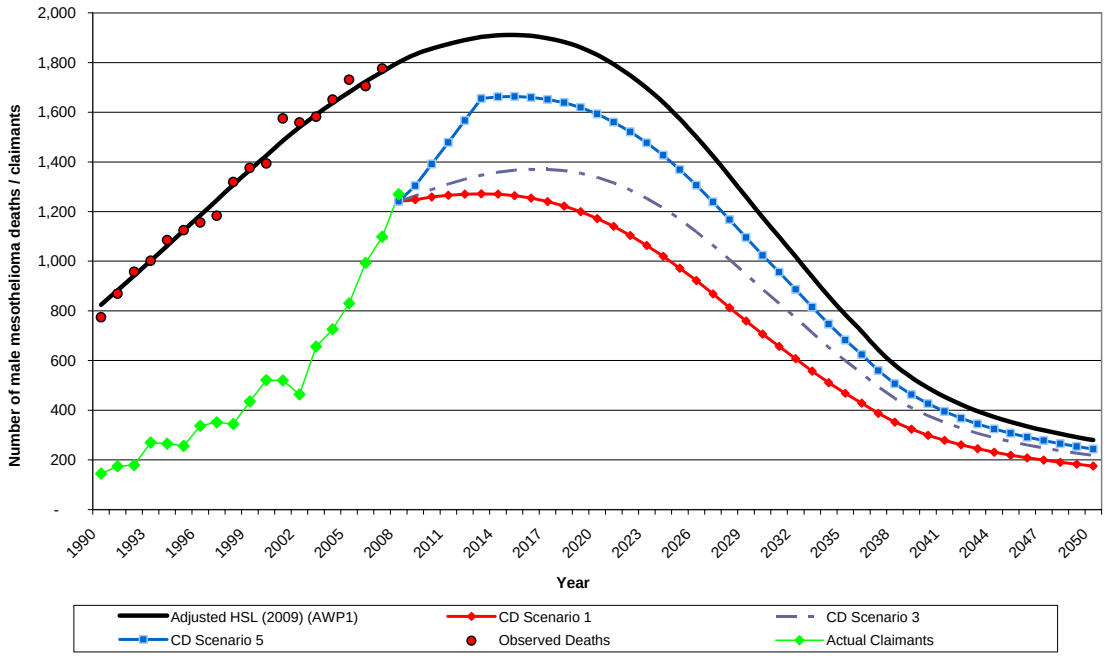
- The use of the internet has increased over the last few years and hence access to specialist information and the ability to bring people with a common interest together, no matter the physical distance apart, has improved. There is a wealth of information available on the web to help patients and their carers find out more about asbestos-related conditions, treatment, symptom management and support, both personal and financial.

- The NHS National Mesothelioma Framework has improved support for mesothelioma sufferers. There has been an improvement in the pre-death diagnosis rate in a number of specialist centres. It is understood that the claim success rate increases when the claim is made prior to death due to the ability to obtain a witness statement from the sufferer. An increase in pre-death diagnoses has increased the likelihood of successful claims against former employers and / or their insurers.

- Anecdotally, it was suggested that as awareness has improved it is possible that there has been an increase in the number of claims made retrospectively (e.g. by relatives after the sufferer has died) even where the death certificate did not state the cause of death to be mesothelioma.

These factors are discussed more fully in the 2008 Working Party update paper. This paper develops future scenarios for the proportion of deaths that result in compensation claim being made. Possible alternative scenarios have been adopted and are fully discussed in Section 5 of this paper. It is extremely difficult to get behind the key drivers as outlined above, and to estimate the influence, if any, these factors will have in the future. This increases the uncertainty surrounding the future projected cost. The following graph shows the Working Party's population mesothelioma deaths projection and three of the five projection scenarios (CD Scenarios) considered for the number of claimants against either the Insurance Market or the Government.

Figure 2: Potential Future Population Mesothelioma Deaths and Claimants



Average Cost of a Mesothelioma Claim

Revised assumptions for the average cost of compensation provided to mesothelioma sufferers have an impact of increasing the Insurance Market cost for the period between 2009 and 2040 by around £0.7bn.

A sample of mesothelioma claims has been analysed and a model of the average claim size by age and year of settlement developed, as set out in Section 6 of this paper. The sample enabled a more robust and detailed analysis to be carried out than was carried out in 2004.This data is based on actual settlement values and therefore provides a better indicator than the summary market data, which in recent years is based on reserves. This analysis has shown that the estimate made of the average cost of a mesothelioma claim paid to a claimant in 2004 was lower than the actual experience. The average claimant cost experienced in 2008 is greater than that assumed in 2004 and this has increased the estimated total Insurance Market cost.

Future Inflation of a Mesothelioma Claim

Revised assumptions for the expected future inflation affecting the cost of compensation provided to mesothelioma sufferers have an impact of decreasing the Insurance Market cost for the period between 2009 and 2040 by around £0.6bn.

The analysis into the claimant costs demonstrated that a greater proportion of the claim is influenced by the age of the claimant than was assumed in the 2004 model. This has resulted in a larger off-set to inflation than was previously assumed to be the case. Further, it is anticipated that the future claims inflation is likely to be lower than that assumed in 2004. Economic factors and a more detailed analysis of the individual heads of claim both lead to this conclusion. As mesothelioma claims are expected to occur over the next 40+ years, the uncertainty in respect of the future inflation level has a large impact on an undiscounted basis. The average cost experience since 2004 is discussed in Section 3 and the revised average cost assumptions are explained in more detail in Section 6 of the paper.

Projection Extended to 2050

Extending the projection to from 2040 to 2050 has an impact of increasing the Insurance Market cost by around £1.7bn.

The 2004 Insurance Market estimate cut-off the future projection in the year 2040. The cut-off was used as a proxy to allow for the impact of non-occupational exposures and to adjust for the exposure post 2004 used in the model having an influence on the projection. This paper considers the total future cost of asbestos-related claims and we consider it more appropriate to cut-off the projections at 2050. The potential impact of non-occupational exposures has been allowed for explicitly, and the market cost estimated in this paper relates to all asbestos exposure that has occurred or is expected to occur in the future. Claims arising from future exposures do not represent a current liability, but rather a future liability. We would expect insurers to adjust the results appropriately for their current exposure.

Other Asbestos-Related Claims

Revised projections for asbestos-related lung cancer, asbestosis and pleural thickening claims have an impact of increasing the Insurance Market cost by around £0.5bn.

The future cost of these claim types to the UK Insurance Market is estimated to be around £1.2bn. Each of these non-mesothelioma claim types is difficult to project into the future. We have taken a pragmatic approach for these claim types and have made future projections based on a number of alternative scenarios given the past experience. Lung cancer claims are considered to be the most uncertain of these claim types. We have developed a model that relates asbestos-related lung cancer claims to smoking-related lung cancer occurrences. This has helped produce alternative scenarios and hence illustrate the uncertainty surrounding claims of this type. The future projections for these claim types are set out in detail in Section 8 of this paper. The main reason for the increase in the cost of these claims is due to reflecting the greater than previously expected experience for asbestos-related lung cancer claims.

Future Monitoring and Recommendation

There is a large uncertainty surrounding any estimate made for the total Insurance Market cost of asbestos-related claims. The uncertainty will reduce as the actual experience emerges especially once the peak in claims and deaths is observed, and hence it is critical that the assumptions made to derive the estimates contained in this paper are monitored closely and adjusted as appropriate in the future. Section 10 outlines the main areas that the Working Party propose to monitor in the future.

The Insurance Market estimates outlined in this paper should not be used without a full understanding of all the limitations and assumptions made. The Working Party encourages the actuary responsible for estimating asbestos-related liabilities to form their own view of the assumptions suitable for the liability being estimated. For example, the market estimates in this paper contain an allowance for future exposure to asbestos post 2009 in line with that assumed by the HSE, and this may not be appropriate for establishing claim liabilities. We consider that, in the absence of a more detailed understanding of a portfolio, the UK Insurance Market estimates contained in this paper are suitable for a high level benchmarking approach for a portfolio that has similar overall characteristics to the market.

3. Experience since 2004

3.1. Summary

The actual claim amounts incurred in the period 2004 to 2008 have been greater than expected for mesothelioma and asbestos-related lung cancer claims, in line with that expected for asbestosis claims, and lower than expected for pleural thickening and pleural plaques claims compared with the medium / medium (medium projected claim numbers and medium claims inflation) forecast set out in the 2004 Working Party paper. The actual versus expected experience based on the market survey data is shown in the following table:

Table 2: Actual Compared to Expected Experience 2004 to 2008

£m	Period 2004-2008				
	Mesothelioma	Asbestosis	Lung Cancer	Pleural Thickening & Pleural Plaques	Total
2004 Projected	417	174	21	657	1,269
Actual as at 2008	924	174	58	147	1,303

Pleural thickening and pleural plaques are different claim types. They are only combined in the above table as they were combined in the 2004 projection, therefore any allocation would be arbitrary.

This Section of the paper reviews the experience in the period 2004-08 by claim type in more detail. Section 3.2 summaries the data collected. Section 3.3 discusses issues related to the data quality and consistency with the data collected in 2004, and Section 3.4 then discusses the observed trends by claim type. The trends are based on the summary data collected from insurance companies and relate to insurance claims rather than individual claimants. The data therefore only covers claimants that make a claim to at least one of the survey participants and each individual claimant may appear more than once in the data collected.

3.2. Data Collection

One of the key aims of the Working Party was to collect insurance company claims data to enable an analysis of the trends and features in the data for recent years to be undertaken. Section 5 of the 2008 paper contained this analysis based on data to mid 2007. The data collection was subsequently repeated as at 31 December 2008. The analysis below concentrates on the comparison of the recent experience with the projections made in 2004.

There were two main data sets collected, a summary data set which related to aggregate data (e.g. number of notified asbestosis claims in a given year) and a detailed data set which collected more information for individual mesothelioma claims on a claim-by-claim basis (e.g. collecting year of birth and year of first exposure for each claim). The Working Party obtained advice to ensure that the data collection exercise complies with the Data Protection Act and Competition Law. Copies of the templates for the summary and detailed data collection exercises are included in Appendix B for reference.

We collected data on the following claim types:

- Mesothelioma
- Asbestos-related Lung Cancer
- Asbestosis
- Pleural Thickening
- Pleural Plaques

12 companies participated in the aggregate data collection exercise and 7 companies participated in the detailed data collection exercise. The Working Party is extremely grateful for all the companies' assistance.

All data was collected on an anonymous basis and aggregated via the Actuarial Profession. Some of the Working Party members then produced summaries of the aggregated anonymous data collected at the Institute which were then circulated to all Working Party members. No Working Party member was allowed to take copies of the original data set.

Note that although most of the items requested had enough data for some form of credible analysis, not all of the requested data was complete or available. In particular, there were not enough adequate responses received on the average share of claims met by individual insurers to enable this to be analysed.

The detailed mesothelioma data was provided as at 31 December 2008. The summary data was also typically provided as at 31 December 2008 although some participants produced data sets as at earlier dates.

3.3. Consistency with 2004

Before proceeding further, it is worth comparing the latest survey results with the survey results from the 2004 paper for the time periods where they overlap. It is important to note that (particularly for older data) several assumptions are required when grossing-up results to the full Insurance Market level. The two most crucial assumptions required are:

1) What % of the market is assumed to be captured by the survey data.
2) How to allocate out "unidentified" asbestos-related claims into the constituent claim types (mesothelioma, asbestosis etc.).

On the first point, both this paper and the 2004 paper assumed their survey collected data for 80% of the Insurance Market. While the 2004 paper made this assumption based on judgement, further analysis during 2008 and 2009 of the Compensation Recovery Unit data (see Section 5.4.3) confirmed that this assumption was indeed reasonable. That said, the participants in the 2004 and 2008 surveys are unlikely to be identical (due to the anonymity of the survey process, we can't be sure on this point) which will produce some differences.

The second point presents more difficulties and a greater degree of approximation. In the 2004 survey, less than half of the companies surveyed were able to provide any kind of history of their claims split by claim type. This meant a significant degree of approximation (using the data where a split was available) was required to estimate the total number of claims by claim type.

Since 2004, the situation has improved significantly. In the data collected, 96% by number of the claims notified for 2008 were split down by claim type. Therefore, there is a lot more confidence in the split of claims by claim type for the recent years. There are still some significant approximations required for historical data. Only 79% by number of the claims notified for 2000 and 51% by number of the claims notified for 1990 were split down by claim type.

Because of these two approximations there are a number of fairly sizeable discrepancies in the two data sets (particularly with regards to average costs), although the high level trends remain very similar. Overall, the Working Party believes that the 2008 survey data is of substantially higher quality due to the improved data collection processes in place, and therefore the projections set out in this paper will be more robust than those in the 2004 paper.

Detailed commentary by claim type is contained within Section 3.4, comparing the actual experience in the period 2004-2008 with the projected experience from the medium/medium 2004 estimates.

3.4. Survey Results

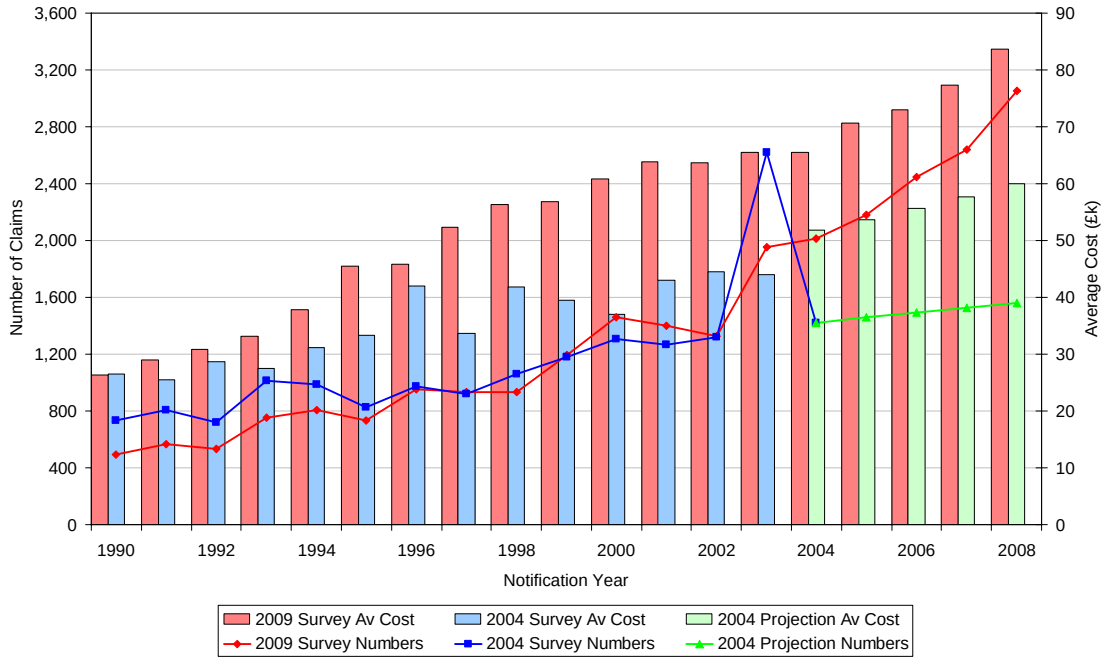
Each of the following sections include a chart showing the summary data collected for that claim type. These show claim number statistics and the average cost per claim based on insurance claim notifications in each year, including nil claim notifications. Commentary is also provided on the trend in the average cost of non-nil claims by settlement year, as this can provide added insight in certain cases. Where 2008 year figures have been provided on a part year basis they have been scaled-up pro-rata to a full year.

For the avoidance of doubt, all historical data and projections referred to below have been grossed up to 100% of the market and unidentified claims have been allocated pro-rata to claim type. They are therefore all a "like for like" comparison. The projections are based on the medium / medium forecast set out in the 2004 Working Party paper.

Two features of the data are worth bearing in mind. Firstly, the data has been split by claim type more accurately in the last five years than in previous periods. This means that the data prior to 2003 may not be as complete and accurate as that for more recent periods. Secondly, the claims notified pre 2006/7 will be largely settled, whereas claims notified post 2006/7 will still be largely outstanding. Hence it is difficult to draw any conclusions in respect to inflation trends using recent incurred data.

3.4.1. Mesothelioma

Figure 3: Mesothelioma Experience 1990-2008



The estimated number of insurance industry claims for mesothelioma over the period 1990-2002 is broadly consistent in both surveys. The differences in the early 1990's demonstrate alternative assumptions around the allocation of unidentified claims to claim types. For the 2004 survey, the stated number of claims in 2003 was highlighted as an "anomaly" and put down to the spike in total claims that year. There was also uncertainty with the estimation approach used to derive the full 2004 year number of notifications at that time.

While there was certainly an element of overestimation in the approach taken (as the revised estimate of mesothelioma claims in 2003 has fallen from c.2,600 to c.2,000) it is clear that 2003 saw the first stage of the noticeable increase in mesothelioma notifications that has been observed in the last five years. Projected total claim numbers for the period 2004-2008 were c.7,500 compared to actual claims of c.12,500 – an overall difference of more than 65%.

The difference is almost entirely down to the change in the proportion of deaths that result in a compensation claim. As set out in more detail in Section 5 of this paper, this has increased from around 36% to around 61% for the UK Insurance Market (excluding Government claims[4]) over the period from 2002 to 2008. The assumption that this proportion would remain constant going forward was a critical assumption in the 2004 paper that has not been borne out by events. In respect of the underlying mesothelioma deaths, actual deaths have been very close to those projected in 2004. The HSE model projected deaths in the period 2002-2007 would be 9,959 and actual deaths have been 10,175, a difference of less than 2.5%.

With respect to average costs, there seems to be a difference between the averages collected in the 2004 survey and the 2008 survey. For the reasons explained in Section 3.3 we believe the data collected in the 2008 survey to be more accurate. In particular, over the last four years there has been a big improvement in the survey participants being able to split out asbestos-related claims data by claim type. Part of the difference in average claim sizes may also be explained by development on the average costs collected in 2004 although the level of this cannot be determined from the data available.

Average costs have increased at an average rate of around 7% per annum between 1990 and 2008. However, this figure will be distorted by the uncertainties in the incurred claims in recent years. The change in the average claim amount is also distorted by a change in the number of claims per claimant since 2003 as outlined in more detail below. Average settled costs on non-nil claims on a settlement year basis have decreased slightly in 2007 and 2008 from the level in 2006. Current average settlement costs are around £80k per insurance claim. Allowing for these distortions the recent inflation rate for mesothelioma claims appears to be around 3%-4% per annum, which is slightly lower than that assumed in 2004.

Given that both the numbers of claims and the average costs from the 2004 projection have proved to be underestimated, it is not surprising to find that the actual incurred costs of mesothelioma claims for the period 2004-2008 have also been above expectation. The 2004 paper gave a range of £396m - £437m, compared to the current incurred costs of £924m for the same period. Around two-thirds of the difference can be attributed to the under projection of the number of claims and the remaining one-third of the difference can be attributed to the under projection of the average cost per claim. However, it should be noted that the average cost per *claimant* has not increased as much due to a change in the number of insurance claims per claimant (see below). Hence the impact of the revised average cost per claim on the future projections is not so great (see Section 7).

The apparent difference in average costs has been explored in further detail in an attempt to split out the various components that influence it. The following issues play a factor:

1) The level of compensation paid to claimants;
2) The level of expenses associated with the handling of the claim (legal costs etc);
3) The proportion of claims which settle at nil cost; and
4) The average number of insurers involved for any individual claimant.

The first two amounts can be derived from a ground-up analysis of the cost of a claim (see Section 6). By applying assumptions for 3) and 4) it is possible to derive a theoretical "average cost" per insurance claim. This comparison has been performed for both 2003 notifications (assumed to settle in 2005) and 2006 notifications (assumed to settle in 2008).

The estimate of the claimant costs used in the 2004 paper was inferred by adjusting the average incurred costs of insurers by the assumed number of claims per claimant of 2.5. This was compared to the range given for a 100% claim in the survey of £50,000 to £175,000. A similarly judgemental estimate was made for the legal costs proportion and the proportion of nil claims.

[4] Including Government the proportion in 2008 was 69%.

From the 2008 survey data, it can be seen that the nil claims rate and the legal cost proportions have both remained fairly static (although these figures are still subject to uncertainty). However, the number of claims per claimant has been falling over the period from 2.5 in 2003 to 2.1 in 2008. This is demonstrated from an analysis of the Compensation Recovery Unit (CRU) data as outlined in Section 5.4.3. All other things being equal, a fall in the claims per claimant ratio will lead to an increase in the average cost of claims, over and above any inflation in the 100% claimant cost.

A final issue relates to costs that will be paid to claimants who are also making an insurance claim but are not picked up by insurers (e.g. payments made by the FSCS on behalf of insolvent insurers or payments made by the Government). This will serve to slightly reduce the reported average cost compared to the average cost per claim model described in Section 6. It is very difficult to quantify this impact, but it is not expected to be significant, as many claims in this category will be paid 100% by the FSCS / Government. The following tables summarise the assumptions made and compare with the actual experience.

Table 3: Mesothelioma Average Cost Assumptions / Experience

Notification Year	Assumed Settlement Year	100% Claimant Cost (£)	Legal Cost (%)	Estimated Nil %	Estimated No. of Claims Per Claimant
2003 (as per 2004 survey)	N/A	156,250	15.0%	20%	2.5
2003 (as per 2009 survey)	2005	160,234	17.3%	21%	2.7
2006 (as per 2009 survey)	2008	176,657	17.7%	21%	2.2
2008 (as per 2009 survey)	2010	179,519	18.8%	21%	2.1

	Implied Average (£)		Actual Average (£)	
Notification Year	incl Nil	excl Nil	Notified incl Nil	Settled excl Nil
2003 (as per 2004 survey)	50,000	62,500	50,000	N/A
2003 (as per 2009 survey)	46,673	59,111	65,552	74,938
2006 (as per 2009 survey)	62,497	79,110	72,987	79,566
2008 (as per 2009 survey)	67,882	85,927	83,698	N/A

The figures in the table above have been derived from the market survey data collected and the mesothelioma claims sample referred to in Section 6.

The above data suggest that:

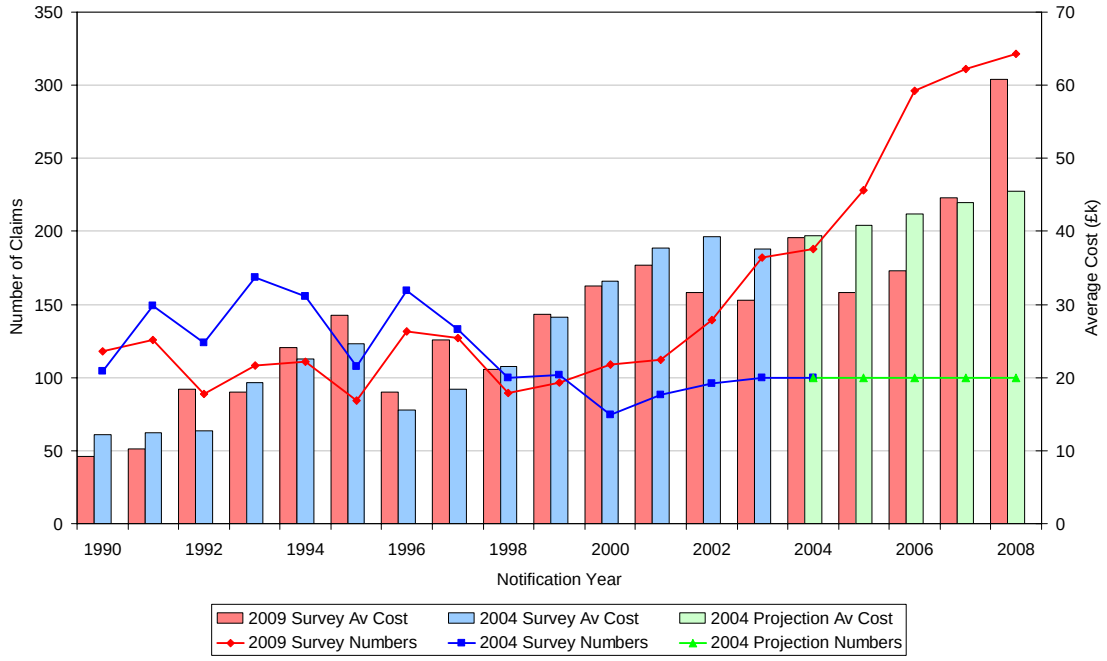
- The inflation rate implied by the average insurance claim over the period 2003 to 2008 is distorted by the fall in the number of claims to claimant (from 2.7 claims per claimant to 2.1 claims per claimant). Therefore it is better to consider the total claimant cost when deriving the underlying claims inflation. The inflation rate is less than 3% per annum over the period 2003 to 2008, and hence more in line with the inflation assumptions outlined in Section 6.
- Current average costs for the 2006-2008 notification years from the market survey appear reasonable compared to the data underlying our average cost per claim model (see Section 6). Note that more weight should be placed on the settled costs since the actual incurred averages may be slightly overstated as not all nil claims will be settled and consequently reflected in the average.
- The 2004 estimate of the Insurance Market average claimant cost for mesothelioma was low. The 2004 estimate of 100% claimant costs was around 10% lower than actual claimant costs at that time.

This analysis is inevitably distorted by the imperfect match between notification year and settlement year information.

The data that has been used within the Insurance Market cost projections for mesothelioma claims has been derived from a sample of claimant claims costs (i.e. compensation at the 100% level). This is discussed more fully in Section 6, and avoids the problems due to the falling claims per claimant ratio as outlined above.

3.4.2. Asbestos-related Lung Cancer

Figure 4: Lung Cancer Experience 1990-2008



In comparing to the 2004 data, the comments regarding asbestos-related lung cancer claims over the period are very similar to those for mesothelioma for claim numbers but not for claim amounts. Overall the historical data is reasonably consistent, but with higher notifications now recorded for the period 2000 to 2003. This is probably due to improved claim type identification and the anomalies to the allocation of unidentified claim types as discussed in Section 3.3. The experience since 2003 has been notably higher than projected. There has been an upturn in notifications, increasing from around 200 to over 300 per annum since 2004. Levels are still around 10% of those for mesothelioma however, and average costs compared to mesothelioma are somewhat lower.

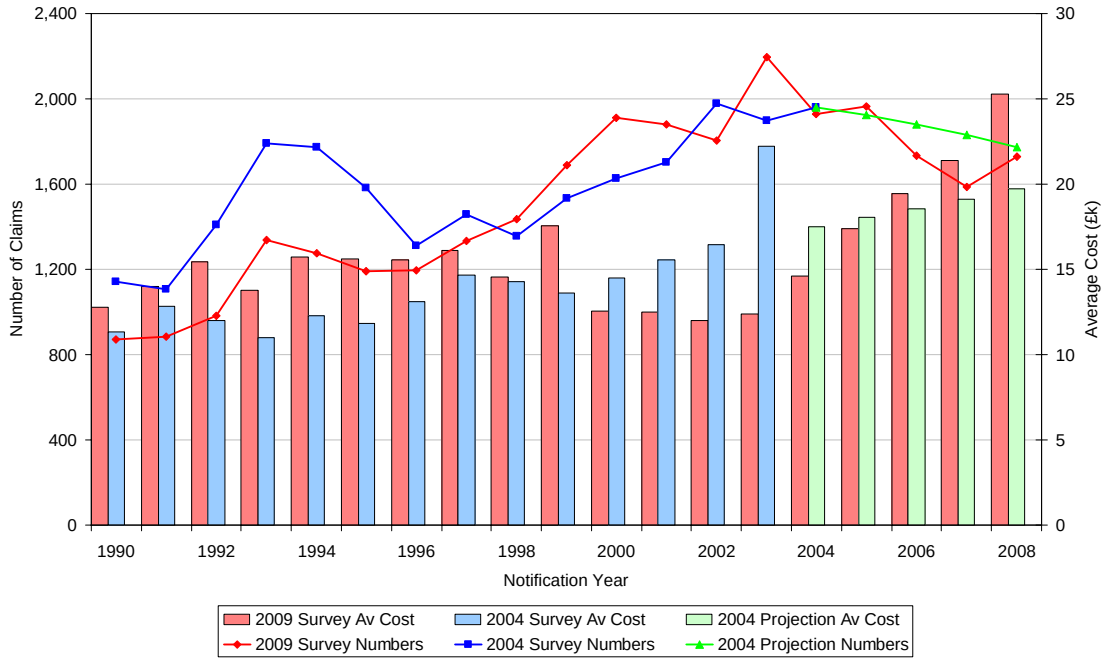
Total claim numbers for the period have been c.1,300 compared to a projection of c.500. The reasons for this are likely to be at least partly attributable to improvements in data quality, and the difficulty in performing projections for this claim type. Asbestos-related lung cancer was highlighted as a significant area of uncertainty in the 2004 paper. Further consideration of the trend in asbestos-related lung cancer notifications is discussed in Section 8.1.

Average costs in both the historical and more recent data appear consistent. The actual incurred cost for 2008 appears anomalously high compared to the recent history, and should be treated with caution due to the limited development for this year. The settlement costs of non-nil claims are somewhat more stable, at around £35,000.

Overall, the actual incurred costs of asbestos-related lung cancer claims for the period 2004-2008 has been higher than the 2004 projections. The 2004 paper gave a range of £16m - £24m, compared to the current incurred costs of £58m for the same period. Almost all of this difference can be attributed to the under projection of the number of claims.

3.4.3. Asbestosis

Figure 5: Asbestosis Experience 1990-2008



Asbestosis experience would appear to be much more consistent with last time's data and resulting projections. The main areas to note are the differences for 1990-1995 which are primarily due to the allocation of unidentified claim types as discussed in Section 3.3, and that the 2004 survey average costs for 2000-2003 would appear to have included a degree of prudence in the early stages of case estimation.

There was discussion in the 2004 Working Party paper that the "peak" for asbestosis-related claims may have already been reached and we should expect claims to reduce in number in the future. Since the peak number of notified asbestosis claims in 2003 the notified claim numbers do appear to be falling.

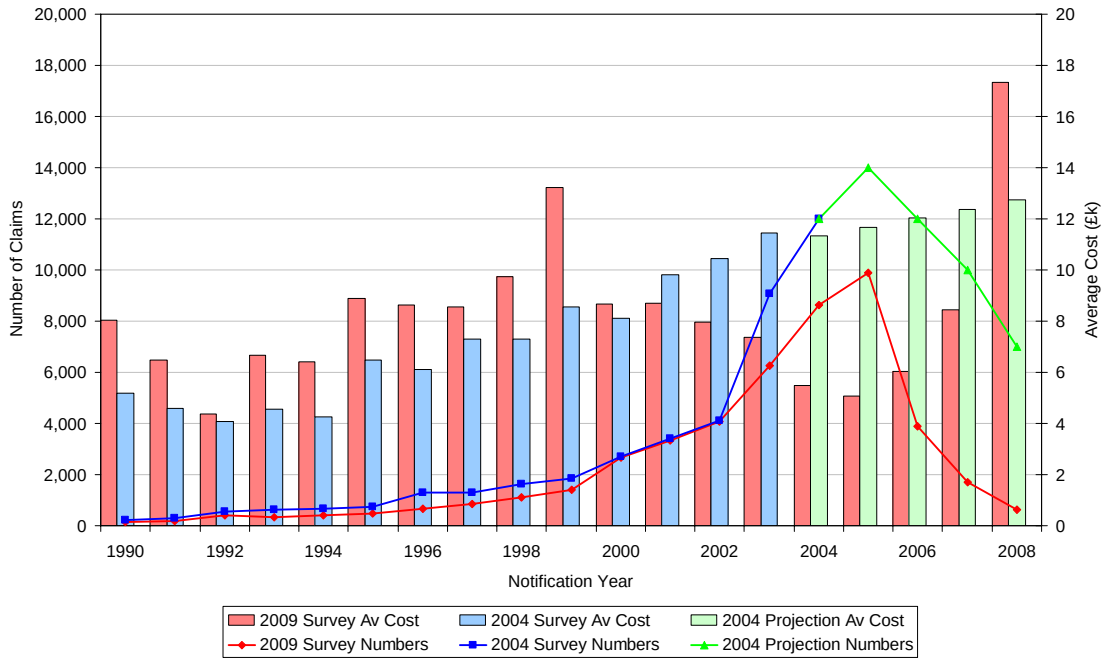
Total numbers of claims for the period 2004-2008 have been c.9,000 compared to a projection of c.9,500 in 2004, which is reasonably close, particularly compared to the significant differences in the other claim types. Actual average costs for 2008 are currently £25k compared to a projection of £20k. Average non-nil settlement costs have increased only very gradually, at an average rate of around 3% per annum since 1990. Current average settlement costs are around £22k per insurance claim. However, the data does suggest that inflation for asbestosis claims since 2003 may have been much higher than initially projected. This is probably due to the distortion in the average incurred cost for recent notification years - it is expected that the average incurred amounts for the later notification years will reduce as the claims are settled. The average settled claim cost over recent years has been fairly stable (see Section 3.5). It is also possible, though less likely as the dynamics of how the claim is handled are different, that it is distorted by the impact of the reducing claims to claimant ratio as outlined for mesothelioma.

Overall, the actual incurred costs of asbestosis claims for the period 2004-2008 have been broadly in line with the 2004 projection. The 2004 paper gave a range of £157m - £197m, compared to the current incurred costs of £174m for the same period.

3.4.4. Pleural Plaques

The 2004 paper did not split out the projections between pleural plaques and pleural thickening. Rather than make an arbitrary retrospective apportionment between these claim types within the 2004 estimate, the comparison set out below is for the total of both claim types. This is only to facilitate the comparison of the experience since 2004. The 2009 market survey has enabled these different claim types to be distinguished and hence a projection for pleural thickening claims has now been made – see Section 3.4.5 and 8.3.

Figure 6: Pleural Plaques and Pleural Thickening Experience 1990-2008



It was highlighted in the 2004 paper that experience for this claim type would be very uncertain due to the legal uncertainties of whether or not asymptomatic pleural plaques claims are compensable. Claim incidence here has broadly followed the legal climate. There was a large spike in notifications up to the start of the legal challenges in 2005. Since then notifications have fallen sharply.

The pattern of reporting for the period 2004-2008 broadly followed the “low” projection from the 2004 paper which had a lower peak and a faster drop-off than given in the “medium” projection shown above. Due to a high level of nil claims in the 2004-2007 notification years relating to pleural plaques, the average cost of claims was also some way below the medium projection.

The total number of claims for the period were c.25,000 compared to a medium projection of c.55,000 (the low projection suggested c.18,000). The average cost for the period has been very volatile due to the issues surrounding pleural plaques, so a comparison to the 2004 projections is not meaningful.

Overall, the actual incurred costs of pleural plaques and pleural thickening claims for the period 2004-2008 have been much lower than the 2004 projection. The 2004 paper gave a range of £202m - £932m, compared to the current incurred costs of £147m for the same period.

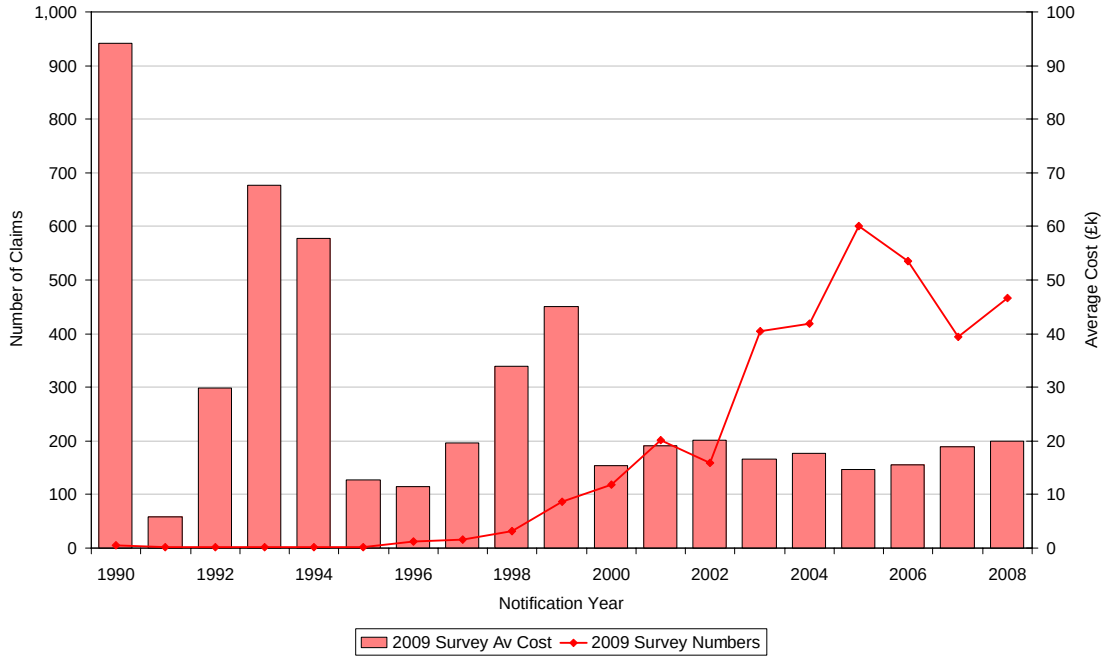
No further comment is made on pleural plaques here. See Section 8.4 for details of the current legal situation in respect of pleural plaques.

3.4.5. Pleural Thickening

Pleural thickening claims were not split out separately in the 2004 data, therefore the graph below does not include a comparison with the 2004 projections.

The number of pleural thickening claims has increased substantially since 2002 but remains at a relatively stable level between 400 and 600 claims per annum. Average costs currently sit in the range of £15k-£20k per insurance claim.

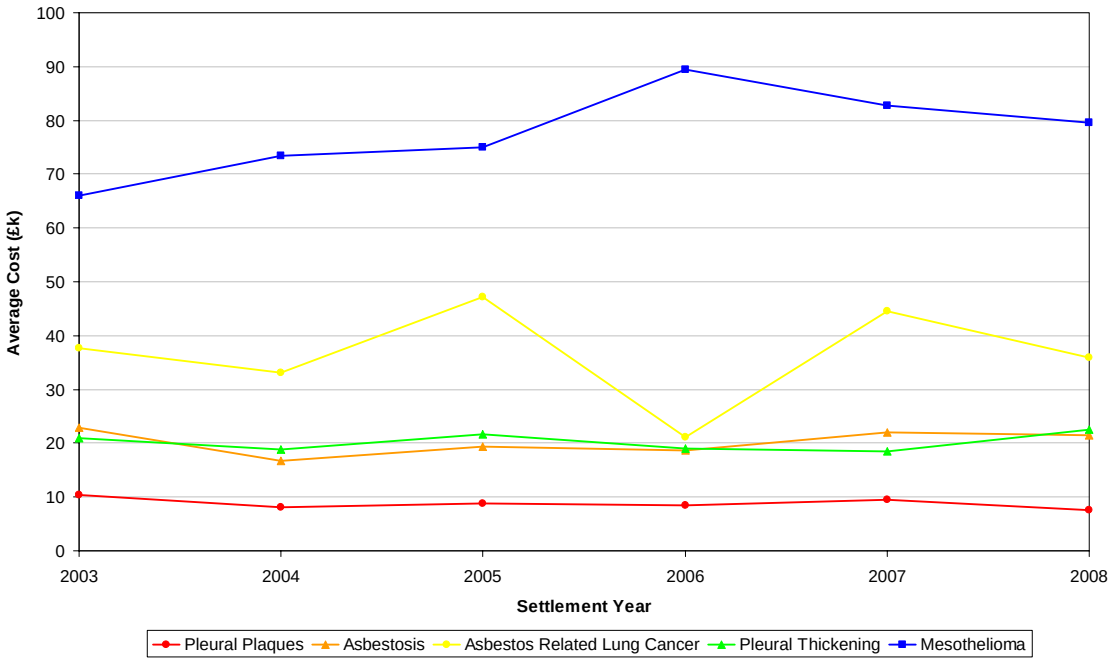
Figure 7: Pleural Thickening Average Costs and Claims Notified



3.5. Aggregate Claim Amounts

The following graph shows the average cost of non-nil settled claims for each claim type over the period 2003-2008. These figures have been referred to in the sections above and can be compared to the modelled average costs used in Section 6 and Sections 8.1 to 8.3 as they can be a better indicator of the underlying trends than the average incurred costs by notification year provided in Section 3.4, where the average incurred costs by notification year are potentially distorted by changes in the rate of nil claims and uncertainty due to future claim development.

Figure 8: Average Settlement Costs for non-nil Claims



The following charts show how the Insurance Market's incurred, paid and outstanding claims break-down between the claim types and notification year. These figures are dominated by the cost of mesothelioma claims.

Figure 9: Claims Incurred by Claim Type

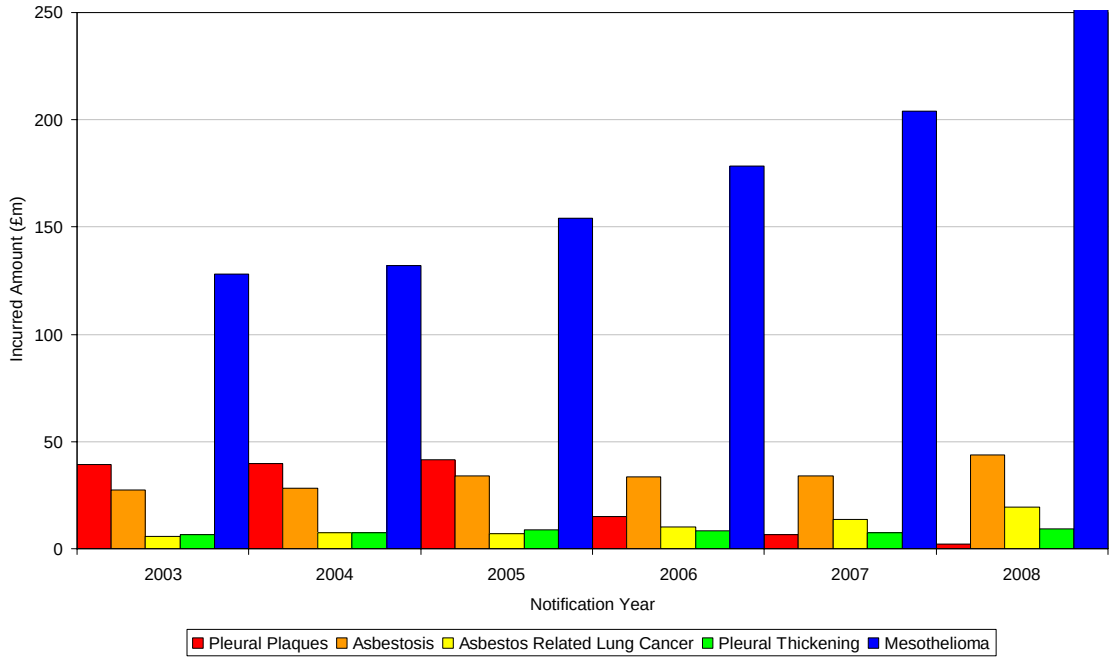


Figure 10: Claims Paid by Claim Type

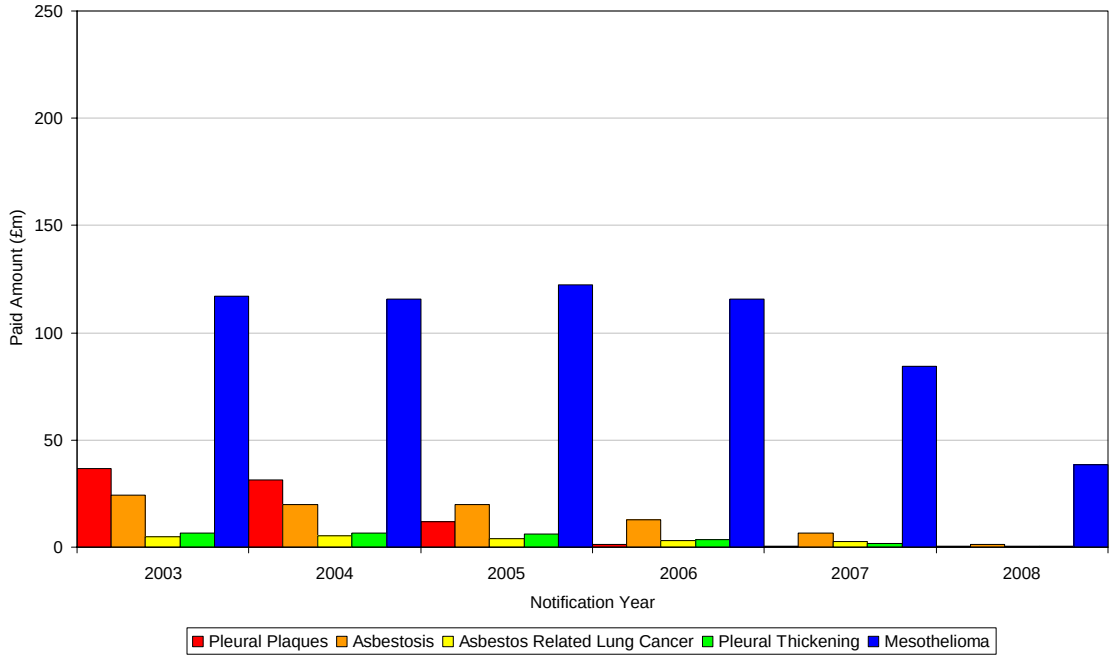
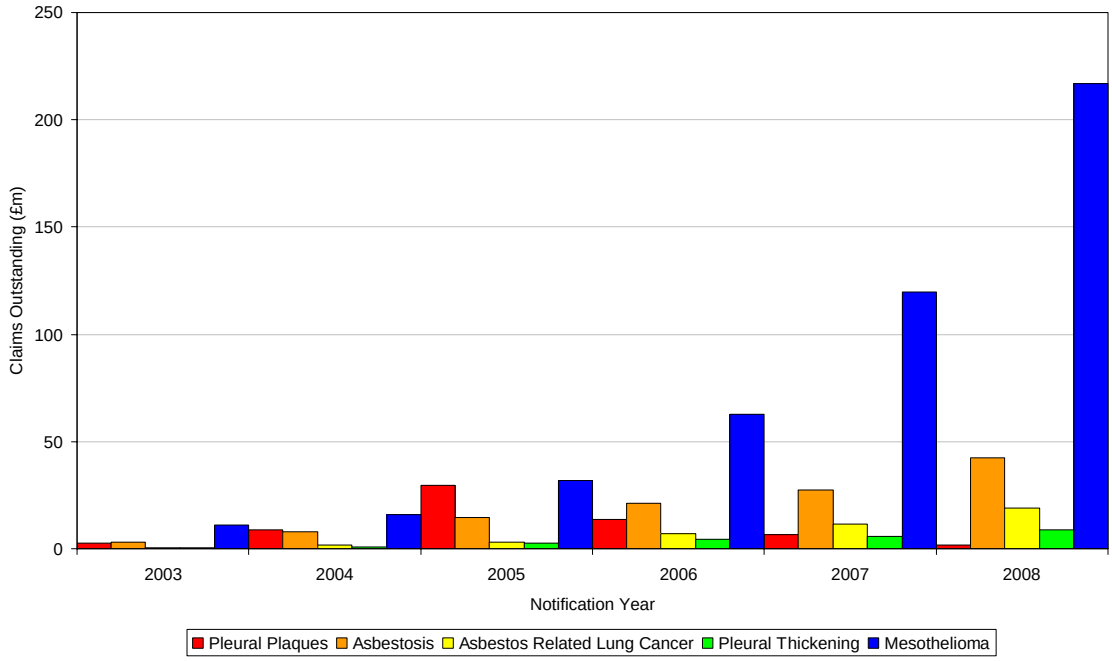


Figure 11: Claims Outstanding by Claim Type



The following table summarises the total costs implied by the 2004 and 2009 surveys by claim type for various periods from 1990.

Table 4: Comparison of Total Cost by Claim Type 2004 and 2009 Surveys

£m	**2004 Survey / Projection**				
Period	Mesothelioma	Asbestosis	Lung Cancer	Pleural Thickening & Pleural Plaques	**Total**
1990-1994	119	85	11	10	**227**
1995-1999	190	97	13	50	**350**
2000-2003	277	125	13	202	**617**
2004-2008 projected	417	174	21	657	**1,269**
Total 1990-2008	**1,004**	**482**	**59**	**919**	**2,463**

£m	**2009 Survey**				
Period	Mesothelioma	Asbestosis	Lung Cancer	Pleural Thickening & Pleural Plaques	**Total**
1990-1994	101	77	9	9	**196**
1995-1999	246	109	13	47	**415**
2000-2003	391	96	17	131	**635**
2004-2008	924	174	58	147	**1,303**
Total 1990-2008	**1,662**	**457**	**97**	**333**	**2,549**

The table shows that at a total level the projections for 2004-2008 were close. However, this disguises the deviations in experience for mesothelioma and pleural plaques which have moved in the opposite direction.

4. Mesothelioma Population Projections

4.1. Summary

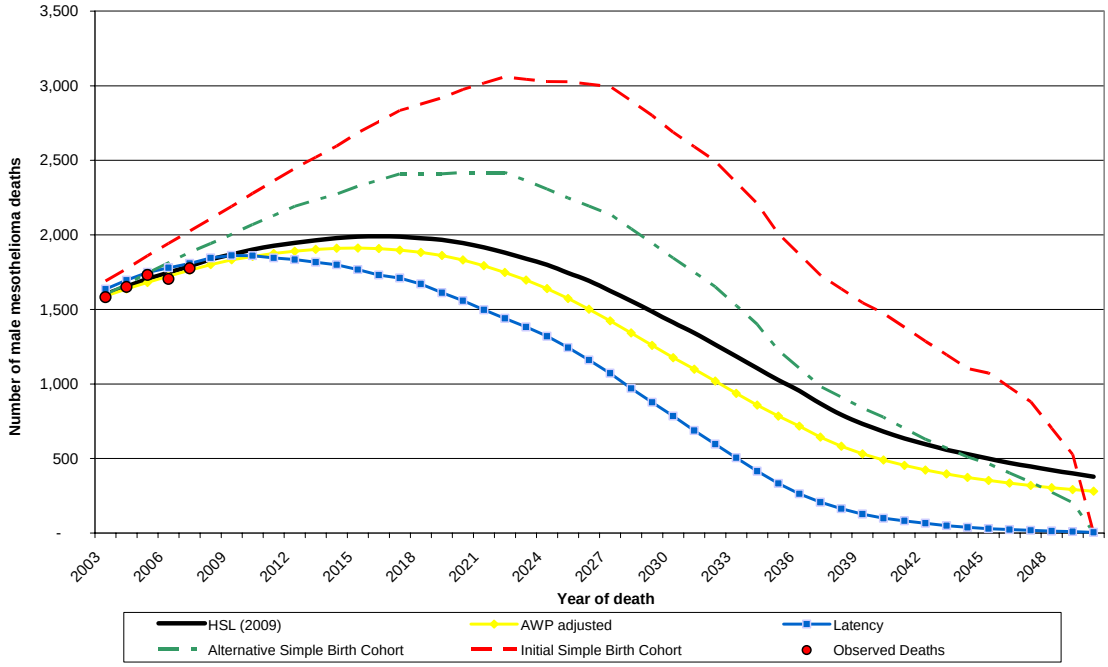
The 2004 Working Party paper took as its foundation the HSE study "Mesothelioma Mortality in Great Britain: Estimating the Future Burden" (HSE 2003). This study was expanded upon in the 2005 paper "The expected burden of mesothelioma mortality in Great Britain from 2002 to 2050" (HSE 2005). In 2009 the HSE engaged the HSL (an agency of the HSE) to re-parameterise the model using the latest deaths data and population projections. These updated projections can be found in the HSL research report entitled "RR728 - Projection of mesothelioma mortality in Great Britain" (HSL 2009). The HSL reconstructed the model in a more flexible computer environment which allowed more efficient fitting to the historical data and a fuller exploration of the model's adequacy. This model was parameterised using a number of optimisation techniques, and this led to a new profile of the collective British population's exposure to asbestos.

The structure of the HSL model remains basically the same as the one in the 2003/5 HSE papers, except that the HSL have made an explicit allowance for 'background' mesothelioma deaths. The HSL define these as deaths that would have occurred in the absence of any industrial exploitation of asbestos in Britain. Note these are different to deaths arising from "background" asbestos exposures such as environmental exposures occurring as a consequence of the industrial use of asbestos.

The model results fit the past data well, but the future projections are very sensitive to slight changes in some of the parameters. The HSL 2009 report highlights that the "updated model provides a reasonable basis for making relatively short-term projections of mesothelioma mortality in Britain, including the extent and timing of the peak number of deaths. Longer-term predictions are influenced by two additional sources of uncertainty. These are whether the form of the model is valid in the context of the most recent and future exposures; and if the model is valid in such contexts, the uncertainty arising from the particular choice of the population exposure profile beyond 1978."

With this in mind, we have investigated two alternative model structures to gain insight into the key drivers and assumptions for projecting future mesothelioma deaths. The two alternative structures are explained briefly below and in more detail later in the section. The models used are shown to fit the past data well, yet they produce materially different future projections. This is one of the reasons why there is a large range around the estimate of the future cost of mesothelioma-related claims. We consider that the model structure used by the HSE and HSL currently appears to be the most appropriate model structure to use to project future mesothelioma deaths although the Working Party made its own selections for the underlying parameters. The Working Party's alternative model structures produced results above and below the HSL's and the Working Party's selected models. These provide a potential range of outcomes but by no means provide an upper or lower bound. Practitioners may wish to consider or use the alternative model structures depending on the nature of the specific situation.

Figure 12 Comparison of Potential Population Mesothelioma Deaths Projections



For details of the model selected by the Working Party, the reader can turn straight to Sections 4.4 and 4.5. We suggest the results of the alternative model structures are considered, as they provide a useful indication of potential outcomes and therefore illustrate the uncertainty in such long-term projections.

All the models used to estimate future mesothelioma deaths in the population have the form:

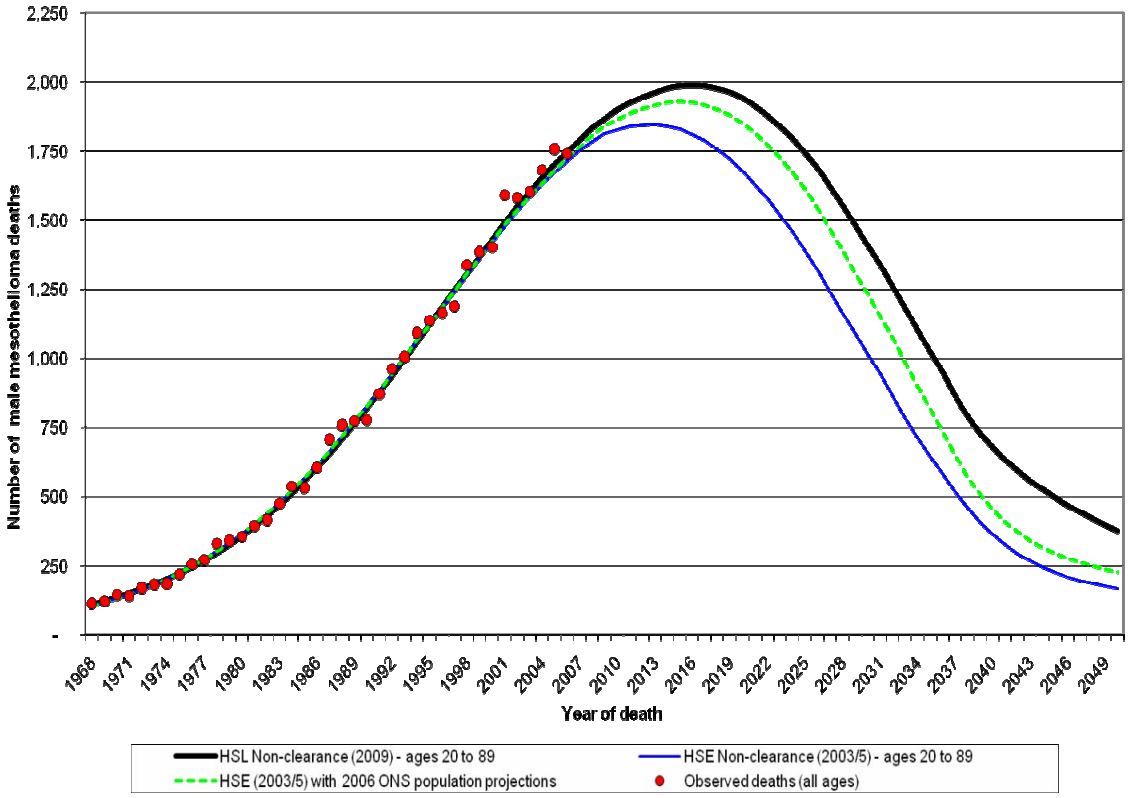
mesothelioma deaths = total population X risk structure

The risk structure is fitted using actual past data along with a defined model and fitting technique. The population, where relevant, is taken from the Office for National Statistics ("ONS") projections. Hence the population projections have a direct impact on the estimated mesothelioma deaths.

Since the 2003/5 HSE Papers were published one of the most relevant changes has been in the UK population projections. Improving longevity and more recent data on immigration and emigration indicate increased population numbers in the ONS' mid-2006 population estimates. While net migration has little impact on the projections, improved longevity has led to increases in the number of deaths projected by the HSL model. The HSL projections are made by applying predicted future mesothelioma death rates to these projections of the British population. A large component of the increase in the long term predicted mesothelioma deaths in the HSL 2009 results compared with the HSE 2003/5 results is caused by the use of these updated population projections.

The HSE and HSL projections are shown below together with the latest actual mesothelioma deaths in Great Britain. The dotted line shows the impact of using the HSE 2003/5 non-clearance assumptions but using the updated ONS mid-2006 population estimates.

Figure 13: HSE and HSL Mesothelioma Death Projection Comparison



Alternative model structures

Firstly, we have developed a "latency model" based upon the amount and timing of past asbestos imports. By combining this historical import data with estimates for the relative risk of each type of asbestos (blue, brown and white), its usage and the latency period, it is possible to derive projected future numbers of mesothelioma deaths.

The latency model follows a common sense approach and is based on only a few "real world" inputs. By setting some reasonable assumptions it is possible to achieve a good fit to the historical data. However, the model is very sensitive to these choices which are substantially judgemental. The projected number of future deaths could easily be overstated or understated.

Because of its simple structure, the latency model approach implicitly assumes that the future population has the same composition as the underlying population of the past. There is no way to vary the future population to allow for the effects of changes in birth or death rates, or for the impact of immigration and emigration. For this reason the latency model may tend to underestimate the number of future mesothelioma deaths. The model is useful as an easily understandable alternative and the projection is useful as a possible low scenario.

As another alternative model the Working Party has used a simple "birth-cohort model" which projects death rates split by year of birth cohort into future years and applies the rates to an assumed future population.

Professor Julian Peto (Cancer Research UK Chair of Epidemiology at the London School of Hygiene & Tropical Medicine) has produced projections using models of this type and most recently presented some results at the University of Melbourne on 22 April 2008. He has also previously published papers on mesothelioma population projections using simple age and birth cohort models: “The European mesothelioma epidemic” (Peto et al, 1999) and “Continuing increase in mesothelioma mortality in Britain” (Peto et al, 1995). Prof. Peto found that rates of mesothelioma in men formed a clear pattern when split by age and date of birth. Death rates were seen to increase steeply with age. Additionally, when rates for different birth cohorts are compared, the rates increase across the cohorts until cohorts born in the late 1940’s and then rates start to fall.

Apart from the introduction of ‘population’ considerations, the structure of the birth-cohort model is broadly analogous to the latency model: where increases in the death rates for successive ages can be thought of as being equivalent to the latency period assumption; and the birth cohorts’ relative risk factors are analogous to the import data, relative asbestos risk and usage assumptions (i.e. higher relative risk factors for birth cohorts of working age during periods of higher import levels and subsequent usage). Then by applying death rates to the explicitly defined population an additional degree of flexibility is added to the projection of future deaths.

The simple birth-cohort model’s projections rely heavily on the future population projections, and as the selection of factors and fitting of the model is not straightforward, there is considerable model and parameter error. It is difficult to quantify the uncertainty in the results but it is fair to say that the death rates are highly dependent on the selected risk relativities. Using the fit implied by Prof. Peto’s work and the same population data as the HSL model shows that the birth-cohort model overestimates the number of deaths for 2008. However, we consider that the projections made using a simple birth-cohort approach are useful to illustrate possible high scenarios, and hence we have considered alternative parameterisations.

A key assumption behind the birth cohort model is that the development of death rates by age is constant for each birth cohort. However, the death rates are observed to increase at different rates for different birth cohorts (see section 4.3). Hence this model may not be the most appropriate structure.

The latency and simple birth-cohort models are attractive because of their relative simplicity but by construction they are unable to capture some of the key characteristics of the historical mesothelioma deaths data. In particular they are unable to allow for the observed differences in the development of death rates between birth cohorts. Further, the latency model does not allow for a changing population mix. Although the HSL model is more complex, the additional complexity allows greater flexibility and the ability to better reflect the observed characteristics of the historical data. This should then provide a more credible platform on which to build the projection of future deaths. This also means that the practitioner needs to be fully aware of his/her own choices for the various inputs and parameters of the HSL model and the sensitivities around them.

In the following sections, we explain each of the latency model, the simple birth-cohort model and the HSL models in more detail.

4.2. Latency Model

4.2.1. Summary

This model uses a simple approach using data based on actual asbestos imports and assumes this is the best indicator of past exposure. The development of this model adds an additional methodology to our toolkit, although the projected mesothelioma deaths were low in comparison to the other methods used.

The simplistic approach makes it easy to use but is highly judgemental. The model assumes no change in population structure or volume: immigration and emigration are not factored in, the structure by age is assumed to be constant as are the death rates by year of birth cohort.

The limitations of the model make it a useful comparison to other models but it has not been selected by the Working Party as the chosen approach.

Below we describe the structure used, results, sensitivities, the strengths and limitations. A spreadsheet copy of the model is available with this paper – see Appendix C for details.

4.2.2. Background

When predicting the future number of mesothelioma deaths, use is almost always made of complex statistical models. Their parameterisation by the practitioner is a time-consuming exercise as a deep understanding of those models is required first. This comprehensive learning exercise may imply a full deconstruction of the model and a myriad of tests to get a full understanding of the drivers and sensitivities. Also, in terms of communication with a non-technical audience their complexity may limit the buy in.

In this section we develop a simple approach to tackle the issue of predicting the future mesothelioma deaths. This simple model aims to provide a different angle to the problem and will almost certainly suggest a different answer in terms of quantum.

By simple, we mean more straightforward but we don't mean simplistic. The number of key parameters will be limited as much as possible and connected with tangible variables.

The underlying reasoning is common sense:

- Developing mesothelioma is almost certainly the result of having been exposed to asbestos in the past. Assuming asbestos imports are the best proxy to map past exposure, the relationship between past imports and actual deaths may come down to shifting the exposure curve with a lag.

- Blue asbestos - Crocidolite - is considered the most hazardous form of asbestos and considered to have the greatest association with asbestos-related diseases followed by Amosite (brown asbestos), and, finally, Chrysotile (white asbestos). The view that some differentials in health hazard exist is supported through several scientific papers about the bio-persistence of the asbestos fibres[5]. Assuming the breakdown of imports between asbestos types is available we can use this information in our model.

- The pure latency period of mesothelioma is the duration between exposure and diagnosis of the disease. Mesothelioma latency is usually estimated as being anywhere between 15 and 50 years, although there have been cases in which the mesothelioma cancer latency was as short as five years and as long as over 50 years after the exposure to asbestos

[5] "The Quantitative Risks of Mesothelioma and Lung Cancer in Relation to Asbestos Exposure" John T. Hodgson and Andrew Darnton (2000); " Models for mesothelioma incidence following exposure to fibres in terms of timing and duration of exposure and the biopersistence of the fibres" Berry G. (1999); "Persistence of Natural Mineral Fibres in Human Lungs: An Overview" Andrew Churg and Joanne L. Wright (1994)

occurred. The latency period might depend on both the level and the duration of exposure, leading therefore to a very large range of potential values.

- Exposure to asbestos during a specific year is the consequence of using a fraction of the asbestos imported in that year, but also the result of using the raw materials imported a few years before. The total exposure in a specific year would therefore be a cumulative function of imports during prior years and imports of the current year.

- The total time from first exposure to developing symptoms can therefore be broken down between a usage period and a "pure" latency of developing mesothelioma since exposure.

The underlying idea is therefore to use data about actual imports, broken down by type of asbestos, as the best indicator of past exposure. The latency model consists of developing a simple mathematical relationship between this past exposure and the pattern of deaths observed since the mid 1990s.

As for most of prediction models, the goodness of fit was measured by the sum of squared differences between the predicted and the actual numbers of mesothelioma deaths.

4.2.3. Detail of structure

Asbestos imports

As already mentioned in the previous section, use was made of data about past imports broken down by type of asbestos. This data is available on the Asbestos Information Centre website:

http://www.aic.org.uk/Asbestos_imports.htm

The AIC is an independent organisation that provides advice on managing asbestos containing products in buildings to keep the fibre release to a minimum. Quantities imported since 1940 are part of this publicly available information.

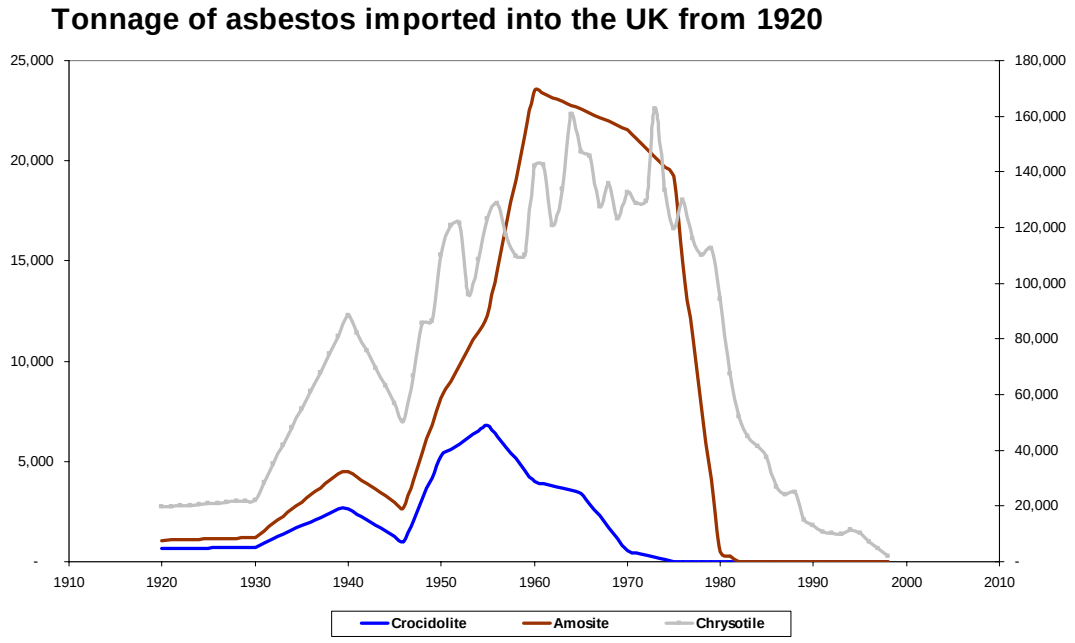
Data provided by the AIC is not complete as many past years have no official records of asbestos imports. To overcome this problem we simply assumed that the increase or decrease in imports between two dates was evenly spread between consecutive years.

Data points for 1920 and 1930 have been added from a volume published recently by the US Geological Survey[6]. This volume has lots of statistics about the worldwide production and consumption of asbestos in the last century; this includes estimates of the UK's apparent consumption at various time intervals.

The following graph illustrates how the imports spread over time. Note that the brown/blue asbestos imports use the left hand scale, the right hand scale is for white asbestos only.

[6] *Worldwide Asbestos Supply and Consumption Trends from 1900 through 2003 – Appendix tables A1& A2*

Figure 14: Asbestos Imports by Type



The white asbestos imports largely outweigh the brown and blue asbestos imports. The blue asbestos imports start to drop from the mid 50s whereas white/brown asbestos imports decrease from the mid 70s only.

Risk adjusted index

Several medical publications support the existence of risk relativities between the three main types of asbestos. Their conclusion is invariant: brown and blue asbestos are more toxic than white asbestos. As the split of exposure between white/brown/blue is available we integrated this information in our model. We define a **risk adjusted index** which is simply a weighted average per year of import, the weights being the risk relativities between white, brown and blue asbestos. For a specific year *i* and a specific *type of asbestos* the risk adjusted index is defined as:

$$RAI_{i,\,type\,of\ asbestos} = imports_{\ i,\,type\,of\ asbestos} \times risk\ relativity\ \ factors_{\ type\,of\ asbestos}$$

Unscaled deaths index

This stage involves the calculation of an index by type of asbestos using the risk adjusted index. For a specific year of observation *i* this index is calculated as:

$$Unscaled\ deaths_{i,\ Type\ of\ asbestos} = \frac{1}{U+1} \cdot \sum_{j=i-L-U}^{i-L} RAI_{j,\ type\ of\ asbestos}$$

With L: latency in years
U: usage period in years

The idea behind this formula is that the asbestos imported in the year *i-L-U* will generate a cumulative impact of *1/[U+1]* per year over the *U* following years. For instance, assuming a latency of 30 years and a usage period of 10 years, the unscaled index for 1990 will be impacted by 1/11th of the asbestos tonnage imported each year from 1950 to 1960. Similarly the unscaled index for 1991 will be impacted by 1/11th of the asbestos tonnage imported each year from 1951 to 1961, and so on.

For a specific year of observation *i* the total number of unscaled deaths is then:

$$Unscaled\ deaths_i = Unscaled\ deaths_{i,white\ asbestos} + Unscaled\ deaths_{i,brown\ asbestos} + Unscaled\ deaths_{i,blue\ asbestos}$$

Scaled deaths index

We now need to scale the index as calculated above to the actual number of deaths. This adjustment provides comparable numbers between projected deaths and actual deaths:

$$Scaled\ deaths\ index_i = \frac{\sum_{Base\ period} actual\ number\ of\ deaths}{\sum_{Base\ period} unscaled\ deaths\ index} \times unscaled\ death\ index_i$$

The base period is usually the last few years of actual data.

Goodness of fit

Finally, as for any prediction model, we minimized the squared differences between the projected and actual numbers to get the best fit.

Key assumptions

Based on the previous section the key assumptions to be calibrated are:

1. **The risk relativities between white, brown and blue asbestos**

   Although several publications conclude that brown and blue asbestos are greater health hazards than white asbestos, quantifying relativities is not obvious. The paper *The Quantitative Risks of Mesothelioma and Lung Cancer in Relation to Asbestos Exposure by John T. Hodgson and Andrew Darnton* suggest a ratio 1:100:500 for chrysotile (white), amosite (brown) and crocidolite (blue) respectively. However using those highly differentiated factors gives a fairly bad fit. We suspect that the 1:100:500 ratios, even if they were fully reliable at an individual level are not really suitable for epidemiological projection purposes, and hence alternative risk relativities may be appropriate.

2. **The latency period by type of asbestos between exposure to asbestos and diagnosis**

   There is no clear scientific consensus as to what the latency period should be. Mesothelioma latency is usually estimated as being somewhere between 15 and 50 years, although there have been cases in which the mesothelioma cancer latency was as short as five years and as long as over 50 years after the exposure to asbestos occurred. We have selected a latency period that provided the best fit (see below).

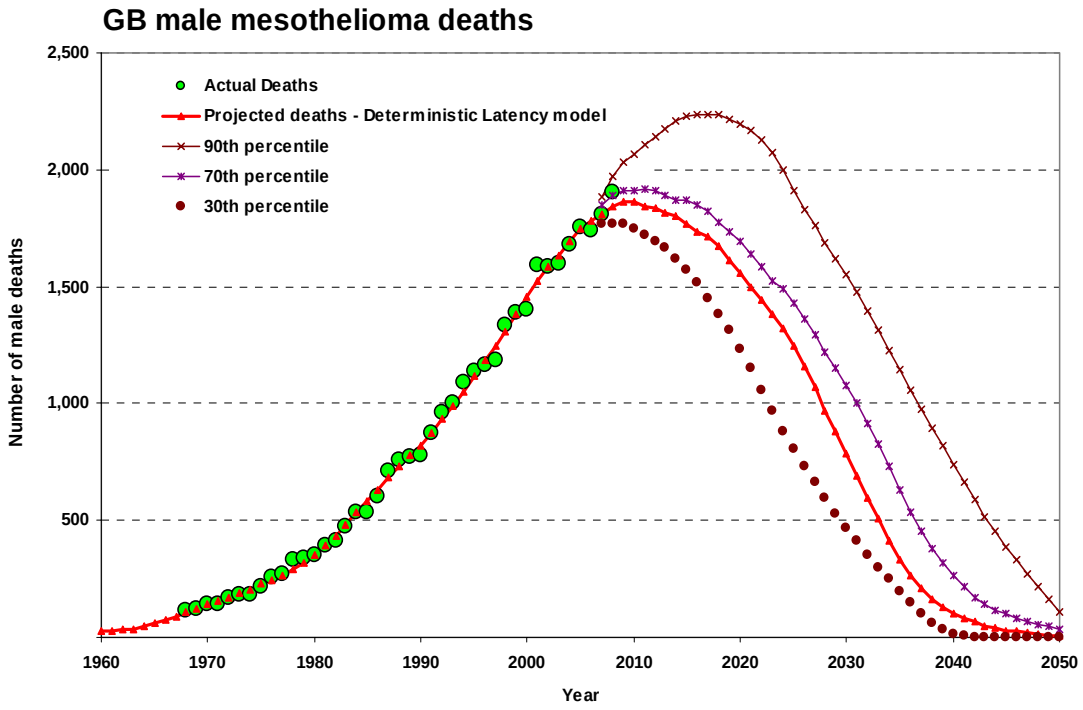
3. **The usage period by type of asbestos**

   Once again, there is no clear cut scientific opinion as to how long the usage period should be. However we have assumed that it is reasonable for a few years delay between the imports of raw asbestos and their transformation into manufactured products.

4.2.4. Analysis of results

It has been possible to find a combination of inputs, which are not unreasonable, that minimise the squared differences between the predicted and actual number of deaths:

Figure 15: Mesothelioma Projections Using the Latency Model



The main curve (with triangle markers) represents this best estimate fit using the latency model in a deterministic manner. We also display in the graph above the 30th, 70th and 90th percentile using a log normal distribution for the latency periods by type of asbestos. This illustrates the range of potential outcomes for fixed parameters of risk relativities and usage periods. The best estimate scenario corresponds to the mean which also corresponds approximately to a 60th percentile.

For this best estimate scenario the corresponding parameters are:

Table 5: Latency Model Parameters

Risk relativities between types of asbestos	
Crocidolite	20
Amosite	16
Chrysotile	1
Latency periods by type of asbestos (years)	
Crocidolite	44
Amosite	30
Chrysotile	44
Usage periods by type of asbestos (years)	
Crocidolite	32
Amosite	30
Chrysotile	10
Scaling factor	
Scale factor	0.39%
Scale from	1999
Scale to	2008
Resulting projections	
Number of projected deaths 2009-2050	36,557
Sum of squares (goodness of fit)	848.0
2007-2050 deaths / 2007 deaths	20.21
Peak Deaths	1,862
Year of Peak	2009

It is worth noting the fairly long usage periods resulting from this fit, although they are not unreasonable. A better fit may be achieved with a different combination of parameters that are also not unreasonable. The best estimate scenario defined above is one amongst several possible best estimate parameterisations.

4.2.5. Sensitivities

It should be made clear that the model is very sensitive to the inputs. Small changes in the assumptions have a large impact on the projections, and particularly on the fit of the model. This is illustrated in the tables below where only the inputs highlighted are flexed. All other assumptions are kept as per the base scenario.

Table 6: Risk Relativities

	Scenarios			
Risk relativities	**Best Estimate**	**1**	**2**	**3**
Crocidolite (blue)	20	1	500	10
Amosite (brown)	16	1	100	5
Chrysotile (white)	1	1	1	1
Projected deaths 2009-2050	36,557	43,929	37,442	40,177
Peak Year	2,009	2,014	2,010	2,010
Peak number of deaths	1,862	1,968	1,880	1,893
Sum of squares	848	14,748	5,065	3,128

Scenario 1 assumes the same risk from each type of asbestos. Results are more conservative compared to the base scenario as the later imports of white asbestos tends to shift the curve of projected deaths further to the right. The fit to actual data is very bad.

Scenario 2 assumes higher risk relativities as per the *Hodgson & Darnton* paper. While the projected number of deaths is close to the base scenario, the goodness of fit has deteriorated.

Scenario 3 assumes lower risk relativities than our base scenario. Although the projected number of deaths do not differ much compared to Scenario 2, the fit to the actual numbers of deaths is somewhat better.

Table 7: Latencies

	Scenarios			
Latency periods (years)	**Best Estimate**	**1**	**2**	**3**
Crocidolite (blue)	44	30	50	20
Amosite (brown)	30	30	50	20
Chrysotile (white)	44	30	50	40
Projected deaths 2009-2050	36,557	23,849	117,857	18,793
Peak Year	2,009	2,009	2,027	2,009
Peak number of deaths	1,862	1,694	3,879	1,460
Sum of squares	848	42,371	16,319	203,643

Unsurprisingly, the higher the latency periods, the higher the number of projected future deaths. This simply results from a greater lag between exposure and death. The varying latency periods result in much worse fits to the actual number of deaths.

Table 8: Usage Periods

	Scenarios			
Usage periods (years)	**Best Estimate**	**1**	**2**	**3**
Crocidolite (blue)	32	10	20	40
Amosite (brown)	30	10	20	40
Chrysotile (white)	10	10	20	40
Projected deaths 2009-2050	36,557	15,209	26,724	59,364
Peak Year	2,009	2,009	2,009	2,018
Peak number of deaths	1,862	1,443	1,726	1,959
Sum of squares	848	22,692	2,463	4,506

The sensitivities are similar to those the for latency periods. The longer the usage period, the higher the number of projected future deaths. This simply results from a greater lag between exposure and death.

4.2.6. Strengths and Limitations of the Model

The model has the following strengths:

- Common sense approach based on a few “real world” inputs.
- We can achieve a good fit to the actual numbers of deaths by combining reasonable assumptions.
- Stochastic modelling can easily be implemented by sampling the key parameters.

As regards to limitations we highlight the following:

- As illustrated in the previous section, the latency model is very sensitive to the inputs. The number of future deaths can then easily be understated / overstated by a large amount.
- ….and the selection of the key assumptions remains a very judgmental exercise.
- The latency model has some implicit assumptions about the underlying population: it is assumed to be constant in structure: age, volume (i.e. no changes in emigration/immigration/mortality/birth rates) for future years which is very doubtful. There is a risk of underestimating or overestimating the future deaths.

4.2.7. Uncertainty

As we have seen in this section, the latency model is attractive because of its simplicity. It does not require the practitioner to spend a considerable amount of time to get around it. Also parameters are readily interpretable which is a great advantage when communicating with a non-technical audience. Finally it seems to provide a good fit with a set of inputs that are not unreasonable.

However the main uncertainties are related to its very judgmental calibration. Sensitivities show considerable potential for underestimating / overestimating the number of future deaths. The lack of conclusive evidence for key assumptions is a strong limitation when calibrating this model. As a result the goodness of fit maybe the only criteria to calibrate inputs.

The implicit assumptions about the underlying population are also a strong limitation. The latency model looks at the relationship between a population exposed in the past and shifts the corresponding curve of mesothelioma deaths using lags by type of asbestos. Once the model is correctly fitted to actual deaths it uses the same implicit population for future deaths. It therefore assumes no change in the population structure or volume: immigration and emigration are not factored in, the structure by age is assumed to be constant as are the death rates by year of birth cohort. It doesn’t allow for the (possibly non-linear) effect of an aging population.

As we will see later in the paper, the population projections have a large impact on the number of future mesothelioma deaths. Incidence rates by year of birth cohort also have a significant impact and it can be demonstrated on the actual population data that incidence rates effectively differentiate by cohort of birth.

For those reasons we believe the latency model may not have the best structure. However we believe this model is appropriate as a benchmark for the lower end of the projections.

4.3. Simple Birth Cohort Model

4.3.1. Summary

This model has additional features to the latency model. In particular, it allows for the death rates to vary according to year of birth. Analysis of the actual historical death rate data demonstrated that there are additional features shown by looking at year of birth cohorts in addition to age. To attempt to capture these features, we used a model based on year of birth and age, and hence added an additional methodology to our toolkit.

The results of this approach tended to project mesothelioma deaths that were high in comparison to the other methods used. This is probably due to the one main disadvantage of this method: the model assumes that the rate of change of the death rates by age within each birth cohort is identical. Analysis of the actual historical data shows that this assumption does not hold and is therefore a simplification of reality. This limitation is the reason why the model has not been selected by the Working Party as our chosen approach. However, this model is considered to be a useful comparison to other projection methods.

The model does not have a large number of parameters and so is still a practical approach and maybe useful in other applications where data is very limited. An example of this would be a comparison between worldwide mesothelioma projections.

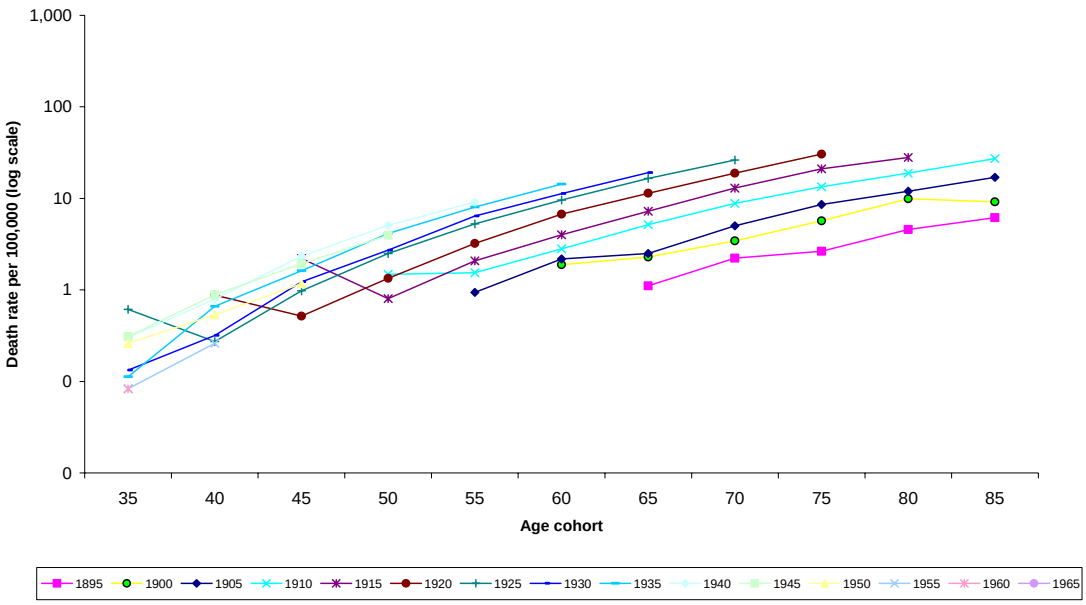
Below we describe the structure used, the results, sensitivities and the strengths and limitations.

4.3.2. Background and structure

Prof. Peto has performed projections using models of this type and, most recently, presented results at the University of Melbourne on 22 April 2008. He has also previously published papers on mesothelioma population projections using simple age and birth cohort models: “The European mesothelioma epidemic” (Peto et al, 1999) and “Continuing increase in mesothelioma mortality in Britain” (Peto et al, 1995). Prof. Peto found that rates of mesothelioma in men formed a clear pattern when split by age and date of birth. Death rates were seen to increase steeply with age. Additionally, when rates for different birth cohorts are compared, the rates increase across the cohorts up to births in the 1940s with reductions in younger cohorts.

Actual mesothelioma deaths by single year of age and year of death (ranging from 1968 to 2006) were provided from the ONS register. They were reclassified into the number of deaths split by age at death and year of birth. Grouping the numbers into five-year bands of age and years of death, death rates per 100,000 were calculated based on historical population figures. ONS mid-2006 population estimates for males in England, Wales and Scotland were used. The graph below shows the death rates by age for the different year of birth cohorts. This illustrates the hypothesis that death rates vary not only by age but also by year of birth.

Figure 16: Actual Death Rates by Age (based on ONS mesothelioma deaths and mid-2006 population estimates)



This feature of varying death rates by year of birth and age led us to consider using a birth-cohort model for projecting mesothelioma deaths. We believe that it is useful to understand this approach so that it could be implemented as an alternative methodology.

Prof. Peto has fitted a multiplicative Poisson regression model to the actual number of deaths between 1990 and 2004 (all ages) and from 1970 to 1990 (aged over 60). The actual death rates shown below are those calculated by the Working Party based on the ONS mid-2006 population estimates for males in England, Wales and Scotland. These will be slightly different to those calculated by Prof. Peto as he has used United Nations population statistics for the UK.

Table 9: Actual Death Rates (number of deaths per 100,000 of population)

Age	Year of birth			
	1930-1934	1935-1939	1940-1944	1945-1949
35-39	0.13	0.11	0.30	0.31
40-44	0.32	0.66	0.80	0.89
45-49	1.22	1.62	2.33	**1.93**
50-54	2.71	4.14	**5.05**	**3.96**
55-59	6.42	**8.06**	**9.09**	**6.65**
60-64	**11.26**	**14.31**	**13.65**	N/A
65-69	**19.09**	**19.54**	N/A	N/A
70-74	**26.36**	N/A	N/A	N/A
75-79	N/A	N/A	N/A	N/A
80-84	N/A	N/A	N/A	N/A
85-89	N/A	N/A	N/A	N/A

The death rate r(i,j) in age-group i and birth cohort j was fitted to the number of deaths n(i,j) and population p(i,j) such that:

$r(i,j) = n(i,j)/p(i,j) = a(i)*c(j)$

Where a(i) is the age-specific rate for age group i, and c(j) is the birth cohort specific relative risk for birth cohort j.

Following discussions with Prof. Peto in respect of his fitted death rates using the Poisson regression model, we analysed the fitted death rates and then selected risk relativities between each of the age groups and birth cohorts. These were based on the average ratio calculated between each birth cohort and each age group separately.

The death rate for one particular combination of age-group i and birth-cohort j was fixed and this enabled a table of death rates to be constructed.

The model structure contains death rates for 5-year bands for each age at death and year of birth. This forms a grid of death rates, as shown in the example in the table below. Also shown are the risk relativities that were applied to either construct the death rate for one age group or for one year of birth cohort along the grid.

Table 10: Fitted Death Rates (number of deaths per 100,000 of population)

Age	**Year of birth**				**Risk relativity (birth cohort)**
	1910-1914	**1915-1919**	**1920-1924**	**1925-1929**	
35-39	0.06	0.09	0.14	0.20	294%
40-44	0.18	0.28	0.42	0.60	214%
45-49	0.39	0.59	0.89	1.28	201%
50-54	0.79	1.19	1.80	2.57	185%
55-59	1.46	2.21	3.33	4.77	171%
60-64	2.51	3.79	5.70	8.17	169%
65-69	4.26	6.42	9.67	13.85	166%
70-74	7.07	10.65	16.05	22.99	161%
75-79	11.41	17.20	25.91	37.13	143%
80-84	16.31	24.58	37.03	53.06	139%
85-89	22.65	34.13	51.42	73.69	294%
Risk relativity (age)	129%	117%	126%	89%	

The fitted numbers of deaths are then calculated by multiplying these rates by the population estimate for the applicable age group and birth cohort. ONS mid-2006 population estimates have been used, which is consistent with the other models set out in this paper.

In order to project deaths in future years, the numbers are then transposed to the applicable years of death. A result of this model structure is that the development of death rates is constant across year of birth cohorts.

The following three tables show an example of the population figures and projected deaths based on the years of birth highlighted above. The population estimates are from 1968 onwards and therefore the earliest ages and years of birth are truncated in the tables below. However, this does not have an impact on projections of future mesothelioma deaths.

Table 11: Population in 000's (ONS mid-2006 estimates)

Age	Year of birth			
	1910-1914	1915-1919	1920-1924	1925-1929
35-39	N/A	N/A	N/A	N/A
40-44	N/A	N/A	N/A	6,230
45-49	N/A	N/A	6,773	8,087
50-54	N/A	5,357	8,803	7,816
55-59	6,101	6,879	8,299	7,424
60-64	7,326	6,240	7,595	6,867
65-69	6,273	5,406	6,659	6,111
70-74	4,980	4,362	5,484	5,151
75-79	3,550	3,217	4,145	4,049
80-84	2,180	2,079	2,790	2,904
85-89	1,074	1,106	1,607	1,829

Table 12: Projected Deaths (000's) by Year of Birth Cohort

Age	Year of birth			
	1910-1914	1915-1919	1920-1924	1925-1929
35-39	N/A	N/A	N/A	N/A
40-44	N/A	N/A	N/A	37
45-49	N/A	N/A	61	**104**
50-54	N/A	64	**158**	201
55-59	89	**152**	276	354
60-64	**184**	236	433	561
65-69	267	347	644	846
70-74	352	465	880	1,184
75-79	405	553	1,074	1,503
80-84	355	511	1,033	1,541
85-89	243	377	826	1,348

The diagonals of the year of birth table map to a 5-year band of years of death.

Table 13: Projected Deaths (000's) by Year of Death

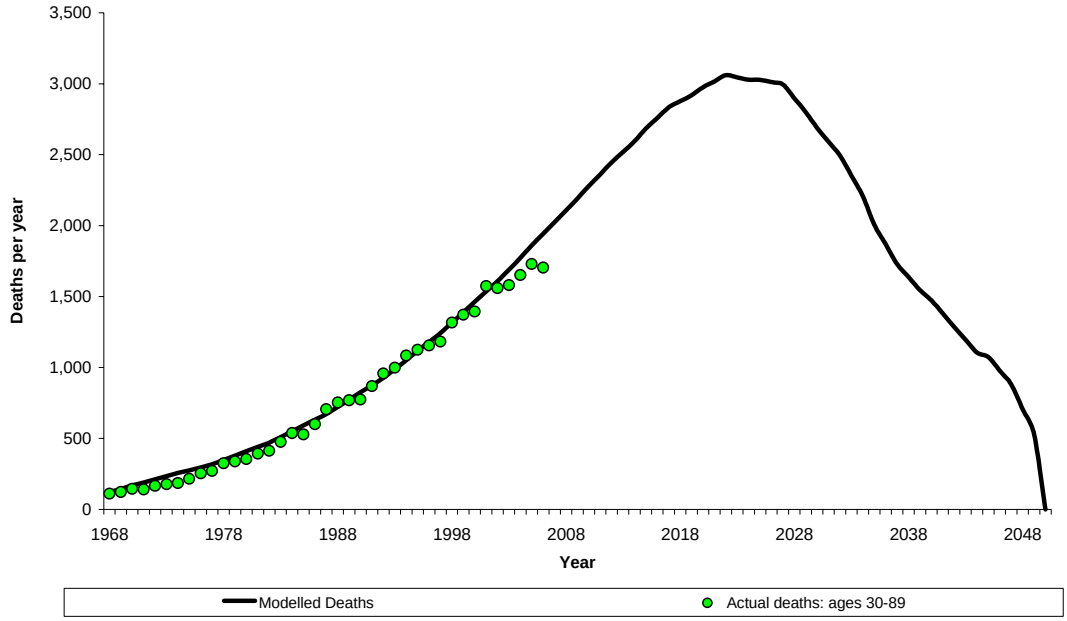
Age	Year of death		
	1965-1969	1970-1974	1975-1979
35-39	16	25	32
40-44	37	61	71
45-49	61	**104**	127
50-54	64	**158**	201
55-59	89	**152**	276
60-64	85	**184**	236
65-69	79	161	267
70-74	36	133	207
75-79	21	52	144
80-84	12	23	41
85-89	6	9	13

Deaths were projected for age groups from 35-39 to 85-89 and year of death cohorts from 1960-1964 to 2045-2049.

4.3.3. Results

Results of these initial projections are shown below, together with the actual mesothelioma deaths. The modelled deaths are approximately estimated by individual year, although the model used 5-year age bands. The modelled deaths have been allocated using an approximate method to individual future years and therefore the projections do not look smooth.

Figure 17: Initial Fit of Simple Birth Cohort Model Male Mesothelioma Deaths projection



It appears that this fitted model tends to over project in the years post 2002. Therefore, alternative risk relativities between each of the age groups and birth cohorts have been selected to improve the fit in these later years (see Sections 4.3.4 and 4.3.5).

Results for individual birth cohorts

The men born between 1930 and 1940 appear to have the highest risk of developing mesothelioma (as shown in the graph of actual death rates at the start of Section 4.3.2). This is because the first 10 to 20 years of their working lives coincided with the peak of asbestos imports into the UK. Examples of the death rates for one of these birth cohorts and a later cohort are shown below, together with a comparison to actual death rates and those produced by the HSL model covered in Section 4.4.

Figure 18: Projected Death Rate per 100,000 for the 1945-1949 Birth Cohort

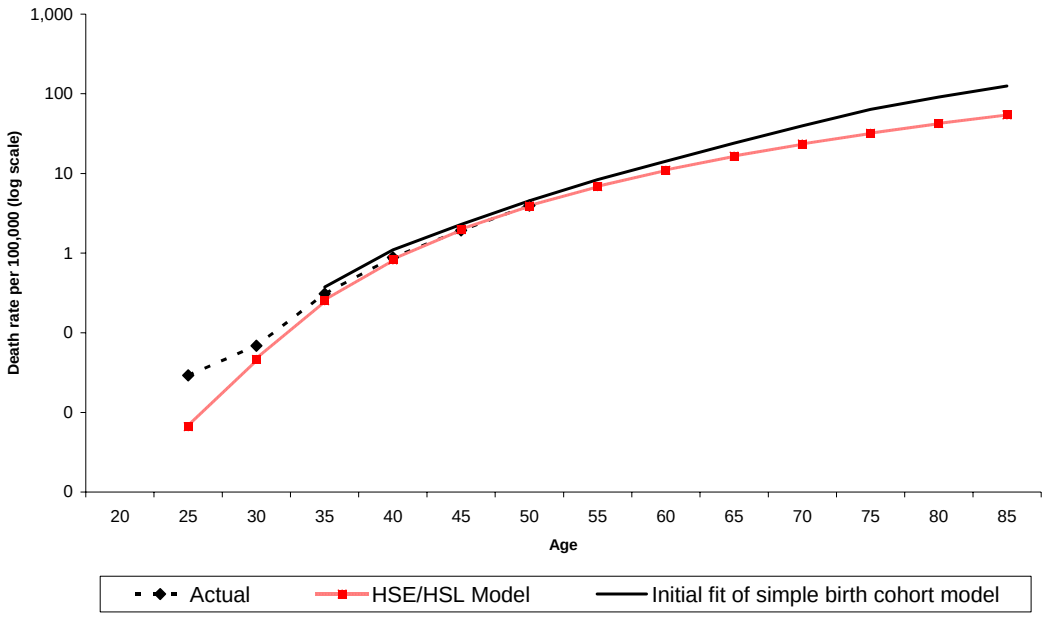
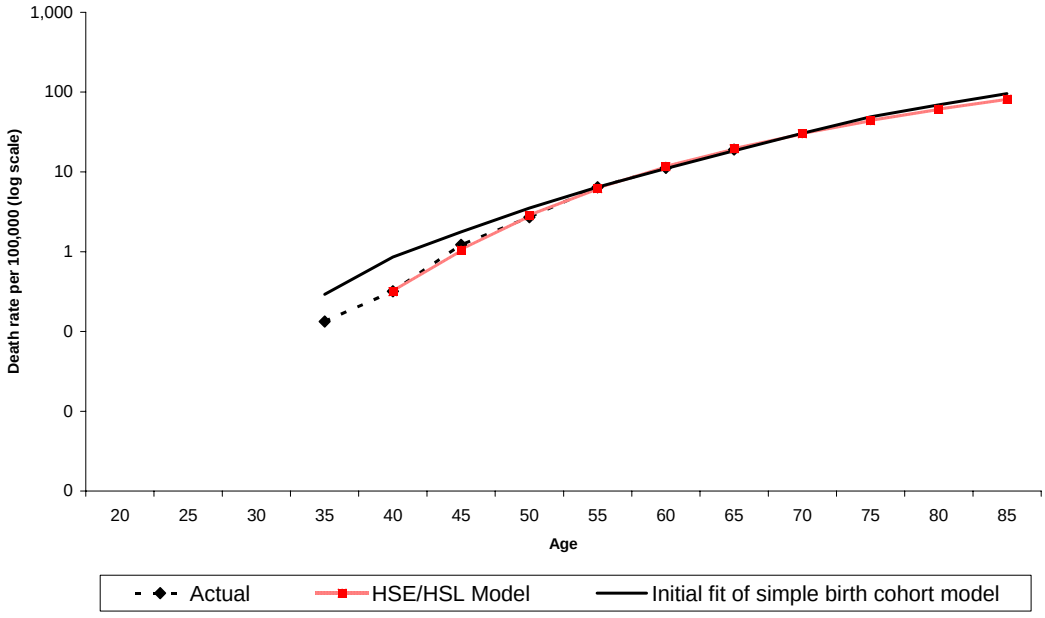


Figure 19: Projected Death Rate per 100,000 for the 1930-1934 Birth Cohort



The graphs demonstrate the fit to past data and also the range of uncertainty resulting from the different models.

4.3.4. Sensitivities

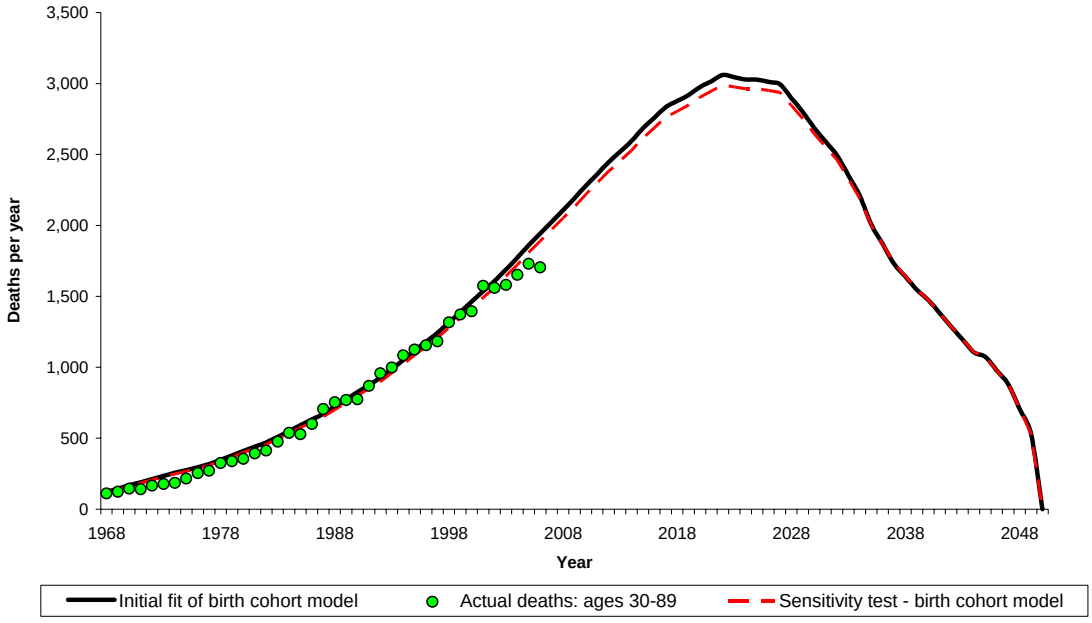
Prof. Peto has used UN population statistics for the UK, which is slightly different to that used by the Working Party (ONS mid-2006 population estimates for males in England, Wales and Scotland). Therefore there is some uncertainty around the suitability of Prof. Peto's fitted death rates to the Working Party's mesothelioma modelling. For this reason, we have investigated alternative parameterisations of the model.

We have considered some alternatives to illustrate the sensitivity of the results to the underlying parameters. The key parameters are:

- the risk relativities between adjacent cohorts (age group and year of birth)
- the death rate for one particular combination of age-group i and birth-cohort j

By changing one risk relativity ratio at a time, a slightly better fit can be obtained. An example of this is given by changing the selected relativity between the 1945-1949 and the 1950-1954 birth cohorts from (24.8%) to (22.5%). This produces a better overall fit to the past data. The following graph shows the results of the selected fit compared to this sensitivity test.

Figure 20: Male Mesothelioma Deaths (ages 30-89) – Initial Fit and Sensitivity Test

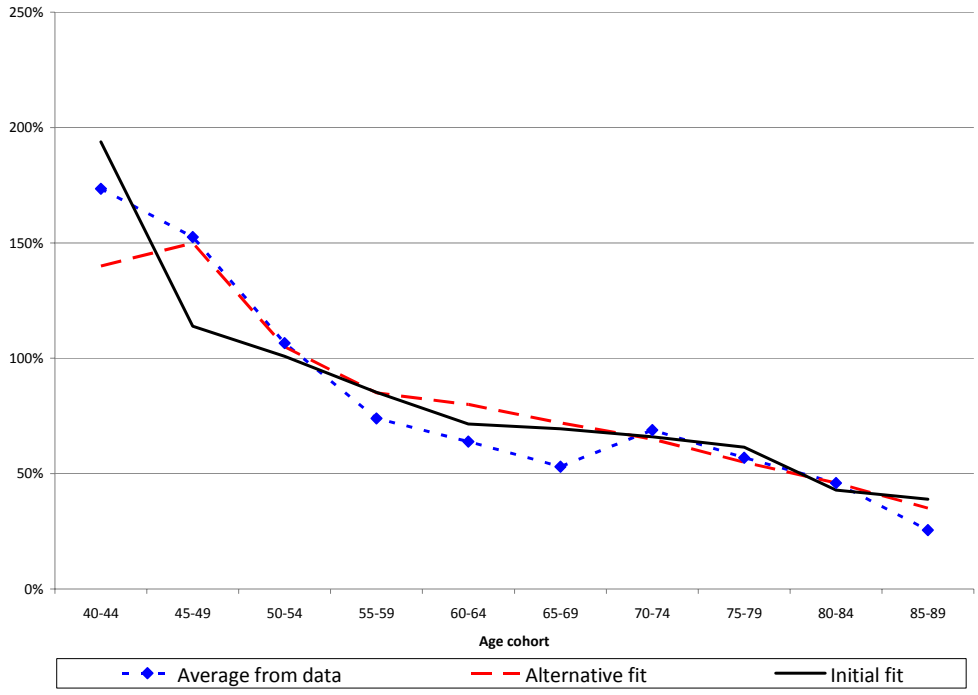


4.3.5. Alternative scenario

In considering an alternative fit of the model, we have analysed the risk relativities between different cohorts and selected alternative risk relativities to derive a better fit based on effectively minimising the sum of the squares of the difference between the actual observations and the modelled observations. The fit is therefore based on a judgemental analysis and comparison to other possible relativities.

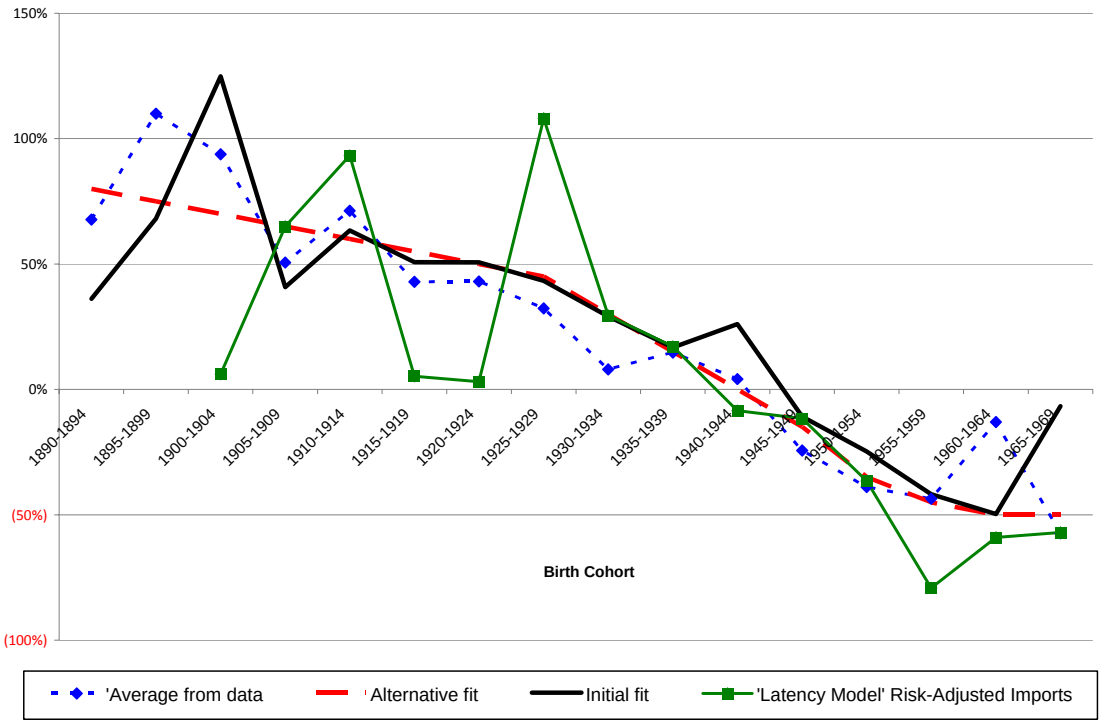
The graph below shows those average risk relativities between age at death cohorts from the actual death rates and those risk relativities selected within the initial fit together with the alternative selections.

Figure 21: Risk Relativities for Adjacent Age Groups



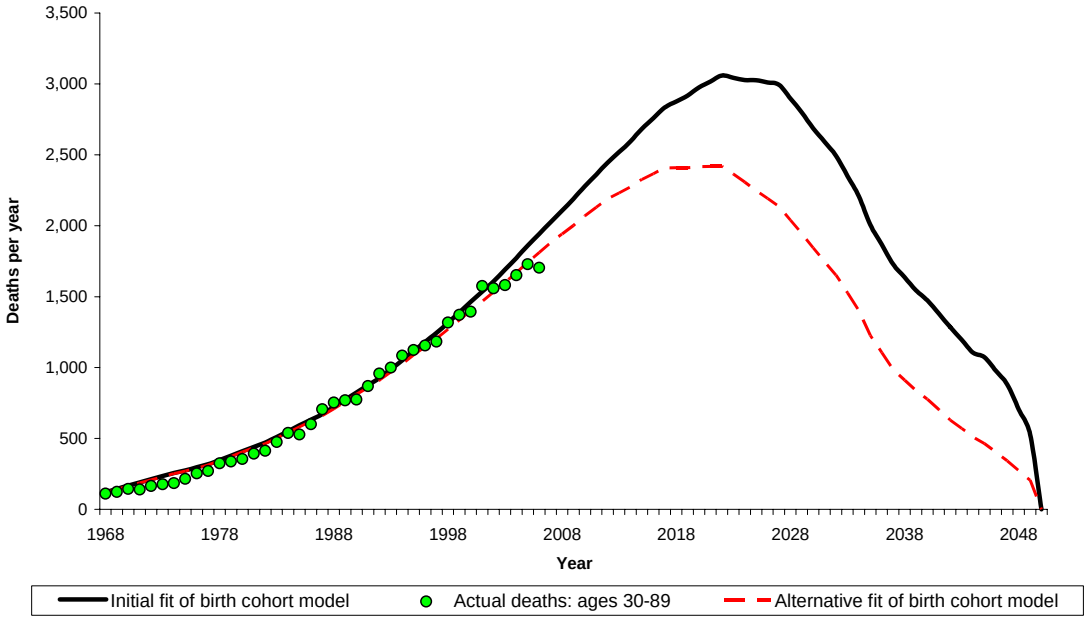
The following graph shows those average risk relativities between birth cohorts implied from the actual death rates, those risk relativities selected within the initial fit, approximate relativities implied from the latency model, together with the alternative selections. The latency model gives a useful alternative view, in particular a greater decreasing trend for more recent birth cohorts. The alternative selection takes some account of this.

Figure 22: Risk Relativities for Adjacent Birth Cohorts



The following graph shows the results of the initial fit compared to this alternative fit. We note that the results are sensitive to the risk relativities selected and can produce a large range of results. This is one of the reasons why the Working Party has not selected this model structure. The alternative fit is also above the HSL projection (see Section 4.4).

Figure 23: Male Mesothelioma Deaths (ages 30-89) – Initial and Alternative Fits



4.3.6. Strengths and limitations

Strengths:

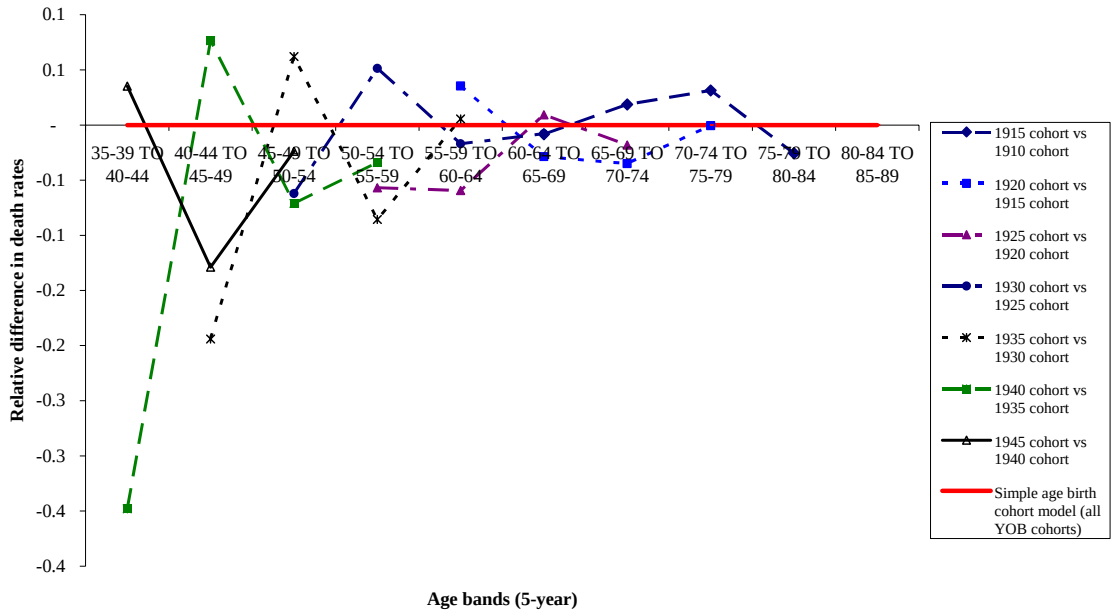
The birth cohort model has a reasonably simple structure and is therefore easy to understand and communicate. Another advantage is that the split by year of birth cohort means that the relative differences between the cohorts are allowed for, unlike in the latency model.

This model is particularly useful where detailed data is not available; for example Prof. Peto has used this kind of model for mesothelioma projections for other countries worldwide.

Limitations:

A key assumption behind the birth cohort model is that the development of death rates by age is constant for each birth cohort. This refers to the rate of change of the death rates and not the absolute values. The death rates increase within a year of birth cohort as the population ages. Analysis of the data shows that this trend in death rates varies by year of birth cohort. This is demonstrated by the following graph.

Figure 24: Development of Death Rates between Age Bands and Adjacent Year of Birth Cohorts



The relative death rates between each 5-year age band have been calculated, based upon actual data, for each birth cohort. These have then been compared between year-of-birth cohorts. If the change in death rate from one age band to the next is the same in adjacent birth cohorts, then a result of zero is obtained. Where a different trend is observed in adjacent birth cohorts, then a result either above or below zero is obtained. This will then show an increasing or decreasing trend along the adjacent birth cohorts.

The bold line lying on the x-axis shows the assumed development trend in the simple birth cohort model – that the relative trend in death rates between age bands does not vary by birth cohort. The variation arising out of the actual data shows that there is a changing relationship between the development of death rate by age in different birth cohorts.

The latency model also does not capture this feature. The latency and birth cohort models may therefore not be the best structures to use.

Other limitations to this approach include:

- The projections rely heavily on the future population projections and the assumptions relating to mortality improvement, immigration and emigration (similarly to the HSL model).

- Entries in the table of death rates include some ages and cohorts with very low numbers of observed deaths. The presence of background deaths can 'swamp' those cells with low observed values and therefore the projections from these calculations may not be credible.

- The selection of factors and fitting of the Poisson model is not straightforward. It is difficult to quantify the uncertainty in the model results but it is fair to say that the death rates are highly dependent on the selected risk relativities.

- The observations for the youngest and oldest deaths in each birth cohort are incomplete, as well as the second youngest and oldest cells. The projections are largely dependent on the more recent incomplete cohorts, which is the case for most projection models.

Given the above limitations, and the potential for the method to over-project as a result of these limitations, the Working Party considers that the model may not have the best structure. However, with care, it could be useful as a potential high scenario. The future experience will demonstrate the effectiveness of the model, and hence the model's predictive performance should be monitored.

4.4. HSE/HSL Model

The 2004 Working Party paper took as its foundation the HSE study "Mesothelioma Mortality in Great Britain: Estimating the Future Burden" (HSE 2003). This study was expanded upon in the 2005 paper "The expected burden of mesothelioma mortality in Great Britain from 2002 to 2050" (HSE 2005).

In 2009 the HSE engaged the HSL to parameterise the model they had used for updated actual population deaths data as at 2006 and the latest population projections. These updated projections can be found in the 2009 HSL research report entitled "RR728 - Projection of mesothelioma mortality in Great Britain" (HSL 2009), and are also summarised on the HSE statistics webpage at http://www.hse.gov.uk/statistics/causdis/mesothelioma/burden.htm.

The HSL's work involved a reconstruction of the model in a more flexible computer environment that has allowed more efficient fitting to historical data and fuller exploration of the model's adequacy. The HSL have used a number of optimisation techniques (MATLAB's fminsearch function and the Metropolis-Hastings algorithm, a Markov Chain Monte Carlo technique) to parameterise the model and this process revealed a profile over time of the collective population exposure to asbestos in more detail than was possible in previous analyses. The HSL, like the HSE, parameterised the model by minimising the deviance residual (the sum of the square of actual less fitted, divided by the fitted) by age and year of death.

The HSL projections result in a peak number of male mesothelioma deaths aged between ages 20 to 89 in 2016 of 1,990[7], and a total of 2,038 for all ages. This is three years later than the peak of the previous HSE projections and represents approximately 8% more deaths at the peak. 2009 and post, the HSL project approximately 23% more deaths than the 2003/5 HSE projections. The increase in the number of deaths projected by the HSL is predominantly due to the change of two parameters:

[7] Table 6 page 24 of HSL 2009

- The improving longevity and more recent data on immigration and emigration indicating increased population numbers in the ONS mid-2006 population estimates[8]; and
- The increase in the assumed exposure between 1978 and 2000.

4.4.1. Structure

The structure of the HSL model remains basically the same as the model used in the 2003/5 HSE projections, except that the HSL have made an allowance for background mesothelioma deaths. Background deaths are deaths that would have occurred in the absence of any industrial exploitation of asbestos in Britain. Note these are different to deaths arising from "background" asbestos exposures such as environmental exposures occurring as a consequence of the industrial use of asbestos. The HSL assume that this background rate is between 1 to 2 per million per year; which equates to approximately 20 to 35 background deaths a year.

The formula used by the HSL for estimating the number of mesothelioma deaths at age A, in year T ($F_{A,T}$) is:

$$F_{A,T} = \frac{[\sum_{l=1}^{A-1} W_{A-l} D_{T-l} I\,(l+1-L)^k\, 0.5^{l/H}] D_{x_T} P_{A,T} (M - \sum_{A=20}^{89} \sum_{T=1968}^{2006} B_{A,T})}{\sum_{A=20}^{89} \sum_{T=1968}^{2006} [\sum_{l=1}^{A-1} W_{A-l} D_{T-l}\,(l+1-L)^k\, 0.5^{l/H}] D_{x_T} P_{A,T}} + B_{A,T}$$

Where:

- $P_{A,T}$ = The number of people alive (or person-years at risk) at age *A* in year *T*.
- W_A = Age specific exposure potential at age *A*.
- D_T = Overall population exposure in year *T*.
- D_{xT} = Proportion of mesothelioma deaths diagnosed in year *T*.
- *L* = Lag period (in years) before effect starts.
- *H* = Half life (in years) for clearance of asbestos from lungs.
- *k* = Exponent of time, modelling the increase of risk of developing mesothelioma with increasing time from exposure.
- $B_{A,T}$ = The total number background deaths for age *A* in year *T.*

  $B_{A,T}$ = background rate * $P_{A,T}$,

  these deaths are then allocated to age using the proportion of $I * (A - L)^k$.
- *I* = Indicator variable where *I* = 0 if *I* < 1 - *L* and *I* = 1 otherwise.
- *l* = Indexes years lagged from the risk year.
- *M* = The total number of observed mesothelioma deaths to date.

The table below details the parameters used by the HSL in the model using the fminsearch function (Model A).

[8] http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106

Figure 25: HSL Parameter Estimates

Parameter estimates			
k	2.47	Background rate	1.22
Maximum exposure year	1963	Half-life (years)	1000000 (fixed)
Change in exposure index (% per year) in...		Relative exposure potential by age group	
1898 ($D(1)$)	0 (fixed)	0 to 4	0.00
1908 ($D(2)$)	1000 (fixed)	5 to 15	0.00
1918 ($D(3)$)	100000 (fixed)	16 to 19	0.30
1928 ($D(4)$)	-92.4	20 to 29	1.00 (baseline)
1938 ($D(5)$)	104.9	30 to 39	1.79
1948 ($D(6)$)	-26.0	40 to 49	1.54
1958 ($D(7)$)	38.0	50 to 59	0.07
1963	0 (by definition)	60 to 64	0.33
1968 ($D(8)$)	-7.7	65+	0.00
1978 ($D(9)$)	-16.3		
Projections of future mesothelioma deaths in males aged 20-89			
Peak level	2020	Peak year	2016
Deviance	213	Diagnostic trend	-

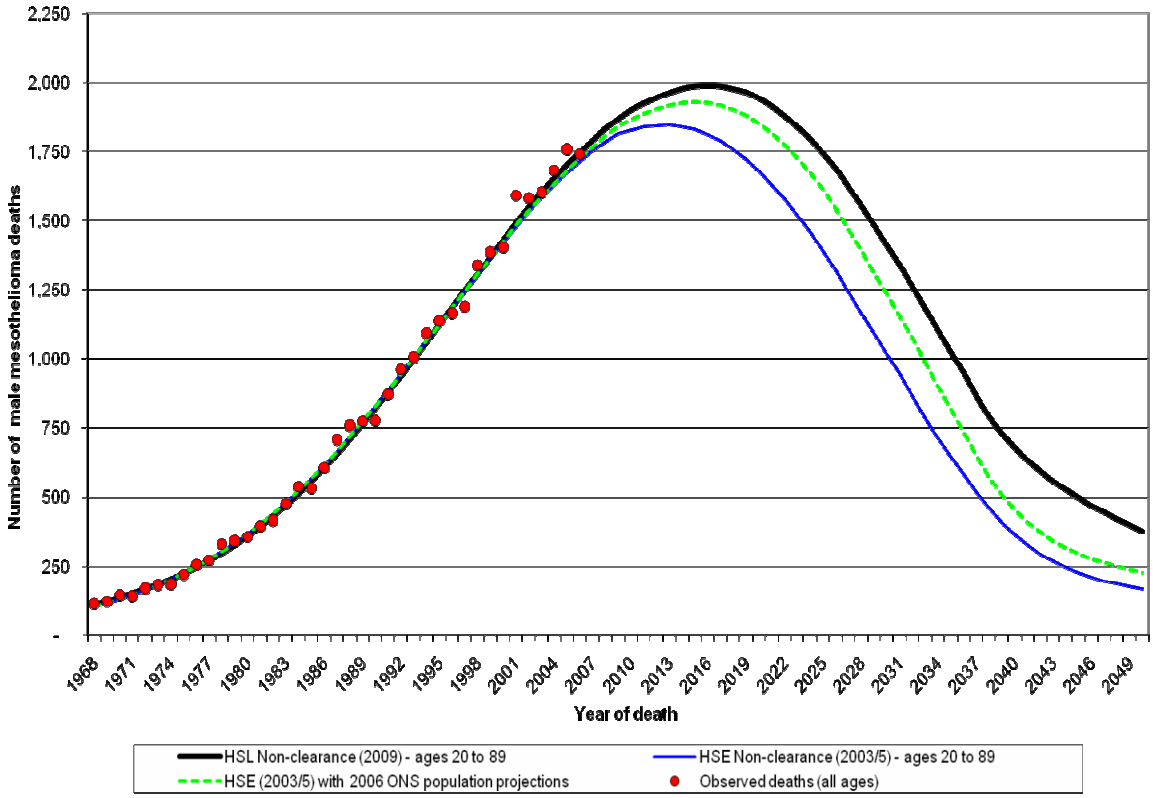
In Section 4.4.4 we have set out some of the sensitivities of the model to the key parameters and the differences between the HSE 2003/5 and the HSL 2009 parameters.

4.4.2. Results

Similar to the HSE, the HSL have preferred a non-clearance model based on a better goodness of fit to the observed deaths. A non-clearance model assumes (effectively) no clearance of asbestos fibres from the lungs over time i.e. that *H* is very large.

The HSE 2003/5 and HSL 2009 projections are shown below together with the latest actual mesothelioma deaths in Great Britain. The dotted line shows this impact of using the HSE 2005 non-clearance model assumptions but using the updated ONS mid-2006 population estimates.

Figure 26: HSE and HSL Projections Against Actual Deaths to 2006



4.4.3. Strengths and Limitations

Past fit

The model fits the past data well, but the future projections are very sensitive to slight changes in some of the parameters. The HSL report highlights the following specific limitation:

"the updated model provides a reasonable basis for making relatively short-term projections of mesothelioma mortality in Britain, including the extent and timing of the peak number of deaths. However, longer-term predictions comprise two additional sources of uncertainty which are not captured within the prediction intervals for the annual number of deaths:

a) whether the form of the model is valid for more recent and future exposure contexts; and

b) if the model is valid in such contexts, the uncertainty arising from the particular choice of the population exposure profile beyond 1978."

Complex structure and number of parameters

As can be seen from the formula of the model, it is quite complex with a considerable number of parameters. This allows the model to be flexible in allowing for different death rates at different ages for different birth cohorts. The key assumption underlying the simple age/birth cohort model is that the ratio of death rates at different ages is identical across all cohorts (equivalently that the ratio of rates between birth cohorts is the same at all ages).
The mesothelioma data until the 1990's fitted the key assumption (of the simple age/birth cohort model) quite closely, but the more recent deaths began to show that the death rates, especially for the most recent birth cohorts, were not behaving consistently. This is the reason why the HSE and Prof. Peto developed this model. Whether different birth cohorts will behave differently in the future is key to understanding whether the model is appropriate to project future deaths.

Although the model fits the past data well, the future projections are very sensitive to slight changes in some of the parameters. It is important to realise that the central HSL projections sit in a wide range and the future number of deaths could easily be higher or lower by a considerable amount.

Mortality improvements

The model uses Great British population estimates to project the number of mesothelioma deaths. The latest ONS estimates take into account improving longevity and more recent data on immigration and emigration.

The large sample of mesothelioma claims data that the Working Party has collected, see Section 6, illustrates that the exposed population, on average, are experiencing heavier mortality than the Great British population at large.

If the exposed population does not enjoy the same level of improvements in longevity as the population as a whole, then there will be a tendency for the model to over-project the future mesothelioma deaths. This is because, if the mortality differential continues in the future, the exposed population will form a decreasing relative proportion of the overall population. A projected mesothelioma death rate per unit of overall population based on past data applied to an overall future population projection would then tend to over estimate the number of future mesothelioma deaths.

Immigration and emigration

As highlighted in the previous Working Party paper entitled “UK Asbestos Working Party Update 2008”, immigration and emigration in the Great British population estimates potentially affect the number of mesothelioma deaths predicted by the model. Immigration increases the number of mesothelioma deaths predicted by the HSL model as immigration increases the population in the future at old age ranges. If immigrants have been exposed to asbestos outside of Great Britain, they are unlikely to be eligible to make a claim on UK employers’ liability policies. Therefore immigration could artificially increase the number of future claims on UK employers’ liability policies.

Emigration, on the other hand, decreases the number of mesothelioma deaths predicted by the HSL model as emigrants could have been exposed to asbestos in the UK in the past but will not form part of the UK population estimates from which future deaths are calculated. In this case there is additional uncertainty as to the likelihood that a person emigrating from Great Britain having been exposed to asbestos as part of their employment in Great Britain and then going on to develop mesothelioma, would make a claim on UK employers’ liability policies. Therefore emigration has the potential to artificially decrease the number of future claims on UK employers’ liability policies.

If net migration is small, the effects of immigration and emigration will broadly cancel each other out in the overall future population estimates. However, without understanding the proportions of people exposed to asbestos and the ages of people entering/leaving Great Britain the effects on future claim numbers are difficult to quantify.

We have looked at the impact of cutting-off the population at a certain time (e.g. post 1990) when the vast majority of exposure to asbestos will have taken place, and then decrementing the remaining population purely for mortality. This eliminates the effect of net migration post the chosen cut-off year, leading to a slight increase in the number of projected deaths. This slightly counter-intuitive result is due to the small but negative migration figures at ages 45 and above embedded in ONS post-1990 data and 2006-based principal projections. See Appendix G and Section 4.4.4 for more details.

Deaths over the age of 80 and continued increase in developing mesothelioma

There is little data to model how the disease may develop at extremely old ages, adding further to the uncertainty of projections in the 80+ category. This age band assumes an increasing importance in the later years of the HSL projections, with more than half of all projected future deaths arising from 80+ year olds after 2023.

As stated in the 2004 and 2008 Working Party papers, the particular uncertainty over the number of deaths in the 80+ category could work two ways. On the one hand, should the increase in mesothelioma incidence rates (to the power of k) hold for even older ages, when combined with increasing longevity, the number of 80+ year old mesothelioma deaths could become far more significant and increase the number of future mesothelioma deaths above the levels currently predicted by the HSL model. Conversely, if the continuing appropriateness of “k” in the HSL model proves to be an overstatement at older 80+ ages, the future number of mesothelioma deaths could be far lower than currently predicted.

The half-life factor should decrease the risk at old ages. This assumption models the fact that asbestos fibres can be broken down in the lung and removed from the body, and over time this may serve to diminish the propensity to develop mesothelioma. The HSL have set the half-life factor to 1,000,000, in other words there is deemed to be no half-life effect. Whilst this may be entirely appropriate for younger ages, if there is a half-life effect, clearly this would be more significant for the 80+ year olds.

As an alternative approach to this issue, we have looked at the impact of introducing a cap on the increasing risk implied by the “k” parameter. This has been achieved by reducing the risk after x years from exposure (e.g. where x = 60). Under this assumption an 80 year old’s risk, with a ten year lag from first exposure, is calculated as ($1^k+11^k+\ldots+59^k+60^k+60^k+60^k+...+60^k$) instead of ($1^k+11^k+\ldots+59^k+60^k+61^k+...+70^k$) where each component of the formula reflects the contribution to the overall risk from exposure n years ago. The cap reduces the chance of developing mesothelioma after a period of 60+ years. This is best shown in the graphs below, which detail the death rate per 100,000 by 5 year age bands for the 1945-1949 birth cohort, with and without the cap at 60 years. Figure 28 shows the top right hand corner of figure 27 magnified to show the divergence.

Figure 27: Death Rates for 1945-1949 Birth Cohort

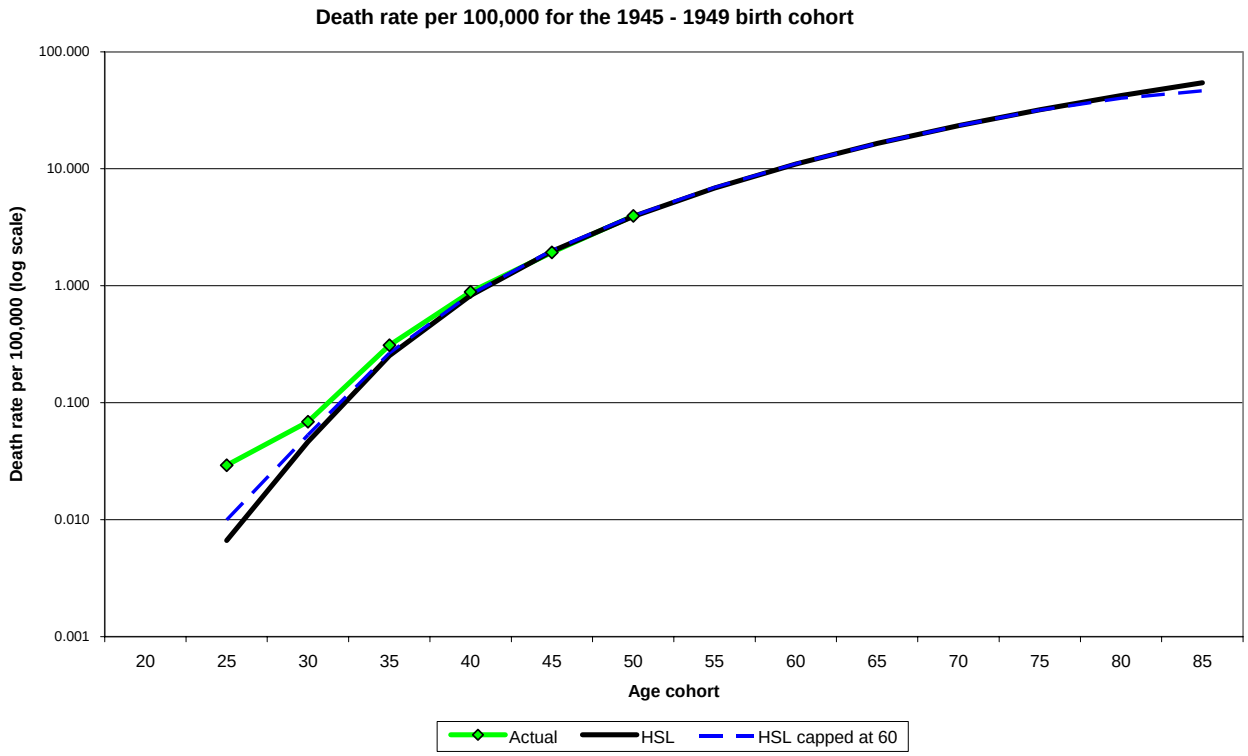
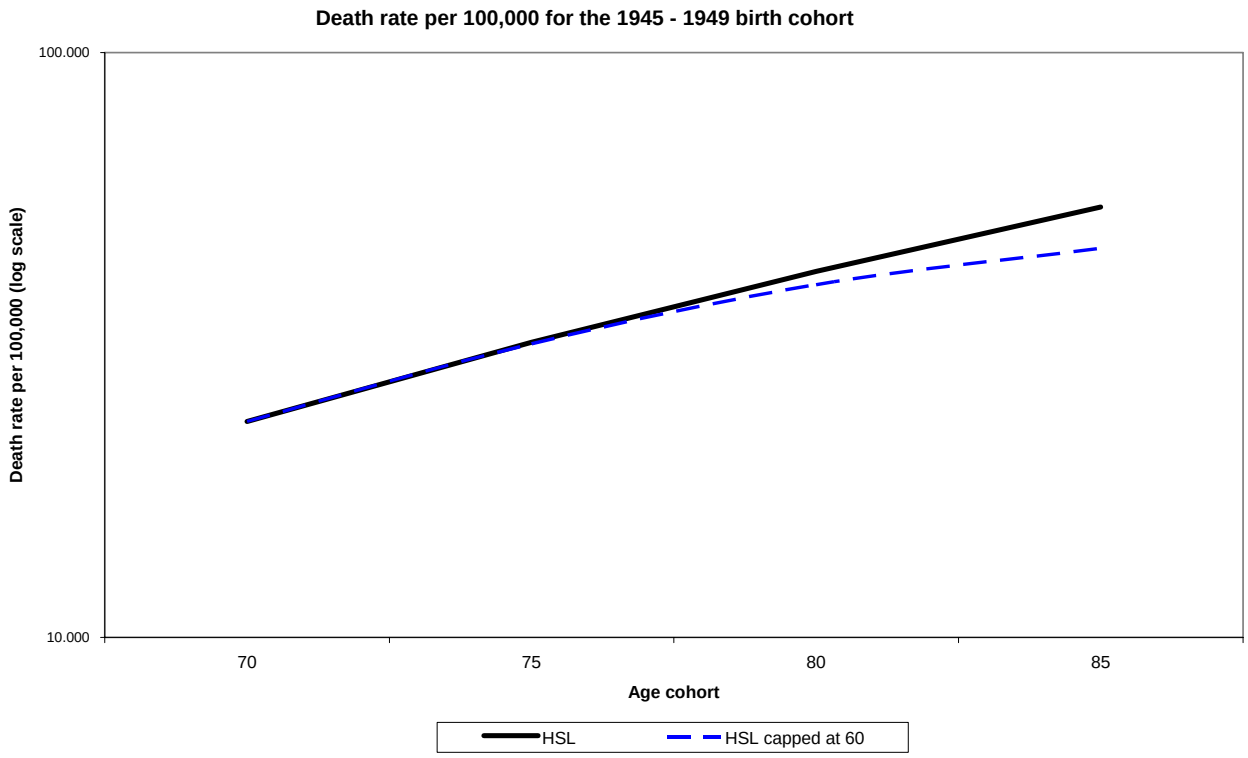


Figure 28: Death Rates for 1945-1949 Birth Cohort (ages 70+ only)

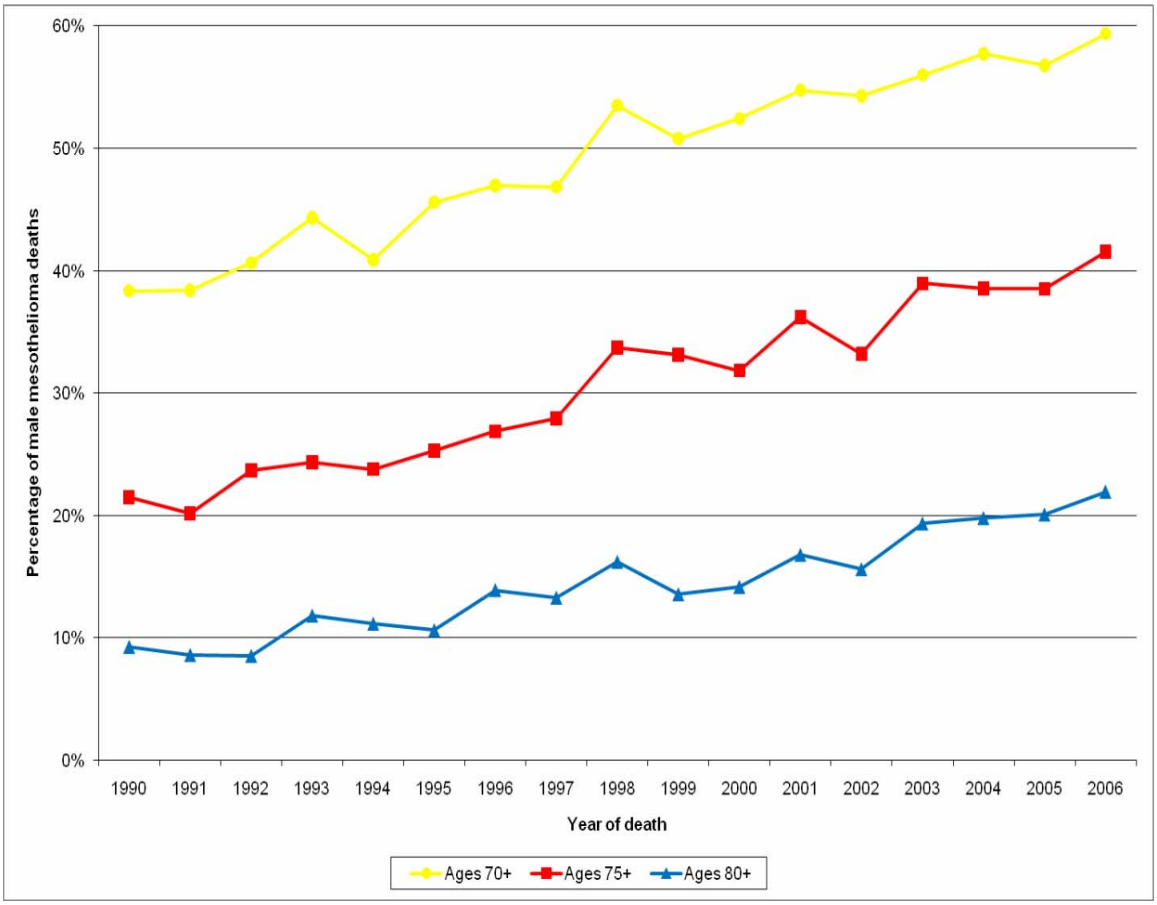


Deaths over the age of 90

The HSL model only projects deaths in males between the ages of 20 and 89. This in part recognises the sparseness of the data for the 90+ age band and the uncertainty over the continued appropriateness of the exponential relationship of developing mesothelioma.

The HSL model predicts that approximately 70% of future deaths will come from the 80+ age band. The proportion of actual male mesothelioma deaths from the 80+ age band has increased from approximately 9% in 1990 to 22% in 2006, as shown in the graph below.

Figure 29: Percentage of Male Deaths



With the new population estimates detailing a greater number of 80+ year olds, the number of 90+ year old mesothelioma deaths predicted by the HSL model could be significant if it was adjusted to account for ages over 89. The mesothelioma deaths projections in the HSL 2009 paper contain an allowance for deaths at age 90 and higher. This allowance was estimated using a linear trend and contributes about 3% to the published figure of approximately 61,000 deaths from 2007 onwards. Using other methodologies or extending the HSL model directly to ages 90-95 would likely produce higher estimates, however these should not be considered very reliable, either, due to the above mentioned data and model limitations.

Insurance claims from 80-89 and 90+ year olds are subject to even greater uncertainty, given the propensity of individuals at this age to make a claim as discussed further in Section 5. However, given that average costs tend to be lower, the impact of this issue on overall Insurance Market claims costs will be ameliorated somewhat.

4.4.4. Key Sensitivities of Assumptions

Like any model the parameters are subject to uncertainty. In this section we will focus on the following key parameters within the HSL model:

- The half-life and k factor ("Exponent of time, modelling the increase of risk of developing mesothelioma with increasing time from exposure");
- Exposure; and
- The population.

Half-life and k factor

As highlighted in the previous two Working Party papers entitled "UK Asbestos – The Definitive Guide" and "UK Asbestos Working Party Update 2008", two of the key parameters are the power relationship, k, between the time since exposure to asbestos and the development of mesothelioma and the half-life, the number of years it takes for asbestos fibres to clear from the lungs. The half-life and "k" are closely correlated and cannot be independently estimated. In effect reducing the half-life means increasing the value of k and vice versa.

The HSL selected a non-clearance model, like the HSE in 2003/5. This assumes that there is (effectively) no clearance of asbestos fibres from the lungs. Through the statistical methods the HSL have used to parameterise the model they have found that:

a) the fit of the model improved as the half-life was increased; and

b) the half-life is infinitely large and that there is no clearance of asbestos once inhaled.

The HSL have increased the half-life factor (from 1,000 used in the 2003/5 HSE papers) to 1,000,000. Increasing the half-life will increase the number of deaths estimated by the model. However, since a half-life of 1,000 effectively assumes that no clearance of asbestos fibres occurs, the change the half-life factor has minimal effect on the model.

Independent epidemiological evidence suggests that after a brief exposure to asbestos, the risk of developing mesothelioma increases in proportion to a power of time, probably in the range 2 to 3. However, there is uncertainty about exactly what value k and the half-life should take. Refitting the model by the HSL led to an estimate of k of 2.47 (slightly lower than the value of 2.6 estimated in the 2003/5 HSE papers). A lower value of the k factor reduced the number of deaths estimated by the model.

There are several studies, including "Sixty years on: the price of assembling military gas masks in 1940" (J C McDonald, J M Harris, G Berry, 2006) which discuss evidence that asbestos (in this paper, crocidolite) is slowly removed from the lungs. The study traced deaths from a particular cohort of workers exposed to asbestos. It found statistically significant evidence relating to an absence of mesothelioma cases at longer times from exposure, compared to those expected i.e. that the mesothelioma incidence rate did not continue to increase at older ages, indeed that there was evidence that, in the cohort under consideration it actually fell. Therefore, the results provide support to the proposition that the mesothelioma incidence rate does not continually increase with increasing time since exposure. However, there are other studies such as "Update of Potency Factors for Asbestos-Related Lung Cancer and Mesothelioma" (D. Wayne Berman and Kenny S. Crump, 2008) that suggest an increasing mesothelioma incidence rate at older ages is appropriate. There is therefore still uncertainty around both the clearance of asbestos from the lungs, and the most appropriate "track" for mesothelioma incidence rates by age.

We found that the past fit of the projection model was improved by incorporating a cut-off to the k factor. This suggests that it may have been more appropriate to have a lower increase in the mesothelioma rate by year of birth cohort in the past (and therefore assumed in the future) than assumed in the HSL model (see Section 4.4.3). This finding has been discussed with the HSE. The HSE are aware of the uncertainties, and agree that it is a potential improvement to the HSL's parameterisation of the model.

The table below details the effect of changing the half-life and k factor within the model.

Table 14: Half-life and k Factor Sensitivities

Half-life	k	All other assumptions	Peak year of deaths	Peak number of deaths	Number of deaths 2009 & post	Sum of squares[9]	Chi-Squared Deviance[10]
1,000,000	2.47	HSL 2009	2016	1,977	55,878	751.3	246.1
1,000,000	2.47 (capped at 60)	HSL 2009	2016	1,965	54,273	747.0	151.9
1,000,000	2.6	HSL 2009	2017	2,076	59,123	879.5	348.9
1,000	2.47	HSL 2009	2016	1,961	55,341	773.9	240.3
1,000	2.6	HSL 2009	2017	2,059	58,559	833.0	334.9
34	3	HSL 2009	2015	1,925	53,091	746.8	391.5
1,000	2.6	HSE 2003/5	2013	1,849	43,722	778.0	282.0

Exposure

The exposure in the HSL model is based on separate parameter sets regarding the exposure for:

- 20-29 year olds at each year; and
- other age bands (relative to the 20-29 year old age band).

Exposure by year

Like "k" and the half-life there is no clear-cut answer to exactly what the exposure for Great Britain should be. The exposure index used by the HSL was defined by percentages, in multiples of 10 years, from the maximum exposure year. The years in between the 10-yearly values were determined by linear interpolation. This parameterisation produces a collective population exposure index over time. However, it is not possible to estimate this beyond the late 1970s because observations about mesothelioma to date tell us nothing about exposure more recently because of the long latency of the disease. Appeal to other forms of evidence is therefore necessary to fix the exposure profile from this point to the present day and then into the future.

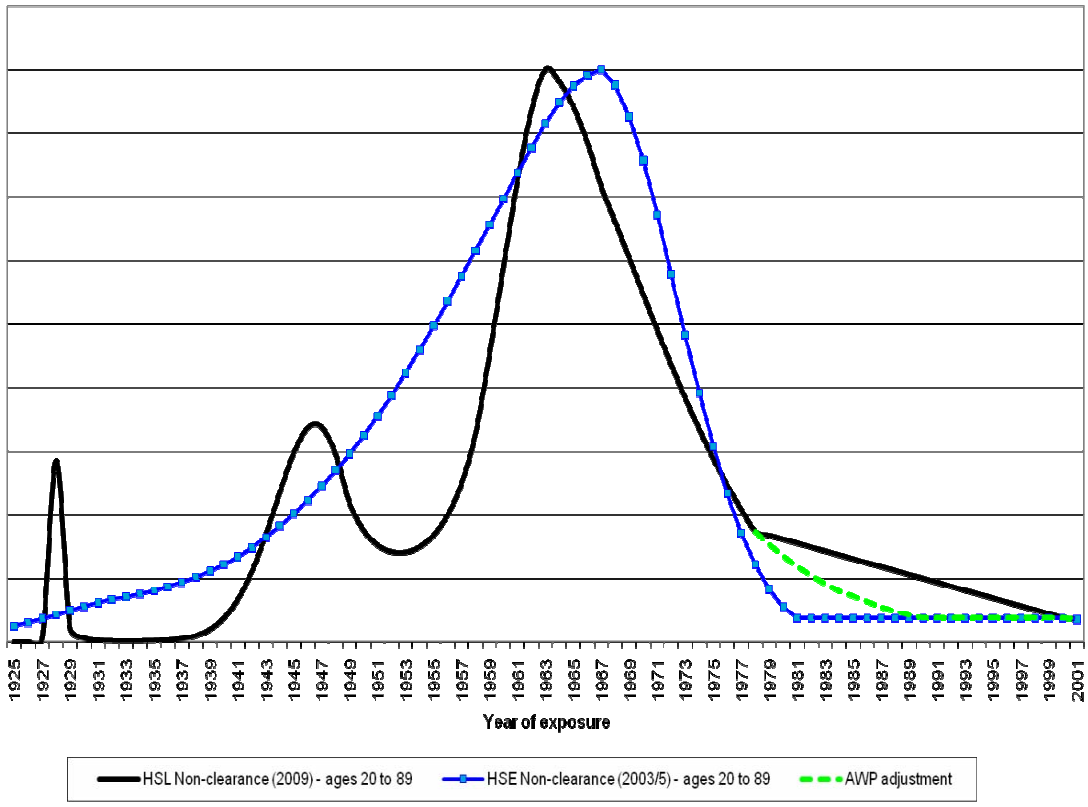
The HSE previously estimated that in order for the mesothelioma projections model to predict the correct level of mesothelioma mortality in the long term (as implied by a separate exercise to predict the long term risks arising from estimated numbers and levels of exposure within different groups of the current population based on a specific dose-response model), the value of the population exposure index in year 2000 should be approximately 4.2% of the peak. These arguments are set out in the Regulatory Impact Assessment ("RIA") for the revised Control of Asbestos at Work Regulations. Though uncertain, this assessment therefore provides a single more recent point on the exposure profile to inform decisions about the profile from 1978 up to this point, and then on into the future.

[9] Sum of squares is calculated on mesothelioma deaths for each year (1968 to 2006)

[10] Chi-squared deviance is calculated on mesothelioma deaths for five year age and birth year bands (Birth years 1878 to 1986 and Ages 20 to 89)

The graph below details the HSE and HSL exposure indices, together with the Working Party selected exposure index, as described in Section 4.5.

Figure 30: HSE, HSL and AWP Exposure Indices by Year (for years 1925 to 2002)



The exposure index produced by the HSL has changed dramatically from that used by the HSE in 2003/5. The reason for this change is due to the optimisation process that the HSL have used to parameterise their model rather than as a result of having more data observations or using a slightly modified model. In other words, if the same optimisation techniques had been used by the HSE in 2003/5 a similar profile would have been revealed. The HSL index has multiple peaks, as opposed to the smoothed HSE single peak index.

The HSL suggest that the local peaks around 1930 and 1950 could be associated with the following events:

- The introduction of the Asbestos Industry Regulations in the UK in 1931 and the impact of the Great Depression; and
- The reduced shipyard activity, especially in naval yards, in Great Britain after the end of World War II.

Whilst it is difficult to corroborate these dramatic movements in the level of exposure to asbestos, these local peaks have little to no impact on the future estimated deaths. The key impacts of the HSL exposure index are:

- moving the peak year of exposure earlier (which reduces the total future number of deaths and the year in which deaths will peak); and
- increasing the exposure between 1976 and 1999 (which increases the total future number of deaths).

Due to the long latency periods of mesothelioma the historical deaths up to 2006 could not be used (directly) to estimate exposure levels since 1978. Therefore the HSL have chosen for their exposure index to use a straight line between the last year parameterised by the historical data (1978) and the findings from the RIA (that the exposure in 2000 is 4.2% of the peak level). From the year 2000 onwards, the HSL have assumed the exposure indices as per the 2003/5 HSE projections. There is no scientific reason for using linear interpolation between these years, nor is there any data or information that justifies a change in the assumption from the HSE 2003/5 model. That said, there was also no scientific basis for the exposure index to reach a level in 1981 and continue at that level until 2000 (as per the 2003/5 HSE projections).

We have endeavoured to use an assumption that has some rational basis and have looked at using the change in the level of imports over the period to estimate how the exposure will change from 1979 to 1999. This is represented by the dotted line in the above graph. We have discussed the selection of post-1978 exposure with the HSE. They have confirmed that their selection was not based on any other evidence and have not objected to the selection of an alternative basis.

The table below details the effect of changing the exposure index within the model.

Table 15: Exposure by Year Sensitivities

Exposure index	All other assumptions	Peak year of deaths	Peak number of deaths	Number of deaths 2009 & post	Sum of squares	Chi-Squared Deviance
HSL 2009	HSL 2009	2016	1,977	55,878	751.3	246.1
HSL 2009 using import measure for 1979 to 1999	HSL 2009	2015	1,919	50,367	777.3	265.9
HSL 2009 with HSE 2003/5 from 1979	HSL 2009	2014	1,875	47,439	842.5	309.3
HSL 2009 with zero exposure post 2009	HSL 2009	2016	1,977	55,550	751.3	246.1
HSE 2003/5	HSE 2003/5	2013	1,849	43,722	778.0	282.0

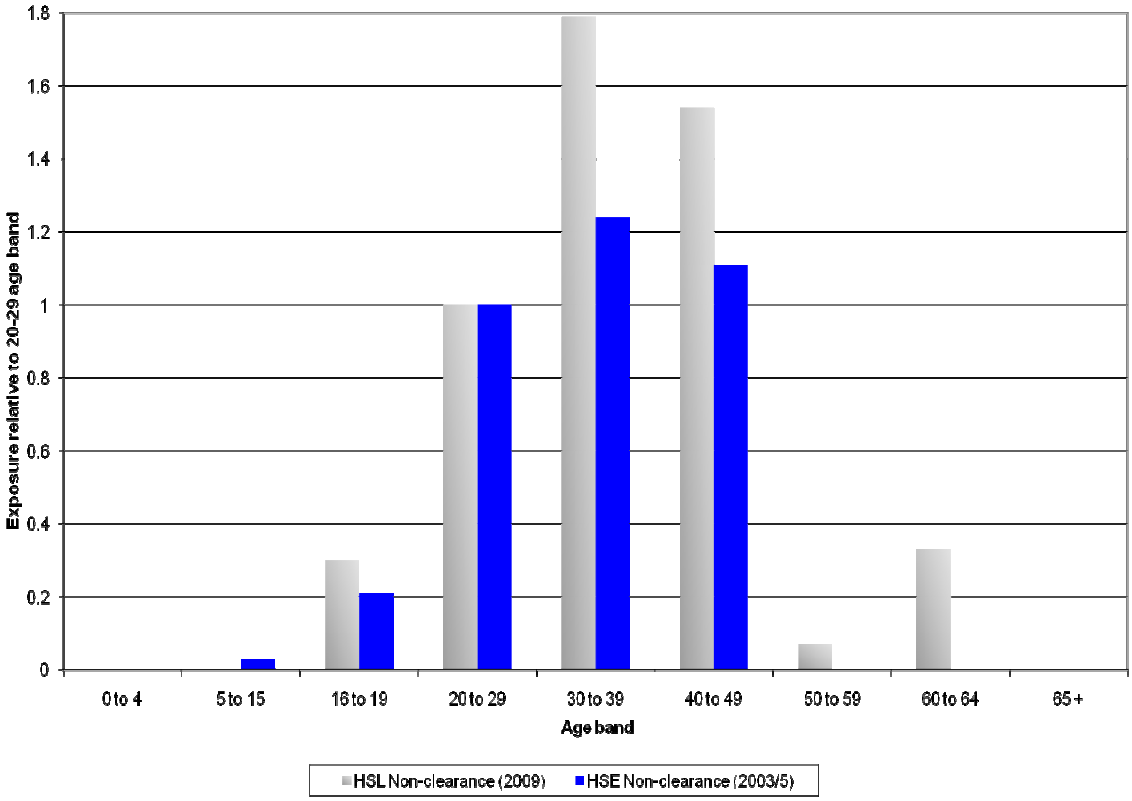
Exposure by age

Age-specific exposure potential parameters, W_A, allow the exposure to differ by age. There are nine parameters including the baseline (set to 1) for ages between 20 and 29. Other values are set for the following ages:-

- 0 to 4 (pre-school);
- 5 to 15 (school age);
- 16 to 19 (school/work transition);
- 30 to 39, 40 to 49, 50 to 64 (work/retirement transition); and
- 65 plus (retired).

The graph below details the HSE 2003/5 and HSL 2009 age-specific exposure potential parameters.

Figure 31: HSE and HSL Age-Specific Exposure Parameters



The table below details the effect of changing the age-specific exposure assumptions within the model.

Table 16: Exposure by Age Sensitivities

Age-specific exposure	All other assumptions	Peak year of deaths	Peak number of deaths	Number of deaths 2009 & post	Sum of squares	Chi-Squared Deviance
HSL 2009	HSL 2009	2016	1,977	55,878	751.3	246.1
HSL 2009 with zero for ages 50+	HSL 2009	2016	1,981	56,012	741.8	234.1
HSL 2009 with zero for ages 16 to 19	HSL 2009	2015	1,911	52,343	853.1	656.7
Setting ages 20 to 49 to one and all others to zero	HSL 2009	2018	2,059	58,036	757.4	517.6
HSE 2003/5	HSL 2009	2018	2,107	61,512	819.3	356.7
HSE 2003/5	HSE 2003/5	2013	1,849	43,722	778.0	282.0

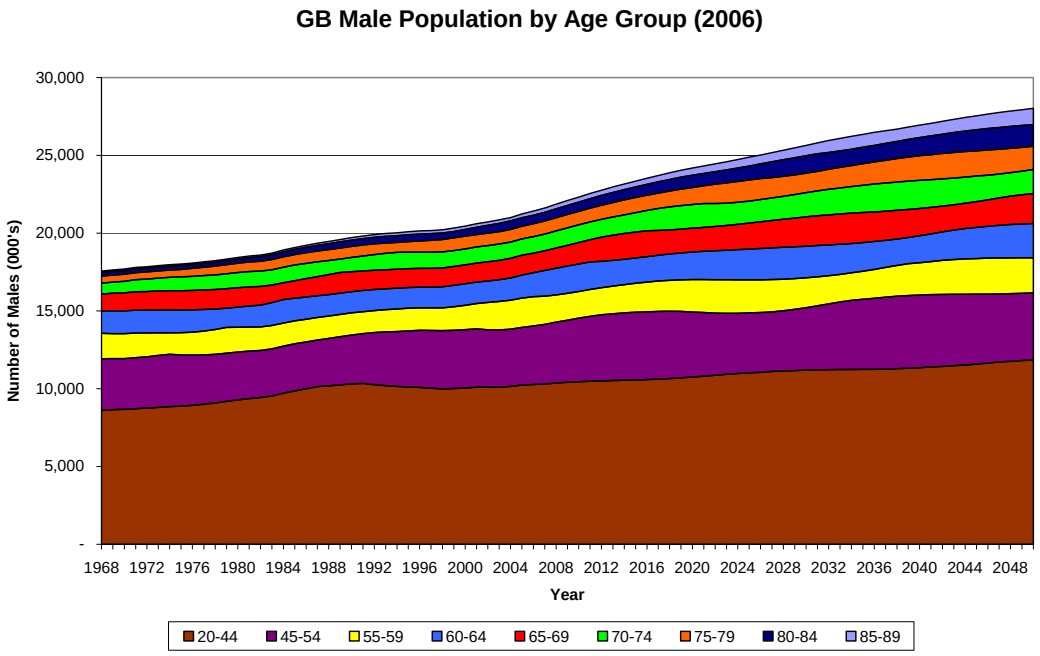
Population

As discussed above the HSL model uses Great British population estimates to project the number of mesothelioma deaths. There is uncertainty surrounding the following key areas of the population estimates used within the model:

- Improving longevity;
- Immigration and emigration; and
- Deaths over the age of 80.

The HSE 2003/5 used the 2001 Great British estimated population statistics for males aged 20 to 89 from 1968 to 2050 provided by the ONS. The HSL have used the revised ONS population estimates as at mid-2006[11]. These new population estimates, shown below, take into account improving longevity and more recent data on immigration and emigration.

Figure 32: ONS mid-2006 Great British Population Estimates



The Working Party have looked at the impact of removing the immigration and emigration from the model by cutting-off the population at different periods and using different ONS mortality assumptions to run-off the population. Implicit in the ONS population figures is an assumption that on balance around 15,000 males aged 45 or above will leave the UK in each future year. As mentioned in Section 4.4.3, removing this net migration assumption leads to a small increase in the projected number of mesothelioma deaths.

[11] http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106

The table below details the effect of changing the assumed population within the model.

Table 17: Population Sensitivities

Population	All other assumptions	Peak year of deaths	Peak number of deaths	Number of deaths 2009 & post	Sum of squares	Chi-Squared Deviance
Mid-2006	HSL 2009	2016	1,977	55,878	751.3	246.1
Mid-2001	HSL 2009	2013	1,884	49,617	755.8	243.1
Mid-2006	HSE 2003/5	2015	1,929	49,155	770.6	279.3
Mid-2006 with cut-off at 2009 and Principal mortality*	HSL 2009	2016	1,980	56,204	751.3	246.1
Mid-2006 with cut-off at 2009 and High Life Expectancy*	HSL 2009	2017	1,999	58,008	751.3	246.1
Mid-2006 with cut-off at 2009 and Low Life Expectancy*	HSL 2009	2016	1,964	54,276	751.3	246.1
Mid-2006 with cut-off at 2009, Principal mortality and off-setting mortality by +3 years	HSL 2009	2009	1,859	50,086	751.3	246.1
Mid-2001	HSE 2003/5	2013	1,849	43,722	778.0	282.0

* Principal mortality refers to the mortality assumption underlying the ONS population projections (see Appendix G). The ONS refer to two (one higher and one lower) other potential mortality assumptions. These are differentiated by the implied life expectancies within the mortality assumption.

4.5. UK Asbestos Working Party Assumptions

The Working Party has selected a model structure based on that used by the HSL, but has made some changes to the selected underlying assumptions. The HSL's approach was to use optimisation processes to achieve the best possible fit to the past data. Whether or not the assumptions implied by this approach are applicable to future experience is uncertain.

We have considered alternative assumptions, some of which the HSL have not considered. These have given alternative fits to the historical data and are described above in Section 4.4. Where the parameterisations improve the fit there are still a variety of outcomes for the projected number of mesothelioma deaths – both higher and lower than those produced by the HSL model. Due to the considerable uncertainty in the selection of assumptions, the Working Party has adopted a pragmatic approach and changed some key assumptions from the HSL model to give a better fit where there was sufficient justification to do so.

A summary of the Working Party's selected model compared to the HSL 2009 is given in the table below, and the assumptions and some of the considerations made in their selection are given in the following sections.

Table 18: Comparison Working Party Model and HSL 2009

Model	Population	Peak year of deaths	Peak number of deaths	Number of deaths 2009 & post	Sum of squares	Chi-Squared Deviance
AWP	Mid-2006	2015	1,912	48,911	757.9	157.7
HSL 2009[12]	Mid-2006	2016	1,977	55,878	751.3	246.1

4.5.1. The k factor

The k factor has been kept at 2.47 as per the HSL model, but has been capped for periods over 60 years from first exposure. This was discussed in Section 4.4.4. When the cap was applied, the death rates for older cohorts fitted the historical mesothelioma deaths data better. It is uncertain whether or not this assumption will be borne out for the later cohorts as they reach this duration from first exposure, but we believe this is a reasonable assumption.

The cap on k limits the increase in the risk of developing mesothelioma after 60 years from first exposure. The main age-group that this affects is the 80+ group and will have the effect of reducing the projected number of deaths from this age group.

4.5.2. Exposure

As shown in Section 4.4.4 above, the exposure post-1978 has not been assumed to be a straight line, as the HSL assume, but has been adjusted, based on the fall in asbestos imports at this time. We have adopted an alternative exposure curve for the period from 1979 to 1999, inclusive.

Although the HSE have always used an exposure profile to 2050 and projected deaths to 2050, the 2004 Working Party estimate cut the Insurance Market projection at 2040. This was as a proxy for eliminating claims from exposure post 2004. The 2009 Working Party estimates have included exposure up to 2050, and projected deaths to 2050, giving an extra 10 years of projected deaths. The Insurance Market projections contained in this paper are intended to include all claims arising from all asbestos exposure in the UK, and hence some claims in the projections are assumed to arise from future exposures. This has therefore changed the basis of the Insurance Market projections and increased the future estimated cost. The practitioner should be aware of, and make appropriate allowance for, this fact.

4.5.3. Exposure by age

We believe it is more appropriate to have no exposure age adjustments post age 49, but note that this does not have a significant impact on the model fit or future projections.

4.5.4. Mortality

The HSL did not look at changing the mortality from that assumed in the adopted revised ONS population estimates as at mid-2006. Some investigations undertaken by the Working Party are discussed in Section 4.4.4. There is evidence that suggests that the exposed population have higher mortality than the general population. If allowance for this is made then an alternative fit of the model can be made. If we increase the mortality assumption (for example, by 5%) then a different parameterisation of the rest of the model actually gives a better fit to the historical data, and a reduced number of projected future deaths (by about 2.5%). This was achieved by changing the k-factor cap and the exposure profile.

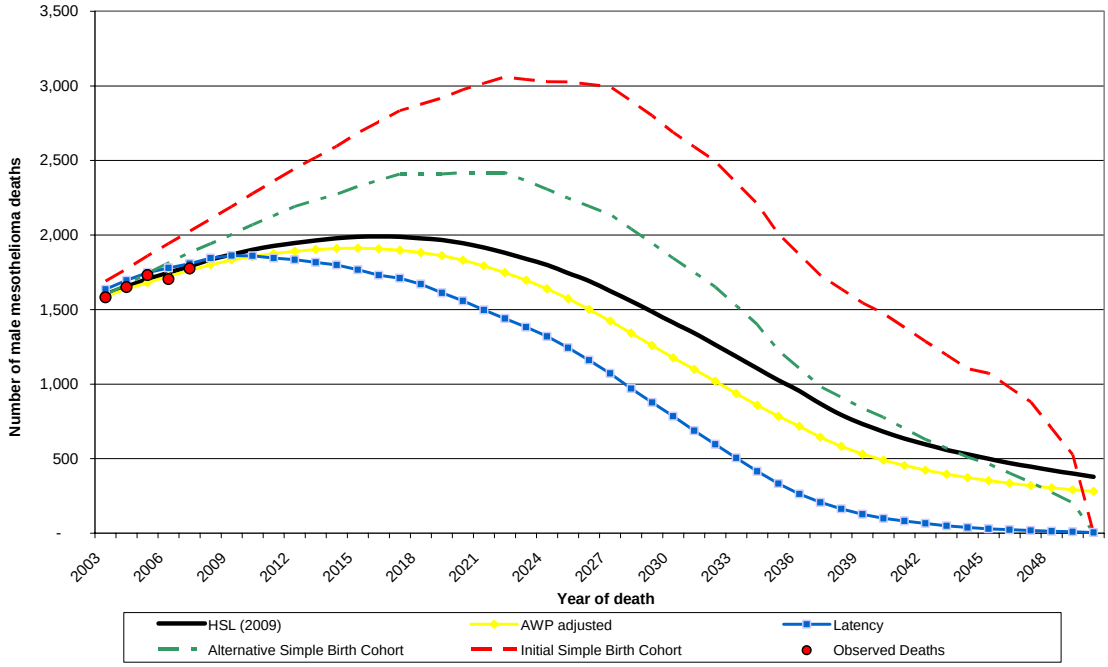
[12] Using the AWP Projection model with the fminsearch parameters from Table 4 in the HSL 2009 report

However, the model currently projects deaths in males up to the age of 89. There is a possibility that deaths in males aged 90 and above could have a significant effect and so this would increase the projection of future deaths. We note that alternative fits are possible and could be investigated further. Due to the considerable uncertainty surrounding deaths at older ages, we decided not to make any mortality adjustments. We have therefore used the same population projections as in the HSL model.

4.5.5. Guidance to the Practitioner

The Working Party encourages the practitioner to consider the issues and sensitivities outlined in Section 4.4.4 and to select their own assumptions. The above should only be considered as guidance as to potential adjustments to the HSL assumptions that could be appropriate. The details of a working spreadsheet model of the HSL methodology containing various parameterisations including that selected by the Working Party as discussed above is given in Appendix C.

Figure 33 Comparison of Potential Population Mesothelioma Deaths Projections



4.6. Comparison to 2004

A comparison of the Insurance Market costs of mesothelioma deaths from the 2004 paper with our revised estimates is provided in Section 7.2.

The number of projected mesothelioma deaths has increased from the 2004 paper, partly due to the increased time horizon of the model, from 2040 to 2050, and partly to the updated population estimates (ONS 2006) used within the modelling process. The following table summarises the projected number of deaths in the current and previous models.

Table 19: Projected Mesothelioma Deaths (ages 20-89)

	Year of death		
	2004 - 2006	**2007 – 2040**	**2041-2050**
AWP 2004	5,056	45,212	N/A
Actual	5,087	N/A	N/A
AWP 2009	N/A	48,945	3,530

5. Mesothelioma Claimants

5.1. Summary

An increase in mesothelioma claimant death ratios (referred to as CD Ratio - the percentage of deaths that lead to a claim for compensation) has been noted throughout the industry since the publication of the 2004 Working Party paper and was the primary driver for the reformation of the Working Party in 2007. As part of the 2008 study, the Working Party oversaw the collection of asbestos-related claim statistics across a large proportion of the UK insurance industry.

The statistics confirmed that the increase was industry-wide with male claim numbers in Great Britain (excluding claims settled at no cost, and excluding claims made against the Government) estimated to have increased from about 1,500 in 2003 to about 1,900 in 2007. The current Working Party has repeated the exercise and numbers have continued to increase, with the 2007 estimate revised (actual replacing estimated data for the second half of 2007) to 2,000 and the 2008 estimate around 2,400.

The 2008 Working Party study concluded that increases in claimant death ratios (i.e. more sufferers claiming) was the cause rather than any change in the number of claims per claimant. Indeed there has been a fall in the number of claims per claimant as outlined in Section 3.3 and commented on in Section 5.4.3. The study further concluded that changes of this speed were unlikely to be caused by structural changes in the nature of insurance exposures but rather changes in the nature of the sufferer's 'journey'. The 2008 paper gave a detailed discussion highlighting changes and how they could affect claimant death ratios. Section 5.2 provides a recap on this discussion.

The Working Party has undertaken further work this year. Discussion with Government departments has yielded information about mesothelioma sufferer and claimant numbers that corroborates last year's conclusion. **The headline male claimant death ratio for Great Britain (including Government claims) has increased from 43% in 2003 to 63% in 2007 and an estimated 69% in 2008. The claimant death ratio for the UK Insurance Market has increased from 36% to 61% over the same period.** This evidence is discussed in Section 5.4.

The qualitative issues discussed in Section 5.3 have clearly had an impact on claimant death ratios. For various reasons, however, it is not possible to quantify the impact of these changes. Interpretation of recent developments and estimation of the future is therefore necessarily subjective and judgmental and will, for an individual insurer, depend on several factors including that insurer's own recent experience and reserving approach.

We make no attempt to limit the scope of judgement that each insurer will make. We have, however, set out a number of questions that each insurer should ask itself in forming a view. Section 5.5 sets out these questions and provides some further information on the potential maximum ratio.

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Finally, we have developed a number of possible scenarios for claimant death ratios in the future. These have been included in the overall projections discussed in Section 5.6. Given the subjectivity of this issue these scenarios should be viewed as purely illustrative of the sensitivity of UK mesothelioma insurance cost projections to changes in the assumed claimant death ratios.

5.2. Recap on 2008 paper

The 2008 paper (Section 4 'Claims Life Cycle') included a discussion of the process by which an individual diagnosed with mesothelioma is then able to make a claim for compensation against an insurance company (or by extension, the Government). The section was informed by discussions with, amongst others, the NHS and claimant solicitors and provides an in-depth analysis of the process and how it has changed in recent years.

The following paragraphs (following the headings in the original paper) extract discussions of key aspects of the process and recent changes.

5.2.1. Medical profession

At the Primary Care Trust level mesothelioma is still such a rare condition that the majority of GPs will not have seen many cases. Mesothelioma diagnosis is unlikely to happen at this level with related symptoms being referred to a specialist in lung conditions.

There have been significant breakthroughs in medical imaging over the last decade but these appear to be having a more direct impact on other conditions. The breakthrough in mesothelioma diagnosis is in image-led biopsy, resulting in a better targetting of the tissue taken for biopsy. It is only in specialist centres where the skills are present to perform such techniques, hence the development of the National Mesothelioma Framework ("the Framework").

The Framework was published in February 2007 based on practice built up in a number of specialist centres, so that best practice can be shared nationwide. The Framework is not mandatory but the developers believe implementation should be relatively simple and largely cost neutral.

The Framework makes four key recommendations:

- Patients should be managed by a specialist multi-disciplinary team;
- Each cancer network should have a lead clinician and lead nurse;
- Local clinicians in areas with high incidence should be made more aware of the disease; and
- Patients should have a key worker for better co-ordination of treatment and information.

The Framework therefore seeks to provide, amongst other things:

- Earlier, more reliable, diagnosis;
- Better co-ordination of treatment; and
- More information to the patient.

In relation to the first of these, there is clear evidence of improvements in diagnosis rates. The paper reported an increase from 50% to 96% of mesothelioma cases confirmed before death in one specialist centre in the eight years before publication. Rates vary across the country but it is clear that the general trend will have been an increase in rates of pre-death diagnosis.

5.2.2. Legal profession

The paper summarised discussions held with personal-injury solicitors. The following comments may have direct relevance to changes in claimant death ratios:

- Solicitors have seen an increase in the number of people (both male and female) with mesothelioma looking to make a claim over the last five years;
- They have seen an increase in the number of living mesothelioma claimants;
- A living claimant is able to provide a witness statement which can be a key component in making a successful claim;
- There has been a slight increase in the number of cases from non-traditional sources such as nurses and teachers;
- Not all death certificates state mesothelioma as the cause of death for cases that they represent but they could not quantify this amount; and
- The ABI database (see below) has improved in that it now updates requesters in how their enquiry is proceeding, but they do not feel it has significantly increased the success rate in finding a responsible party.

5.2.3. Special interest bodies

Voluntary organisations and charities form an important part of the support network for individuals contracting diseases or conditions that impact normal daily life.

Mesothelioma is a rare condition and there are few organisations geared up to focus on it. A review of the National Directory of Voluntary Organisations yields no entries for charitable or voluntary bodies focussing on mesothelioma and many offering counselling services will not have come across it.

The internet on the other hand is capable of providing access to specialist information and bringing people together with a common interest. There is a wealth of information available on the web to help patients and their carers find out more about asbestos-related conditions, treatment, symptom management and support, both personal and financial.

The provision of such web-based information services has increased enormously over the last eight to ten years.

5.2.4. Insurance industry

Given the length of time that typically elapses, it can be a problem for the claimant or their solicitor to identify firstly the employer that exposed the claimant to asbestos and then that employer's insurers. Even if the claimant recalls their employment history in some detail, employers may have merged, ceased trading or become insolvent.

In 1999 the insurance industry, in agreement with the Government, set up a code of practice to help find a solution to this problem for claimants suffering from long-tail diseases. In support, the ABI set up a free enquiry system: the EL tracing service (often referred to as ABI tracing or ABI database).

The service originally relied on physical mail. In 2002 the process began using e-mail; mesothelioma cases were e-mailed every week. In 2005 an on-line enquiry form was created by the ABI for claimant solicitors to fill in directly. In 2007 mesothelioma enquiries were fast tracked.

The ABI has implemented further improvements in recent years to make the process easier for enquirers and to avoid unnecessary duplication for searches that had already taken place.

5.2.5. Legal developments

The paper discussed the development of the law on asbestos-related diseases and compensation, including Fairchild, Barker and The Compensation Act. The Compensation Act in particular has ensured that mesothelioma sufferers receive full compensation as long as one responsible party can be identified. Furthermore, in more general terms, these cases have continued to raise the profile of asbestos-related diseases and the existence of compensation in the public mind.

5.3. Qualitative drivers for an increase

The 2008 paper showed that there were several drivers for increases in claimant death ratios, notably:

- Improvements in pre-death diagnosis rates;
- Increasing awareness of financial compensation; and
- ABI tracing.

The Framework has had the result of improving the rate of diagnosis of mesothelioma whilst the sufferer is alive. This could have a two-fold impact. Knowing that the condition is mesothelioma whilst the sufferer is alive may result in more claims being made (for example, if a sufferer without dependents dies without knowing that he or she is suffering from mesothelioma then no claim is likely to be made). Claimant solicitors point out that claims are more likely to be successful (for example, through witness statements) if the claimant is alive.

In improving the amount of information available to sufferers, the Framework also increases the level of knowledge of financial compensation. Changes in the law and the ubiquity of the internet have also served to increase the general level of awareness of asbestos-related diseases and of the potential for financial compensation. As is the case in many areas, increased awareness of the ability to make an insurance claim can lead to an increase in claim numbers.

The claimant solicitors interviewed did not believe that ABI tracing had had much impact on claim numbers. Nevertheless, statistics compiled by an insurer represented on the Working Party demonstrated a distinct increase in enquiries to the system. The changes introduced by the ABI have made the process easier and it is likely that this has resulted in an increase in enquiries, and perhaps in claim numbers as a whole.

5.3.1. A comment on post death diagnosis

Claimant solicitors commented that not all death certificates state mesothelioma as the cause of death for cases that they represent. That is, not all cases of mesothelioma are recorded on death certificates.

The HSE statistics on UK mesothelioma deaths are compiled from an analysis of causes of death as recorded on death certificates. The implication is therefore that some cases of mesothelioma are outside of the HSE statistics and therefore that the universe of mesothelioma cases from which claimants may appear is wider than the HSE data and wider than the projections based on HSE data presented elsewhere in this paper. The HSE are aware of this potential and are currently investigating its veracity although they do not believe it materially distorts the HSL projections. In theory, though, it is possible that claimant death ratios could therefore exceed 100%.

We have ignored this possibility for the following reason. The qualitative discussion of the Framework and the quantitative improvements in pre-death diagnosis rates suggest that the proportion of mesothelioma sufferers diagnosed after the death certificate is produced will be falling. By extension, this is likely to mean that the proportion of mesothelioma sufferers captured within the HSE data is rising over time and therefore that some of the recent increases in recorded deaths is due to improved diagnosis rather than true demographics.

Though the potential for improving diagnosis was allowed for in the 2003/5 HSE study, it has been excluded from the 2009 HSL study. The precise implications for future deaths is impossible to assess at this stage, but we have (for the sake of simplicity) assumed that this offsets any potential under-recording of mesothelioma-related deaths in the current data.

5.4. Actual experience

5.4.1. Industry data

The Working Party has, as in the past, overseen the collation of aggregate asbestos-related claims data across a very large proportion of the UK Insurance Industry. For mesothelioma claims, this data shows sharp increases in numbers notified, from 1,951 in 2003, 2,641 in 2007 and, provisionally, 3,052 in 2008. These figures represent 100% of the UK Insurance Market and include all claim notifications, including those settled at no cost.

5.4.2. IIDB

Industrial Injuries Disablement benefit ("IIDB") is a weekly allowance provided on a 'no fault' basis to people suffering from a recognised employment-related condition provided that they can demonstrate that they were employed.

The Department of Work and Pensions ("DWP") collects statistics for IIDB awards at a detailed level including age band and nature of condition. In June 2009 they shared the following statistics on IIDB awards for males with the Working Party. Numbers are rounded to the nearest ten and were qualified as 'provisional and subject to revision'.

Table 20: Number of Male Mesothelioma IIDB Benefit Awards

	Year					
Age Band	2003	2004	2005	2006	2007	to 2008 Q3
30 to 34	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0
40 to 44	10	10	0	0	0	0
45 to 49	10	10	10	20	10	10
50 to 54	50	40	50	40	30	40
55 to 59	140	130	140	120	110	70
60 to 64	190	210	250	190	230	160
65 to 69	210	250	270	290	280	220
70 to 74	180	230	270	240	280	240
75 to 79	190	200	230	230	280	200
80 to 84	90	130	130	150	160	150
85 plus	20	30	60	50	70	60
Total	**1,090**	**1,240**	**1,410**	**1,330**	**1,450**	**1,150**

The data shows an increase of about 30% from 2003 to 2007 and a further 10% or so to 2008 Q3. These rates of increase are broadly consistent with the insurance industry data collected by the Working Party.

Although there will be a broad correspondence between numbers of IIDB awards and numbers of insurance claimants, there are differences:

- Because IIDB is 'no fault' there may be awards made where no employer is deemed liable for exposure and therefore there is no employers' liability claim.

- Where mesothelioma is diagnosed after death no IIDB award will have been made; however it is possible (as long as the claim is made within three years of death) that there will be an insurance-related claim.

Because of these differences we have not investigated this data further beyond noting that the change in claimant death ratios are broadly consistent with the CRU and insurance industry claim experiences.

5.4.3. Compensation Recovery Unit (CRU)

The CRU, part of the DWP, works with insurers, solicitors and DWP customers to recover (in the context of asbestos-related claims) amounts of social security benefits paid where a compensation payment has also been made. The CRU is responsible for recoveries in England, Scotland and Wales. A separate unit, reporting to the Department for Social Development in Northern Ireland, is responsible for collection of recoveries in Northern Ireland.

When an insurer is notified of a claim, a standard claim form must be completed within 14 days of notification and submitted to the CRU. This form is not an admission of liability and is completed for all claims, including those that may not eventually succeed.

The CRU will therefore be informed of all asbestos-related claims giving rise to compensation, whether from the insurance industry or the Government.

The following table shows data provided to the Working Party under a Freedom of Information request. Numbers are for male *claimants* (not claims) against the insurance industry or the Government and including a small number of public liability alongside employers' liability claimants. Columns are financial years.

Table 21: Male Mesothelioma Claimants Recorded by the CRU

	Year of First Claim Receipt								
Age Band	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-(part year)	Total
< 45	0	9	6	1	3	4	3	0	26
45 to 54	30	42	22	43	40	42	41	1	261
55 to 59	85	100	80	96	99	89	84	17	650
60 to 64	110	134	151	154	173	190	224	16	1,152
65 to 69	107	159	163	192	242	256	265	26	1,410
70 to 74	120	144	173	193	233	234	306	24	1,427
75 to 79	111	132	147	166	198	250	285	18	1,307
80 to 84	46	66	85	112	156	145	194	12	816
85 plus	24	28	32	48	68	87	111	10	408
Total	**633**	**814**	**859**	**1,005**	**1,212**	**1,297**	**1,513**	**124**	**7,457**

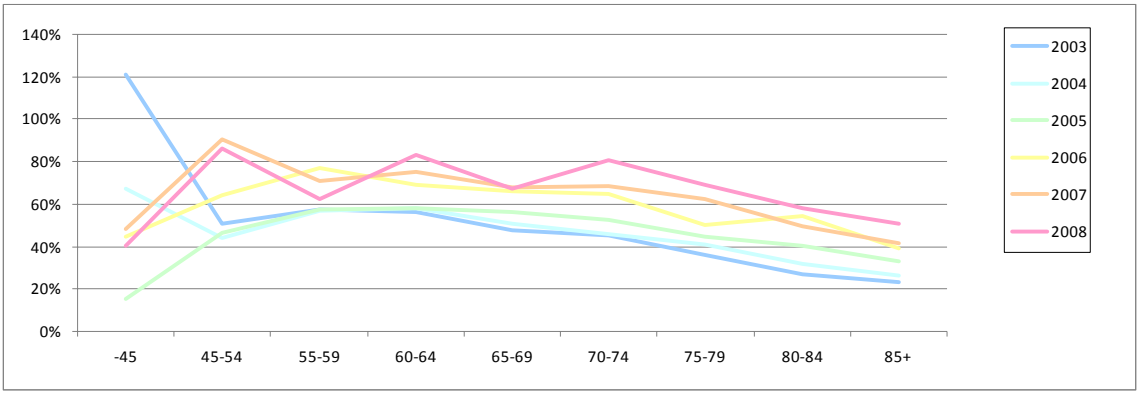
Note that the 2009-2010 figures represent only part of this financial year.

Similarly to the IIDB data, the rate of increase of the CRU data is broadly comparable with the insurance industry data. Given the direct correspondence between an insurer being notified of a claim and registering the claim with the CRU, however, this data should give a reliable guide to the overall industry picture.

About 10% of registrations with the CRU are withdrawn without settlement. Note that the typical nil claim rate for mesothelioma *claims* is much higher, over 20%. The difference is that the withdrawal of a CRU registration represents a claimant failing with any insurance claim, not just a claim against one particular insurer. In using the above data to build a picture of claimant death ratios over time, we have adjusted for this 10% withdrawal rate for the conversion from financial years to calendar years and for an assumed 1% proportion of public liability claims.

The following graph shows the results of this work grouped by age band. **The overall ratio (including Government) has increased from 43% in 2003 to 63% in 2007 and an estimated 69% in 2008.**

Figure 34: Claimant Ratio by Age and Year



The denominator for the ratio is the number of deaths as reported by the HSE each year. At the time of analysis the HSE had published deaths in Great Britain for 2006 but not 2007 nor 2008. HSE deaths for 2007 were estimated by grossing up mesothelioma deaths as reported by the World Health Organisation ("WHO") for 2007[13] by the average factor by which the HSE had grossed up previous WHO figures. This estimate, 1,811 deaths, has proved very close to the actual HSE figure published in October 2009. For 2008, the only figure available is an ONS estimate included in a parliamentary answer reported in Hansard earlier this year[14]. This figure is not age banded and therefore the total estimate (1,905 deaths) and the assumed age banding in the above graph is conjectural.

5.5. Predicting the future

It is clear that claimant death ratios have risen and there have been structural changes in the process which will have served to increase the ratio. It has not proved possible, however, to find quantitative evidence of the impact of these changes. In some areas, such as changes across the UK in pre-death diagnosis rates, data may be collected but we have not been able to find it. In other areas, such as increasing awareness of financial compensation, there is no way of quantifying the impact.

Interpretation of recent developments and estimation of the future is therefore necessarily subjective and judgemental and will, for an individual insurer, depend on several factors including that insurer's own recent experience and reserving approach. We make no attempt to limit the scope of judgement that each insurer will make. We do, however, set out below a number of questions that each insurer should ask itself in forming a view.

These questions are:

- Have the structural changes worked their way through?
- Would rates have risen absent these changes?
- Why have rates risen faster at older ages? Does this point to some sort of maximum level?
- Could 100% of mesothelioma sufferers successfully claim? If not, what is the maximum possible level?

The Working Party has collected some further information in support of the last question. There are four known areas in which mesothelioma sufferers will not be able to make a successful employers' liability claim:

[13] www.who.int/whosis/mort/download/en/index.html
[14] www.publications.parliament.uk/pa/cm200809/cmhansrd/cm090702/text/90702w0001.htm

- Most members of the armed forces, as claims for mesothelioma may only be made in respect of exposure after 1987,
- People who were self-employed throughout their careers,
- People who were exposed to asbestos through domestic or background exposure.

5.5.1. Armed forces

Information provided to the ABI shows that the Ministry of Defense receives about 50 mesothelioma claims each year from ex-civilian personnel. The ratio of service to civilian personnel is about 2:1. On the face of it this points to about 100 sufferers per year from ex-service personnel, or about 5% of the UK total. However, a proportion of these people will have been exposed during employment outside the armed forces. We put a tentative estimate for the proportion of sufferers who are unable to claim because their exposure was through the armed forces at about 1%.

5.5.2. Self-employed

ONS statistics indicate that about 15% of the total workforce, and about 23% of the UK construction workforce, is full-time self-employed. However it is again likely that a proportion of these people will have been exposed as an employee at some time in their careers. We put a tentative estimate for the proportion of sufferers who are unable to claim because their exposure was through self-employment at about 2%.

5.5.3. Domestic or background exposure

Prof. Peto's case study of mesothelioma sufferers[15] indicated that about 15% of male cases cannot be attributed to any known occupational exposure. The study was extensive but it remains possible that it will not prove to be representative of the UK population as a whole. We put a tentative estimate for the proportion of sufferers who are unable to claim because their exposure has no known occupational cause at about 10%.

Thus the total (tentative) estimate of sufferers who will not be able to make an employers' liability claim is 13%. Given the large uncertainties here, it is probably reasonable to say that the figure is somewhere between 10% and 15%, with a maximum possible claimant death ratio somewhere between 85% and 90%.

Note that sufferers who were exposed to asbestos in the course of their employment but who can find no insurance coverage will not be able to bring a successful employers' liability claim. We have been unable to find statistics to estimate how many people this affects. This may also be judgmentally factored into the maximum claimant death ratio.

5.5.4. Claimant Death Ratios for the UK Insurance Market

The claimant death ratios analysed cover males in England, Scotland and Wales. Females are excluded as are males in Northern Ireland. The ratios include claimants who receive compensation from the Government. Therefore adjustments need to be made to determine claimant death ratios appropriate for the UK Insurance Market.

The proportion of claims that are paid by the Government has been estimated from data provided by the CRU. It is not possible to determine the exact proportion as not all claims can be determined as either Government or Insurance Market. Some may be a mixture of both. It has been assumed that 20% of all claimants relate to the Government. This ratio has been fairly stable over the last few years. In 2008, however, the ratio appears to be closer to 16%. We have assumed that the 2008 Government percentage is a one-off and not indicative of a long-term trend. If the Government percentage were to fall relative to the Insurance Market, then the estimated costs for the Insurance Market outlined in this paper may be underestimated. This trend should be monitored in the future (see Section 10).

[15] www.hse.gov.uk/research/rrpdf/rr696.pdf

The CRU data records about one claim from a female for every ten claims from males. This data includes third party as well as employers' liability claims. We have concluded from the market data collection that the number of employers' liability mesothelioma claims from females has increased from around 1% in 2003 to around 3% in 2008. The Working Party has assumed that this ratio is likely to be around 5% of the number of claims from males in the future. The current female claimant death ratio is estimated to be of the order of 20%. This could imply a potential for large increases in future claims. However, Prof. Peto's study indicated that 78% of female mesothelioma sufferers could not identify any occupational asbestos exposure. The Working Party recommends (see Section 10) that the number of female claimants is monitored in the future.

The Northern Ireland HSE reports that there are about 40 mesothelioma deaths per year from males and females combined. We have not sought data on claims from the Northern Ireland CRU department so it isn't currently possible to estimate claimant death ratios. However, given that the population deaths projections and the claimant death ratios exclude Northern Ireland, it is necessary to adjust the projections for Northern Ireland claims. It is observed that considering the number of mesothelioma deaths in Northern Ireland compared to the number in Great Britain, Northern Ireland represents around 2%, and therefore this adjustment in the estimated claim numbers has been made to allow for Northern Ireland claims.

These factors can be brought together to determine the claimant deaths ratio for the UK Insurance Market over the period 2003 to 2008, see Section 5.6. These factors can also be brought together to estimate the claims to claimant ratio. These calculations are set out below and referred to in Section 3:

Table 22: Derivation of Claims to Claimant Ratio

Notification Year	Total UK Ins. Market claims excl Nil	Male GB Claimants excl w/d & Gov	Female % of Male	GB Claimants	NI % of GB	UK Claimants	Claims to Claimants Ratio
2003	1,540	547	0.8%	551	3.1%	568	2.7
2004	1,584	605	1.5%	615	3.2%	634	2.5
2005	1,723	692	1.1%	700	2.3%	716	2.4
2006	1,931	828	1.5%	841	2.9%	865	2.2
2007	2,066	915	2.4%	937	2.0%	956	2.2
2008	2,411	1,095	3.2%	1,130	2.2%	1,154	2.1

The total UK insurance market claims have been grossed up from the market survey data assuming the market survey covered 80% of the overall market. The 80% was used as this gave an overall claims to claimant ratio of 2.1 in 2008. This is consistent with the claims to claimant ratio derived from the claims data sampled (see Section 6). There were consistent responses from 2003 onwards (i.e. no changes in participants being able to provide data) so the 80% would be relevant for all of these years.

The fall in the claims to claimant ratio may be due, at least in part, to the Compensation Act 2006. The 2006 Act makes it clear that potentially liable employers are jointly and severally liable for the indivisible injury that is mesothelioma. Thus a claimant only has to find a single solvent liable employer and / or their insurer in order to recover 100% of their damages. Whilst technically this was the position following Fairchild in 2003 the reality was that until the Compensation Act 2006 was passed most claimant lawyers still gathered full employment details and pursued their client's claims against all known defendants. Since the passing of the 2006 Act insurers are seeing increasing evidence of claimants seeking early full damages from a single identified and solvent insurer. This then leaves that insurer to use the provisions of the Compensation Act 2006 to retrospectively seek recovery from other potential defendants to the claimant's case. This change in market behaviour could have an influence on the number of claims per claimant.

5.5.5. Other issues

Further considerations should be borne in mind.

First, the 2008 deaths data included in the graph in Section 5.4.3 is conjectural. A different mix of age bands in the actual deaths could change the estimated overall 2008 ratio.

The CRU data includes registrations to the end of May 2009, two months into the financial year. On the face of it, the number of registrations has actually fallen slightly. Whilst this data lacks the volume to provide credibility, it is very important for insurers to consider the firmer evidence of recent experience (including claim numbers in 2009) in forming a view of the future.

An approach that projects the same overall claimant death ratio in the future already includes some implicit allowance for increases at each age band, because of the aging of the future mesothelioma claimant population.

In creating claimant death ratios as the ratio between the number of claims and the number of deaths, there is an implicit assumption that the date of claim and date of death are fairly close. The reality is that claims are made at varying times between diagnosis and three years (statute of limitations) after death. Changes in the rate of pre-death diagnosis may have the impact of bringing some claims forward so that claims are temporarily accelerated relative to deaths. This could cause a temporary increase in the claimant death ratio that levels off after the rate of pre-death diagnosis reaches a steady state.

5.6. Possible Future Scenarios

As Section 5.5 demonstrates, predicting future claimant death ratios is fraught with difficulty. Nevertheless, in order to illustrate the impact on the potential insurance cost of mesothelioma claims, the Working Party has put forward five scenarios as detailed in the tables below for future age banded claimant death ratios.

These scenarios may assist in the projection of future liability. They are by no means intended to cover all possible future experience. For example, a fixed claimant death ratio across all age bands together (as suggested by the original Working Party paper) is one of many possible alternatives. We make no attempt to prescribe the basis on which claimant death ratios are estimated.

Note that the scenarios outlined below are for male claimants in Great Britain including Government claims. These are then adjusted at the total level to exclude Government, allow for female claimants and claims from Northern Ireland to derive the total Insurance Market projections (see Appendix D).

The Government proportion of all claims is assumed to continue to be around 20% in the future. It is noted that this proportion appeared to be around 16% in 2008 from the data obtained from the CRU. This is assumed to be a one-off occurrence, and not reflective of a future trend.

The proportion of female claims compared to male claims is assumed to be 1% in 2003 rising to 2.4% in 2007 and 3.2% in 2008. It is then assumed to be 5% in 2009 and then to remain at this level in all future years.

The proportion of claims from Northern Ireland is assumed to have been 2.3% in the past and is assumed to continue at 2.3% in the future.

Allowing for the above adjustments implies that the claimant death ratio for the **UK Insurance Market is estimated at 36% in 2003 rising to 61% in 2008.**

Scenario 1

Claimant death ratios by age band are fixed from 2009 onwards. The actual age banded ratios up to age 74 have been amalgamated into one average as there is no evidence of any trend in ratios up to that age. Note this scenario implies, as average sufferer ages increase, a decline in the overall claimant death ratio in the future.

Table 23: Scenario 1 Claimant Death Ratio Assumptions by Age

Cal Yr	0-44	45-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
2008	40%	86%	62%	83%	67%	81%	69%	58%	50%
2009	75%	75%	75%	75%	75%	75%	69%	58%	50%
2010	75%	75%	75%	75%	75%	75%	69%	58%	50%
2011	75%	75%	75%	75%	75%	75%	69%	58%	50%
2012	75%	75%	75%	75%	75%	75%	69%	58%	50%
2013	75%	75%	75%	75%	75%	75%	69%	58%	50%
2014	75%	75%	75%	75%	75%	75%	69%	58%	50%
2015	75%	75%	75%	75%	75%	75%	69%	58%	50%
2016	75%	75%	75%	75%	75%	75%	69%	58%	50%
2017	75%	75%	75%	75%	75%	75%	69%	58%	50%
2018	75%	75%	75%	75%	75%	75%	69%	58%	50%
2019	75%	75%	75%	75%	75%	75%	69%	58%	50%
2020	75%	75%	75%	75%	75%	75%	69%	58%	50%
2030	75%	75%	75%	75%	75%	75%	69%	58%	50%
2040	75%	75%	75%	75%	75%	75%	69%	58%	50%
2050	75%	75%	75%	75%	75%	75%	69%	58%	50%

Scenario 2

Ratios across all age bands increase for ten years. The rate of increase each year is a set (decaying) proportion of the increase in the previous year.

Table 24: Scenario 2 Claimant Death Ratio Assumptions by Age

Cal Yr	0-44	45-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
2008	40%	86%	62%	83%	67%	81%	69%	58%	50%
2009	75%	75%	75%	75%	75%	75%	70%	59%	53%
2010	75%	75%	75%	75%	75%	75%	70%	61%	55%
2011	75%	75%	75%	75%	75%	75%	71%	62%	57%
2012	76%	76%	76%	76%	76%	76%	72%	64%	58%
2013	76%	76%	76%	76%	76%	76%	72%	65%	60%
2014	76%	76%	76%	76%	76%	76%	73%	66%	61%
2015	76%	76%	76%	76%	76%	76%	73%	67%	63%
2016	76%	76%	76%	76%	76%	76%	74%	68%	64%
2017	77%	77%	77%	77%	77%	77%	74%	69%	65%
2018	77%	77%	77%	77%	77%	77%	74%	69%	66%
2019	77%	77%	77%	77%	77%	77%	74%	69%	66%
2020	77%	77%	77%	77%	77%	77%	74%	69%	66%
2030	77%	77%	77%	77%	77%	77%	74%	69%	66%
2040	77%	77%	77%	77%	77%	77%	74%	69%	66%
2050	77%	77%	77%	77%	77%	77%	74%	69%	66%

Scenario 3

As scenario 2 but rates continue to increase to 2050.

Table 25: Scenario 3 Claimant Death Ratio Assumptions by Age

Cal Yr	0-44	45-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
2008	40%	86%	62%	83%	67%	81%	69%	58%	50%
2009	75%	75%	75%	75%	75%	75%	70%	59%	53%
2010	75%	75%	75%	75%	75%	75%	70%	61%	55%
2011	75%	75%	75%	75%	75%	75%	71%	62%	57%
2012	76%	76%	76%	76%	76%	76%	72%	64%	58%
2013	76%	76%	76%	76%	76%	76%	72%	65%	60%
2014	76%	76%	76%	76%	76%	76%	73%	66%	61%
2015	76%	76%	76%	76%	76%	76%	73%	67%	63%
2016	76%	76%	76%	76%	76%	76%	74%	68%	64%
2017	77%	77%	77%	77%	77%	77%	74%	69%	65%
2018	77%	77%	77%	77%	77%	77%	74%	69%	66%
2019	77%	77%	77%	77%	77%	77%	75%	70%	67%
2020	77%	77%	77%	77%	77%	77%	75%	71%	68%
2030	78%	78%	78%	78%	78%	78%	77%	75%	74%
2040	78%	78%	78%	78%	78%	78%	78%	77%	76%
2050	78%	78%	78%	78%	78%	78%	78%	78%	77%

Scenario 4

Within ten years the claimant death ratio in each age band reaches 90% of the theoretical maximum assuming 13% of sufferers remain unable to claim. As in scenarios 2 and 3 the rate of increase in each age band decays exponentially.

Table 26: Scenario 4 Claimant Death Ratio Assumptions by Age

Cal Yr	0-44	45-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
2008	40%	86%	62%	83%	67%	81%	69%	58%	50%
2009	76%	76%	76%	76%	76%	76%	72%	64%	59%
2010	76%	76%	76%	76%	76%	76%	74%	68%	65%
2011	77%	77%	77%	77%	77%	77%	75%	71%	69%
2012	77%	77%	77%	77%	77%	77%	76%	73%	72%
2013	78%	78%	78%	78%	78%	78%	77%	75%	74%
2014	78%	78%	78%	78%	78%	78%	77%	76%	75%
2015	78%	78%	78%	78%	78%	78%	78%	77%	76%
2016	78%	78%	78%	78%	78%	78%	78%	77%	77%
2017	78%	78%	78%	78%	78%	78%	78%	77%	77%
2018	78%	78%	78%	78%	78%	78%	78%	78%	78%
2019	78%	78%	78%	78%	78%	78%	78%	78%	78%
2020	78%	78%	78%	78%	78%	78%	78%	78%	78%
2030	78%	78%	78%	78%	78%	78%	78%	78%	78%
2040	78%	78%	78%	78%	78%	78%	78%	78%	78%
2050	78%	78%	78%	78%	78%	78%	78%	78%	78%

Scenario 5

Within five years the claimant death ratio in each age band reaches 100% of the theoretical maximum assuming 13% of sufferers remain unable to claim. Increases are linear.

Table 27: Scenario 5 Claimant Death Ratio Assumptions by Age

Cal Yr	0-44	45-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
2008	40%	86%	62%	83%	67%	81%	69%	58%	50%
2009	76%	76%	76%	76%	76%	76%	72%	64%	59%
2010	78%	78%	78%	78%	78%	78%	76%	70%	66%
2011	81%	81%	81%	81%	81%	81%	79%	75%	73%
2012	84%	84%	84%	84%	84%	84%	83%	81%	80%
2013	87%	87%	87%	87%	87%	87%	87%	87%	87%
2014	87%	87%	87%	87%	87%	87%	87%	87%	87%
2015	87%	87%	87%	87%	87%	87%	87%	87%	87%
2016	87%	87%	87%	87%	87%	87%	87%	87%	87%
2017	87%	87%	87%	87%	87%	87%	87%	87%	87%
2018	87%	87%	87%	87%	87%	87%	87%	87%	87%
2019	87%	87%	87%	87%	87%	87%	87%	87%	87%
2020	87%	87%	87%	87%	87%	87%	87%	87%	87%
2030	87%	87%	87%	87%	87%	87%	87%	87%	87%
2040	87%	87%	87%	87%	87%	87%	87%	87%	87%
2050	87%	87%	87%	87%	87%	87%	87%	87%	87%

6. Mesothelioma Claimant Average Cost Per Claim

6.1. Summary

This section outlines how the mesothelioma average cost per claim model was constructed, and compares the approach to that adopted in 2004.

The Working Party obtained a sample of claimant costs for mesothelioma claims settling between 2001 and 2009 from 6 insurers. This data was collected through the ABI so that each insurer's data remained anonymous. This enabled claimant costs to be modelled more thoroughly than before. This has revealed two key aspects:

- The claimant costs effectively assumed in the 2004 Working Party projections were lower than the true claimant costs; and
- There is a larger age-related component within the claimant costs than was previously assumed.

These two factors have off-setting impacts on the overall Insurance Market projections compared to those made in 2004.

The model developed is fairly complex, but it has been designed such that it is fairly simple to use alternative assumptions. The model is available, complete with documentation, on the Actuarial Profession's website (see Appendix C for details). It should be noted that this model relies on output from other models outlined in this paper.

Whilst the model will give a reasonable estimate of the total claimant costs, it could over estimate the insurance cost due to the impact of FSCS payments. This is discussed further in Section 6.4.3.

6.2. Comparison of 2004 and 2009 Working Party Approaches

6.2.1. 2004 Approach

The 2004 Working Party derived assumptions for the average cost of each mesothelioma claim using a model comprising of two main components:

- A 'lost years' or age-related component comprising a loss of earnings element up to age 65 and a loss of pension element from age 65 to death; and
- A 'fixed' component to allow for all other indemnity and legal costs.

The first of these was calculated as the product of a multiplicand (representing the wage/salary and pension) and a suitable factor derived from the Ogden Tables, which varied by age and allowed for the claimant's life expectancy based on suitable mortality and investment return assumptions.

However, a review by the Working Party led to a conclusion in the 2008 update paper that further elements of the total claims cost were in fact age dependent. In addition, the review also highlighted that differences existed in the size of some of the components of the total claim cost depending on whether the claimant was living or deceased at the time of settlement. These observations have led the Working Party to revise its approach for estimating the average cost of mesothelioma claims as described in the following paragraphs.

6.2.2. 2009 Approach

In order to obtain greater insight into the make up of the overall mesothelioma average claims cost, the Working Party decided to gather sample data from a number of major insurers. This sample contains a breakdown of costs between the different heads of damage to ascertain whether each of these was age dependent and also whether they differed depending on whether the claimant was living or deceased at the time of settlement.

Following discussions with various claims handlers, we decided to separate mesothelioma claim costs into the following component heads of damage, which are described in more detail in Section 6.3.2:

- General Damages;
- Special Damages;
- CRU/PWCA Amounts;
- Bereavement Award;
- Funeral Expenses;
- Costs of Care;
- Miscellaneous Expenses;
- Other; and
- Legal Expenses.

A model was then constructed to project each of these heads of damage in turn by year of settlement and the age of the claimant at settlement, separately for living and deceased claimants (if applicable). Allowance was also made for the predominant driver of inflation separately for each head of damage. These amounts were then aggregated to produce a total average cost for mesothelioma claims in each future settlement year for each different age at settlement, separately for living and deceased claimants.

Our analysis of the sample data and the selection of the different assumptions for each head of damage is discussed in the Section 6.3.

6.3. Data Sample

6.3.1. Background

The sample comprised the claimant costs of approximately 350 mesothelioma claims settling between 2001 and 2009 from 6 insurers. The claim amounts represented the 100% claim value (i.e. the indemnity amount that the claimant receives) and not the respective insurer's share of the cost. The sample data did not include legal expenses/costs that would normally be allocated to the claim in addition to the indemnity costs. Allowance was subsequently made in the model for this element of the total claims cost. This is discussed further below.

The claims sample was made up of a mixture of mesothelioma claims from England, Wales and Scotland and hence should provide a reasonable estimate of the average settlement costs for mesothelioma claims in Great Britain. Whilst there are differences in the compensation amounts between Scotland and the rest of Great Britain due to differences in the respective legal systems, this differential was not measured as part of this exercise.

The data collected did not contain a specific indicator as to whether the claimant was living or deceased at the time of settlement. We decided that the best proxy available for this was to identify those claims with a non-zero bereavement award and to classify these claimants as deceased on the basis that we would not expect living claimants, in general, to receive a bereavement award. The data was collected in anonymously so that data from an individual insurer could not be identified and, further, no individual could be identified from the sample data collected.

6.3.2. Claim Cost Components within Data Sample

The following paragraphs provide a brief explanation of the main claim cost components (i.e. separate heads of damage) that make up the total cost of a typical mesothelioma claim. In addition, we have included comments based on the a priori views of various experienced claims handlers as to the factors that will potentially affect the size of the respective claim cost components.

6.3.2.1 General Damages

This element of the claims cost represents the amount awarded to compensate for any pain, suffering and loss of amenity caused. It is usually a fixed amount as set out in the Judicial Studies Board ("JSB") Guidelines. The current version (version 9 published in 2008) suggests a lower limit of £52,500 and a higher limit of £81,500, although in exceptional circumstances an award outside this range may be granted.

The amount will vary according to the individual circumstances of the case, with a longer period of suffering typically leading to a higher compensation amount. In addition, it is usually thought that a younger claimant would be more likely to achieve compensation at the higher end of the scale, although claims handlers do not believe that this should be a strong influence. The claims handlers believe that the majority of cases should be settled at the lower end of the range. The claim handlers do not expect any difference between the amounts paid to living and deceased claimants.

The JSB Guidelines state that compensation levels should increase in line with the Retail Price Index (RPI). This can be cross-checked against past editions of the JSB Guidelines. A summary of the lower, mid and upper points from previous versions of the JSB Guidelines is provided in the following table:

Table 28: General Damages Award Sizes from JSB Guidelines

JSB Guidelines #	Year	Low	Mid	High
5	2000/1	40,000	45,000	50,000
6	2002/3	40,000	50,000	60,000
7	2004/5	45,000	57,500	70,000
8	2006/7	47,850	61,075	74,300
9	2008/9	52,500	67,000	81,500

Over the full period the inflation rate has been around 5%, and more towards 4% over the past 4 years. Note that the inflation rate has also been higher for the upper band compared to the lower band. This is considered by the claims handlers to be a correction that was specifically made and hence therefore not necessarily to be repeated in the future. Based upon this observed experience, and in particular, the difference over the last few years with the Retail Price Index, we have used an assumption in respect of future inflation for the general damages claim element of 2% greater than the assumed underlying RPI.

6.3.2.2 Special Damages

This element of the claims cost represents the amount awarded to compensate the claimant for any future loss of earnings and any future loss of pension entitlement. It is generally calculated as the product of a 'multiplicand' (the amount being compensated for i.e. salary and/or pension) and a 'multiplier' (the equivalent of an Ogden Factor to allow for expected mortality and the time value of money). The amount payable will typically vary between deceased and living claimants as discussed below.

For **deceased claimants**, where there are dependants, the first step in calculating the size of the claim is to determine the income and/or value of the services that the deceased would have provided. These could have included some or all of the following:

- Wages – the deceased could have been expected to be employed to say age 60 to 70;

- Pensions – need to consider both state and occupational;
- Benefits – the claimant might have been in receipt of state benefits and he would have expected these to have continued had he not contracted mesothelioma; and
- Services - such as DIY and gardening. These tend to be paid at a fixed amount per annum up to a certain age, say 75.

The first three items would normally be summed together and the multiplicand calculated as:

2/3 * (total claimant income + independent family income) – independent family income

It is likely that the income will be staged by age (e.g. 55 to 65, 65+) so that the appropriate multiplier is used. Services will generally be included as a separate item. The factor of 2/3 is usually increased to 3/4 if children are involved.

In cases where there are no dependants, no claim will typically arise.

For **living claimants**, the claim amount relates to the claimant's 'lost years' of earnings. The income to be replaced here is the surplus of the claimant's expected earnings over the amounts the claimant would have been expected to spend on living expenses (e.g. food and bills). This will vary depending on the different levels of income (e.g. wages, pension etc.) The multiplicand is then usually estimated as 50% of the claimant's total income (i.e. that expenses are typically assumed to be half the sufferer's income).

It can be seen that if the independent family income is greater than half of the claimant's total income, then the multiplicand for a deceased claimant will be less than the multiplicand for a living claimant with the same total income. The converse is also true, and claims handlers believe that this scenario will usually be the norm. Therefore, claims handlers believe that there may be a slight differential between living (lower cost) and deceased claimants (higher cost).

In general, the multiplicand should increase in line with wage inflation with a slight reduction due to the element relating to the allowance for services, which tends not to increase at the same rate and in addition is not usually paid beyond a certain age. There has also recently been an increase in the propensity to claim occupational pensions, and if this trend were to continue in the future, it would lead to inflationary increases above wage inflation.

The **multiplier** for both deceased and living claimants is usually calculated based on the Ogden Tables. Adjustments will often be made for the claimant's state of health relative to the norm and other factors such as whether the claimant smoked. According to claims handlers the adjustments usually made range from a reduction of two years to an increase of up to five or six years in the claimant's age. This is consistent with the Working Party's findings based on the sample data, that a 5 year increase to the claimant's age is the best fit as described below. The multiplier will be an amalgamation of a number of separate multipliers (for example, one applying to the wage component and a separate one applying to the pension component). Since Ogden factors vary with age, so will this component of the total claim cost.

6.3.2.3 CRU / PWCA Amounts

The CRU element of the claims cost relates to state benefits previously paid to the claimant, which are subsequently recovered from the insurer(s). In the sample data, the CRU amount related to the amount that has not been off-set against any other elements of the claim cost and therefore needs to be paid directly to the CRU, thus forming part of the overall claim cost to the insurer. The sample data has been constructed such that an individual head of damage is recorded gross of the CRU off-set and hence the CRU element of the claims cost is only the amount that could not be off-set against a separate head of damage.

This may be clarified by the following example:

Assume that state supported care benefits received by the claimant amounted to £2,500 and that they can be fully off-set against the amount payable by the insurer. Assume further that the claim costs in relation to the cost of care were £7,500. In the sample data this would be recorded as £7,500 under the cost of care head of damage and zero in the CRU element. In reality, the claimant receives £5,000 from the insurer(s) (£7,500 off-set by the £2,500) and £2,500 is provided to the CRU. If the amount could not be off-set then the total amount paid would now be £10,000, with the insurer paying the claimant £7,500 and the CRU £2,500. These amounts would then be recorded as such in the sample data.

The latter will be the case for the payments made in line with the Pneumoconiosis etc. (Workers' Compensation) Act 1979 (PWCA). Prior to October 2008, the PWCA amount was fully off-set and not recovered by the CRU. However, subsequently, whilst the benefit can still be off-set, it will also be recovered from the insurer by the CRU. Hence the overall claims cost will increase. The PWCA amounts recorded in the sample data were the relevant amounts for information only.

The following are relevant benefits that fall under the remit of the CRU:

- IIDB (Industrial Injury Disability Benefit) – cannot be off-set;
- AA (Attendance Allowance) – can be off-set;
- CAA (Constant Attendance Allowance)– can be off-set;
- DLAC (Disability living allowance care component) – can be off-set (if relevant); and
- DLAM (Disability living allowance mobility component) – can be off-set (if relevant); and
- PWCA (Pneumoconiosis etc. (Workers Compensation) Act 1979 – Post October 2008 – can be offset.

These amounts are expected to increase in line with RPI based on the JSB Guidelines. The claims handlers do not expect that there should be any difference between living and deceased claimants or variation according to the age of the claimant, except that younger claimants can claim for benefits linked to loss of income and older claimants may not be aware of all the awards that can be claimed for. It is therefore possible that some age differential will be seen.

6.3.2.4 Bereavement Award

This element of the claims cost is paid in situations when the claimant is deceased at the time the claim is settled and where there is also a surviving spouse (or civil spouse).

The amount payable is fixed depending solely on the date of death and is increased periodically by the Ministry of Justice. Historical amounts awarded are as follows:

- £3,500 from 1982 to 1989
- £7,500 from 1990 to April 2002
- £10,000 from April 2002 to December 2007
- £11,800 from 1st January 2008

As the Ministry of Justice are responsible for determining any increases to the award, it is likely to increase in line with RPI as per the JSB guidelines. This is evident from the above awards: The latest revision saw an 18% increase after 6 years at the previous level, which equates to under a 3% per annum increase over that period.

By definition some deceased claimants will not receive this award (as they have no spouse). The claim handlers believe the number of claimants in this category is fairly low. They estimate around 20% of deceased claimants fall into this category. However, notwithstanding this, we consider that the existence or otherwise of a bereavement award to be the most reliable indicator in the sample data as to whether a claimant was deceased or living at the time the claim is settled. A bereavement award should not, in theory, be paid to living claimants.

6.3.2.5 Funeral Expenses

This element of the claims cost is intended to cover the costs associated with a funeral.

According to claims handlers these are currently likely to be in the region of £2,600 to £3,000 in total per claimant. These have seen increases in recent years as funeral costs have escalated, but this is not thought likely to continue indefinitely.

These costs are most likely to increase in the future in line with a mixture of RPI and wage inflation, with the price-related element potentially being specific.

An allowance for funeral costs is often incorporated into settlement amounts, regardless of whether the claimant is living or deceased at the time of settlement. Therefore the number of claims including a component for funeral expenses is expected to exceed the number of deceased claimants. Consequently, it is not regarded as a particularly reliable indicator of whether a claimant is deceased at the time of settlement.

It is unlikely that there will be a differential in the funeral costs by age. Funeral costs have been assumed to differ between living and deceased claimants as they will not be incorporated in all cases for living claimants.

6.3.2.6 Care Costs

This element of the claims cost relates to the amount of care required by the claimant, which is typically heavily weighted towards the last few months of the claimant's life. According to claims handlers it is currently typically around £7,500 to £10,000 per claimant. It is usually calculated by multiplying a rate per hour by the number of hours involved. In addition, there can also be an additional amount paid if any special care equipment is needed by the claimant. There is potential for the care costs for the claimant to increase beyond the average rate of inflation in the future.

These costs are likely to increase in line with the hourly salaries of care assistants and so should be linked to (care) wage inflation. Furthermore, the size of this part of any claim could increase in the future if the longevity of claimants post diagnosis increases due to improved medical procedures. In general, these costs should not vary with age and deceased and living claimants should receive roughly the same amount.

6.3.2.7 Miscellaneous Expenses

This element of the claims cost covers the costs incurred in relation to travel, medication, aids etc. Whilst these amounts could vary by age, this was not shown to be the case within the sample data, and hence no differential has been assumed. These amounts are also unlikely to vary between living and deceased claimants. They are most likely to increase in line with RPI.

6.3.2.8 Other

This element of the claims cost will relate to interest on out-of-pocket expenditure prior to the settlement of the claim along with interest on the amount of general damages awarded from date of issue of proceedings until the date of settlement. In the sample data it could also include any differences due to specific negotiations for certain cases, for example, if a higher or lower amount is agreed than is ordinarily paid for one of the individual heads of damage but is not reflected in the appropriate head of damage.

It will also include an allowance for previous loss of income, such as wages lost in the period between the claimant having to give up work at the onset of the illness and the date of the settlement or death, if earlier. This portion of the costs is therefore likely to increase in line with wage inflation. The amounts are assumed to be the same for living and deceased claimants, with no differential by age.

6.3.2.9 Legal Expenses

The sample data collected did not include an allowance for legal costs. A separate piece of analysis was carried by the Working Party to derive a suitable age dependent relationship to an estimate of the total average legal cost for the Insurance Market in relation to mesothelioma claims. No differential between living and deceased claimants was incorporated and it was assumed that amounts would increase in line with wage inflation.

6.3.2.10 Ogden Factor Analysis

Based on the sample data we were able to infer the average adjustment applied to the standard Ogden Factors to allow for the different mortality of the average mesothelioma sufferer compared to the population at large.

From the sample data we calculated the average Ogden Factor used in the claim payments for each age at settlement. We then compared these with the standard 6th Edition Ogden Factors for life (males) and used least squares regression to identify the most appropriate age adjustment to make to reflect the life expectancy of the claimants. This analysis indicated that an increase of 5 years to the age should be used – i.e. for a claimant aged 70 the standard factor for age 75 should be employed as the multiplier in the calculation of special damages element of the claims cost.

6.3.3. Analysis of Data Sample

The following table shows the average levels of compensation in relation to each of the heads of damage as observed in the data sample, along with the average age at settlement and the average implied Ogden Factor:

Table 29: Mesothelioma Claims Cost by Head of Damage

Averages From Sample Data	Average Amount (£)	Proportion of Total Cost
Average Age at Settlement	*69*	
Average Ogden Multiplier	*10*	
Special Damages	65,308	42%
PSLA (pain suffering and loss of amenity)	57,257	37%
CRU	3,525	2%
PWCA	6,574	4%
Bereavement Award	5,536	4%
Funeral Expenses	1,901	1%
Care Cost	7,708	5%
Miscellaneous Expenses	4,765	3%
Other	1,507	1%
Total	**154,081**	**100%**

From this, it is immediately apparent which components are the main drivers in the total compensation amounts paid by insurers. The special damages element which comprises the product of the Ogden Factor and the loss of income multiplicand and the general damages award relating to pain, suffering and loss of amenity make up the vast majority (almost 80%) of the total cost and consequently will be the areas of greatest impact in the Insurance Market projections.

The data relating to each of the heads of damage discussed above was then considered separately to ascertain whether there were any apparent material age-based relationships. This was completed by fitting two straight lines through the data points, one using all data points, the other using the average values for each age at settlement. This investigation was performed separately for living and deceased claimants, as well as for all claimants combined.

Following this analysis, the results were considered along with the views from claims handlers, to decide on which elements of the claims cost should be considered as age dependent, and for which elements of the claims cost there should be a differential between living and deceased claimants.

Decisions were also taken as to the most relevant inflation index to apply, between RPI or wage inflation, with a specific addition to RPI to reflect court award inflation. For simplicity we decided that each head of damage should have only one category of inflation applying to it.

The table below shows the relevant projection assumptions applied for each of the different heads of damage.

It can be seen from the table below that some variances exist between the assumptions we employed and the initial views of claims handlers, namely:

- General Damages inflation – 'Court' rate i.e. RPI +2% used as opposed to RPI as outlined in the JSB Guidelines reflecting the differentials observed in the past JSB guidelines.
- CRU – assumed to be age dependant and to differ between living and deceased claimants as observed in the sample data.
- Funeral costs – assumed to differ between living and deceased claimants as they will not be incorporated in all cases for living claimants.

Table 30: Summary of Mesothelioma Average Cost Assumptions

Head of Damage	Age Related?	Inflation Type	Live / Deceased Differential?
General Damages (Pain / suffering / loss of amenity)	Yes	Court (RPI + 2%)	No
Special Damages (loss of future income)	Yes	Wage	Yes
PWCA	No	RPI	No
CRU	Yes	RPI	Yes
Bereavement Award	No	RPI	Yes
Funeral Expenses	No	RPI	Yes
Care Costs	No	Wage	No
Miscellaneous Expenses	No	RPI	No
Other	No	Wage	No
Legal Expenses	Yes	Wage	No

Finally the sample data was used to select a base value (which we chose to be the claims cost for a 68 year old settling a claim in 2007) for each of the different heads of damage, differentiating between living and deceased claimants, as appropriate.

Different assumptions within the model were used for RPI, wage and court inflation.. We have based the model on an RPI assumption, assuming wage inflation is 1.5% above this level. Our central RPI assumption is 2.5% implying wage inflation of 4% and court inflation (for general damages) of 4.5%. The practitioner is encouraged to choose the base rate of inflation and wage and court differentials that they consider most appropriate.

6.4. Average Cost per Claim Projection

6.4.1. Projection

For each of the different heads of damage, we applied the assumed age relationships and inflation rates to the base level, to derive matrices of the expected claims costs by the age of the claimant at settlement and the settlement year. This can be done separately for living and deceased claimants if appropriate, though it was assumed in our projections that the mix between living and deceased claimants remained constant in the future at the level currently estimated. These matrices were then combined with the projected future mesothelioma insurance claim numbers to derive an expected future cost of mesothelioma claims to the Insurance Market. These results are detailed in Section 7.

6.4.2. Sense Checks

As a check the modelled settled claimant costs in the period 2007 to 2009 were compared to the actual claimant costs in the data sample. This check was performed by entering in the model the number of claims by age band, differentiating between living and deceased claimants, in the sample data, and comparing the derived modelled average claim amounts to the actual sample average claim amounts. The results are shown below.

Table 31: Mesothelioma Sample v Model Averages Cost Amounts

Settlement Year	Sample Data Average (excl. legal costs) (£)	Modelled Data Average (excl. legal costs) (£)	% Difference
2007	151,614	149,163	1.6
2008	144,071	145,352	0.2
2009	146,722	146,364	(0.2)

There are small differences, which may be explained by the banding of ages within the model. The number of claims within the sample for each settlement year for each age band split by living or deceased claimant will be small. It is therefore likely that the average age assumed for each age band is not equal to the actual average for the small number of claims, and hence small differences can arise. It is also noted that the sample average in 2007 is distorted by one particularly large claim.

Further, the claims data can be cross-referenced to the survey data collected (see Section 3). The average settled claim amount for a non-nil insurance claim settled in 2008 is around £80,000. It is assumed that on average these claims would have been notified in 2006 when it is estimated that the claims to claimant ratio was 2.2. This implies that the claimant cost underlying the data collection is £176,000. The average legal spend on claims settled at this time is thought to be around £31,000. Hence the total claimant cost excluding legal expenses implied by the data collection exercise is £145,000. This is consistent with the sample and modelled averages.

Overall it is believed that the parameterisation of the model is reasonable, and hence the future projected claims costs have been used to derive the Insurance Market estimates outlined in Section 7.

6.4.3. Potential Prudence in the Average Cost Assumptions

It should be noted that the average cost per claimant analysis described above considers the breakdown of the sample data across the heads of damage and represents the total compensation paid to the claimants. The summary data described in Section 3 represents the individual submissions received from the participating insurers and as such may not cover those elements not picked up by insurers e.g. payments made by the FSCS on behalf of insolvent insurers or payments made by the Government, though the analysis in Section 6.4.2 suggests that this impact is likely to be small.

The average number of claims per claimant assumed to derive the total average claimant costs by settlement year from the survey data does not include FSCS or the Government as claims parties. However, the total average claimant cost as per the average claim model has been used to estimate the total Insurance Market impact and hence there is the potential for the total Insurance Market impact to be slightly over estimated.

7. Mesothelioma Insurance Market Costs

7.1. Range of Results

To arrive at the estimated number of mesothelioma claimants we combined the population deaths model described in Section 4 with the future claimant death ratio (CD ratio) scenarios described in Section 5. This provided an estimate of the number of claimants bringing insurance claims in each future year. The output from this model was produced by age band and was then fed into the average cost per claim model described in Section 6. Age specific average costs were applied to the number of claimants within that model to determine the Insurance Market costs in each future year.

The CD ratios set out in Section 5.6 and used within the process described above estimate the number of claimants bringing claims to both the Government and the Insurance Market. The assumed proportion of these claims that relate to the Government has been used to adjust the model outputs. A factor of 20% has been used as the Government proportion in the future based on historical proportions according to the CRU data.

The population deaths model provides an estimate for male mesothelioma sufferers only. The CD ratio scenarios have been determined on this basis as well and, as a result, the outputs of the model are for future male claimants only. The survey data collection suggests that female claims as a proportion of male claims have risen over the last few years to around 3%. This was assumed to be 5% in the future, and therefore we have increased the results by this amount. This produced estimates of future mesothelioma insurance claims from both male and female claimants for Great Britain.

In order to gross up to the UK, an estimate has been included for Northern Ireland. It was assumed that Northern Ireland represented 2.3% of Great Britain claims. Therefore we have increased the results by this amount. These adjustments are included in the results set out in this Section and within the appendices.

As described earlier there is significant uncertainty surrounding the future emergence of mesothelioma insurance claims in the UK. Much of this uncertainty arises from the assumptions made about the future population deaths and the CD ratio that is then overlaid to estimate the future number of claimants. A range of central estimates is provided in the table below. These use the Working Party adjusted HSL model for the population deaths. Three central CD ratio scenarios are used to arrive at future claimant numbers.

These scenarios are outlined in Section 5:

- CD Scenario 2 - Ratios across all age bands increase for ten years. The rate of increase each year is a set (decaying) proportion of the increase in the previous year.
- CD Scenario 3 - Ratios across all age bands increase for fifty years. The rate of increase each year is a set (decaying) proportion of the increase in the previous year.
- CD Scenario 4 - Within ten years the claimant death ratio in each age band reaches 90% of the theoretical maximum assuming 13% of sufferers remain unable to claim. As in scenarios 2 and 3 the rate of increase in each age band decays exponentially.

Table 32: Mesothelioma Projection Results

Projection Summary (£m)		RPI Inflation		
CD Scenario	**Total Projected Claims**	**1.5%**	**2.5%**	**3.5%**
Scenario 2	59,673	7,862	9,699	12,081
Scenario 3	61,707	8,165	**10,104**	12,623
Scenario 4	64,787	8,477	10,468	13,049

These figures represent the outcome of alternative reasonable assumption sets that may each be considered as central estimates. They are not intended to represent "optimistic" or "pessimistic" scenarios nor indicate a range of reasonable outcomes.

The above results have been derived using the Working Party adjusted HSL model for the population deaths. Different results will be obtained if alternative population death projection models are used. The following two tables summarise the results obtained when the latency and alternative simple birth cohort models are used.

Table 33: Mesothelioma Projection Results (Latency Model)

Projection Summary (£m)		RPI Inflation		
CD Scenario	**Total Projected Claims**	**1.5%**	**2.5%**	**3.5%**
Scenario 2	44,662	5,303	6,227	7,347
Scenario 3	45,681	5,436	6,396	7,564
Scenario 4	48,272	5,691	6,689	7,901

Table 34: Mesothelioma Projection Results (Alternative Simple Birth Cohort Model)

Projection Summary (£m)		RPI Inflation		
CD Scenario	**Total Projected Claims**	**1.5%**	**2.5%**	**3.5%**
Scenario 2	79,148	10,130	12,501	15,548
Scenario 3	82,406	10,596	13,120	16,372
Scenario 4	86,700	11,036	13,637	16,980

Overall, we have run 75 scenarios comprising 5 different population models described in Section 4, 5 different CD ratio scenarios described in Section 5 and 3 different assumptions for inflation equivalent to future RPI of 1.5%, 2.5% and 3.5%. These give a broad range of outcomes with the lowest future Insurance Market cost estimated at £4.8bn and the highest at £30.0bn. The full set of scenario outputs is included in Appendix D.

The results of these 75 scenarios are for illustrative purposes only. Care should be taken when interpreting the scenario results. They include model selections and assumptions sets which, whilst possible, would not be considered appropriate as a best estimate. The scenario results are not intended to define a set of possible outcomes or to indicate any percentiles that may be used in a stochastic range of results. Possible outcomes may fall outside of the range of results displayed. The quantification of the distribution of possible results has not been considered within this paper.

7.2. Comparison to 2004 Working Party Results

The 2004 Working Party mid estimate for mesothelioma Insurance Market claims notified between 2009 and 2040 was £4.0bn. The 2009 results are more than double this for the same period. The vast majority of the increase has arisen due to an increase in the CD ratio over the past 5 years.

The table below gives an approximate analysis of change. This is shown for each of the CD ratio scenarios shown in the table above, based on a future RPI inflation rate of 2.5%. The most material change is in the CD ratio, both observed in the past and assumed in the future. This accounts for an increase of around 74% to 89% in the estimated Insurance Market cost, depending on the CD ratio scenario selected for the 2009 projections. The change in the projection of the population deaths increases the estimated Insurance Market cost by around 16%. Including claims notified between 2041 and 2050 results in an increase in the estimated Insurance Market costs of around 20%. However, this amount is expected to be paid more than 30 years into the future so on a discounted basis the increase is much less material. The remainder of the change in the estimate is accounted for by the change in the average cost per claim methodology.

Table 35: Mesothelioma Analysis of Change Between 2004 and 2009 Projections

Insurance claim notifications (Incurred value 100% market) £m		2004-2008	2009-2040	2009-2040	2009-2040
Estimated 2004 AWP Mid Mid		**417**	**4,016**	**4,016**	**4,016**
Actual		**924**			
Change population deaths projection					
	Increase (%)		16%	16%	16%
	Increase (amount)		633	633	633
	Total post change		**4,648**	**4,648**	**4,648**
Change in CD Ratio			**CD Scenario 2**	**CD Scenario 3**	**CD Scenario 4**
	Increase (%)		74%	79%	89%
	Increase (amount)		3,451	3,693	4,141
	Total post change		**8,099**	**8,341**	**8,789**
Change in initial ACPC					
	Increase (%)		8%	8%	8%
	Increase (amount)		630	649	684
	Total post change		**8,730**	**8,990**	**9,473**
Change inflation					
	Increase (%)		-7%	-6%	-7%
	Increase (amount)		-599	-575	-699
	Total post change		**8,131**	**8,415**	**8,774**
Claims notified 2041-2050			**2009-2050**	**2009-2050**	**2009-2050**
	Increase (%)		19%	20%	19%
	Increase (amount)		1,569	1,688	1,694
	Total post change		**9,699**	**10,104**	**10,468**

8. Non Mesothelioma Insurance Cost

8.1. Lung Cancer

8.1.1. Summary

The projection of lung cancer claims is subject to considerable uncertainty. Only a tiny fraction of all lung cancer deaths in the UK results in an asbestos-related claim (a few hundred claims compared with tens of thousands of total deaths) and it is highly uncertain how this proportion could potentially change under different circumstances.

It seems likely that the biggest influences on lung cancer claims are **smoking rates** and the **propensity to claim**. We have attempted to project claim numbers using a pragmatic methodology based on these underlying drivers.

The following table demonstrates a cross-section of such outcomes, where Scenarios 1 to 3 all represent credible forecasts for how future claim numbers and total claim costs might develop:

Table 36: Lung Cancer Projection Results

Projection Summary (£m)		Inflation Assumption		
Scenario	**Total Projected Claims**	**1%**	**3%**	**5%**
Scenario 1	3,799	171	201	238
Scenario 2	8,378	395	**512**	679
Scenario 3	19,504	952	1,332	1,913

These forecasts are materially higher than the forecasts made by the 2004 Working Party for the same time period, which ranged from £17m to £706m. A major factor in the change in the forecast is the availability in this study of better quality lung cancer claim data than was available in 2004; the actual data experience is set out in more detail in Section 3.4.

8.1.2. Background Investigations

It has long been known that lung cancer is particularly associated with smoking. There is also evidence that it is associated with asbestos exposure. It is this latter association that leads to asbestos-related insurance claims.

It is difficult to separate the impact due to smoking (and other contributory effects) from the impact due to asbestos exposure. Legally, where a sufferer has also smoked, they are deemed to have contributory negligence and so obtain a reduced award.

In the projection of future asbestos-related lung cancer claims, however, we need to investigate the relative degrees of impact from smoking and asbestos exposure. The 2004 Working Party paper (page 27) quoted the following expected relative impacts of contracting lung cancer from smoking and asbestos exposure:

Type of Person	Risk of Lung Cancer
Non-smoker / No Asbestos Exposure	1
Non-smoker / Asbestos Exposure	5
Smoker / No Asbestos Exposure	11
Smoker / Asbestos Exposure	52

On the face of it, this indicates that smoking by itself has twice the impact as asbestos exposure by itself and that the combination of the two is particularly severe, being ten times as bad as pure asbestos exposure and five times as bad as purely smoking.

If we believe these relativities, the implication is that it is smoking trends that drive lung cancer cases rather than asbestos exposure. Even when talking about asbestos-related lung cancer insurance claims, it is still the underlying smoking patterns that are the biggest driver of claims, since all other factors being even, cases without smokers would form only about 8.8% of all asbestos-related lung cancers.

It should be noted, however, that whilst the above figures are in common use, they do not necessarily form the true underlying picture. In recent years, for example, the impact of passive smoking has begun to be understood and it is hard to separate this from the "non-smoker with asbestos exposure" category. As incidences of smoking reduce and smoking is eliminated in public places, we might expect that the apparent "non-smoker / asbestos exposure" relativity to reduce.

Furthermore, according to Cancer Research UK, "The second most important risk factor for lung cancer is exposure to radon gas. Radon is a naturally occurring radioactive gas that can seep out of the soil."[16] It is unclear how the quoted relativities were arrived at and to what extent they allow for varying demographic exposures to factors such as radon.

Evidence For Relative Importance of Asbestos And Smoking

Although we refer to "lung cancer" as a single disease, in truth there are a number of different diseases grouped together under that broad banner. It may be that some of these are more affected by smoking and/or asbestos exposure than others. In fact, a 1999 Finnish study entitled "Lung Cancer and Past Occupational Exposure to Asbestos"[17] included the following tables showing the "Odds Ratios" ("OR") from various smoking and asbestos-related factors, based on both a univariate and multivariate analysis:

Table 37: Lung Cancer Odds Ratio

TABLE 2

Uni- and multivariate prediction of histologic type (adenocarcinoma versus squamous-cell carcinoma) with indicators of occupational asbestos exposure and tobacco smoking

		Univariate		Multivariate	
Predictor	NEC	OR	95% CI	OR	95% CI
Asbestos exposure (≥ 1 million f/g dry wt of lung)	15	2.99	1.10–8.09	3.03	1.09–8.47
Mean lifetime daily smoking (> 20 cigarettes/d)	7	0.83	0.28–2.45	0.61	0.18–2.03
Duration of smoking (> 43 yr)	10	0.85	0.32–2.28	0.93	0.32–2.69
Time from cessation of smoking to clinical appearance (≥ 5 yr)	8	1.43	0.48–4.42	1.27	0.40–4.04
Age at onset of smoking (< 18 yr)	14	1.29	0.50–3.38	1.29	0.45–3.66

Includes ever-smoker men, adenocarcinoma, and squamous-cell carcinoma histologies only. All predictors are included in the multivariate models. Excludes subjects with missing data in any variable in the analysis.
Predictor, exposed category given in parentheses.
NEC, number of exposed cases.

[16] http://www.cancerhelp.org.uk/type/lung-cancer/about/lung-cancer-risks-and-causes

[17] Am. J. Respir. Cell Mol. Biol., Volume 20, Number 4, April 1999 667-674 – Kirsti Husgafvel-Pursiainen, Antti Karjalainen, Annamaria Kannio, Sisko Anttila, Timo Partanen, Anneli Ojajärvi, and Harri Vainio

TABLE 3

Uni- and multivariate prediction of p53 *mutations with histologic type and indicators of occupational asbestos exposure and tobacco smoking*

		Univariate		Multivariate	
Predictor	NEC	OR	95% CI	OR	95% CI
Histologic type (adenocarcinoma)	10	0.41	0.15–1.09	0.42	0.14–1.28
Asbestos exposure (≥ 1 million f/g dry wt of lung)	11	0.47	0.18–1.23	0.69	0.23–2.06
Mean lifetime daily smoking (> 20 cigarettes/d)	7	0.41	0.15–1.10	0.58	0.17–2.00
Duration of smoking (> 43 yr)	19	3.23	1.19–8.79	2.87	0.98–8.40
Time from cessation of smoking to clinical appearance (≥ 5 yr)	7	0.53	0.18–1.57	0.82	0.24–2.78
Age at onset of smoking (< 18 yr)	13	0.38	0.14–0.98	0.45	0.16–1.31

See footnotes to Table 2.

TABLE 6

Uni- and multivariate prediction of K-ras *mutations with histologic type and indicators of occupational asbestos exposure and tobacco smoking*

		Univariate		Multivariate	
Predictor	NEC	OR	95% CI	OR	95% CI
Histologic type (adenocarcinoma)	15	24.4	4.87–122	36.6	5.79–232
Asbestos exposure (≥ 1 million f/g dry wt of lung)	9	2.25	0.74–6.87	1.02	0.22–4.71
Mean lifetime daily smoking (> 20 cigarettes/d)	7	2.05	0.65–6.48	3.93	0.58–26.7
Duration of smoking (> 43 yr)	5	0.60	0.18–1.94	0.53	0.11–2.65
Time from cessation of smoking to clinical appearance (≥ 5 yr)	4	0.90	0.25–3.25	0.49	0.09–2.74
Age at onset of smoking (< 18 yr)	10	1.74	0.57–5.29	1.13	0.23–5.66

See footnotes to Table 2.

In this study, adenocarcinoma (which is the most common type of lung cancer) had a statistically significant impact from asbestos exposure. As shown in table 2 above, the odds ratio is about 3, with a 95% confidence interval that is wholly above 1.

As shown in table 6 above, the K-ras mutation that has a very strong link with adenocarcinoma (about 30 times more likely to produce this type of cancer), however indicated almost unity (i.e. no link) with asbestos exposure on a multivariate basis. This stands in stark contrast to the impact of mean lifetime daily smoking, which was a strong predictor. It should be noted, however, that there was a wide 95% confidence interval of this odds ratio that encompassed possible figures up to 4.71, and hence there could be an impact from asbestos exposure.

By contrast, in this study there was no evidence that a p53 mutation (which tends to indicate types of lung cancer other than adenocarcinoma) had any correlation with asbestos exposure, with the 95% confidence interval of the odds ratio running from 0.23 to 2.06 and centring on 0.69. For this type of mutation, the duration of smoking appeared to be the key predictor, as shown in table 3 above.

Age of Diagnosis and Asbestos-Related Latency

A further note of interest from the above study (a point that also appears to be backed up by other studies and the data collated by the Working Party), is related to the age of lung cancer sufferers. The medical study indicated an age of diagnosis in the mid-60s regardless of asbestos exposure as shown in the following table from the study:

Table 38: Lung Cancer Fibre Concentration

TABLE 1

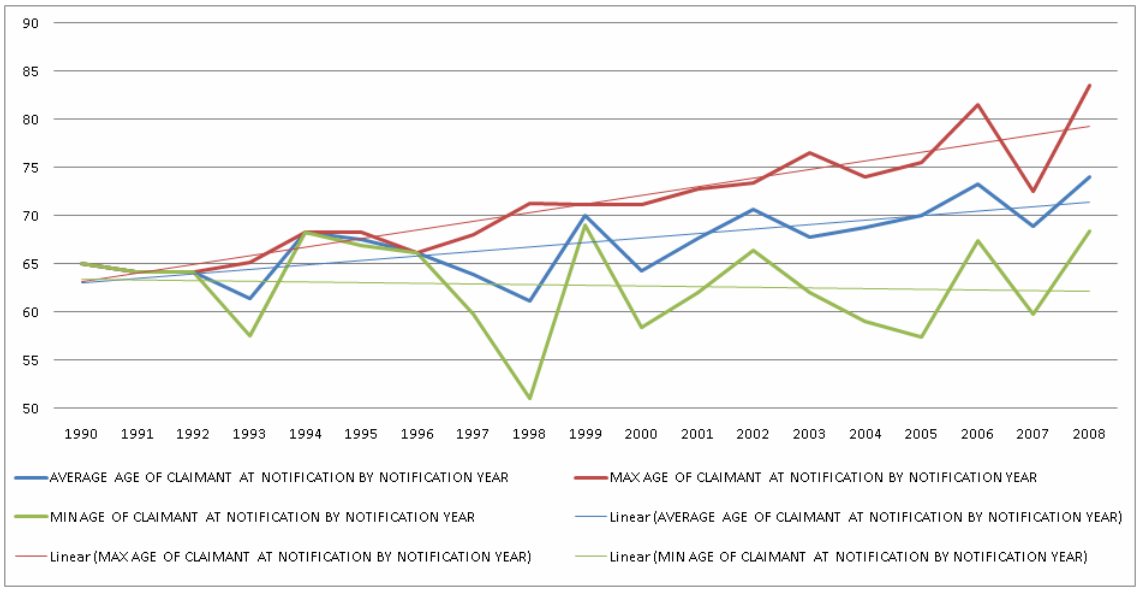
Demographic and exposure data on lung cancer patients by pulmonary asbestos fiber concentration

	Pulmonary Concentration of Asbestos Fibers	
	≥ 1.0×10^6 (f/g)	< 1.0×10^6 (f/g)
Sex (M/F)	33/0	54/15*
Age at diagnosis	64 ± 7	63 ± 9
Smoking (mean ± SD)		
Cigarettes smoked/d	25 ± 12	20 ± 9
Pack-years	44 ± 24	41 ± 22
Yr since quitting	6.8 ± 12	2.6 ± 6.3
Age at starting	18 ± 4.3	18 ± 6.0
Pulmonary fiber content		
Mean ± SD	11 ± 28	0.3 ± 0.2†
Median	2.2	0.3

* For one female patient, no data available for asbestos exposure.
† Fiber concentration below detection limit (0.3×10^6 f/g) taken into account as $0.5 \times 0.3 \times 10^6$ f/g.

All sources similarly back up a fairly tight range around the mid-60s to early-70s as the age for diagnosis, regardless of the underlying cause. Our data (which is asbestos-related only, since it deals with asbestos-related claims) indicates a typical age of claiming for lung cancer at about 67-68, which is consistent with the study, although the trends for the average and upper ages have been gradually upwards from 1990 to 2008 as shown in the following graph:

Figure 35: Average Age of Lung Cancer Claimants by Year of Notification



Although the claims data indicates a gradual upward trend in the average age of claimants, the minimum age has remained remarkably steady with only one year ever offering a claimant under the age of 55. If a mesothelioma-style “incubation period” applied, we would expect to see those claims at considerably younger ages from those exposed whilst in their teens.

Data from total UK deaths obtained from Cancer Research UK shows a similar stable trend in average age, moving from 61.9 and 71.1 for diagnosis and death respectively in 1990 to 62.1 and 72.8 respectively in 2007 – figures that are all consistent with the claimant ages in our data.

Certainly, the traditional view of lung cancer as having a latency of 20 years (as was suggested in the 2004 Working Party paper) doesn't seem to have supporting evidence in the data. In fact, it is difficult to trace back the original source of the "20 year" statistic, with sources generally quoting it without attribution. If there really were such a latency period, there should be a bulk of claimants diagnosed in their 30s and 40s, whereas actually there are none at these ages at all.

Combined with the ages indicated by the work-related asbestos exposure medical study, there is real evidence that the age at which lung cancer manifests itself is relatively independent of the timing of any asbestos exposure. The upward drift in claimant age seen in our data is more likely due to underlying downward trends in smoking, meaning that the average age of the most at-risk population is gradually drifting upwards.

Conclusions of Investigations

There is considerable uncertainty about the interaction of smoking and asbestos. This uncertainty is in no small part related to the tendency to treat all lung cancers under the same umbrella when projecting claims.

Two features stand out, however:

1. Smoking remains the key driver of lung cancer deaths, although exposure to asbestos does also seem to generally increase the likelihood of contracting the disease.
2. The age at diagnosis does not seem to be affected by the timing of any asbestos exposure.

In conclusion, projecting lung cancer claims seems to be above all a matter of <u>understanding smoking trends</u>. Layered onto this needs to be an understanding of the factors that affect claim intensity:

- <u>Exposure of the claimant to asbestos.</u> It is important to note that the asbestos may not have actually "caused" the lung cancer – so long as the exposure exists, a claim can be made. As such, we are purely interested in exposure patterns.

- <u>Propensity to claim.</u> If this is a key factor in projecting mesothelioma claims, it can be considered even more so for lung cancer claims since, relatively speaking, considerably fewer cases ultimately manifest as claims. This makes the projection more sensitive to small changes in this assumption.

The importance of these latter factors suggests a possible methodology. It is pragmatic to base the lung cancer projections on the mesothelioma projections. Inbuilt into the mesothelioma projections are a measure of the underlying population's exposure to asbestos and the relative impact thereof, which will define the population that may make a claim. The mesothelioma projections also include a measure of the propensity to claim and the trend of this over time.

As noted, however, it is crucial that we superimpose onto any projection produced in this way an adjustment for changes in smoking exposures. It will also be necessary to adjust for the impact of the difference between mesothelioma and lung cancer trends in claimant age and propensity to claim.

8.1.3. Data

Smoking Data

The key dataset that must be produced is a measure of smoking exposure. To this end, it is vital to have a measure of the level of smoking by calendar year and by age. We obtained the following data relating to smoking rates per 100 population from the ONS[18]:

Table 39: Smoking Rates per 100 Population

	Men	16-19	20-24	25-34	35-49	50-59	60+
1948	65						
1980	42	33	44	47	45	45	34
1982	37	31	39	40	39	41	32
1984	35	28	39	39	38	38	29
1986	34	30	41	37	37	34	28
1988	32	28	37	37	36	32	25
1990	31	28	39	37	34	27	24
1992	29	29	39	35	31	27	20
1994	28	28	42	34	31	26	17
1996	28	25	43	38	30	27	17
1998	28	30	42	37	32	26	15
2000	29	30	40	38	33	27	16
2001	29	30	36	39	31	27	16
2002	28	24	39	38	31	25	16
2003	27	22	38	36	29	26	16
2004	27	26	38	37	31	25	15
2005	26	25	37	34	31	25	15
2006	25	23	34	33	29	25	14

From this data, we interpolated and extrapolated trends to apply by age group from 1948 to 2050. This was applied to the same population projection used in the mesothelioma projections to establish numbers of smokers by age for each calendar year.

The “smoking exposure” applicable to lung cancer projections may be to do with numbers of packets smoked, to do with duration of smoking or some other combination of factors. We have produced a generic exposure by selecting an age of diagnosis (“X”) for a given year (“Y”) and summing smoker populations across all previous years for those who are age X as at year Y, thus creating a birth cohort effect.

A feature of taking this approach is a “spike” in smoker exposure at about 2015-2019. There was a large, sudden increase in the birth rate in 1947 and these children would be 16 in 1963. Assuming an age of diagnosis of 68, for example, this means that this “baby boom” hits the lung cancer statistics in 2015. Working against this, however, is the steadily decreasing smoking rates, which act to reduce aggregate smoker exposure at age 68 after that time. The result is a rapid increase in relative smoking exposure in the late 2010s followed by a rapid decline thereafter.

These demographics also predict that we are currently in a temporary lull for smoking exposure, due to it being about 68 years after the period of the Second World War. If the model is right, this would predict that there should currently be a temporary lull in the incidence of lung cancer claims.

The following table shows the relative smoking exposure produced in this way, an average of the exposures calculated using diagnosis ages of 65 to 71 inclusive.

[18] For example: http://www.statistics.gov.uk/StatBase/ssdataset.asp?vlnk=5230&Pos=1&ColRank=1&Rank=176

Table 40: Relative Smoking Exposure

Year	Smoking Exposure Relative to 2008
1997	116%
1998	113%
1999	110%
2000	108%
2001	106%
2002	104%
2003	103%
2004	103%
2005	102%
2006	100%
2007	100%
2008	**100%**
2009	101%
2010	102%
2011	103%
2012	110%
2013	114%
2014	115%
2015	115%
2016	114%
2017	113%
2018	108%
2019	104%
2020	101%

In practice, we constructed exposure relativities for a range of ages at diagnosis. These were applied to produce a range of claim number projections. The scenarios quoted in the results section are an amalgamation of these.

Claim Data

In order to use the mesothelioma model to project lung cancer claims, it is necessary to establish an underlying mesothelioma-to-lung cancer claim ratio. The history of lung cancer claims was taken from the data collection exercise (see Section 3.4.2). This dataset also included details on average claim payments over the same time.

The minimum, maximum and average ages of claimants in the dataset is shown in the graph in Section 8.1.2. These were used to inform the selection of age at diagnosis, which was the driver of the smoking adjustment. Various different ages at diagnosis were tested and the final selected projections are an amalgamation of the results of these.

Mesothelioma Model

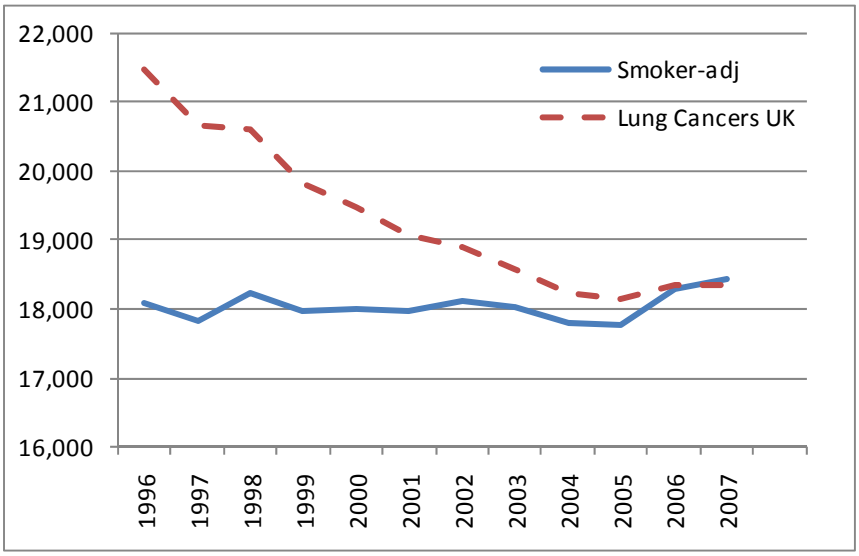
The mesothelioma projections, detailed elsewhere in this paper, were used as a basis for our projections.

8.1.4. Supporting Evidence for Methodology

Having derived the smoking exposure shown in the table above, it is possible to examine recent trends in total UK lung cancer deaths to see if the exposures stand up to the real-world experience.

The following graph shows recent UK lung cancer deaths (data from Cancer Research UK) and the same figures adjusted using the smoking exposure quoted above. It indicates that the exposure adjustment's normalisation of the observed trend in total deaths is successful, with the post-adjustment figures occurring at a fairly stable level whilst the original data shows a distinct downward trend.

Figure 36: Lung Cancer Death Rates



The website of Cancer Research UK also contains their projections of total UK Lung Cancers[19]. This backs up the concept that although incidence rates are falling due to smoking trends, population statistics mean that total incidences will rise in the immediate future, with the current time period forming a trough in the figures. Below, we reproduce the relevant males-only table from that report (Table Two on page3; note that this is a table of new diagnoses, rather than deaths and hence is not consistent with the above chart).

Table 41: Cancer Research UK Total UK Projection of Lung Cancers

	Year of Diagnosis	Rate per 100,000 males	Average number of cases per year*, GB	Average number of cases per year*, UK~
	1975-79	113.0	30,564	-
	1980-84	111.0	31,140	-
	1985-89	102.2	29,797	-
	1990-94	90.5	27,401	-
	1995-99	76.6	24,337	24,883
	2000-04	66.1	22,390	22,930
Projections	2005-09	57.1	21,004	21,533
Projections	2010-14	51.5	20,743	21,279
Projections	2015-19	48.4	21,358	21,923
Projections	2020-24	47.8	22,898	23,515

*The annual case numbers are an average of the number of overall cases in each five-year period (i.e. the overall figure has been divided by five).
~ Data for the whole of the UK is only available from 1993 onwards.

19

http://info.cancerresearchuk.org/prod_consump/groups/cr_common/@nre/@new/@pre/documents/generalcontent/crukmig_1000ast-2761.pdf

The asbestos-related deaths will not see the same upwards pressure on the long-term population trends that are associated with the UK as a whole, since asbestos exposure reduced rapidly after the 1970s, thus reducing the pool of potential sufferers. Nevertheless, Cancer Research UK's investigation is instructive for the illustration that a reduction in smoking rates (and hence incidence and death rates) does not necessarily correspond with a reduction in the total number of lung cancer cases.

8.1.5. Methodology – Claim Numbers

The approach is a pragmatic one, which aims to bring together trends in smoking with trends in asbestos exposure and propensity to claim. Other methods would also be possible and some may even be more appropriate.

For a more complete understanding of the underlying drivers of claims, it would be necessary to construct models similar to those used by the Working Party to project mesothelioma claims. These would need their own parameterisations for each element of the model. We have not done this since lung cancer claims only form a small portion of the total asbestos claims. Nevertheless, we believe that the pragmatic approach taken here provides some insight as to the nature of lung cancer claims and their possible future evolution.

The methodology is:

- Use historic mesothelioma and lung cancer claim data to produce crude "lung cancers per mesothelioma" rates for each calendar year.
- Estimate smoking rates at each age in the UK in each calendar year.
- Apply to population data to obtain smoking population per age per year.
- Select "Diagnosis Age" for lung cancer.
- Sum smoking population across birth cohorts to get total historical smoking exposure as at Diagnosis Age for each calendar year.
- Apply relative exposure to crude "lung cancers per mesothelioma" rates to reverse impact of smoking trends ("smoking-normalised rates")
- Two key trends remain:

    i) The movements in the relative likelihoods of death; and
    ii) The movements in the relative propensities to claim.

- The former is related to incubation of lung cancer versus mesothelioma and is likely to be a long-term trend, whereas the latter is to do with relative tendencies to claim and is likely to be made up of a series of short-term trends.
- These trends should be applied to the smoking-normalised rates in order to establish the "final adjusted observed rates".
- If all trending has been done properly, the result should be a stable figure over time, with no clear trend. If it is not stable, revisit the assumptions for the underlying trends. The stable figure is the "underlying lung cancer per mesothelioma rate".
- Apply this underlying rate to the projected future mesothelioma deaths to get an adjusted projection of future lung cancer claims.
- Apply the trends into the future to get final projected lung cancer claims.
- This is repeated for several different Diagnosis Ages and a final, smoothed, projection chosen.

The trend in the relative likelihood of death is to do with the relative size of the "at-risk" population that has been exposed to asbestos. This is chiefly related to the nature of the Diagnosis Age:

- Diagnosis Age affects likely historical asbestos exposure. This is particularly important in the tail, since:

  i) If mesothelioma has a latency of 40 years after exposure; whereas
  ii) Lung cancer Diagnosis Age is either static or increasing only slowly; then
  iii) Since asbestos exposure steadily declined from the 1970s, the proportion of lung cancer sufferers exposed to asbestos at the Diagnosis Age will gradually reduce compared with the proportion of at-risk mesothelioma sufferers that were exposed to asbestos.

- Age also directly concerns population size. For example, if:

  i) Lung cancer Diagnosis Age is 68; whereas
  ii) The average mesothelioma Diagnosis Age for that particular calendar year is 75; then
  iii) There will be fewer people available to contract mesothelioma in the general population than are available to contract lung cancer.

This trend is long term. We can experiment with different types of trend to obtain the best fit.

Having eliminated the long term trend of relative likelihood of death, the remaining trend is reporting tendency. Lung cancer has a lot more potential for future increases than mesothelioma has in its propensity to claim, so there is a distinct potential for the "lung cancer per mesothelioma" rate to increase in the future.

Several factors combine to justify the idea that large potential future increases in the reporting trend are possible:

- The number of lung cancer deaths being claimed for as asbestos-related is a tiny fraction of the total pool of all lung cancer deaths – about 1% in total.
- The vast majority of these deaths will be smoking-related. This smoking link means that we can expect to continue to see the total lung cancer deaths across the UK to remain high for quite some time. Regardless of whether the underlying cause was wholly or partially smoking, however, any exposure to asbestos will allow for an asbestos-related claim to be made.

Despite the potentially large pool of claimants, however, it is largely trends in public awareness and attitude that will dictate how the propensity to claim changes and this is particularly difficult to predict.

The manner in which the trend in the propensity to claim is related to the focus of media reporting means that the reporting trend is actually likely to be made up of a composite of short-term trends. Again, we can experiment with different types of trend to obtain the best fit.

8.1.6. Methodology – Claim Amounts

The claim number approach projects all lung cancer claims, including nil claims (since it is based on notifications). As such, we need to use an average claim amount including nil claims. We used the summary data to establish the average claim amount applicable to the last five years. We then applied several alternative claim inflation assumptions to this average claim amount in order to establish average claim amounts for each future calendar year.

The current average cost per claim is running at just over £40,000.

We have illustrated results using claims inflation of 1%, 3% and 5% per annum, as we believe these are reasonable alternative future inflation estimates based on the mesothelioma analysis. Although all the comments about inflation made in the mesothelioma section of this paper also apply here, it is worth noting in addition that if there is a trend towards a greater proportion of claims being more smoking- than asbestos-related then this will result in a greater proportion of awards being reduced for contributory negligence and this will, in turn, act as a negative inflationary pressure on the average claim amount. As such, it may be more appropriate to consider a lower future inflation assumption for lung cancer claims than for mesothelioma claims.

8.1.7. Range of Results

The methodology contains considerable sources of uncertainty. These include, but are not limited to the following:

- The smoking exposure we have used is an approximation only for the true underlying risk measure for smoking.
- Smoking trends have been extrapolated from incomplete data.
- The population used does not have direct correspondence to the at-risk population, who may have different smoking rates to the general population.
- The nature of the asbestos exposure for lung cancer sufferers may be different to that of mesothelioma sufferers, meaning that the mesothelioma model is an inappropriate basis.
- The trends used to adjust movements in relative mesothelioma and lung cancer incidence rates over time may be incorrectly parameterised or simply wrong in nature.
- The trends used to adjust movements in relative mesothelioma and lung cancer propensity to claim rates over time may be incorrectly parameterised or simply wrong in nature.
- Reductions for contributory negligence make predicting trends in average claim amounts particularly difficult here – a fact that is exacerbated by the dominance of the effect of smoking on the projected results.

We have allowed for some element of parameter uncertainty (although not process error or model error) by running our model with different assumption sets, to provide a range of estimates. This range represents various reasonable outcomes; it is not intended to suggest “optimistic” or “pessimistic” scenarios or an upper or lower bound.

The following table demonstrates a cross-section of such outcomes:

Table 42: Lung Cancer Projection Results

Projection Summary (£m)		Inflation Assumption		
Scenario	**Total Projected Claims**	**1%**	**3%**	**5%**
Scenario 1	3,799	171	201	238
Scenario 2	8,378	395	**512**	679
Scenario 3	19,504	952	1,332	1,913

The reader may note that the range is much wider in relative terms than the mesothelioma range of results. This is because many of the parameters associated with the prediction of lung cancer have such great scope for adjustment within reasonable bounds.

This makes sense from a wider perspective too -- only about 1% of all lung cancers result in an asbestos-related claim. Clearly there is plenty of scope for change above a figure of 1%, and yet if this were to change from 1% to 2% then the predicted cost would double.

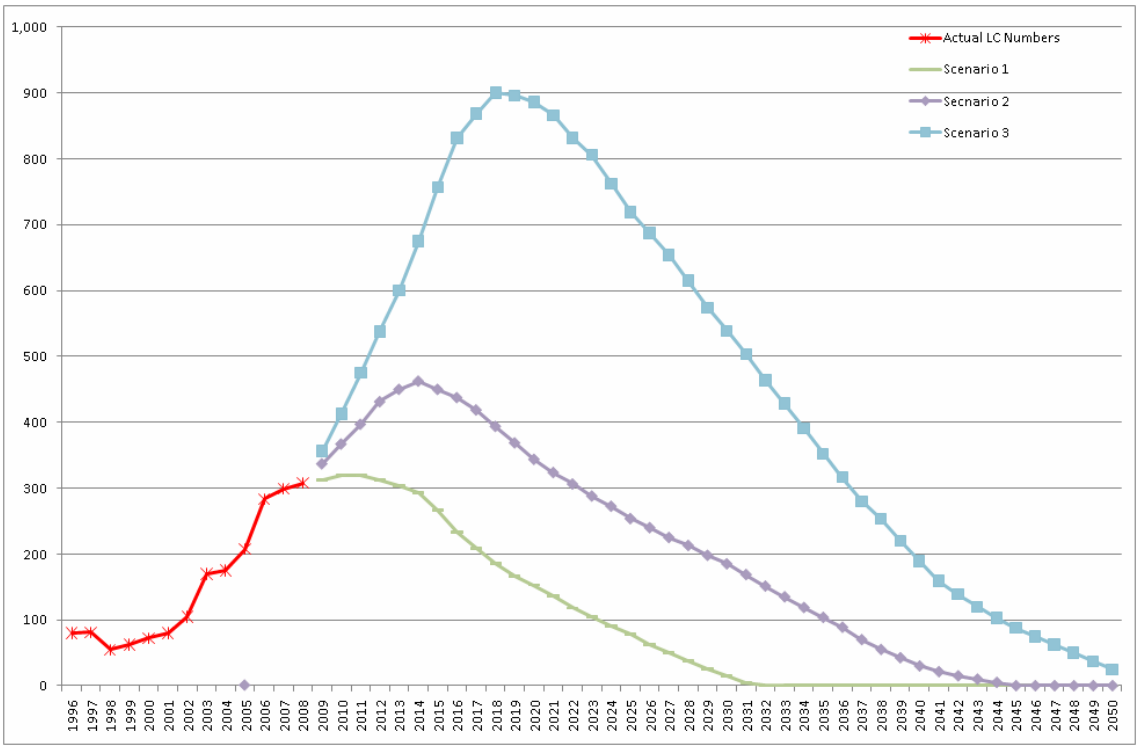
Scenario 1 contains a heavy age-related component, i.e. it assumes that the pool of potential lung cancer claimants reduces 7% faster than the pool of potential mesothelioma claimants. It also assumes no change in the propensity to claim.

Scenario 2 contains a small age-related component, i.e. it assumes that the pool of potential lung cancer claimants reduces 2% faster than the pool of potential mesothelioma claimants. It allows for the trend in propensity to claim seen in the last five to seven years to continue for another few years.

Scenario 3 contains a smaller still age-related component, i.e. it assumes that the pool of potential lung cancer claimants reduces just 1% faster than the pool of potential mesothelioma claimants. In addition, it also allows for a heavy increasing trend in the propensity to claim – 10% per year for the next ten years.

Below we show the claim number graphs that relate to Scenarios 1, 2 and 3:

Figure 37: 2009 Working Party Asbestos-Related Lung Cancer Claim Number Projections



The wide dispersal of these graphs demonstrates that there is considerable uncertainty in relation to the future Insurance Market cost of asbestos-related lung cancer claims.

The above may appear to be the output of a complicated analysis, but the complexity should not be seen as giving additional credibility to the projections. It is not possible to forecast accurately how claim notifications may trend in the future; all the scenarios shown above are plausible. Indeed higher or lower projections can also be derived. It has been often quoted that there could be one asbestos-related lung cancer case for every mesothelioma case. If this is true and the propensity / ability to claim against former employers or their insurers equals that seen for mesothelioma claims then future claim numbers could exceed those projected in Scenario 3.

8.1.8. Comparison to 2004 Working Party Results

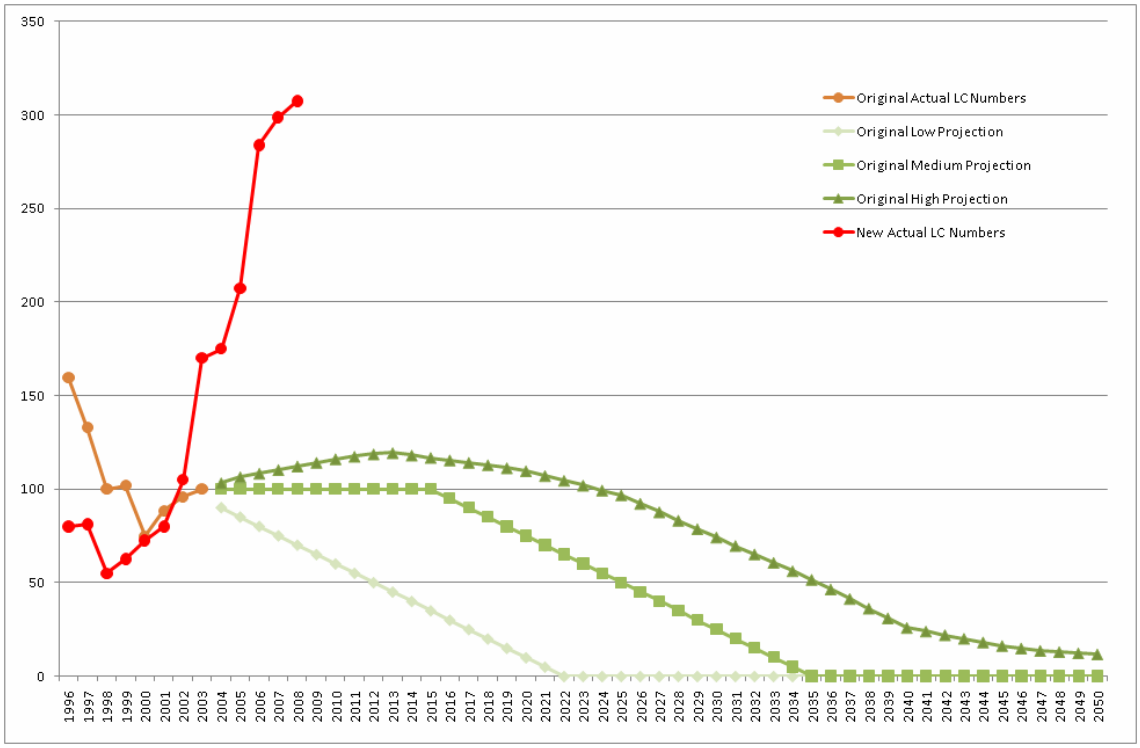
The data available for the 2004 Working Party study was less refined than that available for the 2009 study. There were only a few years of reliable lung cancer data available; prior to that an estimate had to be taken from a general "non-mesothelioma" data set.

In addition, the 2004 Working Party study did not consider the combined effects of smoking trends and population changes, particularly the baby boom that occurred just after the Second World War. Instead, it concentrated on broad observed trends in lung cancer claims. Using this approach, the mid-estimate was for claim levels to be flat until 2016 and decrease thereafter. This position was not unreasonable (aforementioned issues with data aside) and is similar in concept to Scenario 1 in our revised estimates.

The 2004 Working Party study projected claim numbers that materially undershot the true picture from 2004 to 2008, as the following graph demonstrates. This graph shows the original "actual" lung cancer claim numbers and the true actual lung claim numbers, as well as the projections made in the 2004 Working Party study.

The chief reason for this under-projection for the period from 2004 to 2008 seems to be the quality of the data – had the true 2003 picture been known, it is very unlikely that the selected projections would have been chosen.

Figure 38: 2004 Working Party Asbestos-Related Lung Cancer Claim Number Projections



Unsurprisingly, this undershooting of the true position was also reflected in materially lower estimates for the future claims than under our revised scenarios. Below, we show the 2004 estimates (as they relate to post-2008 claims only):

Table 43: Lung Cancer Projection Estimates made in 2004

Original 2004 Projection Summary (£m)		Inflation Assumption		
Scenario	**Total Projected Claims**	**0%**	**4%**	**8%**
Scenario 1	455	17	26	38
Scenario 2	1,650	63	**115**	220
Scenario 3	2,959	112	264	706

The change in the selected projected cost for asbestos-related lung cancer claims is around £400m. This is due both to the deterioration in claims experience since 2004 as well as a different view in respect to the future projection of asbestos-related lung cancer claims.

As mentioned above, the curve used for the 2004 Working Party study was similar in concept to our revised Scenario 1, which had an estimate of about £220m at an inflation rate of 4% per annum. We may therefore break down the ×4 change in estimate into factors of ×2 due to changes in data and a further ×2 due to a change in methodology.

It is re-iterated that all 2009 scenarios presented are plausible and should not be considered as either optimistic or pessimistic, or an upper or lower bound.

8.2. Asbestosis

8.2.1. Summary

Compared to other asbestos-related diseases, projections of the number and cost of asbestosis Insurance Market claims have proved somewhat more reliable. Asbestosis Insurance Market claims do not appear to have been affected by the changes in the propensity to claim that have characterised mesothelioma and lung cancer claims, and, as discussed in Section 3.4.3, the actual number of claims presented in the 2004-2008 period and the corresponding incurred amounts are broadly comparable with the projections of the 2004 Working Party.

However, there remains significant uncertainty in respect of future projections, both affecting potential claim numbers and their average cost. Hence, we selected a combination of potential scenarios that represent reasonable forecasts of the development of asbestosis claims. These are discussed in more detail in the following sections.

Table 44: Asbestosis Projection Results

Projection Summary (£m)		Average Cost Per Claim		
		16,000	18,750	22,000
		Inflation Assumption		
Scenario	Total Projected Claims	1%	3%	5%
Scenario 1	13,227	227	309	425
Scenario 2	20,224	354	503	726
Scenario 3	34,867	627	940	1,437

The new projections are comparable to the forecasts by the 2004 Working Party, which ranged between £291 and £1,274 million over the period from 2009 to 2040 period, with a central projection of £512m.

8.2.2. Background Issues and Data Sources

Asbestosis is defined as a bilateral diffuse pulmonary fibrosis caused by a sufficiently high cumulative exposure to air-borne asbestos fibres. Contrary to diseases such as mesothelioma, the likelihood of developing asbestosis is not generally thought to be significantly affected by the length of the exposure period and the time elapsed since first exposure. Instead, the latency period tends to be inversely proportional to the exposure level. Asbestosis is also known to be negatively affected by smoking[20], both in terms of likelihood of contracting the disease and of its progression rate – although not necessarily its mortality rate[21].

Finally, since asbestosis is a degenerative progressive disease that only in the most severe cases can lead to death, it is important to distinguish between the onset of the disease and death, often with considerable time passing between the two. In terms of insurance claims, manifestation is most relevant, since a claim can be presented after proper diagnosis, while the severity of the disease will affect compensation levels.

[20] See e.g. BT Mossman and A Churg, "Mechanisms in the Pathogenesis of Asbestosis and Silicosis", Am J Resp Crit Care Med, 1998 vol 157:1667-1680.

[21] Markowitz et al, "Clinical Predictors of Mortality from Asbestosis in the North American Insulator Cohort, 1981 to 1991", Am J Resp Crit Care Med, 1997 vol 156:101-108.

Early asbestosis cases tended to be associated with occupational exposure to extremely high concentrations of asbestos fibres (e.g. aboard ships during or after the Second World War), with the disease manifesting itself after relatively short latency periods of between five and twenty years[22]. It is very unlikely that many such cases are still occurring; current asbestosis cases are more likely to be caused by exposures to lower levels of asbestos fibres for long periods of time. This type of occupational exposure is known to be associated with much longer latency periods, e.g. Selikoff and collaborators found in their classic 1980 study on insulation workers[23] that asbestosis deaths in the cohort they observed peaked 40 to 45 years after first exposure. Current asbestosis sufferers were likely to be exposed to even lower annual fibre concentrations, hence the significant latencies implied in the still high number of new cases. However, it is expected that the number of asbestosis cases should start declining earlier, and faster, than the number of mesothelioma cases.

These and other considerations led the 2004 Working Party to hypothesise that the peak of asbestosis claims had already been reached in the UK, well in advance of the peak of mesothelioma deaths which is expected to occur in the second decade of this century.

In order to validate this hypothesis we looked at a number of data sources. The main data source was the survey data collected by the Working Party as set out in Section 3.

The data confirms that claims have started to decrease in recent years, having reached a peak in 2003. Some issues remain with the reliability of the survey data; while data quality in recent years (2004 and post) is thought to be high, data in earlier years is not as reliable, especially as far as the exact identification of the claim type is concerned. The conclusion that asbestosis claims seem to be past their peak appears strengthened by its independence from the actual data adjustments performed.

We also looked at the number of asbestos-related pneumoconiosis claims assessed by the Department for Work and Pensions under the Industrial Injuries Scheme (IIDB)[24]. These claims have been decreasing in the last two years in the dataset, having possibly peaked in 2004.

Finally, we looked at counts of death certificates mentioning asbestosis, as provided by the HSE[25]. Here, the evidence is less clear, since death counts seem to have been slowly increasing in the last 30 years, with a noticeable increase since 2005, although the 2007 figure is lower than the figure in 2006. Since the increase in death counts is perhaps more evident in the number of certificates mentioning asbestosis as a non-underlying cause of death, it is possible that some diagnostic effect is reflected in the data.

The data discussed above is presented in the following graph. We included the number of mesothelioma insurance claims for comparison purposes, since the latter display a protracted steep rise, which we believe has been magnified by increases in the propensity to claim which do not seem to have had such a role in the asbestosis claims dynamics.

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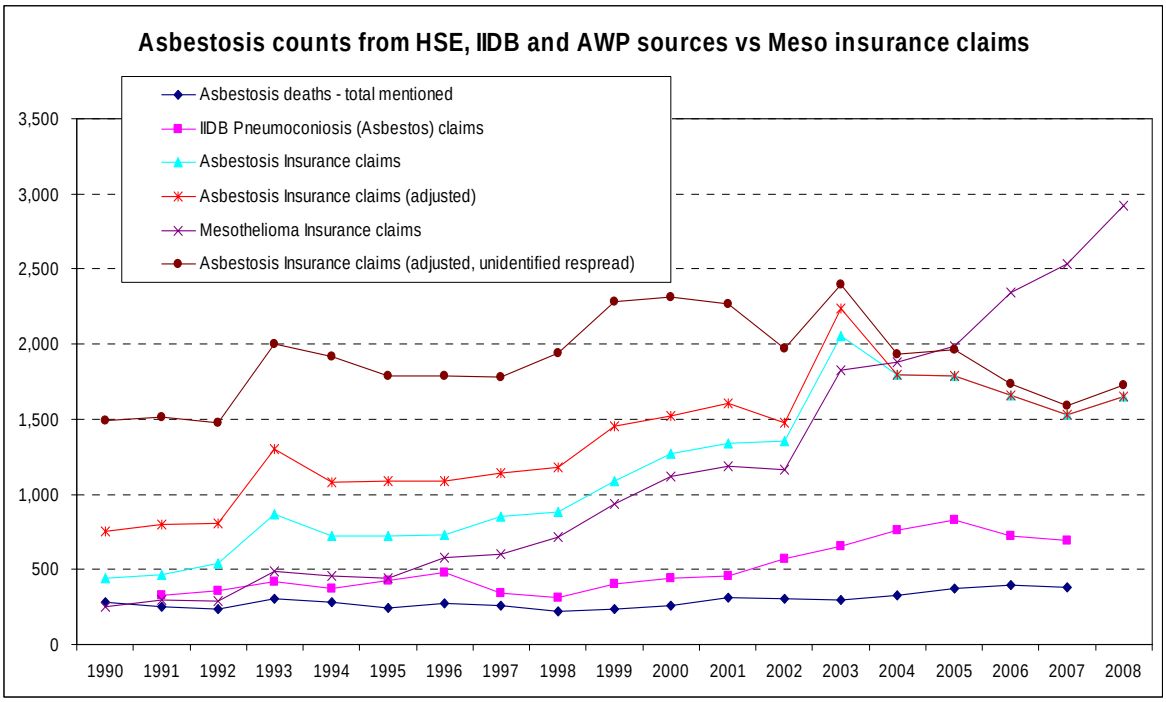
22 Mossman and A Churg (1998) p 1667.

23 IJ Selikoff, EC Hammond and H Seidman, “Latency of Asbestos Disease among Insulation Workers in the United States and Canada”, Cancer, 1980 vol 46(12):2736-2740.

24 See Table IIDB06, downloaded from http://www.hse.gov.uk/statistics/tables/iidb06.htm

25 See Table ASIS01, downloaded from http://www.hse.gov.uk/statistics/tables/asis01.htm

Figure 39: Asbestosis Insurance Claims, Population Deaths, IIDB Awards



8.2.3. Methodology – Claim Numbers

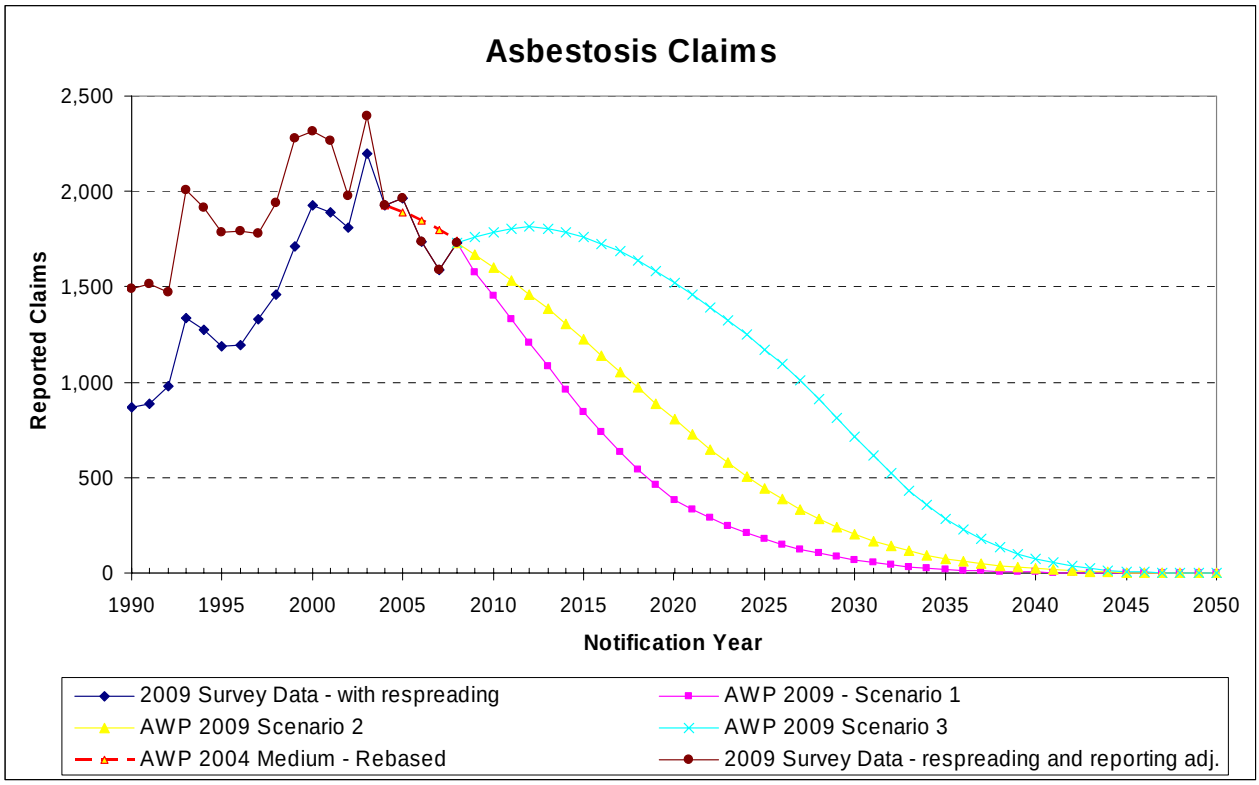
Asbestosis claims have been decreasing since their 2003 peak, although the exact extent of the reduction in the number of asbestosis claims in the last ten years is affected by the selected adjustment to our past survey data. As discussed in Section 3.4.3, the cumulative number of claims filed in 2004-2008 is quite close to the number of claims in the 2004 Working Party medium projection (adjusted to reflect the most recent data). This projection had been derived from a parameterisation of the 2004 Working Party simplified epidemiological (HLM) model which still appears reasonable, hence we included it as our projection Scenario 2.

Significant uncertainty remains about future developments, relating both to the uncertainty in epidemiological estimates (e.g. the long term trends might be better represented by death numbers, which do not appear to be reducing much at all, or alternatively they could decrease more rapidly than expected) and to potential changes in the propensity to claim. We endeavoured to capture this by including plausible best estimate Scenarios 1 and 3. The former, similarly to the pleural thickening case 1, assumes that claims are past their peak and will decrease until 2020 at a rate derived from the original HSE 2009 asbestos exposure curve with a 42 year lag; after 2020, we assumed the 2004 Working Party low pattern would apply.

Our Scenario 3 assumes that claims have still to reach their peak and will increase until 2012 at a similar rate to mesothelioma deaths, followed by a decreasing pattern modelled based on the 2004 Working Party high scenario (with a somewhat steeper gradient after 2025). Scenarios 2 and 3 allow for a limited number of claims to be filed between 2040 and 2050.

The following graph summarises past claims experience and our range of projections.

Figure 40: 2009 Working Party Asbestosis Claim Number Projections



8.2.4. Methodology – Claim Amounts

The average incurred (on a notification year basis) and paid (excluding nil claims, on a settlement year basis) costs of asbestosis claims in our survey data are reasonably consistent and are currently around £22,000 and £21,000 respectively. However, since our claim projection methodology produces forecasts including rejected/dismissed (nil) claims, some adjustments in our average severity assumption appear warranted.

The survey data suggests that as many as 30%-40% of filed asbestosis claims are eventually dismissed. However, it is unclear that such a reduction should be applied in full to average severities. For example, it is arguable that incurred but unpaid amounts should already include some allowance for future dismissals, although this will depend on actual company practices, and the cost of actual resolved claims should be automatically reflected in the observed averages.

In order to better account for the uncertainty in future average asbestosis claim costs, we selected three different starting average values. In case A, we chose an initial value of £16,000, corresponding to a current average incurred cost of asbestosis claims, net of the full survey data dismissal rate applied to still unresolved claims. Case B has a starting value of £18,750, derived by applying approximately half the survey data dismissal rate to the average cost of incurred but unresolved claims. In case C, we selected the full £22,000 current incurred average cost as our starting point.

Three different sets of inflation rates (1%, 3% and 5%), which we believe are reasonable alternative future inflation estimates based on the mesothelioma analysis, were then applied to our selected averages, to obtain three different projections of average claims costs.

8.2.5. Range of Projections

The results of our projection exercise are reproduced below. The scenarios represent various reasonable outcomes; they are not intended to suggest “optimistic” or “pessimistic” scenarios, or an upper or lower bound.

Table 45: Asbestosis Projection Results

Projection Summary (£m)		Average Cost Per Claim		
		16,000	**18,750**	**22,000**
		Inflation Assumption		
Scenario	**Total Projected Claims**	**1%**	**3%**	**5%**
Scenario 1	13,227	227	309	425
Scenario 2	20,224	354	**503**	726
Scenario 3	34,867	627	940	1,437

These projections are similar overall to the ranges produced by the 2004 Working Party. These are summarised in the following table, which only includes projections for the period from 2009 to 2040 for comparison purposes.

Table 46: Asbestosis Projection Results made by 2004 Working Party

Projection Summary (£m)		Average Cost Per Claim		
		Low 18,046	**Medium 20,299**	**High 22,782**
		Inflation Assumption		
Scenario	**Total Projected Claims**	**1%**	**3%**	**5%**
Scenario 1	15,087	291	378	496
Scenario 2	20,671	404	**539**	728
Scenario 3	32,570	649	902	1,274

8.3. Pleural Thickening

8.3.1. Summary

For completeness we have also estimated the future Insurance Market cost for pleural thickening claims as at 1 January 2009.

The following table sets out our estimate of the potential future Insurance Market cost for pleural thickening claims, in a consistent format as the lung cancer and asbestosis projections:

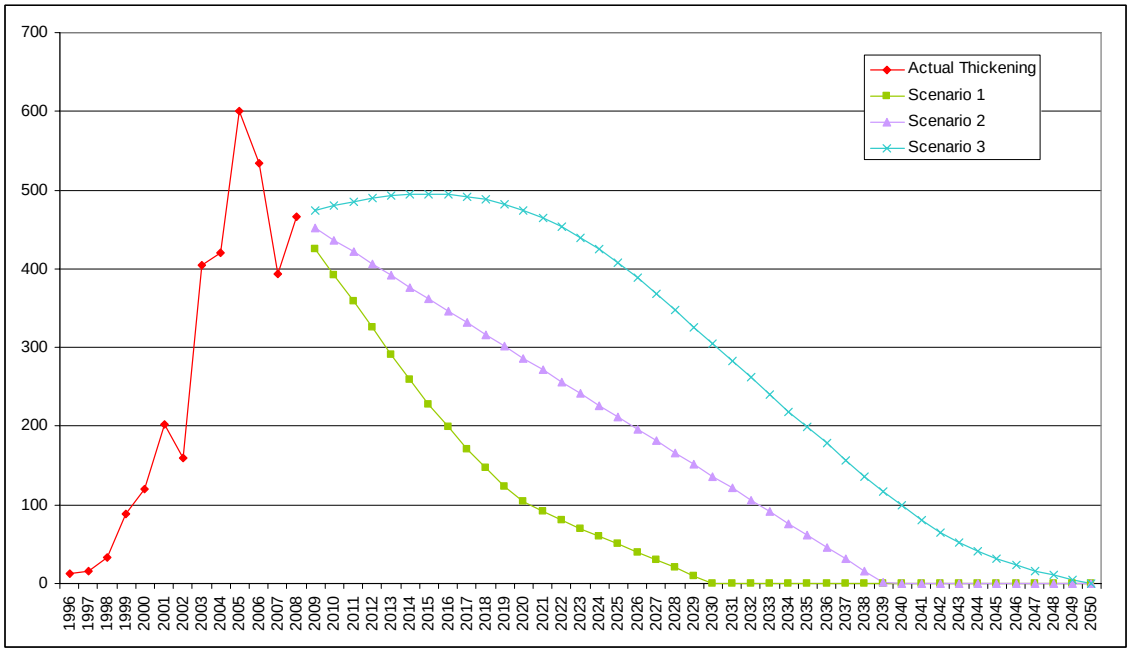
Table 47: Pleural Thickening Projection Results

Projection Summary (£m)		Inflation Assumption		
Scenario	**Total Projected Claims**	**1%**	**3%**	**5%**
Scenario 1	3,475	74	85	98
Scenario 2	7,024	157	**197**	253
Scenario 3	11,986	276	375	522

8.3.2. Methodology – Claim Numbers

The approach used is a judgemental one based on projecting future pleural thickening claim numbers and average claim costs.

Figure 41: 2009 Working Party Pleural Thickening Claim Number Projections



The Working Party summary data survey provided the number of reported pleural thickening claims from 1996 to 2008, for the companies able to provide this data. It was estimated that this survey covered 80% of the UK Insurance Market. The total number of reported UK pleural thickening claim numbers was estimated by grossing up the survey data.

This indicated that the number of reported pleural thickening insurance claims in the UK may have peaked at around 600 in 2005. Future pleural thickening claim numbers were judgementally selected from 2009 onwards on three scenarios as follows:

Scenario 1: This scenario assumes that future pleural thickening claim numbers continue to decrease at a similar rate to that experienced from 2005 to 2008 and eventually tail off by 2030.

Scenario 2: This assumes a straight line reduction in claim numbers from 2009 to 2040.

Scenario 3: This scenario assumes that future pleural thickening claim numbers increase from the 2008 level until a peak in around 2015 and then tail off by 2050.

8.3.3. Methodology – Claim Amounts

The claim number approach projects all pleural thickening claims, including nil claims. As such, we need to use an average claim amount including nil claims. We used the summary data to establish the average pleural thickening claim amount of around £20,000 in 2008. Three different sets of inflation rates (1%, 3% and 5%), which we believe are reasonable alternative future inflation estimates based on the mesothelioma analysis, were then applied to this average claim amount in order to estimate average claim amounts for each future year.

8.3.4. Range of Results

Projecting pleural thickening claims is uncertain. The scenarios represent various reasonable outcomes; they are not intended to suggest “optimistic” or “pessimistic” scenarios, or an upper or lower bound.

8.3.5. Comparison to 2004 Working Party Results

The 2004 Working Party study estimated the future insurance cost for pleural plaques and pleural thickening claims combined. See Section 8.4 for comments relating to pleural plaques.

Below, we show the 2004 Working Party estimates for pleural plaques and pleural thickening (as they relate to post-2008 claims only):

Table 48: Pleural Plaques and Thickening Projection Results made in 2004

Original 2004 Projection Summary (£m)		Inflation Assumption		
Scenario	**Total Projected Claims**	**0%**	**4%**	**8%**
Scenario 1	900	11	12	14
Scenario 2	7,900	93	**107**	122
Scenario 3	30,900	366	425	491

8.4. Pleural Plaques

On 17 October 2007 the House of Lords decided in *Rothwell v Chemical and Insulating Company Limited and Others* that asymptomatic pleural plaques could not constitute actionable damage. This decision by the highest UK court meant that employers and, therefore, their insurers were not required to pay compensation for asymptomatic pleural plaque claims.

The consequence of this decision remains uncertain. In England and Wales the Ministry of Justice (MOJ) is consulting on the most appropriate way of supporting people diagnosed with pleural plaques. The initial consultation closed on 1 October 2008 and the MOJ indicated that it would announce a decision once all responses had been fully considered. As at early January 2010, an announcement is still awaited.

Rothwell was an English case and therefore not binding in Scotland. English law is of persuasive authority only in Scotland. In order to prevent the *Rothwell* judgement applying in Scotland the Scottish Parliament introduced the Damages (Asbestos-related Conditions) (Scotland) Bill on 23 June 2008.

Scottish Parliament passed the Bill on 11 March 2009. The Bill provided that the asymptomatic conditions of asbestos-related pleural plaques, asbestos-related pleural thickening and asbestosis were actionable personal injuries for which damages could be claimed. The Bill received Royal Assent on 17 April 2009.

On 21 April 2009 a number of insurers (AXA, Norwich Union, RSA and Zurich) raised a Petition for Judicial Review in the Outer Court of Session in an attempt to strike down the Damages (Asbestos-related Conditions) (Scotland) Act 2009. Insurers argue that they are directly affected by the 2009 Act; that the Scottish Parliament acted irrationally in bringing in the legislation (contrary to the House of Lords ruling in *Rothwell*); and further that the Act contravenes their rights to a fair trial and safe possession of property under the European Convention on Human Rights.

The Act came into force on 17 June 2009 but the Judicial Review resulted in existing claims being sisted (stayed). On 8 January 2010, Lord Emslie handed down his Judgment. He ruled that while insurers do have a standing to challenge Acts of the Scottish Parliament, they had otherwise failed to persuade the Court that the 2009 Act should be struck down. The insurers' Petition was therefore dismissed. Insurers have lodged an appeal which will be heard in the Inner House of the Court of Session in Edinburgh probably some time during 2010.

Consultation in respect of pleural plaques has also been made in Northern Ireland, and consideration is currently being made as to whether to adopt similar legislation to that adopted by Scotland.

Due to the recent legal developments for pleural plaque claims there have been limited claim notifications to insurers. This means that it is difficult to make future projections based on actual data. Given this uncertainty, and the fact that asymptomatic pleural plaques are currently not compensable in England, Wales and Northern Ireland, and under a judicial review process in Scotland, the Working Party has not included such claims in its estimates of the Insurance Market cost.

Estimates of the potential cost were included as part of the Government's Consultation on Pleural Plaques. For completeness, the main aspects of these estimates are repeated here:

The MOJ estimate the present value of the cost of compensation and legal costs for both stayed and future pleural plaques ranges between £3,670 million and £28,640 million.

Table 49: Pleural Plaques Projections in MOJ Consultation Paper

This estimate is based on the following assumptions:

Average compensation:	£11,500 to £13,400 (2008 values)
Average legal costs:	£14,000 (£8,000 for claimants and £6,000 for defendants)
Government stayed cases:	1,500
Insurers' stayed cases:	5,000
Government future cases:	10,500
Insurers' future cases (1):	200,000 to 1,250,000
Future cases occur:	Peak around 2015, 60% by 2019, 90% by 2024, 100% by 2029
Average annual cost:	£252 million to £2,022 million.

(1) The number of future cases is based on the following assumptions:

Assumption	Low	High
Exposed to asbestos (2)	4,000,000	5,000,000
Develop Pleural Plaques	25%	50%
Number with Pleural Plaques	1,000,000	2,500,000
Diagnosed with Pleural Plaques	20%	50%
Number diagnosed with Pleural Plaques	200,000	1,250,000

(2) Note: The population exposed has been estimated by applying a benchmark of 14.6% based on the US experience (Nicholson WJ, G Perkel and IJ Selikoff (1982), "Occupational Exposure to Asbestos: Population at Risk and Projected Mortality – 1982-2030", *Am J Ind Med*, 3:259-311). Applying the proportion exposed to the UK yields an occupational exposure of around 7.7 million, which has been reduced to 4 million to 5 million taking account of the number who have already died.

The Working Party, on behalf of the Actuarial Profession, produced a formal response to the Consultation Paper. This response can be found on the Actuarial Profession's website at:

http://www.actuaries.org.uk/__data/assets/pdf_file/0008/139157/AP_MJ_PleuralPlaques_20080930_resp.pdf

9. Total Insurance Market Estimates

9.1. Summary of results

This section brings together the selected results for the individual disease types described in Section 7 (mesothelioma) and Section 8 (non-mesothelioma) above.

The table below shows the results for all the claim types considered. The inflation 1, 2 and 3 options vary by claim type and are in line with those used in each claim-type specific section. The claim / claimant number scenarios are also set out in each claim-type specific section. It should be noted that the numbers are intended to represent a range of potential central estimates and not a range from low to high. These projections are highly uncertain and it is possible that the ultimate cost could be outside of this range. Further, note that the results illustrated in the table do not include variation due to alternative population deaths projections for mesothelioma claims.

Table 50: Total Insurance Market Projections

Projection Summary (£m)		Inflation Assumption		
Scenario		**Inflation 1**	**Inflation 2**	**Inflation 3**
Scenario 1		8,334	10,294	12,842
Scenario 2		9,071	11,316	14,281
Scenario 3		10,332	13,115	16,921

As described in Section 7, the outcomes encompassed by the 75 mesothelioma scenarios run ranged from a lowest future Insurance Market cost estimate of £4.8bn and a highest of £30.0bn. Combining these with the lowest and highest non-mesothelioma projections gives an overall lowest Insurance Market cost estimate of £5.3bn and a highest of £33.9bn.

As noted within the mesothelioma results section the results of these 75 scenarios are for illustrative purposes only. Care should be taken when interpreting the scenario results. They include model selections and assumptions sets which, whilst possible, would not be considered appropriate as a best estimate. The scenario results are not intended to define a set of possible outcomes or to indicate any percentiles that may be used in a stochastic range of results. Possible outcomes may fall outside of the range of results displayed. The quantification of the distribution of possible results has not been considered within this paper.

10. Suggestions for future monitoring

In this paper we have outlined the work undertaken to estimate the potential UK Insurance Market cost of asbestos-related claims. The key message emerging from this work is that a large amount of uncertainty surrounds this cost. Although a reasonable estimate of the cost of asbestos-related claims might be of the order of £11bn, there is a large range of uncertainty surrounding this figure as discussed in Section 9. Indeed the uncertainty has not reduced since 2004. A more detailed analysis has only served to highlight but not resolve the areas of uncertainty. Therefore it will be important to monitor the claims experience as it emerges over the next few years.

This section sets out what the Working Party considers to be the most important areas to monitor. It is the Working Party's intention to monitor these areas in the future and to report on any material deviances compared to expectations.

10.1. Actual Population Deaths

The actual number of mesothelioma deaths in the British population is published by the HSE each year. The figure is usually published with a lag of about 18 months to two years, for example the 2006 number of deaths was published in late 2008, along with some revisions made to the 2004 and 2005 recorded number of deaths. It was this data that the HSL used to fit their model and produce their projections as discussed in Section 4.4.

Monitoring the total number of deaths will give an early indication as to whether the projections made are reasonable. The HSE published the 2007 number of deaths in October 2009 and this showed that the total number of male deaths was in line with the projections made.

However, it will probably be more revealing to break down the total number of deaths by year of birth / age at death so that the development by year of birth cohort can be compared to that expected. This is important for two reasons. Firstly, it was highlighted in Section 5 that a key assumption was that each year of birth cohort will develop differently in the future and hence the HSL model structure was preferred. If all the year of birth cohorts develop in line with each other in the future, then this would indicate that a simple birth cohort model structure may be a better model. A projection with a different model structure could give rise to significantly different results. Secondly, there is an assumption that the mesothelioma incidence rate (deaths per unit population alive) increases through time. As discussed in Section 4.4, there is a large amount of uncertainty as to what the future incidence rate by year of birth cohort will be, and this is a main driver of the uncertainty within the population death projections due to mesothelioma. Monitoring the actual year of birth incidence rates will help amend the selection of the way the year of birth cohorts develop and hence point to whether the selected future projections require amendment.

We intend to review the developing incidence rates each year as and when the relevant data is available, although it is noted that a yearly analysis will not be as revealing as looking at the development by three year bands due to the high level of random variation that will exist in a single year figure. However, annual developments will give an early indication of the emerging experience ahead of a more robust analysis of the trends.

10.2. Population Projections

It was highlighted in Section 4.4 that a large proportion of the increase in the HSL population projections between 2003/5 and 2009 was due to a revision in the overall population projections for Great Britain made by the ONS in 2006. If these projections change in the future, then this will have an impact on the projected level of population mesothelioma deaths – e.g. if it is assumed that a greater number of people are alive at a certain age in the future, then for a fixed mesothelioma incidence rate, it follows that there will be a higher level of mesothelioma deaths.

There are two key aspects to consider here. Firstly, the overall level of longevity assumed in the population projections may not turn out to be as expected. Secondly the overall level might be as expected, but this could vary by year of birth cohort. There has recently been a substantial improvement in the mortality of the year of birth cohort 1930 to 1939. This is also a key cohort within the mesothelioma projections. A continued increase in improvement beyond that expected for this cohort will have an impact on the total population mesothelioma deaths projections. Mortality improvements by year of birth cohort are considered in more detail in the Continuous Mortality Investigation Working Party (Papers 38 and 39). This is an area that is worthy of further investigation and scenario testing.

The Working Party will monitor the updated population projections and other related work and communicate any emerging impacts. For example, an update to the ONS population projections has recently been published, our initial comments on these projections are included as Appendix G to this paper.

10.3. Claims to Deaths Ratio

The increase in the proportion of mesothelioma sufferers that claim against employers / insurers that has occurred over the last five years is the main reason for the rise in the estimates of the cost of asbestos-related claims to the Insurance Market. The 2004 Working Party estimates made the assumption that the proportion would remain constant based on past experience, but it has subsequently doubled since 2004. Section 5 discusses the difficulty in estimating how this ratio will develop.

The actual ratio can, however, be easily monitored using the data that is available from the CRU. It is therefore proposed that the Working Party obtains the data from the CRU each year and, linking in with the actual deaths data, sets out how the level of the ratio is trending over time, split by age band. The Working Party will also try and get beneath these trends more by further engaging the relevant parties.

Also, it has been highlighted that there has been a rise in the proportion of female mesothelioma sufferers that are making claims against former employers and their insurers. It has been assumed in the projections made by the Working Party that this proportion remains constant at around 5% in the future. It will therefore be important to monitor this proportion in the future.

Similarly, the Government has historically received around 20% of the total number of claimants. The estimate in 2008 for the Government proportion though dropped dramatically to around 16%. We have assumed that this is just a one–off change, and that the future proportion for the Government will remain at the 20% level. If this proves not to be the case, and the Government has a lower share in the future, then the Insurance Market projections outlined in this paper will prove to be too low. On the other hand, should the Government proportion increase, then the projections will prove to be too high. It is therefore worth monitoring the Government proportion in the future. This can be performed using the CRU data.

10.4. Insurance Claim Notifications

The Insurance Market data collection surveys that have been performed by the Working Party have served as a useful check against the expected experience. It has been possible to cross-reference the Insurance Market experience with the data obtained from the CRU. Therefore, whilst these market surveys have proved useful, it is believed that the claimant data obtained from the CRU is the most useful way to monitor emerging experience. However, the market surveys conducted are an excellent way to drill down into a level of detail that is not possible by simply using the data obtained from the CRU. Therefore it will be useful to revisit the market surveys in the future, but this does not necessarily need to be done annually. Further requests have been made to the CRU to obtain data in relation to non-mesothelioma claims, and hence the emerging experience for these claims can also be monitored more easily in the future.

10.5. Average Claimant Costs

It is recommended that insurance companies start to collect mesothelioma claimant data split by the different heads of claim as set out in Section 6. This will assist with the monitoring of the assumptions underlying the average cost per claim model. This will also enable a much larger sample of claims to be collected in the future which will facilitate a much richer analysis.

11. Thanks

A number of people have helped the Working Party members produce this paper. These include Professor Julian Peto of the London School of Hygiene and Tropical Medicine, and John Hodgson, and Andrew Darnton of the HSE. The Working Party would like to thank all of these people for the help and support that they gave to the Working Party.

A special thank you goes to all the companies, and all the people therefore involved, that provided data to the Working Party, and also to Peter Stirling for his help and patience in coordinating the data collection. Similarly, a special thank you also goes to the Association of British Insurers for facilitating the sample of mesothelioma claims data collection.

We would also like to thank the many solicitors, claims handlers, and others within the insurance industry; the Health and Safety Executive; the Compensation Recovery Unit; the Department of Work and Pensions, the professors, clinicians, radiologists and nurses within the NHS and the representatives of voluntary bodies that have helped answer our questions.

12. List of Appendices

The following appendices are attached to this paper:

Appendix A – Summary of the 2004 UK Asbestos Working Party Estimates

Appendix B – Data Collection Process and Templates

Appendix C – Spreadsheet Model Details

Appendix D – Summary of Mesothelioma Projection Results

Appendix E – Summary of Non-Mesothelioma Projections

Appendix F – Summary of Data used for Section 3 graphs

Appendix G – British Population Projections

Appendix H – Comparison Between GB Mesothelioma Deaths Projections

13. List of References

The following is a list of all the references referred to in the paper;

1. "Mesothelioma Mortality in Great Britain: Estimating the Future Burden" (HSE 2003).

2. "The expected burden of mesothelioma mortality in Great Britain from 2002 to 2050" (HSE 2005).

3. "RR728 - Projection of mesothelioma mortality in Great Britain" (HSL 2009).

4. "The European mesothelioma epidemic" (Peto et al, 1999)

5. "The Quantitative Risks of Mesothelioma and Lung Cancer in Relation to Asbestos Exposure" John T. Hodgson and Andrew Darnton (2000);

6. "Models for mesothelioma incidence following exposure to fibres in terms of timing and duration of exposure and the biopersistence of the fibres" Berry G. (1999);

7. "Persistence of Natural Mineral Fibres in Human Lungs: An Overview" Andrew Churg and Joanne L. Wright (1994);

8. Asbestos import data from: http://www.aic.org.uk/Asbestos_imports.htm and Worldwide Asbestos Supply and Consumption Trends from 1900 through 2003 – Appendix tables A1& A2.

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20. "Latency of Asbestos Disease among Insulation Workers in the United States and Canada", IJ Selikoff, EC Hammond and H Seidman (1980), Cancer, 1980 vol 46(12):2736-2740.

21. Asbestosis data Table IIDB06 from http://www.hse.gov.uk/statistics/tables/iidb06.htm and Table ASIS01, from http://www.hse.gov.uk/statistics/tables/asis01.htm

22. Actuarial Profession's response to the Ministry of Justice's Pleural Plaques Consultation Paper:http://www.actuaries.org.uk/__data/assets/pdf_file/0008/139157/AP_MJ_PleuralPlaques_20080930_resp.pdf

23. Continuous Mortality Investigation Working Paper 38: http://www.actuaries.org.uk/knowledge/cmi/cmi_wp/wp38

Contents of Appendices

Appendix A:

- Summary of the 2004 UK Asbestos Working Party Estimate
- 2004 Asbestos Working Party projections:
    - Mesothelioma projections
    - Lung Cancer projections
    - Asbestosis projections
    - Pleural Plaques/Thickening projections

Appendix A

Summary of the 2004 UK Asbestos Working Party Estimates

Our projections of asbestos claim cost build on the quantitative work performed in the original UK asbestos working party paper: "UK Asbestos – The Definitive Guide" which was published at GIRO in 2004.

The 2004 working party estimated that the future cost to the UK insurance industry of UK sourced asbestos-related claims, at that time, was £4bn-£10bn. Approximately, 70% of that estimate was in respect of mesothelioma claims. The mesothelioma estimates were based on the HSE's 2003 projection of the future number of mesothelioma deaths. These projections are highly sensitive to a number of key parameters, as is suggested by the wide range of estimates. The projection of population deaths relied on the HSE projection of deaths from mesothelioma, and it was also assumed that the number of mesothelioma deaths that ultimately resulted in an insurance claim remained constant at the past observed average of around one third.

The population projections are also highly sensitive to a number of key parameters. In particular, how the disease continues to develop at older ages, with over half of all projected claims being in respect of those aged over 80 by the year 2020. The working party noted that given the lack of actual experience from that age group, the future number of mesothelioma deaths could easily be considerably higher or lower than the HSE's projections. In addition to using the HSE projections, the working party collected data through an anonymous survey of all major insurers, representing the majority of the UK Employer's Liability market during the main period of asbestos exposure. They derived assumptions for the number of future claims for asbestos-related diseases other than mesothelioma and for the average claim sizes for all asbestos-related disease types. Based on these assumptions the working party derived their estimates for the future cost of asbestos claims to the UK insurance industry.

The 2004 working party did more than just estimate the future cost of asbestos-related claims to the UK insurance industry, and the full paper is available at http://www.actuaries.org.uk/__data/assets/pdf_file/0004/34969/Lowe.pdf.

2004 mesothelioma estimates

The previous working party's low, medium and high estimates, for the cost of mesothelioma claims to the UK insurance industry between 2004 and 2040 are summarised below:

Table A1: 2004 summary of projections

Undiscounted			
Projection of numbers	**Low**	**Inflation Medium**	**High**
Low	£3.0bn	£3.8bn	£4.9bn
Medium	£3.6bn	£4.4bn	£5.8bn
High	£4.0bn	£5.0bn	£6.6bn

Appendix A

Table A2: 2004 summary of selections

Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)			
Projection of numbers	**Inflation Low**	**Medium**	**High**
Low	£1.5bn	£1.8bn	£2.1bn
Medium	£1.7bn	£2.0bn	£2.5bn
High	£1.9bn	£2.2bn	£2.7bn

In estimating the future cost to the UK insurance industry from mesothelioma claims the working party made assumptions relating to:

1) The number of future mesothelioma claims; and

2) The level of compensation payable for each claim.

The table below details the key selections made in the previous working party's mesothelioma estimates.

Table A3: 2004 summary of assumptions

Estimate	HSE model (Non-clearance)	Average claim costs for 2003	Inflation (wage & court inflation)
Low	k = 2.0	£50k	4% and 4%
Medium	k = 2.6	£50k	4% and 6%
High	k = 3.0	£50k	4% and 8%

We will discuss each of these assumptions in more detail below.

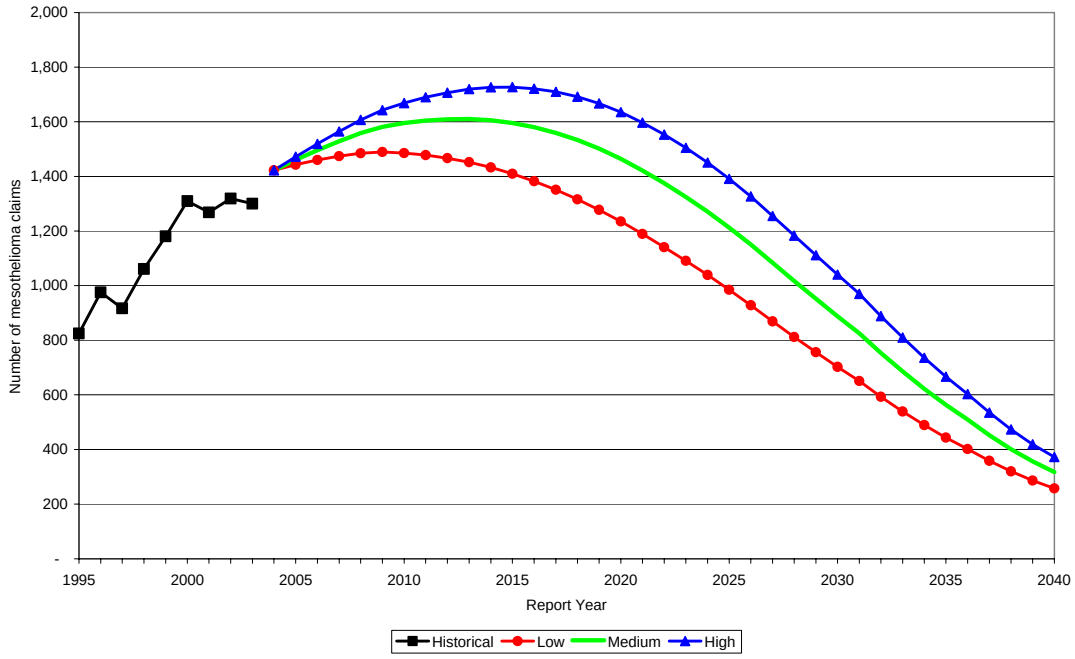
Appendix A

Future number of mesothelioma claims

The estimates used the 2003 HSE model to project the future number of mesothelioma claims. The low, medium and high future claim projections were all scaled to the same level of claims, 1,422, in 2004. The past number of mesothelioma claims included nil claims.

The graph below shows the low, medium and high projections of the future number of mesothelioma claims, together with the actual historical claims from the data collected through the survey carried out by the working party.

Figure A1: 2004 projected number of Mesothelioma deaths



The low and high estimates were based on the 2003 HSE projections of the future number of mesothelioma deaths, but used a different k factor, (exponent of time, modelling the increase of the risk of developing mesothelioma with increasing time from exposure): k=2 and k=3 respectively. The medium future claim projections used the HSE selected value for k of 2.6.

The working party's future claim projections used the HSE non-clearance model, which assumes that the asbestos fibres do not leave the lungs once they are inhaled.

The exposure used in these claim projections incorporated "background" exposure to asbestos (this means that there is exposure to asbestos after 1990, long after asbestos ceased being imported into the UK). The claim projections were then cut-off at 2040 as it was believed that the majority of claims reported after 2040 were expected to have been caused by background environmental exposures, which were unlikely to be covered by insurance contracts. The 2004 working party also felt that should the industry-sharing agreements continue in their then present forms up to 2040, some of the liability for these claims could relate to future periods of insurance and would therefore fall outside of the working party's scope.

Appendix A

The table below summarises the key assumptions underlying the 2004 working party's projections of the future number of mesothelioma claims to the UK insurance industry.

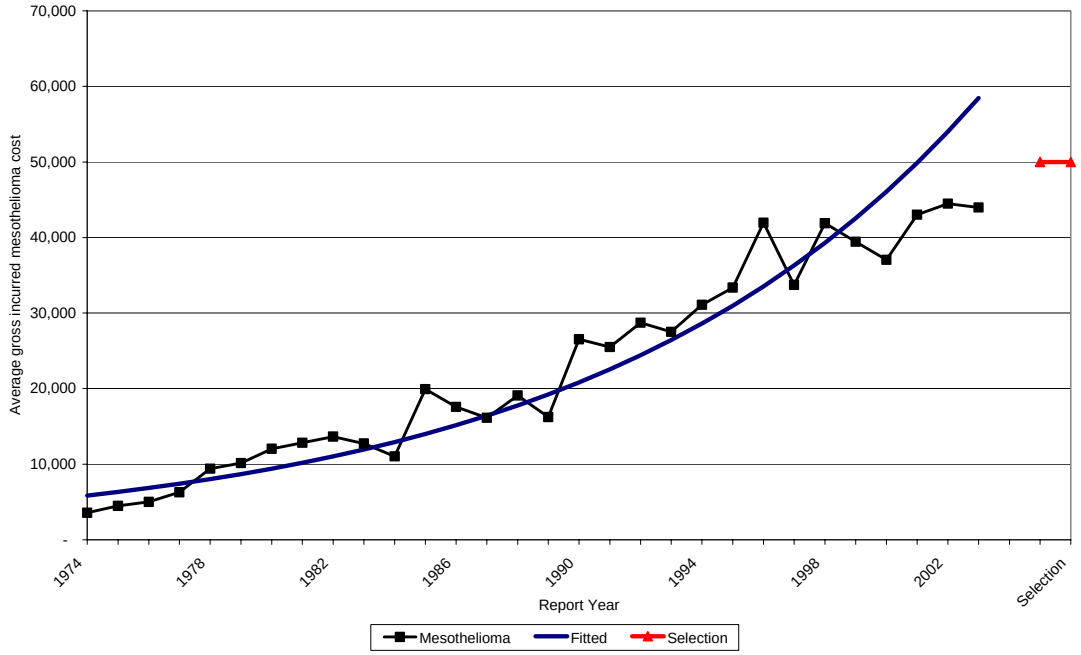
Table A4: 2004 summary of key assumptions

Estimate	Low	Medium	High
Nil claims	Included	Included	Included
Starting level	1,422	1,422	1,422
HSE Model used	non-clearance – "background" exposure	non-clearance – "background" exposure	non-clearance – "background" exposure
Cut-off point	2040	2040	2040
K factor	2.0	2.6	3.0
Peak year	2009	2013	2015
Peak number of claims	1,489	1,610	1,727
Total future claims	37,914	43,492	47,777

Average cost of mesothelioma claims

The 2004 working party selected a market average cost for mesothelioma claims that was mid-way between the actual average cost from the data collected through the survey of the UK insurance industry and their fitted average cost curve. The graph below details the actual average incurred cost and the fitted average cost together with the selected starting average cost. The chart below includes nil claims.

Figure A2: 2004 projection of average mesothelioma cost



An exponential curve was fitted using regression analysis, which gave a reasonable fit, apart from the last four years. It was suggested that this slow down in the average cost of mesothelioma claims in the last four years was due to a couple of possibilities:

- Under-reserving of claims on these recent years.
- A change in the trend of average costs.

Appendix A

The 2004 working party believed that a combination of the two factors might be the most likely as the graph suggested that the rate of increase in the average cost has been slowing over the past ten years.

It was expected that the underlying mesothelioma costs would start to decrease, as the average age of claimants would become older (with lower compensation amounts for loss of earnings or future care). This is discussed in more detail in the next Section.

Inflation for mesothelioma claims

The 2004 working party considered the award to mesothelioma claimants to be comprised of the following components:

- A fixed cost component; and
- An age-related component.

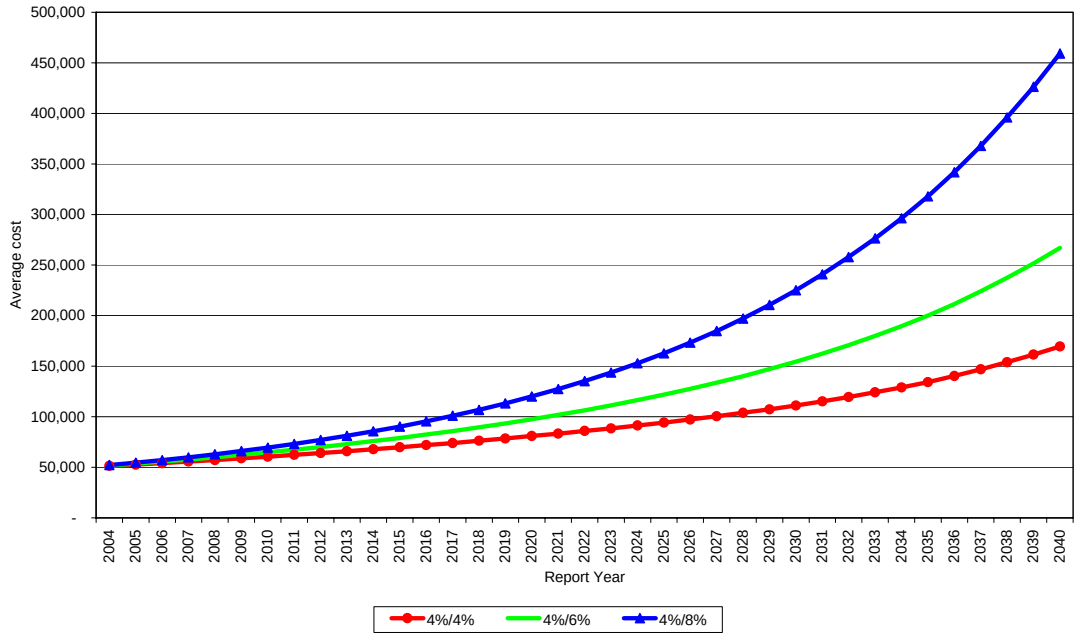
In order to determine the future cost of mesothelioma claims, they used an average cost model that assessed the future expected average cost, taking into account:

- Court inflation on the fixed component; and
- Wage inflation as well as the increase in the average age of claimants in the age-related component.

The graph below details the low, medium and high future mesothelioma average cost per claim in future years. All the scenarios assumed that wage inflation was 4% p.a. with court inflation of 4%, 6% and 8% p.a. respectively.

Appendix A

Figure A3: 2004 inflation assumptions



The overall inflation rate starts lower and tends towards the court inflation. This effect is in part due to the dampening impact of the increasing average age of claimants.

From one year to the next the average age of mesothelioma claimants increases by less than a whole year. Initially, the wage-related component of an average mesothelioma award makes up the greater proportion of the claim; therefore the inflation on the wage-related component of the award increases at less than 4% p.a. Eventually, as claimants get older, the fixed part of the claim makes up the majority of the award and the inflation rate tends to increase towards the assumed level of court inflation.

Claims per death

To derive the number of different insurers against which an individual makes a claim (and hence the ratio of the number of claims to the number of deaths), the working party looked at the difference between:

- their selected average cost per claim (based on the data they had collected); and
- the estimated 100% indemnity costs provided by several companies.

In order to compare the two, they had to remove nil claims and legal expenses from their selected average cost.

The following two tables detail the 2004 working party assumptions on the proportion of claims that settle at nil costs and the proportion of legal expenses per claim for each disease type.

Appendix A

Table A5: 2004 assumptions re nil claims and legal expenses

Disease type	Working Party 04 selected ACPC (includes nils)	Proportion of claims settled at nil cost	Working Party 04 selected ACPC (excludes nils)
Mesothelioma	£50,000	20%	£62,500
Asbestosis	£17,000	20%	£21,250
Lung cancer	£38,000	20%	£47,500
Pleural plaques/thickening	£11,000	20%	£13,750

Disease Type	Working Party 04 selected ACPC (excludes nils)	Proportion of legal costs	ACPC (excludes legal expenses and nils)
Mesothelioma	£62,500	15%	£53,125
Asbestosis	£21,250	15%	£18,063
Lung cancer	£47,500	15%	£40,375
Pleural plaques/thickening	£13,750	30%	£9,625

These figures were then compared to the average 100% indemnity costs that various companies had supplied. The average costs by each disease type are detailed in the table below.

Table A6: 2004 average costs by disease type

Disease type	ACPC (excludes legal expenses and nils)	Estimated average 100% indemnity costs	Ratio
Mesothelioma	£53,125	£108,222	2.0
Asbestosis	£18,063	£45,222	2.5
Lung cancer	£40,375	£115,000	2.8
Pleural plaques/thickening*	£9,625	£12,491	1.3

* The working party combined the pleural plaques and pleural thickening claims together by assuming that 90% of these claims were pleural plaques.

A reasonable proportion of people who make asbestos-related claims would have periods of employment with asbestos exposure at more than one company. A separate claim would then be made to the insurer of each of these companies. Hence the 2004 working party expected the average company share of a claim to be lower than the 100% claim amount.

Taking this into account, the working party selected a ratio of 2.5 for all asbestos-related claims; which suggested that each claimant makes a claim with, on average, 2.5 insurance companies. They noted that this ratio was fairly consistent across the non-pleural diseases. The working party suggested that the observed lower ratio on pleural plaques/thickening claims might be due to the different characteristics of those claims.

The working party noted that using a ratio of 2.5 implied that, for mesothelioma claims, only a third of those currently dying from mesothelioma were making an insurance claim. They assumed that there was no change in the future proportion of people making an insurance claim and that if this proportion were to increase going forward, then their estimates would be understated.

Appendix A

Previous lung cancer estimates

The previous working party's low, medium and high estimates, for the cost of lung cancer claims to the UK insurance industry between 2004 and 2040 are summarised below:

Table A7: 2004 lung cancer estimates

Undiscounted

Projection of numbers	Inflation Low	Medium	High
Low	£39.4m	£42.4m	£46.0m
Medium	£117.8m	£137.7m	£165.8m
High	£211.7m	£266.2m	£352.9m

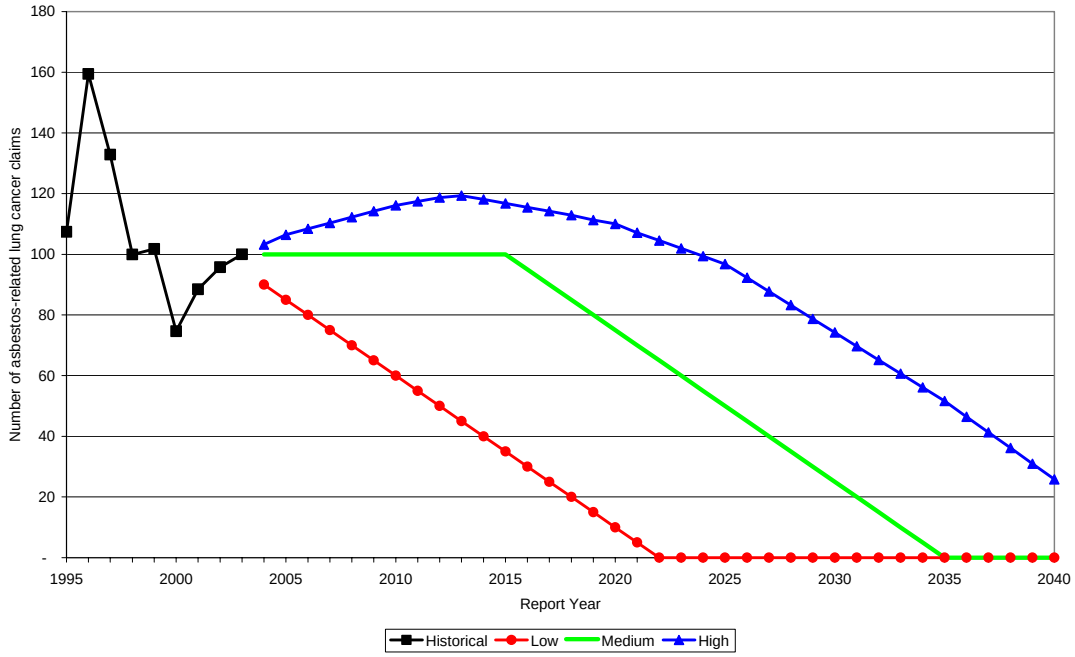
Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)

Projection of numbers	Inflation Low	Medium	High
Low	£29.8m	£31.7m	£34.0m
Medium	£67.8m	£76.6m	£88.5m
High	£98.7m	£116.9m	£144.2m

Future number of lung cancer claims

The graph below shows the low, medium and high projections of the future number of lung cancer claims, together with the actual historical claims from the data collected through the survey carried out by the working party.

Figure A4: 2004 projected number of lung cancer claims



Appendix A

The working party observed that the number of claims had been showing a downward trend over the past fifteen years. The low projection assumed that the trend would continue in a linear fashion. The high projection assumed that the trend was the same as for the medium estimate of future mesothelioma claim numbers (i.e. the 2003 HSE projection). The medium projection was in between the two and assumed that the current number of claims continued for a period and then tailed-off. The working party highlighted that one of the biggest uncertainties affecting the number of lung cancer claims was the possibility of lawyers targeting all lung cancer claims, most of which will be smoking related. The working party did not consider this in their projections.

Previous asbestosis estimates

The previous working party's low, medium and high estimates, for the cost of asbestosis claims to the UK insurance industry between 2004 and 2040 are summarised below:

Table A8: 2004 asbestosis estimates

Undiscounted

Projection of numbers	Inflation Low	Inflation Medium	Inflation High
Low	£448.7m	£545.1m	£672.8m
Medium	£568.1m	£712.9m	£912.3m
High	£823.4m	£1,087.3m	£1,471.0m

Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)

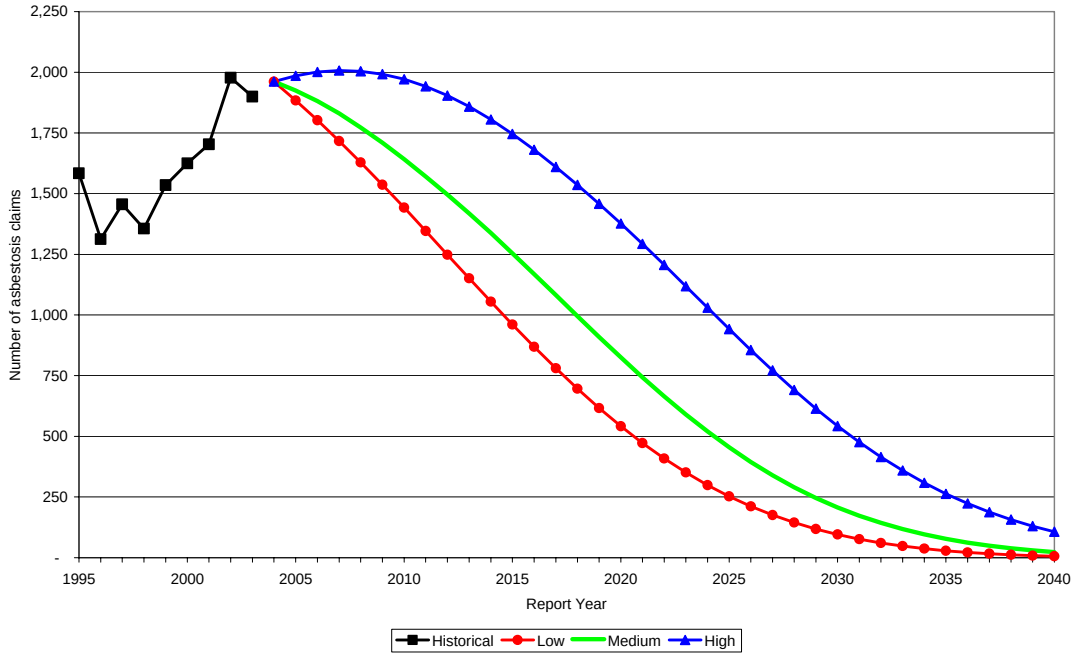
Projection of numbers	Inflation Low	Inflation Medium	Inflation High
Low	£312.2m	£364.3m	£429.8m
Medium	£371.3m	£443.0m	£536.2m
High	£486.6m	£601.9m	£759.1m

Appendix A

Future number of asbestosis claims

The graph below shows the low, medium and high projections of the future number of asbestosis claims, together with the actual historical claims from the data collected through the survey carried out by the working party.

Figure A5: 2004 projected number of asbestosis claims



The working party commented that unlike mesothelioma, which can allegedly be caused by a single asbestos fibre, it requires a reasonable exposure to asbestos in order to develop asbestosis. They therefore expected a much earlier peak in the number of asbestosis claims, due to the earlier reduction in heavy asbestos exposure through the introduction of tighter regulations.

The various projections were based on the working party's "high level model". The medium projection assumed that the number of claim notifications were approximately at the peak at that time. The high curve assumed that asbestosis claims continued to rise until 2008 and the low curve assumed that they were already past the peak and asbestosis claim numbers were firmly on their way down.

Appendix A

Previous pleural plaques/thickening estimates

The previous working party's low, medium and high estimates, for the cost of pleural plaques/thickening claims to the UK insurance industry between 2004 and 2040 are summarised below:

Table A9: 2004 pleural plaques/thickening estimates

Undiscounted

Projection of numbers	Inflation Low	Medium	High
Low	£212.9m	£223.3m	£234.2m
Medium	£714.9m	£763.4m	£815.2m
High	£1,193.7m	£1,302.8m	£1,423.1m

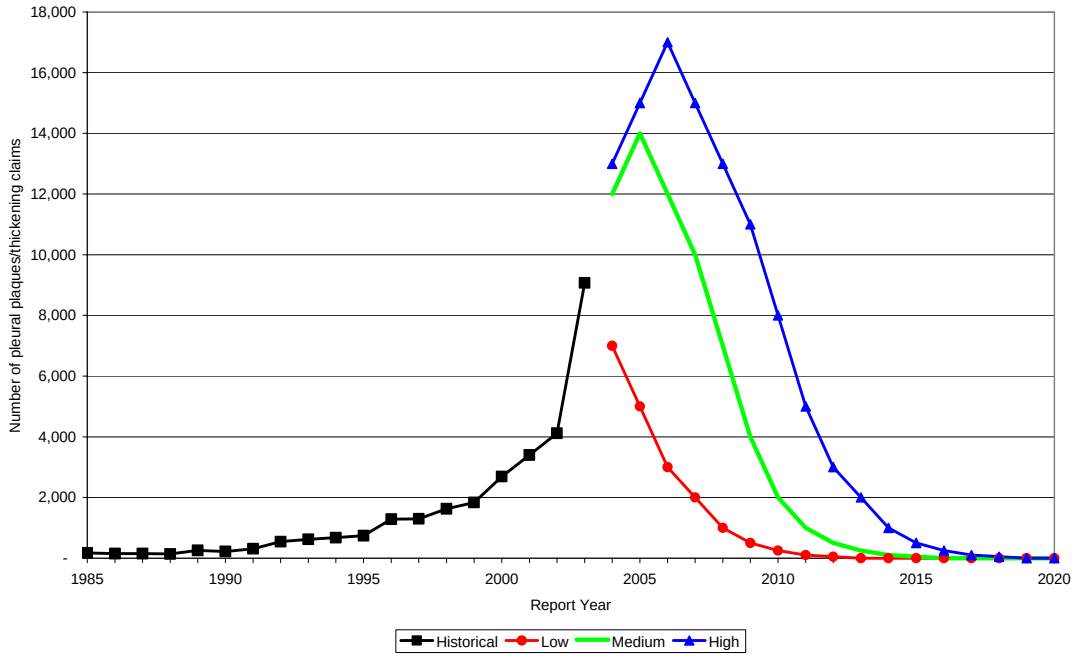
Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)

Projection of numbers	Inflation Low	Medium	High
Low	£199.4m	£208.6m	£218.3m
Medium	£641.6m	£682.7m	£726.5m
High	£1,018.8m	£1,105.3m	£1,200.0m

Future number of pleural plaques/thickening claims

The graph below shows the low, medium and high projections of the future number of pleural plaques/thickening claims, together with the actual historical claims from the data collected through the survey carried out by the working party.

Figure A6: 2004 projected number of pleural plaques / thickening claims



Appendix A

The working party stated that this was the most difficult projection due to the extremely high numbers of claims seen in the past few years. They saw the big question to be whether or not insurers were about to see an upwards blip in claims as had been seen in the US, or whether the pleural plaques test cases would nip the issue in the bud and see claims drop right off, both in number and cost.

Summary of previous assumptions for non-mesothelioma claims

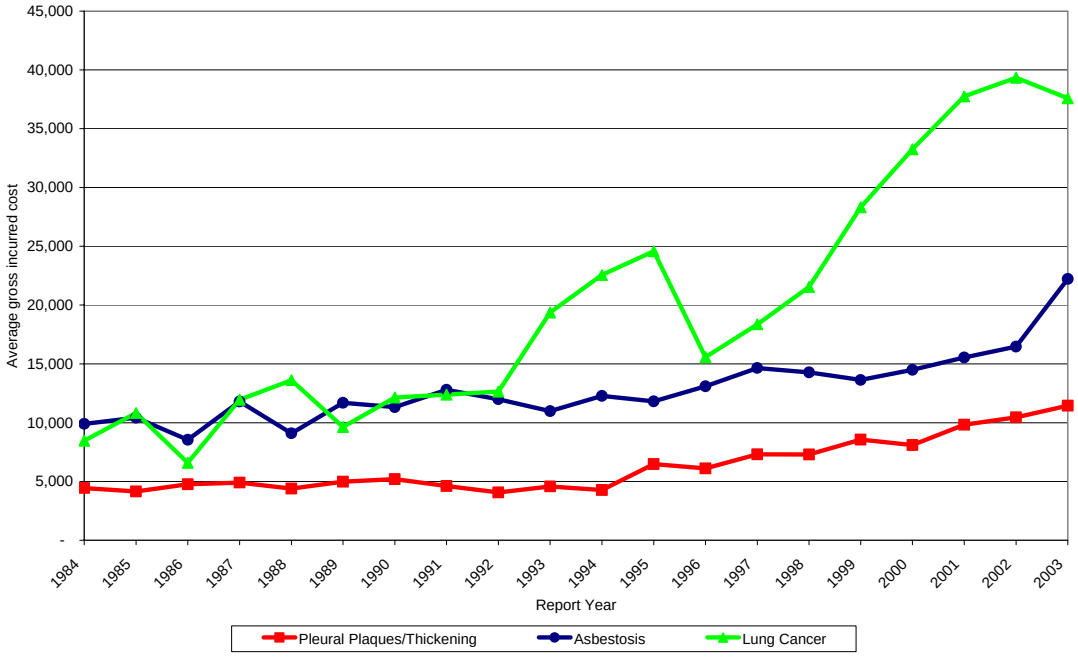
The table below details the key selections made in the previous working party's non-mesothelioma estimates.

Table A10: 2004 non-mesothelioma projection assumptions

Disease type	Average claim costs for 2003	Inflation		
		Low	Medium	High
Lung Cancer	38,000	Wage = 4%, Court = 4%	Wage = 4%, Court = 6%	Wage = 4%, Court = 8%
Asbestosis	17,000	1%	3%	5%
Pleural plaques/thickening	11,000	1%	3%	5%

The previous working party used the data they collected through the survey of the UK insurance industry to derive their selected average costs and inflation assumptions as shown in the graph below.

Figure A7: 2004 non-mesothelioma average costs



Appendix A

The working party used the same low, medium and high inflation assumptions for lung cancer claims as they derived for mesothelioma claims; see Section 2.1.3 for more details on the mesothelioma inflation assumptions. They based this decision on the following:

- The average cost of lung cancer claims had increased substantially over time and had a similar pattern to the average cost of mesothelioma claims;
- A fitted exponential curve to the average cost of lung cancer claims implied a rate of inflation that was similar to that implied for mesothelioma claims; and
- There are similar opinions regarding how older claimants could cause average costs to plateau in the future.

For asbestosis and pleural plaques/thickening claims, the working party assumed inflation rates of 1%, 3% and 5% for their low, medium and high estimates, respectively. The medium assumption was based around the observed inflation in both asbestosis and pleural plaques claims over the last decade.

Appendix A

AWP 2004 - Mesothelioma Projections

Inflation	**Medium - 4%/6%**
Population Deaths Numbers	**Medium - k=2.6**
Claims to Deaths	**2.5**

	2004 Asbestos Working Party Mesothelioma Projections							
	Population Deaths	**% Claims to Deaths**	**Claim Deaths**	**Insurance Claims**		**Inflation**	**ACPC**	**Total Cost**
2003	1,584	34.9%	552	1,381			50,000	
2004	1,631	34.9%	569	1,422		3.7%	51,834	73,728,595
2005	1,675	34.9%	584	1,461		3.6%	53,724	78,473,034
2006	1,716	34.9%	599	1,496		3.7%	55,701	83,346,762
2007	1,753	34.9%	612	1,529		3.7%	57,746	88,285,549
2008	1,787	34.9%	623	1,558		3.8%	59,935	93,406,330
2009	1,814	34.9%	633	1,582		4.0%	62,321	98,577,864
2010	1,829	34.9%	638	1,595		4.0%	64,813	103,398,472
2011	1,840	34.9%	642	1,604		4.0%	67,415	108,149,218
2012	1,845	34.9%	644	1,609		4.0%	70,120	112,837,702
2013	1,846	34.9%	644	1,610		4.1%	72,972	117,491,342
2014	1,841	34.9%	642	1,606		4.1%	75,973	121,983,670
2015	1,830	34.9%	638	1,596		4.2%	79,127	126,264,034
2016	1,812	34.9%	632	1,580		4.2%	82,447	130,269,720
2017	1,788	34.9%	624	1,559		4.2%	85,925	133,974,345
2018	1,758	34.9%	613	1,533		4.3%	89,601	137,394,969
2019	1,722	34.9%	601	1,502		4.3%	93,483	140,390,205
2020	1,679	34.9%	586	1,464		4.4%	97,578	142,899,631
2021	1,630	34.9%	569	1,422		4.5%	101,921	144,917,063
2022	1,577	34.9%	550	1,375		4.5%	106,490	146,433,152
2023	1,519	34.9%	530	1,325		4.5%	111,311	147,471,250
2024	1,457	34.9%	508	1,271		4.6%	116,445	147,995,614
2025	1,390	34.9%	485	1,212		4.7%	121,885	147,784,837
2026	1,320	34.9%	460	1,151		4.7%	127,605	146,846,134
2027	1,243	34.9%	433	1,084		4.8%	133,708	144,901,613
2028	1,167	34.9%	407	1,017		4.9%	140,196	142,619,233
2029	1,092	34.9%	381	952		4.9%	147,104	140,031,888
2030	1,018	34.9%	355	888		5.0%	154,477	137,162,957
2031	947	34.9%	330	825		5.1%	162,430	134,078,240
2032	864	34.9%	301	754		5.2%	170,910	128,818,768
2033	786	34.9%	274	686		5.3%	179,968	123,428,556
2034	714	34.9%	249	622		5.4%	189,659	118,023,264
2035	646	34.9%	225	563		5.5%	200,039	112,708,597
2036	584	34.9%	204	509		5.8%	211,635	107,816,523
2037	519	34.9%	181	452		5.9%	224,102	101,374,765
2038	460	34.9%	161	401		6.0%	237,476	95,294,961
2039	409	34.9%	143	356		6.0%	251,774	89,726,884
2040	364	34.9%	127	318		6.1%	267,048	84,808,703

Total Mesothelioma Cost 2004-2040 **4,433,114,444**

Total Mesothelioma Cost 2009-2040 **4,015,874,175**

Appendix A

AWP 2004 - Lung Cancer Projections

Inflation **Medium - 4%/6%**
Insurance Claims **Medium**

	2004 Asbestos Working Party Lung Cancer Projections				
	Insurance Claims	**Inflation**	**ACPC**		**Total Cost**
2003	100		38,000		
2004	100	3.7%	39,393		3,939,348
2005	100	3.6%	40,830		4,083,029
2006	100	3.7%	42,332		4,233,242
2007	100	3.7%	43,887		4,388,705
2008	100	3.8%	45,551		4,555,088
2009	100	4.0%	47,364		4,736,405
2010	100	4.0%	49,258		4,925,811
2011	100	4.0%	51,235		5,123,550
2012	100	4.0%	53,291		5,329,126
2013	100	4.1%	55,459		5,545,890
2014	100	4.1%	57,740		5,773,965
2015	100	4.2%	60,137		6,013,667
2016	95	4.2%	62,660		5,952,677
2017	90	4.2%	65,303		5,877,282
2018	85	4.3%	68,096		5,788,197
2019	80	4.3%	71,047		5,683,753
2020	75	4.4%	74,159		5,561,927
2021	70	4.5%	77,460		5,422,222
2022	65	4.5%	80,933		5,260,626
2023	60	4.5%	84,596		5,075,784
2024	55	4.6%	88,498		4,867,392
2025	50	4.7%	92,632		4,631,617
2026	45	4.7%	96,980		4,364,102
2027	40	4.8%	101,618		4,064,715
2028	35	4.9%	106,549		3,729,206
2029	30	4.9%	111,799		3,353,980
2030	25	5.0%	117,402		2,935,062
2031	20	5.1%	123,446		2,468,929
2032	15	5.2%	129,892		1,948,373
2033	10	5.3%	136,776		1,367,757
2034	5	5.4%	144,141		720,703
2035	-	5.5%	152,030		-
2036	-	5.8%	160,842		-
2037	-	5.9%	170,317		-
2038	-	6.0%	180,482		-
2039	-	6.0%	191,348		-
2040	-	6.1%	202,957		-

Total LC Cost 2004-2040 **137,722,132**

Total LC Cost 2009-2040 **116,522,720**

Appendix A

AWP 2004 - Asbestosis Projections

Inflation	**Medium**
Insurance Claims	**Medium**

	2004 Asbestos Working Party Asbestosis Projections				
	Insurance Claims	**Inflation**	**ACPC**		**Total Cost**
2003	1,900		17,000		
2004	1,961	3.0%	17,510		34,342,194
2005	1,925	3.0%	18,035		34,720,319
2006	1,881	3.0%	18,576		34,944,823
2007	1,830	3.0%	19,134		35,013,596
2008	1,773	3.0%	19,708		34,931,999
2009	1,710	3.0%	20,299		34,704,940
2010	1,642	3.0%	20,908		34,336,050
2011	1,571	3.0%	21,535		33,833,574
2012	1,496	3.0%	22,181		33,192,180
2013	1,419	3.0%	22,847		32,409,120
2014	1,338	3.0%	23,532		31,479,545
2015	1,254	3.0%	24,238		30,395,346
2016	1,168	3.0%	24,965		29,168,932
2017	1,082	3.0%	25,714		27,816,388
2018	995	3.0%	26,485		26,355,421
2019	909	3.0%	27,280		24,805,835
2020	825	3.0%	28,098		23,187,027
2021	744	3.0%	28,941		21,518,215
2022	665	3.0%	29,810		19,822,129
2023	590	3.0%	30,704		18,126,736
2024	520	3.0%	31,625		16,447,579
2025	455	3.0%	32,574		14,809,646
2026	394	3.0%	33,551		13,232,515
2027	339	3.0%	34,557		11,732,139
2028	290	3.0%	35,594		10,321,853
2029	246	3.0%	36,662		9,011,377
2030	207	3.0%	37,762		7,808,428
2031	173	3.0%	38,895		6,718,929
2032	143	3.0%	40,062		5,737,810
2033	118	3.0%	41,263		4,861,929
2034	96	3.0%	42,501		4,080,891
2035	78	3.0%	43,776		3,397,332
2036	62	3.0%	45,090		2,804,891
2037	49	3.0%	46,442		2,294,492
2038	39	3.0%	47,836		1,858,179
2039	30	3.0%	49,271		1,488,540
2040	23	3.0%	50,749		1,178,100

Total Asbestosis Cost 2004-2040	**712,888,998**
Total Asbestosis Cost 2009-2040	**538,936,068**

Appendix A

AWP 2004 - Pleural Plaques/Thickening Projections

Inflation	**Medium**
Insurance Claims	**Medium**

	2004 Asbestos Working Party Pleural Projections				
	Insurance Claims	**Inflation**	**ACPC**		**Total Cost**
2003	9,072		11,000		
2004	12,000	3.0%	11,330		135,960,000
2005	14,000	3.0%	11,670		163,378,600
2006	12,000	3.0%	12,020		144,239,964
2007	10,000	3.0%	12,381		123,805,969
2008	7,000	3.0%	12,752		89,264,104
2009	4,000	3.0%	13,135		52,538,301
2010	2,000	3.0%	13,529		27,057,225
2011	1,000	3.0%	13,934		13,934,471
2012	500	3.0%	14,353		7,176,253
2013	250	3.0%	14,783		3,695,770
2014	100	3.0%	15,227		1,522,657
2015	50	3.0%	15,683		784,168
2016	-	3.0%	16,154		-
2017	-	3.0%	16,638		-
2018	-	3.0%	17,138		-
2019	-	3.0%	17,652		-
2020	-	3.0%	18,181		-
2021	-	3.0%	18,727		-
2022	-	3.0%	19,289		-
2023	-	3.0%	19,867		-
2024	-	3.0%	20,463		-
2025	-	3.0%	21,077		-
2026	-	3.0%	21,709		-
2027	-	3.0%	22,361		-
2028	-	3.0%	23,032		-
2029	-	3.0%	23,723		-
2030	-	3.0%	24,434		-
2031	-	3.0%	25,167		-
2032	-	3.0%	25,922		-
2033	-	3.0%	26,700		-
2034	-	3.0%	27,501		-
2035	-	3.0%	28,326		-
2036	-	3.0%	29,176		-
2037	-	3.0%	30,051		-
2038	-	3.0%	30,952		-
2039	-	3.0%	31,881		-
2040	-	3.0%	32,837		-

Total Pleural Plaques/Thickening Cost 2004-2040	**763,357,482**
Total Pleural Plaques/Thickening Cost 2009-2040	**106,708,845**

Appendix B:

- Data Collection Process and Templates

Appendix B - Data Collection Template

Asbestos Working Party II - Data Collection Template (2008 Year-End Update)

1. We have deliberately asked for a large number of data items, and acknowledge that most companies will not be able to provide every data item. However, please provide as much data as you can. In particular, we are most interested in **mesothelioma** claims, so getting more detailed information for these claims would be of most benefit.

2. Ideally all figures should be extracted at **31 December 2008**. However if this is not possible please clearly indicate the extraction date.

3. In all the sheets, "unidentified asbestos related" refers to claims for which you are unable to distinguish which asbestos-related disease they relate to, but know that they are an asbestos-related claim. Alternatively, if you are able to distinguish mesothelioma and non-mesothelioma claims only, please fill in the columns "mesothelioma" and "total non-mesothelioma".

4. A number of the sheets refer to **"low value"** claims. This term has been used to describe those claims that have been settled at a non-zero cost below a pre-defined threshold of £1,000 per claim.

5. Please indicate for each notification or settlement year on each completed sheet whether you believe the data entered to be "**reliable and consistent"** (column K). Clearly this is a fairly subjective question. For instance you may believe that data for notification years before 1995 is partially incomplete, based on a different data source or processes, and therefore subject to greater uncertainty or reduced credibility, and therefore can not be compared to years post 1994. In this case you would enter 'Y' in years from 1995-2008 only.

6. Each individual sheet gives more detail on exactly what data we are collecting, but if you are unsure on any of the definitions, please contact Matt Wilde on the Asbestos Working Party via 01603 683883 / wildem@norwich-union.co.uk who can help clarify what data is required.

7. Please return completed forms to Peter Stirling at the Institute of Actuaries at peter.stirling@actuaries.org.uk by **31 March 2009**. Peter will be responsible for collating the responses to provide back to the Working Party for analysis.

8. Only direct claims should be included (i.e. no reinsurance claims) and all monetary amounts should be **your own company share only** (i.e. exclude amounts covered by other insurers).

9. Please ensure any "total" columns sum to the individual components that make-up the total.

10. Many thanks for your participation!

Appendix B - Data Collection Template

Data As At:	

NUMBER OF CLAIMS NOTIFIED BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the number of claims (nil and non-nil) notified to your company for each notification year, split by disease-type.

Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening

Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

NUMBER OF CLAIMS SETTLED AT TRUE NIL COST (£0) BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

*Please provide the number of claims notified to your company and settled at **precisely nil-cost** for each notification year, split by disease-type.*

Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening

Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

NUMBER OF CLAIMS SETTLED AT LOW VALUE COST (NON-ZERO BUT BELOW £1,000) BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

*Please provide the number of claims notified to your company and settled at **low value cost** (defined to be strictly less than £1,000) for each notification year, split by disease-type.*

Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening

Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

NUMBER OF CLAIMS SETTLED AT COST (NON-ZERO) BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

*Please provide the number of claims notified to your company and settled at cost (**including** those below £1,000) for each notification year, split by disease-type.*

Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening

Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

NUMBER OF CLAIMS SETTLED AT LOW VALUE COST (NON-ZERO BUT BELOW £1,000) BY CLAIM SETTLEMENT YEAR										
Settlement Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

*Please provide the number of claims notified to your company and settled at **low value cost** (defined to be strictly less than £1,000) for each year of claim settlement, split by disease-type.*

Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening

Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

NUMBER OF CLAIMS SETTLED AT COST (NON-ZERO) BY CLAIM SETTLEMENT YEAR										
Settlement Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

*Please provide the number of claims notified to your company and settled at cost (**including** those below £1,000) for each year of claim settlement, split by disease-type.*

Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening

Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

GROSS PAID AMOUNT BY CLAIM NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the total gross paid amount in respect of indemnity and costs (both own and third-party) on all notified claims (open or settled) for each notification year, split by disease-type.
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers
Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening
Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

GROSS INCURRED AMOUNT BY CLAIM NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the total gross incurred amount (paid + outstandings) in respect of indemnity and costs (both own and third-party) on all notified claims (open or settled) for each notification year, split by disease-type.
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers
Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening
Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

GROSS PAID AMOUNT FOR LOW VALUE SETTLED CLAIMS (BELOW £1,000) BY CLAIM NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

*Please provide the total gross paid amount in respect of indemnity and costs (both own and third-party) on all claims settled at **low value cost** (defined to be strictly less than £1,000) for each **notification** year, split by disease-type*
Explicitly exclude partial payments made on claims which are still open
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers
Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening
Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

GROSS PAID AMOUNT FOR SETTLED CLAIMS BY CLAIM SETTLEMENT YEAR										
Settlement Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the total gross paid amount in respect of indemnity and costs (both own and third-party) on all ***settled claims*** *(including those below £1,000) for each* ***settlement*** *year, split by disease-type.*
Explicitly exclude partial payments made on claims which are still open
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers
Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening
Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

GROSS PAID AMOUNT FOR LOW VALUE SETTLED CLAIMS (BELOW £1,000) BY CLAIM SETTLEMENT YEAR										
Settlement Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the total gross paid amount in respect of indemnity and costs (both own and third-party) on all claims settled at ***low value cost*** *(defined to be strictly less than £1,000) for each* ***settlement*** *year, split by disease-type.*
Explicitly exclude partial payments made on claims which are still open
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers
Total Non-Mesothelioma = Pleural Plaques + Asbestosis + Asbestos Related Lung Cancer + Pleural Thickening
Total Identified Asbestos Related = Total Non-Mesothelioma + Mesothelioma

Appendix B - Data Collection Template

Data As At:	

AVERAGE SHARE OF CLAIM PAID BY INSURER BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the average share of the claimants total award met by your company by notification year
This should only refer to the shares of different primary insurers / companies and should exclude any amounts ceded to reinsurers

E.g. if a claim is split as follows: *£30,000 your company*
£20,000 Insurer B
£50,000 Government

The share % would be 30%

Appendix B - Data Collection Template

Data As At:	

AVERAGE INITIAL YEAR OF CLAIMANT EXPOSURE BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the average year in which the claimant was first exposed to asbestos by notification year
In the case of multiple exposure periods, please only consider the first relevant period.
If the information available only relates to your own period of cover please use this data, but if possible please base it on the first year exposed even if you are not covering this period

E.g. if a claimant was exposed from 1950 to 1955, and your company provided cover from 1953 to 1955, please base the data on "1950" rather than "1953"

Also, please indicate if your company only wrote EL insurance before and/or after certain years. E.g. if your company went into run-off for EL insurance in 1975.

Appendix B - Data Collection Template

Data As At:	

AVERAGE AGE OF CLAIMANT AT NOTIFICATION BY NOTIFICATION YEAR										
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**	Reliable and Consistent? (Y / N)
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
Total										

Notes

Please provide the average age of claimants at notification by notification year where date of birth of claimant is available

Please give a rough indication of the % of claims for which this data is available

Appendix B - Data Collection Template

Data As At:	

NUMBER OF MESOTHELIOMA CLAIMANTS BY AGE-BAND AT NOTIFICATION BY NOTIFICATION YEAR												
Notification Year	0-44	45-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unknown	**Total**	Reliable and Consistent? (Y / N)
1990												
1991												
1992												
1993												
1994												
1995												
1996												
1997												
1998												
1999												
2000												
2001												
2002												
2003												
2004												
2005												
2006												
2007												
2008												
Total												

Notes

Please provide the number of claims recorded in each age band for each notification year

Please only record ***mesothelioma*** *claims. Totals should match to mesothelioma claims recorded in sheet 1)*

Appendix B – Data Collection Process

Schedule 1

PROCESS DOCUMENTATION FOR ASBESTOS WORKING PARTY PER CLAIM DATA

COLLECTION MARCH 2009

1. INTRODUCTION

1.1 The UK Actuarial Profession, which comprises the Faculty of Actuaries and the Institute of Actuaries, performs research into General Insurance Issues and a number of working parties are formed by members of the UK Actuarial Profession. The working parties are advertised by the UK Actuarial Profession and are open to any member who is interested to join. The working parties present their findings at the General Insurance Research Organisation (GIRO) Conference each year.

1.2 In 2007, an Asbestos Working Party (AWP) has been formed, and intends to be in existence until the end of 2009. The AWP is proposing to set up a per claim asbestos data collection for insurance companies represented on the working party.

1.3 The companies represented on the working party and who will participate in the data collection are as follows: Royal Sun Alliance, Norwich Union, Zurich Insurance Plc, AXA, Equitas, EIROS, Chester Street and Builders Accident (represented by PwC).

2. PER CLAIM INFORMATION TO BE PROVIDED BY PARTICIPANTS

2.1 The information provided by each participant will relate to only claims arising due to asbestos exposure. The information collected is only for all asbestos related claims notified from 2003 onwards and relates to the following categories:

(a) Cover type (e.g. EL / PL);

(b) Claim ID (e.g. meso, asbestos related lung cancer, asbestosis, pleural thickening and pleural plaques);

(c) Trade code AWP (as per instructions set out in spreadsheet Per Claim Template 2009.xls);

(d) Trade Code OWN (as per instructions set out in spreadsheet Per Claim Template 2009.xls);

(e) Insured first year indicator (year the insured first notified a meso claim, yyyy);

(f) Date reported (dd/mm/yyyy or blank if not known);

(g) Date settled (dd/mm/yyyy or blank if not known or not settled);

(h) Claimant exposure start year (yyyy or blank if not known);

(i) Date of birth year (yyyy or blank if not known);

(j) Sex (M or F or blank if not known)

(k) Total claim paid (in £s); and

(l) Total case estimate (in £s)

2.2 The data will be as at 31st December 2008

Appendix B – Data Collection Process

3. DATA COLLECTION PROCESS

3.1 Information provided by the AWP members will be put into an Excel spreadsheet, one line per claim using the headings, in order, as given and defined in Section 2.1, and sent to Peter Stirling of the Institute of Actuaries. A template with an example format has been provided – see Per Claim Template 2009.xls.

3.2 Peter Stirling will collect and amalgamate the data sent by the AWP members into one dataset using Excel. This dataset will be sorted by trade code, so that the individual datasets can not be determined when the total dataset is viewed.

3.3 Peter Stirling will keep one copy of the original submission and create another copy fropm which the Trade code OWN field will be deleted. It is this copy of the data that will be provided to the AWP to use as detailed below.

3.4 From the original copy the two trade code lists will be copied to another spreadsheet and a mapping table (Trade code OWN to Trade code AWP) will be created with the help of the AWP.

3.5 Peter Stirling will keep the datasets on a secure PC within the Institute of Actuaries.

3.6 The working party members will be able to perform an analysis on the dataset, but will not be able to take a copy of the amalgamated data set away from the Institute.

3.7 The working party members will be able to have the results of analyses e-mailed to them by Peter Stirling.

3.8 Only the results of relevant data analyses will be published in the report (GIRO paper) as submitted to the Institute of Actuaries. The data itself will not be made publicly available.

3.9 Following the completion of the research by the AWP, Peter Stirling will delete all the datasets held by the Institute.

Appendix B – Data Collection Process

Schedule 2

ASBESTOS WORKING PARTY MEMBERS

Peter Taylor
Robert Brooks
Gregory Overton
Graham Sandhouse
Matthew Ball
Brian Gravelsons
Andy Whiting
Charlie Kefford
Darren Michaels
Dan Sykes
Dan Beard
Stephen Robertson-Dunn
Patrick Nolan
Jerome Schilling
John Wilson
Emiliano Ruffini
Naomi Coachman
Matthew Wilde

Appendix B - Data Collection Template

Asbestos Working Party - Per Claim Template (2008 Year-End Update)

The following fields for each claim notified **post 31/12/2002** to **31/12/2008** should be filled in or left blank if there is no data.
If the claim is known to have settled, but no settlement date has been recorded then a date of 31/12/9999 should be used.
The examples have been correctly formatted and give an example of some of the expected field values.
Explanation of the Insured First Year can be found in sheet Insured First Year.
Trade Code AWP should be derived using the instructions provided in the sheet Trade Codes
One sheet should be completed and then e-mailed to Peter Stirling - peter.stirling.actuaries.org.uk

Cover Type	Claim ID	Trade Code AWP	Trade Code OWN	Insured First Year	Date Reported	Date Settled	Claimant Exposure Start Year	Year of Birth	Sex	Total Claim Paid	Total Case Estimate
EL	Meso	Boiler related		2003	31/03/2006	31/03/2007	1963	1929	M	100,000.00	100,000.00
PL	Pleural Plaques	Carpenter		2004		31/12/9999			F		
	Pleural Thickening	Construction		2005							
	Asbestosis	Direct asbestos exposure		2006							
	Asbestos Related Lung Cancer	Electrician		2007							
	Unidentified Non-Meso	Fitter									
		Lagger / Insulator									
		Maintenance									
		Manufacturing									
		Marine									
		Miscellaneous									
		Plumbing									
		Transport									

Appendix C:

- Working Party Models

Appendix C – Working Party Models

The following models have been developed by the Working Party and can be obtained from the Actuarial Profession's website together with this paper in a zipped file: *Asbestos Working Party 2009 Models*. Each spreadsheet model contains documentation and instructions on how the spreadsheet works.

AWP Mesothelioma Population Projection Model (see section 4.4)

This spreadsheet replicates the methodology used by the HSE/ HSL, and contains the selected Working Party projections.

Simple Birth Cohort Model (see section 4.3)

This spreadsheet uses a birth cohort approach to project future mesothelioma deaths.

Latency Model (see section 4.2)

This spreadsheet uses the latency model approach to project future mesothelioma deaths.

Mesothelioma Average Cost Model (see section 6)

This spreadsheet sets out how the mesothelioma claimant cost is modelled.

Claimant Ratio Derivation (see section 5)

This spreadsheet outlines how the claimant ratios are derived.

Appendix D:

- Summary of Mesothelioma Projection Results

Appendix D: AWP Mesothelioma Projection 2009

Scenario outputs

				Results for 2009 and post deaths		
Scenario Number	Population Deaths	Claimant to death ratio (CD ratio)	Inflation	Male GB Population Deaths	UK Insurance Claims	UK Insurance Cost (£m)
1	HSL model	AWP 1: Stays constant at 2008 level	RPI = 1.5%	55,878	60,893	8,365
2	HSL model	AWP 1: Stays constant at 2008 level	RPI = 2.5%	55,878	60,893	10,424
3	HSL model	AWP 1: Stays constant at 2008 level	RPI = 3.5%	55,878	60,893	13,118
4	HSL model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 1.5%	55,878	68,201	9,319
5	HSL model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 2.5%	55,878	68,201	11,651
6	HSL model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 3.5%	55,878	68,201	14,707
7	HSL model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 1.5%	55,878	70,817	9,721
8	HSL model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 2.5%	55,878	70,817	12,195
9	HSL model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 3.5%	55,878	70,817	15,446
10	HSL model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 1.5%	55,878	74,094	10,059
11	HSL model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 2.5%	55,878	74,094	12,591
12	HSL model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 3.5%	55,878	74,094	15,912
13	HSL model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 1.5%	55,878	82,247	11,183
14	HSL model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 2.5%	55,878	82,247	14,009
15	HSL model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 3.5%	55,878	82,247	17,718
16	AWP selected population model	AWP 1: Stays constant at 2008 level	RPI = 1.5%	48,911	53,429	7,080
17	AWP selected population model	AWP 1: Stays constant at 2008 level	RPI = 2.5%	48,911	53,429	8,710
18	AWP selected population model	AWP 1: Stays constant at 2008 level	RPI = 3.5%	48,911	53,429	10,819
19	AWP selected population model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 1.5%	48,911	59,673	7,862
20	AWP selected population model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 2.5%	48,911	59,673	9,699
21	AWP selected population model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 3.5%	48,911	59,673	12,081
22	AWP selected population model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 1.5%	48,911	61,707	8,165
23	AWP selected population model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 2.5%	48,911	61,707	10,104
24	AWP selected population model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 3.5%	48,911	61,707	12,623
25	AWP selected population model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 1.5%	48,911	64,787	8,477
26	AWP selected population model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 2.5%	48,911	64,787	10,468
27	AWP selected population model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 3.5%	48,911	64,787	13,049
28	AWP selected population model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 1.5%	48,911	71,854	9,417
29	AWP selected population model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 2.5%	48,911	71,854	11,638
30	AWP selected population model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 3.5%	48,911	71,854	14,519
31	Latency model	AWP 1: Stays constant at 2008 level	RPI = 1.5%	36,557	40,480	4,834
32	Latency model	AWP 1: Stays constant at 2008 level	RPI = 2.5%	36,557	40,480	5,660
33	Latency model	AWP 1: Stays constant at 2008 level	RPI = 3.5%	36,557	40,480	6,660
34	Latency model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 1.5%	36,557	44,662	5,303
35	Latency model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 2.5%	36,557	44,662	6,227
36	Latency model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 3.5%	36,557	44,662	7,347
37	Latency model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 1.5%	36,557	45,681	5,436
38	Latency model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 2.5%	36,557	45,681	6,396
39	Latency model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 3.5%	36,557	45,681	7,564
40	Latency model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 1.5%	36,557	48,272	5,691
41	Latency model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 2.5%	36,557	48,272	6,689
42	Latency model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 3.5%	36,557	48,272	7,901
43	Latency model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 1.5%	36,557	53,379	6,302
44	Latency model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 2.5%	36,557	53,379	7,415
45	Latency model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 3.5%	36,557	53,379	8,766
46	Initial Birth Cohort model	AWP 1: Stays constant at 2008 level	RPI = 1.5%	90,038	97,261	13,771
47	Initial Birth Cohort model	AWP 1: Stays constant at 2008 level	RPI = 2.5%	90,038	97,261	17,365
48	Initial Birth Cohort model	AWP 1: Stays constant at 2008 level	RPI = 3.5%	90,038	97,261	22,086
49	Initial Birth Cohort model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 1.5%	90,038	109,827	15,432
50	Initial Birth Cohort model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 2.5%	90,038	109,827	19,505
51	Initial Birth Cohort model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 3.5%	90,038	109,827	24,859
52	Initial Birth Cohort model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 1.5%	90,038	114,662	16,161
53	Initial Birth Cohort model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 2.5%	90,038	114,662	20,485
54	Initial Birth Cohort model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 3.5%	90,038	114,662	26,178
55	Initial Birth Cohort model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 1.5%	90,038	119,654	16,694
56	Initial Birth Cohort model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 2.5%	90,038	119,654	21,116
57	Initial Birth Cohort model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 3.5%	90,038	119,654	26,930
58	Initial Birth Cohort model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 1.5%	90,038	133,073	18,586
59	Initial Birth Cohort model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 2.5%	90,038	133,073	23,524
60	Initial Birth Cohort model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 3.5%	90,038	133,073	30,017
61	Alternative Birth Cohort model	AWP 1: Stays constant at 2008 level	RPI = 1.5%	65,414	69,711	8,958
62	Alternative Birth Cohort model	AWP 1: Stays constant at 2008 level	RPI = 2.5%	65,414	69,711	11,017
63	Alternative Birth Cohort model	AWP 1: Stays constant at 2008 level	RPI = 3.5%	65,414	69,711	13,659
64	Alternative Birth Cohort model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 1.5%	65,414	79,148	10,130
65	Alternative Birth Cohort model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 2.5%	65,414	79,148	12,501
66	Alternative Birth Cohort model	AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years	RPI = 3.5%	65,414	79,148	15,548
67	Alternative Birth Cohort model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 1.5%	65,414	82,406	10,596
68	Alternative Birth Cohort model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 2.5%	65,414	82,406	13,120
69	Alternative Birth Cohort model	AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years	RPI = 3.5%	65,414	82,406	16,372
70	Alternative Birth Cohort model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 1.5%	65,414	86,700	11,036
71	Alternative Birth Cohort model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 2.5%	65,414	86,700	13,636
72	Alternative Birth Cohort model	AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too	RPI = 3.5%	65,414	86,700	16,980
73	Alternative Birth Cohort model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 1.5%	65,414	96,352	12,280
74	Alternative Birth Cohort model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 2.5%	65,414	96,352	15,185
75	Alternative Birth Cohort model	AWP 5: Max (assuming 100% propensity) reached linearly by 2013	RPI = 3.5%	65,414	96,352	18,921

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	160,975		114,636,002	91,708,802
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	162,981	1.2%	125,980,745	100,784,596
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.2%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	170,526	2.4%	184,348,685	147,478,948
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	181,088	6.2%	212,540,241	170,032,193
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	182,389	0.7%	241,181,298	202,592,290
2009	1,859	68.1%	1,265	2.0	2,531	2,719	2,175	58%	186,310	2.1%	253,249,954	202,599,963
2010	1,889	67.8%	1,280	2.0	2,560	2,750	2,200	58%	190,246	2.1%	261,588,439	209,270,751
2011	1,914	67.5%	1,291	2.0	2,582	2,774	2,219	58%	194,343	2.2%	269,547,438	215,637,951
2012	1,935	67.2%	1,300	2.0	2,600	2,793	2,234	58%	198,350	2.1%	276,946,916	221,557,533
2013	1,953	66.9%	1,306	2.0	2,612	2,806	2,244	57%	202,428	2.1%	283,957,739	227,166,192
2014	1,966	66.5%	1,308	2.0	2,617	2,811	2,249	57%	206,672	2.1%	290,481,604	232,385,283
2015	1,974	66.2%	1,307	2.0	2,614	2,808	2,246	57%	211,085	2.1%	296,357,232	237,085,785
2016	1,977	65.9%	1,302	2.0	2,604	2,797	2,237	57%	215,715	2.2%	301,657,769	241,326,215
2017	1,974	65.5%	1,293	2.0	2,586	2,778	2,222	56%	220,234	2.1%	305,874,527	244,699,622
2018	1,967	65.1%	1,280	2.0	2,561	2,751	2,201	56%	224,864	2.1%	309,288,452	247,430,762
2019	1,954	64.7%	1,264	2.0	2,528	2,715	2,172	56%	229,745	2.2%	311,924,221	249,539,377
2020	1,934	64.3%	1,243	2.0	2,487	2,671	2,137	55%	234,879	2.2%	313,713,872	250,971,097
2021	1,908	63.9%	1,220	2.0	2,439	2,620	2,096	55%	240,305	2.3%	314,809,970	251,847,976
2022	1,876	63.5%	1,191	2.0	2,383	2,559	2,048	55%	245,586	2.2%	314,280,935	251,424,748
2023	1,841	63.0%	1,160	2.0	2,320	2,492	1,994	54%	251,038	2.2%	312,792,168	250,233,735
2024	1,800	62.6%	1,126	2.0	2,252	2,419	1,935	54%	256,799	2.3%	310,634,275	248,507,420
2025	1,751	62.2%	1,089	2.0	2,178	2,339	1,871	53%	262,994	2.4%	307,589,103	246,071,282
2026	1,696	61.9%	1,049	2.0	2,098	2,254	1,803	53%	269,647	2.5%	303,845,563	243,076,450
2027	1,635	61.4%	1,004	2.0	2,009	2,158	1,726	53%	276,292	2.5%	298,070,534	238,456,427
2028	1,569	61.1%	958	2.0	1,915	2,057	1,646	52%	283,294	2.5%	291,438,156	233,150,525
2029	1,499	60.8%	911	2.0	1,821	1,957	1,565	52%	290,773	2.6%	284,451,201	227,560,961
2030	1,428	60.5%	864	2.0	1,729	1,857	1,485	52%	298,728	2.7%	277,332,277	221,865,821
2031	1,359	60.3%	820	2.0	1,641	1,762	1,410	52%	306,970	2.8%	270,501,417	216,401,134
2032	1,287	60.1%	774	2.0	1,547	1,662	1,330	52%	315,325	2.7%	262,052,866	209,642,293
2033	1,208	60.0%	725	2.0	1,450	1,558	1,246	52%	324,570	2.9%	252,798,258	202,238,606
2034	1,130	60.0%	678	2.0	1,356	1,456	1,165	52%	334,564	3.1%	243,640,032	194,912,026
2035	1,055	60.1%	634	2.0	1,267	1,361	1,089	52%	345,153	3.2%	234,910,418	187,928,335
2036	984	60.2%	592	2.0	1,183	1,271	1,017	52%	356,286	3.2%	226,456,991	181,165,593
2037	901	60.4%	544	2.0	1,089	1,170	936	52%	369,003	3.6%	215,797,921	172,638,337
2038	830	60.7%	504	2.0	1,007	1,082	866	52%	381,824	3.5%	206,584,464	165,267,571
2039	771	60.8%	469	2.0	939	1,008	807	52%	394,608	3.3%	198,911,113	159,128,890
2040	721	60.9%	439	2.0	879	944	755	52%	407,551	3.3%	192,298,469	153,838,776
2041	677	61.0%	413	2.0	826	887	709	52%	420,573	3.2%	186,469,875	149,175,900
2042	637	61.0%	389	2.0	778	835	668	52%	433,774	3.1%	181,173,781	144,939,025
2043	602	61.0%	367	2.0	734	788	631	52%	447,252	3.1%	176,255,441	141,004,353
2044	569	60.9%	347	2.0	693	745	596	52%	461,056	3.1%	171,686,524	137,349,219
2045	540	60.8%	328	2.0	657	705	564	52%	475,128	3.1%	167,551,786	134,041,429
2046	513	60.7%	311	2.0	622	668	534	52%	489,627	3.1%	163,546,048	130,836,838
2047	486	60.5%	294	2.0	589	632	506	52%	504,770	3.1%	159,587,367	127,669,894
2048	460	60.4%	278	2.0	557	598	478	52%	520,719	3.2%	155,658,724	124,526,979
2049	436	60.3%	263	2.0	526	565	452	52%	537,338	3.2%	151,887,901	121,510,321
2050	413	60.3%	249	2.0	498	535	428	52%	554,700	3.2%	148,262,579	118,610,063
2009&post	**55,878**	**63.4%**	**35,431**	**2.0**	**70,862**	**76,117**	**60,893**	**54%**	**274,732**		**10,455,864,320**	**8,364,691,456**

Total Meso Cost 2004-2040 7,770,412,298

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	158,846		113,119,704	90,495,763
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	161,915	1.9%	125,156,643	100,125,315
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.8%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	172,181	3.4%	186,137,927	148,910,342
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	184,622	7.2%	216,688,217	173,350,574
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	187,754	1.7%	248,275,779	208,551,654
2009	1,859	68.1%	1,265	2.0	2,531	2,719	2,175	58%	193,652	3.1%	263,230,620	210,584,496
2010	1,889	67.8%	1,280	2.0	2,560	2,750	2,200	58%	199,663	3.1%	274,537,438	219,629,951
2011	1,914	67.5%	1,291	2.0	2,582	2,774	2,219	58%	205,943	3.1%	285,636,653	228,509,323
2012	1,935	67.2%	1,300	2.0	2,600	2,793	2,234	58%	212,230	3.1%	296,326,603	237,061,283
2013	1,953	66.9%	1,306	2.0	2,612	2,806	2,244	57%	218,696	3.0%	306,777,066	245,421,653
2014	1,966	66.5%	1,308	2.0	2,617	2,811	2,249	57%	225,447	3.1%	316,871,056	253,496,845
2015	1,974	66.2%	1,307	2.0	2,614	2,808	2,246	57%	232,496	3.1%	326,417,859	261,134,287
2016	1,977	65.9%	1,302	2.0	2,604	2,797	2,237	57%	239,902	3.2%	335,480,309	268,384,247
2017	1,974	65.5%	1,293	2.0	2,586	2,778	2,222	56%	247,304	3.1%	343,470,651	274,776,521
2018	1,967	65.1%	1,280	2.0	2,561	2,751	2,201	56%	254,953	3.1%	350,673,951	280,539,161
2019	1,954	64.7%	1,264	2.0	2,528	2,715	2,172	56%	263,014	3.2%	357,093,603	285,674,883
2020	1,934	64.3%	1,243	2.0	2,487	2,671	2,137	55%	271,500	3.2%	362,626,516	290,101,213
2021	1,908	63.9%	1,220	2.0	2,439	2,620	2,096	55%	280,466	3.3%	367,423,458	293,938,766
2022	1,876	63.5%	1,191	2.0	2,383	2,559	2,048	55%	289,410	3.2%	370,363,896	296,291,117
2023	1,841	63.0%	1,160	2.0	2,320	2,492	1,994	54%	298,704	3.2%	372,184,568	297,747,655
2024	1,800	62.6%	1,126	2.0	2,252	2,419	1,935	54%	308,522	3.3%	373,201,564	298,561,251
2025	1,751	62.2%	1,089	2.0	2,178	2,339	1,871	53%	319,030	3.4%	373,126,726	298,501,381
2026	1,696	61.9%	1,049	2.0	2,098	2,254	1,803	53%	330,273	3.5%	372,159,750	297,727,800
2027	1,635	61.4%	1,004	2.0	2,009	2,158	1,726	53%	341,692	3.5%	368,626,280	294,901,024
2028	1,569	61.1%	958	2.0	1,915	2,057	1,646	52%	353,749	3.5%	363,918,509	291,134,807
2029	1,499	60.8%	911	2.0	1,821	1,957	1,565	52%	366,608	3.6%	358,637,561	286,910,049
2030	1,428	60.5%	864	2.0	1,729	1,857	1,485	52%	380,289	3.7%	353,051,840	282,441,472
2031	1,359	60.3%	820	2.0	1,641	1,762	1,410	52%	394,570	3.8%	347,694,176	278,155,341
2032	1,287	60.1%	774	2.0	1,547	1,662	1,330	52%	409,238	3.7%	340,099,725	272,079,780
2033	1,208	60.0%	725	2.0	1,450	1,558	1,246	52%	425,319	3.9%	331,269,069	265,015,255
2034	1,130	60.0%	678	2.0	1,356	1,456	1,165	52%	442,665	4.1%	322,362,731	257,890,185
2035	1,055	60.1%	634	2.0	1,267	1,361	1,089	52%	461,102	4.2%	313,825,123	251,060,099
2036	984	60.2%	592	2.0	1,183	1,271	1,017	52%	480,589	4.2%	305,464,176	244,371,341
2037	901	60.4%	544	2.0	1,089	1,170	936	52%	502,566	4.6%	293,907,848	235,126,278
2038	830	60.7%	504	2.0	1,007	1,082	866	52%	525,069	4.5%	284,086,558	227,269,246
2039	771	60.8%	469	2.0	939	1,008	807	52%	547,908	4.3%	276,185,480	220,948,384
2040	721	60.9%	439	2.0	879	944	755	52%	571,364	4.3%	269,591,458	215,673,167
2041	677	61.0%	413	2.0	826	887	709	52%	595,334	4.2%	263,953,351	211,162,680
2042	637	61.0%	389	2.0	778	835	668	52%	619,969	4.1%	258,941,567	207,153,254
2043	602	61.0%	367	2.0	734	788	631	52%	645,426	4.1%	254,352,868	203,482,294
2044	569	60.9%	347	2.0	693	745	596	52%	671,792	4.1%	250,159,944	200,127,955
2045	540	60.8%	328	2.0	657	705	564	52%	699,003	4.1%	246,500,513	197,200,411
2046	513	60.7%	311	2.0	622	668	534	52%	727,312	4.0%	242,938,210	194,350,568
2047	486	60.5%	294	2.0	589	632	506	52%	757,070	4.1%	239,354,272	191,483,418
2048	460	60.4%	278	2.0	557	598	478	52%	788,557	4.2%	235,723,566	188,578,853
2049	436	60.3%	263	2.0	526	565	452	52%	821,607	4.2%	232,241,314	185,793,051
2050	413	60.3%	249	2.0	498	535	428	52%	856,370	4.2%	228,894,073	183,115,258
2009&post	**55,878**	**63.4%**	**35,431**	**2.0**	**70,862**	**76,117**	**60,893**	**54%**	**342,353**		**13,029,382,499**	**10,423,505,999**

Total Meso Cost 2004-2040 9,206,492,977

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	156,777		111,646,609	89,317,287
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	160,869	2.6%	124,348,271	99,478,617
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	3.5%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	173,836	4.4%	187,927,170	150,341,736
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	188,190	8.3%	220,876,282	176,701,025
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	193,223	2.7%	255,508,044	214,626,757
2009	1,859	68.1%	1,265	2.0	2,531	2,719	2,175	58%	201,210	4.1%	273,503,435	218,802,748
2010	1,889	67.8%	1,280	2.0	2,560	2,750	2,200	58%	209,450	4.1%	287,994,249	230,395,399
2011	1,914	67.5%	1,291	2.0	2,582	2,774	2,219	58%	218,115	4.1%	302,518,359	242,014,687
2012	1,935	67.2%	1,300	2.0	2,600	2,793	2,234	58%	226,934	4.0%	316,857,288	253,485,831
2013	1,953	66.9%	1,306	2.0	2,612	2,806	2,244	57%	236,096	4.0%	331,185,185	264,948,148
2014	1,966	66.5%	1,308	2.0	2,617	2,811	2,249	57%	245,724	4.1%	345,370,495	276,296,396
2015	1,974	66.2%	1,307	2.0	2,614	2,808	2,246	57%	255,843	4.1%	359,195,527	287,356,421
2016	1,977	65.9%	1,302	2.0	2,604	2,797	2,237	57%	266,529	4.2%	372,716,045	298,172,836
2017	1,974	65.5%	1,293	2.0	2,586	2,778	2,222	56%	277,393	4.1%	385,260,434	308,208,347
2018	1,967	65.1%	1,280	2.0	2,561	2,751	2,201	56%	288,720	4.1%	397,119,934	317,695,947
2019	1,954	64.7%	1,264	2.0	2,528	2,715	2,172	56%	300,711	4.2%	408,275,536	326,620,429
2020	1,934	64.3%	1,243	2.0	2,487	2,671	2,137	55%	313,397	4.2%	418,584,990	334,867,992
2021	1,908	63.9%	1,220	2.0	2,439	2,620	2,096	55%	326,857	4.3%	428,196,873	342,557,499
2022	1,876	63.5%	1,191	2.0	2,383	2,559	2,048	55%	340,520	4.2%	435,770,093	348,616,075
2023	1,841	63.0%	1,160	2.0	2,320	2,492	1,994	54%	354,831	4.2%	442,118,810	353,695,048
2024	1,800	62.6%	1,126	2.0	2,252	2,419	1,935	54%	370,015	4.3%	447,585,132	358,068,106
2025	1,751	62.2%	1,089	2.0	2,178	2,339	1,871	53%	386,292	4.4%	451,793,385	361,434,708
2026	1,696	61.9%	1,049	2.0	2,098	2,254	1,803	53%	403,745	4.5%	454,950,338	363,960,271
2027	1,635	61.4%	1,004	2.0	2,009	2,158	1,726	53%	421,717	4.5%	454,958,337	363,966,670
2028	1,569	61.1%	958	2.0	1,915	2,057	1,646	52%	440,789	4.5%	453,461,028	362,768,822
2029	1,499	60.8%	911	2.0	1,821	1,957	1,565	52%	461,199	4.6%	451,171,724	360,937,379
2030	1,428	60.5%	864	2.0	1,729	1,857	1,485	52%	483,003	4.7%	448,409,345	358,727,476
2031	1,359	60.3%	820	2.0	1,641	1,762	1,410	52%	505,953	4.8%	445,844,509	356,675,607
2032	1,287	60.1%	774	2.0	1,547	1,662	1,330	52%	529,799	4.7%	440,293,030	352,234,424
2033	1,208	60.0%	725	2.0	1,450	1,558	1,246	52%	555,904	4.9%	432,978,061	346,382,449
2034	1,130	60.0%	678	2.0	1,356	1,456	1,165	52%	584,130	5.1%	425,382,120	340,305,696
2035	1,055	60.1%	634	2.0	1,267	1,361	1,089	52%	614,301	5.2%	418,091,557	334,473,246
2036	984	60.2%	592	2.0	1,183	1,271	1,017	52%	646,408	5.2%	410,859,311	328,687,449
2037	901	60.4%	544	2.0	1,089	1,170	936	52%	682,458	5.6%	399,110,759	319,288,607
2038	830	60.7%	504	2.0	1,007	1,082	866	52%	719,859	5.5%	389,477,233	311,581,786
2039	771	60.8%	469	2.0	939	1,008	807	52%	758,381	5.4%	382,279,535	305,823,628
2040	721	60.9%	439	2.0	879	944	755	52%	798,439	5.3%	376,734,063	301,387,250
2041	677	61.0%	413	2.0	826	887	709	52%	839,919	5.2%	372,395,306	297,916,245
2042	637	61.0%	389	2.0	778	835	668	52%	883,070	5.1%	368,830,461	295,064,369
2043	602	61.0%	367	2.0	734	788	631	52%	928,152	5.1%	365,771,111	292,616,889
2044	569	60.9%	347	2.0	693	745	596	52%	975,338	5.1%	363,193,498	290,554,799
2045	540	60.8%	328	2.0	657	705	564	52%	1,024,582	5.0%	361,314,512	289,051,610
2046	513	60.7%	311	2.0	622	668	534	52%	1,076,306	5.0%	359,509,606	287,607,685
2047	486	60.5%	294	2.0	589	632	506	52%	1,131,092	5.1%	357,604,392	286,083,514
2048	460	60.4%	278	2.0	557	598	478	52%	1,189,437	5.2%	355,558,947	284,447,158
2049	436	60.3%	263	2.0	526	565	452	52%	1,251,179	5.2%	353,667,330	282,933,864
2050	413	60.3%	249	2.0	498	535	428	52%	1,316,630	5.2%	351,914,204	281,531,364
2009&post	**55,878**	**63.4%**	**35,431**	**2.0**	**70,862**	**76,117**	**60,893**	**54%**	**430,859**		**16,397,806,087**	**13,118,244,870**

Total Meso Cost 2004-2040 10,986,082,345

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	160,975		114,636,002	91,708,802
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	162,981	1.2%	125,980,745	100,784,596
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.2%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	170,526	2.4%	184,348,685	147,478,948
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	181,088	6.2%	212,540,241	170,032,193
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	182,389	0.7%	241,181,298	202,592,290
2009	1,859	68.9%	1,281	2.0	2,561	2,751	2,201	59%	185,962	2.0%	255,819,889	204,655,911
2010	1,889	69.4%	1,311	2.0	2,621	2,816	2,252	60%	189,554	1.9%	266,854,883	213,483,906
2011	1,914	69.9%	1,337	2.0	2,674	2,872	2,298	60%	193,310	2.0%	277,631,227	222,104,981
2012	1,935	70.3%	1,361	2.0	2,722	2,924	2,339	60%	196,986	1.9%	287,966,902	230,373,522
2013	1,953	70.8%	1,382	2.0	2,764	2,969	2,375	61%	200,743	1.9%	298,024,286	238,419,429
2014	1,966	71.2%	1,400	2.0	2,799	3,007	2,405	61%	204,671	2.0%	307,683,337	246,146,669
2015	1,974	71.6%	1,413	2.0	2,825	3,035	2,428	61%	208,768	2.0%	316,787,382	253,429,906
2016	1,977	71.9%	1,422	2.0	2,843	3,054	2,443	62%	213,079	2.1%	325,366,952	260,293,562
2017	1,974	72.3%	1,426	2.0	2,853	3,064	2,452	62%	217,298	2.0%	332,941,450	266,353,160
2018	1,967	72.6%	1,427	2.0	2,855	3,067	2,453	62%	221,632	2.0%	339,826,628	271,861,302
2019	1,954	72.4%	1,414	2.0	2,829	3,038	2,431	62%	226,406	2.2%	343,966,358	275,173,086
2020	1,934	72.2%	1,397	2.0	2,793	3,000	2,400	62%	231,421	2.2%	347,180,669	277,744,535
2021	1,908	72.1%	1,375	2.0	2,749	2,953	2,363	62%	236,723	2.3%	349,547,690	279,638,152
2022	1,876	71.9%	1,349	2.0	2,697	2,897	2,318	62%	241,888	2.2%	350,384,860	280,307,888
2023	1,841	71.7%	1,319	2.0	2,638	2,834	2,267	62%	247,199	2.2%	350,243,189	280,194,551
2024	1,800	71.5%	1,286	2.0	2,573	2,763	2,211	61%	252,802	2.3%	349,280,796	279,424,637
2025	1,751	71.3%	1,249	2.0	2,497	2,682	2,146	61%	258,840	2.4%	347,128,547	277,702,837
2026	1,696	71.2%	1,207	2.0	2,414	2,593	2,074	61%	265,348	2.5%	343,976,558	275,181,246
2027	1,635	71.0%	1,160	2.0	2,321	2,493	1,994	61%	271,821	2.4%	338,807,283	271,045,826
2028	1,569	70.8%	1,111	2.0	2,221	2,386	1,909	61%	278,625	2.5%	332,417,460	265,933,968
2029	1,499	70.7%	1,059	2.0	2,119	2,276	1,821	61%	285,896	2.6%	325,318,172	260,254,538
2030	1,428	70.6%	1,008	2.0	2,015	2,165	1,732	61%	293,636	2.7%	317,826,363	254,261,091
2031	1,359	70.5%	958	2.0	1,917	2,059	1,647	61%	301,656	2.7%	310,550,852	248,440,682
2032	1,287	70.4%	906	2.0	1,812	1,946	1,557	60%	309,700	2.7%	301,412,028	241,129,623
2033	1,208	70.4%	850	2.0	1,700	1,826	1,461	60%	318,669	2.9%	290,971,869	232,777,495
2034	1,130	70.4%	795	2.0	1,590	1,708	1,366	60%	328,422	3.1%	280,395,915	224,316,732
2035	1,055	70.4%	742	2.0	1,485	1,595	1,276	60%	338,789	3.2%	270,173,876	216,139,101
2036	984	70.4%	693	2.0	1,385	1,488	1,190	61%	349,723	3.2%	260,197,837	208,158,270
2037	901	70.5%	635	2.0	1,271	1,365	1,092	61%	362,281	3.6%	247,265,175	197,812,140
2038	830	70.6%	586	2.0	1,173	1,260	1,008	61%	374,952	3.5%	236,199,383	188,959,507
2039	771	70.7%	546	2.0	1,091	1,172	938	61%	387,584	3.4%	227,105,235	181,684,188
2040	721	70.8%	510	2.0	1,020	1,096	877	61%	400,383	3.3%	219,344,246	175,475,397
2041	677	70.8%	479	2.0	958	1,029	823	61%	413,246	3.2%	212,616,064	170,092,852
2042	637	70.8%	451	2.0	902	969	775	61%	426,262	3.1%	206,594,161	165,275,329
2043	602	70.8%	426	2.0	852	915	732	61%	439,516	3.1%	201,071,487	160,857,190
2044	569	70.7%	403	2.0	805	865	692	61%	453,068	3.1%	195,999,434	156,799,547
2045	540	70.7%	382	2.0	764	820	656	61%	466,852	3.0%	191,475,723	153,180,579
2046	513	70.6%	362	2.0	724	778	622	61%	481,022	3.0%	187,109,346	149,687,477
2047	486	70.6%	343	2.0	686	737	590	61%	495,790	3.1%	182,774,896	146,219,917
2048	460	70.5%	325	2.0	650	698	558	61%	511,316	3.1%	178,406,843	142,725,474
2049	436	70.5%	307	2.0	615	660	528	61%	527,456	3.2%	174,185,347	139,348,277
2050	413	70.5%	291	2.0	582	625	500	61%	544,294	3.2%	170,081,619	136,065,295
2009&post	**55,878**	**71.0%**	**39,683**	**2.0**	**79,366**	**85,251**	**68,201**	**61%**	**273,284**		**11,648,912,218**	**9,319,129,774**

Total Meso Cost 2004-2040 8,534,262,700

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	158,846		113,119,704	90,495,763
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	161,915	1.9%	125,156,643	100,125,315
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.8%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	172,181	3.4%	186,137,927	148,910,342
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	184,622	7.2%	216,688,217	173,350,574
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	187,754	1.7%	248,275,779	208,551,654
2009	1,859	68.9%	1,281	2.0	2,561	2,751	2,201	59%	193,290	2.9%	265,901,833	212,721,466
2010	1,889	69.4%	1,311	2.0	2,621	2,816	2,252	60%	198,937	2.9%	280,064,568	224,051,655
2011	1,914	69.9%	1,337	2.0	2,674	2,872	2,298	60%	204,849	3.0%	294,202,939	235,362,351
2012	1,935	70.3%	1,361	2.0	2,722	2,924	2,339	60%	210,770	2.9%	308,117,687	246,494,149
2013	1,953	70.8%	1,382	2.0	2,764	2,969	2,375	61%	216,875	2.9%	321,973,960	257,579,168
2014	1,966	71.2%	1,400	2.0	2,799	3,007	2,405	61%	223,264	2.9%	335,635,423	268,508,338
2015	1,974	71.6%	1,413	2.0	2,825	3,035	2,428	61%	229,944	3.0%	348,920,180	279,136,144
2016	1,977	71.9%	1,422	2.0	2,843	3,054	2,443	62%	236,970	3.1%	361,847,631	289,478,105
2017	1,974	72.3%	1,426	2.0	2,853	3,064	2,452	62%	244,006	3.0%	373,864,216	299,091,373
2018	1,967	72.6%	1,427	2.0	2,855	3,067	2,453	62%	251,288	3.0%	385,298,079	308,238,463
2019	1,954	72.4%	1,414	2.0	2,829	3,038	2,431	62%	259,191	3.1%	393,775,342	315,020,274
2020	1,934	72.2%	1,397	2.0	2,793	3,000	2,400	62%	267,502	3.2%	401,310,833	321,048,666
2021	1,908	72.1%	1,375	2.0	2,749	2,953	2,363	62%	276,286	3.3%	407,966,292	326,373,034
2022	1,876	71.9%	1,349	2.0	2,697	2,897	2,318	62%	285,052	3.2%	412,909,912	330,327,930
2023	1,841	71.7%	1,319	2.0	2,638	2,834	2,267	62%	294,136	3.2%	416,746,033	333,396,826
2024	1,800	71.5%	1,286	2.0	2,573	2,763	2,211	61%	303,720	3.3%	419,631,404	335,705,123
2025	1,751	71.3%	1,249	2.0	2,497	2,682	2,146	61%	313,990	3.4%	421,089,914	336,871,931
2026	1,696	71.2%	1,207	2.0	2,414	2,593	2,074	61%	325,006	3.5%	421,312,505	337,050,004
2027	1,635	71.0%	1,160	2.0	2,321	2,493	1,994	61%	336,162	3.4%	419,004,685	335,203,748
2028	1,569	70.8%	1,111	2.0	2,221	2,386	1,909	61%	347,917	3.5%	415,088,150	332,070,520
2029	1,499	70.7%	1,059	2.0	2,119	2,276	1,821	61%	360,458	3.6%	410,161,576	328,129,261
2030	1,428	70.6%	1,008	2.0	2,015	2,165	1,732	61%	373,806	3.7%	404,600,579	323,680,463
2031	1,359	70.5%	958	2.0	1,917	2,059	1,647	61%	387,737	3.7%	399,170,997	319,336,797
2032	1,287	70.4%	906	2.0	1,812	1,946	1,557	60%	401,936	3.7%	391,179,562	312,943,649
2033	1,208	70.4%	850	2.0	1,700	1,826	1,461	60%	417,585	3.9%	381,290,396	305,032,316
2034	1,130	70.4%	795	2.0	1,590	1,708	1,366	60%	434,536	4.1%	370,993,045	296,794,436
2035	1,055	70.4%	742	2.0	1,485	1,595	1,276	60%	452,597	4.2%	360,932,968	288,746,375
2036	984	70.4%	693	2.0	1,385	1,488	1,190	61%	471,733	4.2%	350,974,754	280,779,803
2037	901	70.5%	635	2.0	1,271	1,365	1,092	61%	493,409	4.6%	336,763,048	269,410,438
2038	830	70.6%	586	2.0	1,173	1,260	1,008	61%	515,615	4.5%	324,809,890	259,847,912
2039	771	70.7%	546	2.0	1,091	1,172	938	61%	538,153	4.4%	315,330,734	252,264,587
2040	721	70.8%	510	2.0	1,020	1,096	877	61%	561,311	4.3%	307,506,152	246,004,922
2041	677	70.8%	479	2.0	958	1,029	823	61%	584,957	4.2%	300,962,045	240,769,636
2042	637	70.8%	451	2.0	902	969	775	61%	609,229	4.1%	295,271,482	236,217,185
2043	602	70.8%	426	2.0	852	915	732	61%	634,258	4.1%	290,162,643	232,130,114
2044	569	70.7%	403	2.0	805	865	692	61%	660,148	4.1%	285,583,514	228,466,811
2045	540	70.7%	382	2.0	764	820	656	61%	686,823	4.0%	281,694,957	225,355,965
2046	513	70.6%	362	2.0	724	778	622	61%	714,525	4.0%	277,937,827	222,350,262
2047	486	70.6%	343	2.0	686	737	590	61%	743,596	4.1%	274,129,279	219,303,423
2048	460	70.5%	325	2.0	650	698	558	61%	774,310	4.1%	270,169,944	216,135,955
2049	436	70.5%	307	2.0	615	660	528	61%	806,489	4.2%	266,332,195	213,065,756
2050	413	70.5%	291	2.0	582	625	500	61%	840,296	4.2%	262,576,514	210,061,211
2009&post	**55,878**	**71.0%**	**39,683**	**2.0**	**79,366**	**85,251**	**68,201**	**61%**	**341,654**		**14,563,195,685**	**11,650,556,548**

Total Meso Cost 2004-2040 10,152,134,948

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	156,777		111,646,609	89,317,287
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	160,869	2.6%	124,348,271	99,478,617
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	3.5%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	173,836	4.4%	187,927,170	150,341,736
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	188,190	8.3%	220,876,282	176,701,025
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	193,223	2.7%	255,508,044	214,626,757
2009	1,859	68.9%	1,281	2.0	2,561	2,751	2,201	59%	200,834	3.9%	276,278,891	221,023,113
2010	1,889	69.4%	1,311	2.0	2,621	2,816	2,252	60%	208,688	3.9%	293,792,287	235,033,830
2011	1,914	69.9%	1,337	2.0	2,674	2,872	2,298	60%	216,956	4.0%	311,590,907	249,272,725
2012	1,935	70.3%	1,361	2.0	2,722	2,924	2,339	60%	225,373	3.9%	329,465,263	263,572,211
2013	1,953	70.8%	1,382	2.0	2,764	2,969	2,375	61%	234,130	3.9%	347,591,124	278,072,899
2014	1,966	71.2%	1,400	2.0	2,799	3,007	2,405	61%	243,345	3.9%	365,822,431	292,657,945
2015	1,974	71.6%	1,413	2.0	2,825	3,035	2,428	61%	253,034	4.0%	383,957,301	307,165,841
2016	1,977	71.9%	1,422	2.0	2,843	3,054	2,443	62%	263,272	4.0%	402,009,734	321,607,787
2017	1,974	72.3%	1,426	2.0	2,853	3,064	2,452	62%	273,694	4.0%	419,351,685	335,481,348
2018	1,967	72.6%	1,427	2.0	2,855	3,067	2,453	62%	284,571	4.0%	436,329,596	349,063,677
2019	1,954	72.4%	1,414	2.0	2,829	3,038	2,431	62%	296,340	4.1%	450,214,412	360,171,529
2020	1,934	72.2%	1,397	2.0	2,793	3,000	2,400	62%	308,781	4.2%	463,238,346	370,590,677
2021	1,908	72.1%	1,375	2.0	2,749	2,953	2,363	62%	321,984	4.3%	475,445,073	380,356,058
2022	1,876	71.9%	1,349	2.0	2,697	2,897	2,318	62%	335,392	4.2%	485,829,040	388,663,232
2023	1,841	71.7%	1,319	2.0	2,638	2,834	2,267	62%	349,404	4.2%	495,052,670	396,042,136
2024	1,800	71.5%	1,286	2.0	2,573	2,763	2,211	61%	364,255	4.3%	503,268,086	402,614,469
2025	1,751	71.3%	1,249	2.0	2,497	2,682	2,146	61%	380,188	4.4%	509,867,663	407,894,130
2026	1,696	71.2%	1,207	2.0	2,414	2,593	2,074	61%	397,306	4.5%	515,036,451	412,029,161
2027	1,635	71.0%	1,160	2.0	2,321	2,493	1,994	61%	414,890	4.4%	517,134,050	413,707,240
2028	1,569	70.8%	1,111	2.0	2,221	2,386	1,909	61%	433,522	4.5%	517,219,588	413,775,670
2029	1,499	70.7%	1,059	2.0	2,119	2,276	1,821	61%	453,461	4.6%	515,988,185	412,790,548
2030	1,428	70.6%	1,008	2.0	2,015	2,165	1,732	61%	474,767	4.7%	513,879,429	411,103,543
2031	1,359	70.5%	958	2.0	1,917	2,059	1,647	61%	497,190	4.7%	511,850,826	409,480,661
2032	1,287	70.4%	906	2.0	1,812	1,946	1,557	60%	520,344	4.7%	506,418,943	405,135,154
2033	1,208	70.4%	850	2.0	1,700	1,826	1,461	60%	545,793	4.9%	498,355,175	398,684,140
2034	1,130	70.4%	795	2.0	1,590	1,708	1,366	60%	573,401	5.1%	489,551,216	391,640,973
2035	1,055	70.4%	742	2.0	1,485	1,595	1,276	60%	602,967	5.2%	480,848,284	384,678,627
2036	984	70.4%	693	2.0	1,385	1,488	1,190	61%	634,492	5.2%	472,070,033	377,656,026
2037	901	70.5%	635	2.0	1,271	1,365	1,092	61%	670,018	5.6%	457,303,261	365,842,609
2038	830	70.6%	586	2.0	1,173	1,260	1,008	61%	706,894	5.5%	445,305,602	356,244,481
2039	771	70.7%	546	2.0	1,091	1,172	938	61%	744,875	5.4%	436,459,484	349,167,587
2040	721	70.8%	510	2.0	1,020	1,096	877	61%	784,386	5.3%	429,714,394	343,771,515
2041	677	70.8%	479	2.0	958	1,029	823	61%	825,275	5.2%	424,605,853	339,684,682
2042	637	70.8%	451	2.0	902	969	775	61%	867,766	5.1%	420,575,165	336,460,132
2043	602	70.8%	426	2.0	852	915	732	61%	912,086	5.1%	417,264,310	333,811,448
2044	569	70.7%	403	2.0	805	865	692	61%	958,426	5.1%	414,620,014	331,696,011
2045	540	70.7%	382	2.0	764	820	656	61%	1,006,721	5.0%	412,898,517	330,318,814
2046	513	70.6%	362	2.0	724	778	622	61%	1,057,374	5.0%	411,300,109	329,040,087
2047	486	70.6%	343	2.0	686	737	590	61%	1,110,951	5.1%	409,556,086	327,644,869
2048	460	70.5%	325	2.0	650	698	558	61%	1,167,938	5.1%	407,513,248	326,010,598
2049	436	70.5%	307	2.0	615	660	528	61%	1,228,145	5.2%	405,578,562	324,462,850
2050	413	70.5%	291	2.0	582	625	500	61%	1,291,903	5.2%	403,695,344	322,956,275
2009&post	**55,878**	**71.0%**	**39,683**	**2.0**	**79,366**	**85,251**	**68,201**	**61%**	**431,287**		**18,383,846,636**	**14,707,077,309**

Total Meso Cost 2004-2040 12,160,636,512

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	160,975		114,636,002	91,708,802
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	162,981	1.2%	125,980,745	100,784,596
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.2%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	170,526	2.4%	184,348,685	147,478,948
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	181,088	6.2%	212,540,241	170,032,193
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	182,389	0.7%	241,181,298	202,592,290
2009	1,859	68.9%	1,281	2.0	2,561	2,751	2,201	59%	185,962	2.0%	255,819,889	204,655,911
2010	1,889	69.4%	1,311	2.0	2,621	2,816	2,252	60%	189,554	1.9%	266,854,883	213,483,906
2011	1,914	69.9%	1,337	2.0	2,674	2,872	2,298	60%	193,310	2.0%	277,631,227	222,104,981
2012	1,935	70.3%	1,361	2.0	2,722	2,924	2,339	60%	196,986	1.9%	287,966,902	230,373,522
2013	1,953	70.8%	1,382	2.0	2,764	2,969	2,375	61%	200,743	1.9%	298,024,286	238,419,429
2014	1,966	71.2%	1,400	2.0	2,799	3,007	2,405	61%	204,671	2.0%	307,683,337	246,146,669
2015	1,974	71.6%	1,413	2.0	2,825	3,035	2,428	61%	208,768	2.0%	316,787,382	253,429,906
2016	1,977	71.9%	1,422	2.0	2,843	3,054	2,443	62%	213,079	2.1%	325,366,952	260,293,562
2017	1,974	72.3%	1,426	2.0	2,853	3,064	2,452	62%	217,298	2.0%	332,941,450	266,353,160
2018	1,967	72.6%	1,427	2.0	2,855	3,067	2,453	62%	221,632	2.0%	339,826,628	271,861,302
2019	1,954	72.9%	1,424	2.0	2,847	3,058	2,447	63%	226,223	2.1%	345,935,021	276,748,017
2020	1,934	73.2%	1,415	2.0	2,829	3,039	2,431	63%	231,062	2.1%	351,128,562	280,902,849
2021	1,908	73.4%	1,401	2.0	2,802	3,010	2,408	63%	236,193	2.2%	355,451,961	284,361,568
2022	1,876	73.7%	1,383	2.0	2,766	2,971	2,376	63%	241,194	2.1%	358,248,641	286,598,913
2023	1,841	73.9%	1,361	2.0	2,721	2,923	2,339	64%	246,342	2.1%	360,048,790	288,039,032
2024	1,800	74.2%	1,335	2.0	2,669	2,867	2,294	64%	251,783	2.2%	360,964,355	288,771,484
2025	1,751	74.4%	1,303	2.0	2,605	2,799	2,239	64%	257,660	2.3%	360,555,069	288,444,055
2026	1,696	74.6%	1,266	2.0	2,532	2,719	2,176	64%	264,016	2.5%	358,979,404	287,183,523
2027	1,635	74.8%	1,224	2.0	2,447	2,629	2,103	64%	270,333	2.4%	355,321,103	284,256,883
2028	1,569	75.0%	1,177	2.0	2,354	2,529	2,023	64%	276,975	2.5%	350,218,397	280,174,718
2029	1,499	75.3%	1,128	2.0	2,256	2,423	1,938	65%	284,080	2.6%	344,161,001	275,328,801
2030	1,428	75.5%	1,077	2.0	2,155	2,314	1,851	65%	291,652	2.7%	337,491,541	269,993,233
2031	1,359	75.7%	1,029	2.0	2,057	2,210	1,768	65%	299,501	2.7%	330,904,785	264,723,828
2032	1,287	75.8%	976	2.0	1,952	2,097	1,678	65%	307,341	2.6%	322,233,121	257,786,497
2033	1,208	76.0%	919	2.0	1,837	1,973	1,579	65%	316,116	2.9%	311,895,668	249,516,534
2034	1,130	76.2%	861	2.0	1,722	1,850	1,480	65%	325,686	3.0%	301,189,163	240,951,331
2035	1,055	76.4%	806	2.0	1,611	1,731	1,385	66%	335,876	3.1%	290,693,505	232,554,804
2036	984	76.5%	753	2.0	1,506	1,617	1,294	66%	346,644	3.2%	280,333,807	224,267,046
2037	901	76.7%	691	2.0	1,382	1,484	1,187	66%	359,047	3.6%	266,475,317	213,180,253
2038	830	76.9%	638	2.0	1,276	1,371	1,097	66%	371,571	3.5%	254,651,900	203,721,520
2039	771	77.0%	594	2.0	1,188	1,276	1,021	66%	384,062	3.4%	244,999,342	195,999,474
2040	721	77.1%	556	2.0	1,111	1,194	955	66%	396,727	3.3%	236,797,992	189,438,393
2041	677	77.2%	522	2.0	1,045	1,122	898	66%	409,453	3.2%	229,745,831	183,796,665
2042	637	77.3%	493	2.0	985	1,058	847	66%	422,324	3.1%	223,477,894	178,782,315
2043	602	77.4%	466	2.0	931	1,000	800	66%	435,417	3.1%	217,759,940	174,207,952
2044	569	77.4%	441	2.0	882	947	758	67%	448,796	3.1%	212,535,307	170,028,246
2045	540	77.5%	419	2.0	837	899	719	67%	462,393	3.0%	207,915,222	166,332,178
2046	513	77.6%	398	2.0	795	854	683	67%	476,355	3.0%	203,453,419	162,762,736
2047	486	77.6%	377	2.0	755	811	649	67%	490,891	3.1%	198,996,290	159,197,032
2048	460	77.7%	358	2.0	715	768	615	67%	506,157	3.1%	194,445,358	155,556,286
2049	436	77.7%	339	2.0	678	728	582	67%	522,007	3.1%	190,018,406	152,014,724
2050	413	77.8%	321	2.0	642	690	552	67%	538,528	3.2%	185,676,060	148,540,848
2009&post	**55,878**	**73.7%**	**41,205**	**2.0**	**82,410**	**88,521**	**70,817**	**63%**	**274,548**		**12,151,605,108**	**9,721,284,087**

Total Meso Cost 2004-2040 8,805,449,966

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	158,846		113,119,704	90,495,763
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	161,915	1.9%	125,156,643	100,125,315
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.8%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	172,181	3.4%	186,137,927	148,910,342
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	184,622	7.2%	216,688,217	173,350,574
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	187,754	1.7%	248,275,779	208,551,654
2009	1,859	68.9%	1,281	2.0	2,561	2,751	2,201	59%	193,290	2.9%	265,901,833	212,721,466
2010	1,889	69.4%	1,311	2.0	2,621	2,816	2,252	60%	198,937	2.9%	280,064,568	224,051,655
2011	1,914	69.9%	1,337	2.0	2,674	2,872	2,298	60%	204,849	3.0%	294,202,939	235,362,351
2012	1,935	70.3%	1,361	2.0	2,722	2,924	2,339	60%	210,770	2.9%	308,117,687	246,494,149
2013	1,953	70.8%	1,382	2.0	2,764	2,969	2,375	61%	216,875	2.9%	321,973,960	257,579,168
2014	1,966	71.2%	1,400	2.0	2,799	3,007	2,405	61%	223,264	2.9%	335,635,423	268,508,338
2015	1,974	71.6%	1,413	2.0	2,825	3,035	2,428	61%	229,944	3.0%	348,920,180	279,136,144
2016	1,977	71.9%	1,422	2.0	2,843	3,054	2,443	62%	236,970	3.1%	361,847,631	289,478,105
2017	1,974	72.3%	1,426	2.0	2,853	3,064	2,452	62%	244,006	3.0%	373,864,216	299,091,373
2018	1,967	72.6%	1,427	2.0	2,855	3,067	2,453	62%	251,288	3.0%	385,298,079	308,238,463
2019	1,954	72.9%	1,424	2.0	2,847	3,058	2,447	63%	258,982	3.1%	396,029,062	316,823,249
2020	1,934	73.2%	1,415	2.0	2,829	3,039	2,431	63%	267,088	3.1%	405,874,208	324,699,366
2021	1,908	73.4%	1,401	2.0	2,802	3,010	2,408	63%	275,667	3.2%	414,857,242	331,885,794
2022	1,876	73.7%	1,383	2.0	2,766	2,971	2,376	63%	284,235	3.1%	422,176,843	337,741,474
2023	1,841	73.9%	1,361	2.0	2,721	2,923	2,339	64%	293,116	3.1%	428,413,323	342,730,658
2024	1,800	74.2%	1,335	2.0	2,669	2,867	2,294	64%	302,496	3.2%	433,668,004	346,934,403
2025	1,751	74.4%	1,303	2.0	2,605	2,799	2,239	64%	312,559	3.3%	437,376,910	349,901,528
2026	1,696	74.6%	1,266	2.0	2,532	2,719	2,176	64%	323,374	3.5%	439,688,108	351,750,487
2027	1,635	74.8%	1,224	2.0	2,447	2,629	2,103	64%	334,322	3.4%	439,427,029	351,541,623
2028	1,569	75.0%	1,177	2.0	2,354	2,529	2,023	64%	345,857	3.5%	437,315,651	349,852,521
2029	1,499	75.3%	1,128	2.0	2,256	2,423	1,938	65%	358,168	3.6%	433,918,125	347,134,500
2030	1,428	75.5%	1,077	2.0	2,155	2,314	1,851	65%	371,280	3.7%	429,634,237	343,707,389
2031	1,359	75.7%	1,029	2.0	2,057	2,210	1,768	65%	384,968	3.7%	425,332,558	340,266,046
2032	1,287	75.8%	976	2.0	1,952	2,097	1,678	65%	398,874	3.6%	418,200,920	334,560,736
2033	1,208	76.0%	919	2.0	1,837	1,973	1,579	65%	414,239	3.9%	408,708,188	326,966,551
2034	1,130	76.2%	861	2.0	1,722	1,850	1,480	65%	430,915	4.0%	398,503,803	318,803,043
2035	1,055	76.4%	806	2.0	1,611	1,731	1,385	66%	448,706	4.1%	388,344,787	310,675,830
2036	984	76.5%	753	2.0	1,506	1,617	1,294	66%	467,579	4.2%	378,134,703	302,507,762
2037	901	76.7%	691	2.0	1,382	1,484	1,187	66%	489,003	4.6%	362,925,307	290,340,246
2038	830	76.9%	638	2.0	1,276	1,371	1,097	66%	510,965	4.5%	350,183,856	280,147,085
2039	771	77.0%	594	2.0	1,188	1,276	1,021	66%	533,260	4.4%	340,175,251	272,140,201
2040	721	77.1%	556	2.0	1,111	1,194	955	66%	556,183	4.3%	331,974,054	265,579,243
2041	677	77.2%	522	2.0	1,045	1,122	898	66%	579,586	4.2%	325,208,419	260,166,736
2042	637	77.3%	493	2.0	985	1,058	847	66%	603,598	4.1%	319,401,121	255,520,896
2043	602	77.4%	466	2.0	931	1,000	800	66%	628,340	4.1%	314,244,228	251,395,382
2044	569	77.4%	441	2.0	882	947	758	67%	653,921	4.1%	309,676,050	247,740,840
2045	540	77.5%	419	2.0	837	899	719	67%	680,259	4.0%	305,879,062	244,703,250
2046	513	77.6%	398	2.0	795	854	683	67%	707,588	4.0%	302,214,409	241,771,527
2047	486	77.6%	377	2.0	755	811	649	67%	736,244	4.0%	298,456,972	238,765,578
2048	460	77.7%	358	2.0	715	768	615	67%	766,494	4.1%	294,456,293	235,565,035
2049	436	77.7%	339	2.0	678	728	582	67%	798,153	4.1%	290,539,584	232,431,667
2050	413	77.8%	321	2.0	642	690	552	67%	831,390	4.2%	286,649,930	229,319,944
2009&post	**55,878**	**73.7%**	**41,205**	**2.0**	**82,410**	**88,521**	**70,817**	**63%**	**344,403**		**15,243,414,754**	**12,194,731,803**

Total Meso Cost 2004-2040 10,502,785,669

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	156,777		111,646,609	89,317,287
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	160,869	2.6%	124,348,271	99,478,617
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	3.5%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	173,836	4.4%	187,927,170	150,341,736
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	188,190	8.3%	220,876,282	176,701,025
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	193,223	2.7%	255,508,044	214,626,757
2009	1,859	68.9%	1,281	2.0	2,561	2,751	2,201	59%	200,834	3.9%	276,278,891	221,023,113
2010	1,889	69.4%	1,311	2.0	2,621	2,816	2,252	60%	208,688	3.9%	293,792,287	235,033,830
2011	1,914	69.9%	1,337	2.0	2,674	2,872	2,298	60%	216,956	4.0%	311,590,907	249,272,725
2012	1,935	70.3%	1,361	2.0	2,722	2,924	2,339	60%	225,373	3.9%	329,465,263	263,572,211
2013	1,953	70.8%	1,382	2.0	2,764	2,969	2,375	61%	234,130	3.9%	347,591,124	278,072,899
2014	1,966	71.2%	1,400	2.0	2,799	3,007	2,405	61%	243,345	3.9%	365,822,431	292,657,945
2015	1,974	71.6%	1,413	2.0	2,825	3,035	2,428	61%	253,034	4.0%	383,957,301	307,165,841
2016	1,977	71.9%	1,422	2.0	2,843	3,054	2,443	62%	263,272	4.0%	402,009,734	321,607,787
2017	1,974	72.3%	1,426	2.0	2,853	3,064	2,452	62%	273,694	4.0%	419,351,685	335,481,348
2018	1,967	72.6%	1,427	2.0	2,855	3,067	2,453	62%	284,571	4.0%	436,329,596	349,063,677
2019	1,954	72.9%	1,424	2.0	2,847	3,058	2,447	63%	296,102	4.1%	452,791,129	362,232,903
2020	1,934	73.2%	1,415	2.0	2,829	3,039	2,431	63%	308,303	4.1%	468,505,856	374,804,684
2021	1,908	73.4%	1,401	2.0	2,802	3,010	2,408	63%	321,264	4.2%	483,475,714	386,780,572
2022	1,876	73.7%	1,383	2.0	2,766	2,971	2,376	63%	334,430	4.1%	496,732,359	397,385,887
2023	1,841	73.9%	1,361	2.0	2,721	2,923	2,339	64%	348,193	4.1%	508,912,060	407,129,648
2024	1,800	74.2%	1,335	2.0	2,669	2,867	2,294	64%	362,786	4.2%	520,102,075	416,081,660
2025	1,751	74.4%	1,303	2.0	2,605	2,799	2,239	64%	378,455	4.3%	529,588,112	423,670,489
2026	1,696	74.6%	1,266	2.0	2,532	2,719	2,176	64%	395,310	4.5%	537,499,455	429,999,564
2027	1,635	74.8%	1,224	2.0	2,447	2,629	2,103	64%	412,618	4.4%	542,338,775	433,871,020
2028	1,569	75.0%	1,177	2.0	2,354	2,529	2,023	64%	430,953	4.4%	544,915,570	435,932,456
2029	1,499	75.3%	1,128	2.0	2,256	2,423	1,938	65%	450,580	4.6%	545,873,577	436,698,862
2030	1,428	75.5%	1,077	2.0	2,155	2,314	1,851	65%	471,559	4.7%	545,673,722	436,538,977
2031	1,359	75.7%	1,029	2.0	2,057	2,210	1,768	65%	493,637	4.7%	545,396,571	436,317,257
2032	1,287	75.8%	976	2.0	1,952	2,097	1,678	65%	516,379	4.6%	541,399,711	433,119,769
2033	1,208	76.0%	919	2.0	1,837	1,973	1,579	65%	541,418	4.8%	534,189,813	427,351,851
2034	1,130	76.2%	861	2.0	1,722	1,850	1,480	65%	568,622	5.0%	525,852,451	420,681,961
2035	1,055	76.4%	806	2.0	1,611	1,731	1,385	66%	597,781	5.1%	517,366,109	413,892,887
2036	984	76.5%	753	2.0	1,506	1,617	1,294	66%	628,904	5.2%	508,599,564	406,879,652
2037	901	76.7%	691	2.0	1,382	1,484	1,187	66%	664,034	5.6%	492,828,642	394,262,914
2038	830	76.9%	638	2.0	1,276	1,371	1,097	66%	700,517	5.5%	480,091,241	384,072,993
2039	771	77.0%	594	2.0	1,188	1,276	1,021	66%	738,101	5.4%	470,846,147	376,676,918
2040	721	77.1%	556	2.0	1,111	1,194	955	66%	777,217	5.3%	463,904,769	371,123,815
2041	677	77.2%	522	2.0	1,045	1,122	898	66%	817,694	5.2%	458,811,773	367,049,418
2042	637	77.3%	493	2.0	985	1,058	847	66%	859,743	5.1%	454,943,014	363,954,412
2043	602	77.4%	466	2.0	931	1,000	800	66%	903,572	5.1%	451,892,784	361,514,227
2044	569	77.4%	441	2.0	882	947	758	67%	949,381	5.1%	449,596,589	359,677,271
2045	540	77.5%	419	2.0	837	899	719	67%	997,096	5.0%	448,344,823	358,675,858
2046	513	77.6%	398	2.0	795	854	683	67%	1,047,104	5.0%	447,223,255	357,778,604
2047	486	77.6%	377	2.0	755	811	649	67%	1,099,962	5.0%	445,900,145	356,720,116
2048	460	77.7%	358	2.0	715	768	615	67%	1,156,142	5.1%	444,143,523	355,314,818
2049	436	77.7%	339	2.0	678	728	582	67%	1,215,444	5.1%	442,439,896	353,951,917
2050	413	77.8%	321	2.0	642	690	552	67%	1,278,203	5.2%	440,704,210	352,563,368
2009&post	**55,878**	**73.7%**	**41,205**	**2.0**	**82,410**	**88,521**	**70,817**	**63%**	**436,216**		**19,307,072,653**	**15,445,658,122**

Total Meso Cost 2004-2040 12,614,103,082

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	160,975		114,636,002	91,708,802
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	162,981	1.2%	125,980,745	100,784,596
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.2%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	170,526	2.4%	184,348,685	147,478,948
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	181,088	6.2%	212,540,241	170,032,193
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	182,389	0.7%	241,181,298	202,592,290
2009	1,859	71.1%	1,323	2.0	2,645	2,841	2,273	61%	185,046	1.5%	262,887,210	210,309,768
2010	1,889	73.1%	1,381	2.0	2,763	2,968	2,374	63%	188,067	1.6%	279,074,679	223,259,743
2011	1,914	74.6%	1,427	2.0	2,855	3,066	2,453	64%	191,472	1.8%	293,545,454	234,836,363
2012	1,935	75.6%	1,464	2.0	2,927	3,144	2,515	65%	194,951	1.8%	306,473,995	245,179,196
2013	1,953	76.4%	1,492	2.0	2,984	3,205	2,564	66%	198,618	1.9%	318,283,781	254,627,025
2014	1,966	76.9%	1,513	2.0	3,025	3,249	2,600	66%	202,522	2.0%	329,039,101	263,231,281
2015	1,974	77.3%	1,526	2.0	3,052	3,279	2,623	66%	206,634	2.0%	338,757,991	271,006,393
2016	1,977	77.6%	1,534	2.0	3,067	3,295	2,636	67%	210,985	2.1%	347,556,007	278,044,806
2017	1,974	77.8%	1,536	2.0	3,071	3,299	2,639	67%	215,275	2.0%	355,084,026	284,067,221
2018	1,967	77.9%	1,533	2.0	3,066	3,293	2,635	67%	219,694	2.1%	361,754,757	289,403,806
2019	1,954	77.9%	1,522	2.0	3,045	3,271	2,616	67%	224,415	2.1%	366,974,416	293,579,533
2020	1,934	77.9%	1,507	2.0	3,013	3,237	2,589	67%	229,371	2.2%	371,211,713	296,969,370
2021	1,908	77.9%	1,486	2.0	2,972	3,192	2,554	67%	234,613	2.3%	374,491,328	299,593,063
2022	1,876	77.9%	1,461	2.0	2,923	3,140	2,512	67%	239,724	2.2%	376,309,511	301,047,608
2023	1,841	77.9%	1,433	2.0	2,867	3,079	2,463	67%	244,968	2.2%	377,135,130	301,708,104
2024	1,800	77.9%	1,401	2.0	2,802	3,010	2,408	67%	250,496	2.3%	377,031,174	301,624,939
2025	1,751	77.8%	1,363	2.0	2,726	2,929	2,343	67%	256,457	2.4%	375,520,094	300,416,075
2026	1,696	77.8%	1,320	2.0	2,640	2,836	2,269	67%	262,894	2.5%	372,792,871	298,234,297
2027	1,635	77.8%	1,272	2.0	2,545	2,734	2,187	67%	269,286	2.4%	368,058,562	294,446,850
2028	1,569	77.8%	1,221	2.0	2,441	2,622	2,098	67%	275,994	2.5%	361,842,908	289,474,326
2029	1,499	77.8%	1,166	2.0	2,332	2,505	2,004	67%	283,161	2.6%	354,662,958	283,730,366
2030	1,428	77.8%	1,111	2.0	2,221	2,386	1,909	67%	290,791	2.7%	346,903,397	277,522,718
2031	1,359	77.8%	1,058	2.0	2,115	2,272	1,818	67%	298,695	2.7%	339,308,601	271,446,881
2032	1,287	77.8%	1,001	2.0	2,002	2,151	1,721	67%	306,578	2.6%	329,674,122	263,739,298
2033	1,208	77.8%	940	2.0	1,880	2,019	1,615	67%	315,400	2.9%	318,382,671	254,706,137
2034	1,130	77.8%	879	2.0	1,757	1,888	1,510	67%	325,019	3.0%	306,788,708	245,430,966
2035	1,055	77.8%	821	2.0	1,641	1,763	1,410	67%	335,260	3.2%	295,495,023	236,396,018
2036	984	77.8%	765	2.0	1,530	1,644	1,315	67%	346,078	3.2%	284,425,663	227,540,531
2037	901	77.8%	701	2.0	1,401	1,505	1,204	67%	358,531	3.6%	269,860,435	215,888,348
2038	830	77.8%	646	2.0	1,292	1,388	1,110	67%	371,103	3.5%	257,464,562	205,971,650
2039	771	77.8%	600	2.0	1,200	1,289	1,032	67%	383,642	3.4%	247,350,202	197,880,162
2040	721	77.8%	561	2.0	1,122	1,205	964	67%	396,352	3.3%	238,764,636	191,011,709
2041	677	77.8%	527	2.0	1,053	1,131	905	67%	409,121	3.2%	231,390,500	185,112,400
2042	637	77.8%	496	2.0	992	1,066	852	67%	422,034	3.2%	224,847,425	179,877,940
2043	602	77.8%	468	2.0	937	1,006	805	67%	435,164	3.1%	218,890,806	175,112,645
2044	569	77.8%	443	2.0	886	952	761	67%	448,579	3.1%	213,457,472	170,765,978
2045	540	77.8%	420	2.0	841	903	722	67%	462,210	3.0%	208,654,457	166,923,566
2046	513	77.8%	399	2.0	798	857	686	67%	476,205	3.0%	204,029,120	163,223,296
2047	486	77.8%	378	2.0	757	813	650	67%	490,773	3.1%	199,424,847	159,539,877
2048	460	77.8%	358	2.0	716	770	616	67%	506,071	3.1%	194,741,273	155,793,018
2049	436	77.8%	339	2.0	678	729	583	67%	521,952	3.1%	190,196,168	152,156,934
2050	413	77.8%	321	2.0	642	690	552	67%	538,504	3.2%	185,748,919	148,599,135
2009&post	**55,878**	**77.2%**	**43,112**	**2.0**	**86,224**	**92,617**	**74,094**	**66%**	**271,532**		**12,574,286,673**	**10,059,429,339**

Total Meso Cost 2004-2040 9,137,709,412

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	158,846		113,119,704	90,495,763
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	161,915	1.9%	125,156,643	100,125,315
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.8%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	172,181	3.4%	186,137,927	148,910,342
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	184,622	7.2%	216,688,217	173,350,574
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	187,754	1.7%	248,275,779	208,551,654
2009	1,859	71.1%	1,323	2.0	2,645	2,841	2,273	61%	192,339	2.4%	273,247,670	218,598,136
2010	1,889	73.1%	1,381	2.0	2,763	2,968	2,374	63%	197,377	2.6%	292,889,237	234,311,390
2011	1,914	74.6%	1,427	2.0	2,855	3,066	2,453	64%	202,901	2.8%	311,067,039	248,853,631
2012	1,935	75.6%	1,464	2.0	2,927	3,144	2,515	65%	208,593	2.8%	327,919,769	262,335,815
2013	1,953	76.4%	1,492	2.0	2,984	3,205	2,564	66%	214,579	2.9%	343,861,452	275,089,162
2014	1,966	76.9%	1,513	2.0	3,025	3,249	2,600	66%	220,920	3.0%	358,931,182	287,144,945
2015	1,974	77.3%	1,526	2.0	3,052	3,279	2,623	66%	227,593	3.0%	373,119,203	298,495,362
2016	1,977	77.6%	1,534	2.0	3,067	3,295	2,636	67%	234,641	3.1%	386,524,396	309,219,517
2017	1,974	77.8%	1,536	2.0	3,071	3,299	2,639	67%	241,735	3.0%	398,728,211	318,982,569
2018	1,967	77.9%	1,533	2.0	3,066	3,293	2,635	67%	249,090	3.0%	410,160,153	328,128,122
2019	1,954	77.9%	1,522	2.0	3,045	3,271	2,616	67%	256,912	3.1%	420,114,895	336,091,916
2020	1,934	77.9%	1,507	2.0	3,013	3,237	2,589	67%	265,133	3.2%	429,088,350	343,270,680
2021	1,908	77.9%	1,486	2.0	2,972	3,192	2,554	67%	273,822	3.3%	437,078,330	349,662,664
2022	1,876	77.9%	1,461	2.0	2,923	3,140	2,512	67%	282,502	3.2%	443,460,346	354,768,277
2023	1,841	77.9%	1,433	2.0	2,867	3,079	2,463	67%	291,481	3.2%	448,743,673	358,994,938
2024	1,800	77.9%	1,401	2.0	2,802	3,010	2,408	67%	300,949	3.2%	452,970,643	362,376,514
2025	1,751	77.8%	1,363	2.0	2,726	2,929	2,343	67%	311,099	3.4%	455,530,182	364,424,146
2026	1,696	77.8%	1,320	2.0	2,640	2,836	2,269	67%	322,000	3.5%	456,606,950	365,285,560
2027	1,635	77.8%	1,272	2.0	2,545	2,734	2,187	67%	333,027	3.4%	455,179,215	364,143,372
2028	1,569	77.8%	1,221	2.0	2,441	2,622	2,098	67%	344,632	3.5%	451,830,832	361,464,666
2029	1,499	77.8%	1,166	2.0	2,332	2,505	2,004	67%	357,009	3.6%	447,158,719	357,726,975
2030	1,428	77.8%	1,111	2.0	2,221	2,386	1,909	67%	370,183	3.7%	441,615,475	353,292,380
2031	1,359	77.8%	1,058	2.0	2,115	2,272	1,818	67%	383,931	3.7%	436,134,252	348,907,401
2032	1,287	77.8%	1,001	2.0	2,002	2,151	1,721	67%	397,883	3.6%	427,857,760	342,286,208
2033	1,208	77.8%	940	2.0	1,880	2,019	1,615	67%	413,300	3.9%	417,208,524	333,766,819
2034	1,130	77.8%	879	2.0	1,757	1,888	1,510	67%	430,033	4.0%	405,912,348	324,729,878
2035	1,055	77.8%	821	2.0	1,641	1,763	1,410	67%	447,882	4.2%	394,759,053	315,807,243
2036	984	77.8%	765	2.0	1,530	1,644	1,315	67%	466,814	4.2%	383,653,911	306,923,129
2037	901	77.8%	701	2.0	1,401	1,505	1,204	67%	488,300	4.6%	367,535,494	294,028,395
2038	830	77.8%	646	2.0	1,292	1,388	1,110	67%	510,321	4.5%	354,051,534	283,241,228
2039	771	77.8%	600	2.0	1,200	1,289	1,032	67%	532,676	4.4%	343,439,230	274,751,384
2040	721	77.8%	561	2.0	1,122	1,205	964	67%	555,657	4.3%	334,731,036	267,784,829
2041	677	77.8%	527	2.0	1,053	1,131	905	67%	579,117	4.2%	327,536,371	262,029,097
2042	637	77.8%	496	2.0	992	1,066	852	67%	603,183	4.2%	321,358,405	257,086,724
2043	602	77.8%	468	2.0	937	1,006	805	67%	627,975	4.1%	315,876,077	252,700,862
2044	569	77.8%	443	2.0	886	952	761	67%	653,605	4.1%	311,019,631	248,815,705
2045	540	77.8%	420	2.0	841	903	722	67%	679,991	4.0%	306,966,549	245,573,239
2046	513	77.8%	399	2.0	798	857	686	67%	707,366	4.0%	303,069,523	242,455,618
2047	486	77.8%	378	2.0	757	813	650	67%	736,068	4.1%	299,099,691	239,279,753
2048	460	77.8%	358	2.0	716	770	616	67%	766,363	4.1%	294,904,382	235,923,506
2049	436	77.8%	339	2.0	678	729	583	67%	798,068	4.1%	290,811,367	232,649,094
2050	413	77.8%	321	2.0	642	690	552	67%	831,352	4.2%	286,762,403	229,409,922
2009&post	**55,878**	**77.2%**	**43,112**	**2.0**	**86,224**	**92,617**	**74,094**	**66%**	**339,861**		**15,738,513,464**	**12,590,810,771**

Total Meso Cost 2004-2040 10,890,321,972

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	156,777		111,646,609	89,317,287
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	160,869	2.6%	124,348,271	99,478,617
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	3.5%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	173,836	4.4%	187,927,170	150,341,736
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	188,190	8.3%	220,876,282	176,701,025
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	193,223	2.7%	255,508,044	214,626,757
2009	1,859	71.1%	1,323	2.0	2,645	2,841	2,273	61%	199,845	3.4%	283,911,396	227,129,117
2010	1,889	73.1%	1,381	2.0	2,763	2,968	2,374	63%	207,052	3.6%	307,245,549	245,796,439
2011	1,914	74.6%	1,427	2.0	2,855	3,066	2,453	64%	214,893	3.8%	329,451,664	263,561,331
2012	1,935	75.6%	1,464	2.0	2,927	3,144	2,515	65%	223,045	3.8%	350,639,243	280,511,395
2013	1,953	76.4%	1,492	2.0	2,984	3,205	2,564	66%	231,651	3.9%	371,219,955	296,975,964
2014	1,966	76.9%	1,513	2.0	3,025	3,249	2,600	66%	240,790	3.9%	391,213,288	312,970,631
2015	1,974	77.3%	1,526	2.0	3,052	3,279	2,623	66%	250,447	4.0%	410,586,143	328,468,914
2016	1,977	77.6%	1,534	2.0	3,067	3,295	2,636	67%	260,684	4.1%	429,425,240	343,540,192
2017	1,974	77.8%	1,536	2.0	3,071	3,299	2,639	67%	271,146	4.0%	447,240,638	357,792,510
2018	1,967	77.9%	1,533	2.0	3,066	3,293	2,635	67%	282,081	4.0%	464,484,340	371,587,472
2019	1,954	77.9%	1,522	2.0	3,045	3,271	2,616	67%	293,734	4.1%	480,328,885	384,263,108
2020	1,934	77.9%	1,507	2.0	3,013	3,237	2,589	67%	306,046	4.2%	495,301,969	396,241,575
2021	1,908	77.9%	1,486	2.0	2,972	3,192	2,554	67%	319,113	4.3%	509,371,940	407,497,552
2022	1,876	77.9%	1,461	2.0	2,923	3,140	2,512	67%	332,391	4.2%	521,774,181	417,419,345
2023	1,841	77.9%	1,433	2.0	2,867	3,079	2,463	67%	346,250	4.2%	533,062,161	426,449,729
2024	1,800	77.9%	1,401	2.0	2,802	3,010	2,408	67%	360,931	4.2%	543,251,582	434,601,266
2025	1,751	77.8%	1,363	2.0	2,726	2,929	2,343	67%	376,687	4.4%	551,568,264	441,254,611
2026	1,696	77.8%	1,320	2.0	2,640	2,836	2,269	67%	393,631	4.5%	558,181,662	446,545,330
2027	1,635	77.8%	1,272	2.0	2,545	2,734	2,187	67%	411,021	4.4%	561,779,712	449,423,769
2028	1,569	77.8%	1,221	2.0	2,441	2,622	2,098	67%	429,427	4.5%	563,001,823	450,401,459
2029	1,499	77.8%	1,166	2.0	2,332	2,505	2,004	67%	449,121	4.6%	562,530,052	450,024,042
2030	1,428	77.8%	1,111	2.0	2,221	2,386	1,909	67%	470,165	4.7%	560,890,634	448,712,507
2031	1,359	77.8%	1,058	2.0	2,115	2,272	1,818	67%	492,308	4.7%	559,247,077	447,397,662
2032	1,287	77.8%	1,001	2.0	2,002	2,151	1,721	67%	515,096	4.6%	553,901,070	443,120,856
2033	1,208	77.8%	940	2.0	1,880	2,019	1,615	67%	540,191	4.9%	545,299,623	436,239,698
2034	1,130	77.8%	879	2.0	1,757	1,888	1,510	67%	567,458	5.0%	535,628,239	428,502,591
2035	1,055	77.8%	821	2.0	1,641	1,763	1,410	67%	596,683	5.2%	525,911,147	420,728,918
2036	984	77.8%	765	2.0	1,530	1,644	1,315	67%	627,875	5.2%	516,022,777	412,818,222
2037	901	77.8%	701	2.0	1,401	1,505	1,204	67%	663,078	5.6%	499,088,753	399,271,003
2038	830	77.8%	646	2.0	1,292	1,388	1,110	67%	699,634	5.5%	485,393,513	388,314,810
2039	771	77.8%	600	2.0	1,200	1,289	1,032	67%	737,292	5.4%	475,363,737	380,290,990
2040	721	77.8%	561	2.0	1,122	1,205	964	67%	776,482	5.3%	467,757,255	374,205,804
2041	677	77.8%	527	2.0	1,053	1,131	905	67%	817,031	5.2%	462,095,964	369,676,772
2042	637	77.8%	496	2.0	992	1,066	852	67%	859,151	5.2%	457,730,775	366,184,620
2043	602	77.8%	468	2.0	937	1,006	805	67%	903,047	5.1%	454,239,326	363,391,461
2044	569	77.8%	443	2.0	886	952	761	67%	948,922	5.1%	451,547,147	361,237,717
2045	540	77.8%	420	2.0	841	903	722	67%	996,702	5.0%	449,938,737	359,950,989
2046	513	77.8%	399	2.0	798	857	686	67%	1,046,776	5.0%	448,488,606	358,790,885
2047	486	77.8%	378	2.0	757	813	650	67%	1,099,698	5.1%	446,860,327	357,488,262
2048	460	77.8%	358	2.0	716	770	616	67%	1,155,945	5.1%	444,819,360	355,855,488
2049	436	77.8%	339	2.0	678	729	583	67%	1,215,315	5.1%	442,853,749	354,282,999
2050	413	77.8%	321	2.0	642	690	552	67%	1,278,145	5.2%	440,877,117	352,701,694
2009&post	**55,878**	**77.2%**	**43,112**	**2.0**	**86,224**	**92,617**	**74,094**	**66%**	**429,498**		**19,889,524,622**	**15,911,619,698**

Total Meso Cost 2004-2040 13,067,703,781

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	160,975		114,636,002	91,708,802
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	162,981	1.2%	125,980,745	100,784,596
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.2%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	170,526	2.4%	184,348,685	147,478,948
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	181,088	6.2%	212,540,241	170,032,193
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	182,389	0.7%	241,181,298	202,592,290
2009	1,859	71.1%	1,323	2.0	2,645	2,841	2,273	61%	185,046	1.5%	262,887,210	210,309,768
2010	1,889	74.9%	1,416	2.0	2,831	3,041	2,433	64%	188,150	1.7%	286,093,398	228,874,718
2011	1,914	78.9%	1,509	2.0	3,018	3,242	2,594	68%	191,427	1.7%	310,293,884	248,235,107
2012	1,935	82.9%	1,604	2.0	3,208	3,446	2,756	71%	194,643	1.7%	335,320,509	268,256,407
2013	1,953	87.0%	1,699	2.0	3,399	3,651	2,921	75%	197,960	1.7%	361,353,859	289,083,087
2014	1,966	87.0%	1,711	2.0	3,422	3,675	2,940	75%	202,052	2.1%	371,311,330	297,049,064
2015	1,974	87.0%	1,718	2.0	3,435	3,690	2,952	75%	206,296	2.1%	380,625,839	304,500,671
2016	1,977	87.0%	1,720	2.0	3,439	3,695	2,956	75%	210,742	2.2%	389,293,127	311,434,501
2017	1,974	87.0%	1,718	2.0	3,435	3,690	2,952	75%	215,100	2.1%	396,837,011	317,469,609
2018	1,967	87.0%	1,711	2.0	3,423	3,677	2,941	75%	219,569	2.1%	403,644,313	322,915,450
2019	1,954	87.0%	1,700	2.0	3,400	3,652	2,921	75%	224,287	2.1%	409,527,389	327,621,912
2020	1,934	87.0%	1,683	2.0	3,365	3,615	2,892	75%	229,240	2.2%	414,314,552	331,451,642
2021	1,908	87.0%	1,660	2.0	3,319	3,566	2,852	75%	234,477	2.3%	418,029,094	334,423,275
2022	1,876	87.0%	1,632	2.0	3,265	3,507	2,806	75%	239,586	2.2%	420,125,108	336,100,086
2023	1,841	87.0%	1,601	2.0	3,203	3,440	2,752	75%	244,826	2.2%	421,117,214	336,893,771
2024	1,800	87.0%	1,566	2.0	3,132	3,364	2,691	75%	250,349	2.3%	421,068,046	336,854,437
2025	1,751	87.0%	1,524	2.0	3,047	3,273	2,618	75%	256,306	2.4%	419,438,617	335,550,894
2026	1,696	87.0%	1,476	2.0	2,951	3,170	2,536	75%	262,739	2.5%	416,441,195	333,152,956
2027	1,635	87.0%	1,422	2.0	2,845	3,056	2,445	75%	269,127	2.4%	411,214,466	328,971,573
2028	1,569	87.0%	1,365	2.0	2,729	2,932	2,345	75%	275,829	2.5%	404,321,643	323,457,314
2029	1,499	87.0%	1,304	2.0	2,608	2,801	2,241	75%	282,989	2.6%	396,337,687	317,070,150
2030	1,428	87.0%	1,242	2.0	2,484	2,668	2,134	75%	290,613	2.7%	387,695,261	310,156,209
2031	1,359	87.0%	1,183	2.0	2,365	2,541	2,033	75%	298,510	2.7%	379,231,925	303,385,540
2032	1,287	87.0%	1,120	2.0	2,239	2,405	1,924	75%	306,383	2.6%	368,488,645	294,790,916
2033	1,208	87.0%	1,051	2.0	2,102	2,258	1,807	75%	315,196	2.9%	355,876,801	284,701,441
2034	1,130	87.0%	983	2.0	1,966	2,112	1,689	75%	324,807	3.0%	342,915,949	274,332,759
2035	1,055	87.0%	918	2.0	1,836	1,972	1,577	75%	335,039	3.2%	330,284,595	264,227,676
2036	984	87.0%	856	2.0	1,711	1,838	1,471	75%	345,850	3.2%	317,900,815	254,320,652
2037	901	87.0%	784	2.0	1,567	1,683	1,347	75%	358,296	3.6%	301,591,066	241,272,853
2038	830	87.0%	722	2.0	1,444	1,552	1,241	75%	370,862	3.5%	287,715,086	230,172,069
2039	771	87.0%	671	2.0	1,342	1,442	1,153	75%	383,394	3.4%	276,398,068	221,118,454
2040	721	87.0%	627	2.0	1,254	1,347	1,078	75%	396,099	3.3%	266,794,827	213,435,862
2041	677	87.0%	589	2.0	1,177	1,265	1,012	75%	408,862	3.2%	258,551,424	206,841,139
2042	637	87.0%	555	2.0	1,109	1,191	953	75%	421,768	3.2%	251,241,064	200,992,852
2043	602	87.0%	524	2.0	1,047	1,125	900	75%	434,891	3.1%	244,589,065	195,671,252
2044	569	87.0%	495	2.0	991	1,064	851	75%	448,297	3.1%	238,524,108	190,819,286
2045	540	87.0%	470	2.0	940	1,010	808	75%	461,919	3.0%	233,165,840	186,532,672
2046	513	87.0%	446	2.0	892	958	767	75%	475,903	3.0%	228,006,565	182,405,252
2047	486	87.0%	423	2.0	846	909	727	75%	490,459	3.1%	222,869,854	178,295,883
2048	460	87.0%	401	2.0	801	861	689	75%	505,742	3.1%	217,641,499	174,113,199
2049	436	87.0%	379	2.0	759	815	652	75%	521,607	3.1%	212,566,375	170,053,100
2050	413	87.0%	359	2.0	718	772	617	75%	538,142	3.2%	207,598,440	166,078,752
2009&post	**55,878**	**85.6%**	**47,856**	**2.0**	**95,712**	**102,809**	**82,247**	**74%**	**271,946**		**13,979,242,760**	**11,183,394,208**

Total Meso Cost 2004-2040 10,066,975,684

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	158,846		113,119,704	90,495,763
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	161,915	1.9%	125,156,643	100,125,315
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	2.8%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	172,181	3.4%	186,137,927	148,910,342
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	184,622	7.2%	216,688,217	173,350,574
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	187,754	1.7%	248,275,779	208,551,654
2009	1,859	71.1%	1,323	2.0	2,645	2,841	2,273	61%	192,339	2.4%	273,247,670	218,598,136
2010	1,889	74.9%	1,416	2.0	2,831	3,041	2,433	64%	197,464	2.7%	300,255,393	240,204,314
2011	1,914	78.9%	1,509	2.0	3,018	3,242	2,594	68%	202,853	2.7%	328,815,173	263,052,139
2012	1,935	82.9%	1,604	2.0	3,208	3,446	2,756	71%	208,263	2.7%	358,784,831	287,027,865
2013	1,953	87.0%	1,699	2.0	3,399	3,651	2,921	75%	213,869	2.7%	390,392,662	312,314,130
2014	1,966	87.0%	1,711	2.0	3,422	3,675	2,940	75%	220,407	3.1%	405,043,670	324,034,936
2015	1,974	87.0%	1,718	2.0	3,435	3,690	2,952	75%	227,221	3.1%	419,233,805	335,387,044
2016	1,977	87.0%	1,720	2.0	3,439	3,695	2,956	75%	234,371	3.1%	432,941,109	346,352,887
2017	1,974	87.0%	1,718	2.0	3,435	3,690	2,952	75%	241,539	3.1%	445,613,132	356,490,505
2018	1,967	87.0%	1,711	2.0	3,423	3,677	2,941	75%	248,949	3.1%	457,654,818	366,123,854
2019	1,954	87.0%	1,700	2.0	3,400	3,652	2,921	75%	256,765	3.1%	468,829,821	375,063,857
2020	1,934	87.0%	1,683	2.0	3,365	3,615	2,892	75%	264,981	3.2%	478,911,451	383,129,160
2021	1,908	87.0%	1,660	2.0	3,319	3,566	2,852	75%	273,665	3.3%	487,892,336	390,313,869
2022	1,876	87.0%	1,632	2.0	3,265	3,507	2,806	75%	282,339	3.2%	495,094,623	396,075,699
2023	1,841	87.0%	1,601	2.0	3,203	3,440	2,752	75%	291,312	3.2%	501,076,824	400,861,459
2024	1,800	87.0%	1,566	2.0	3,132	3,364	2,691	75%	300,773	3.2%	505,877,135	404,701,708
2025	1,751	87.0%	1,524	2.0	3,047	3,273	2,618	75%	310,916	3.4%	508,806,154	407,044,923
2026	1,696	87.0%	1,476	2.0	2,951	3,170	2,536	75%	321,810	3.5%	510,068,573	408,054,858
2027	1,635	87.0%	1,422	2.0	2,845	3,056	2,445	75%	332,830	3.4%	508,550,213	406,840,170
2028	1,569	87.0%	1,365	2.0	2,729	2,932	2,345	75%	344,425	3.5%	504,873,694	403,898,955
2029	1,499	87.0%	1,304	2.0	2,608	2,801	2,241	75%	356,792	3.6%	499,702,121	399,761,697
2030	1,428	87.0%	1,242	2.0	2,484	2,668	2,134	75%	369,956	3.7%	493,544,333	394,835,466
2031	1,359	87.0%	1,183	2.0	2,365	2,541	2,033	75%	383,693	3.7%	487,450,094	389,960,075
2032	1,287	87.0%	1,120	2.0	2,239	2,405	1,924	75%	397,630	3.6%	478,231,963	382,585,571
2033	1,208	87.0%	1,051	2.0	2,102	2,258	1,807	75%	413,033	3.9%	466,340,742	373,072,593
2034	1,130	87.0%	983	2.0	1,966	2,112	1,689	75%	429,752	4.0%	453,712,246	362,969,797
2035	1,055	87.0%	918	2.0	1,836	1,972	1,577	75%	447,587	4.2%	441,235,214	352,988,171
2036	984	87.0%	856	2.0	1,711	1,838	1,471	75%	466,507	4.2%	428,807,534	343,046,027
2037	901	87.0%	784	2.0	1,567	1,683	1,347	75%	487,979	4.6%	410,750,833	328,600,667
2038	830	87.0%	722	2.0	1,444	1,552	1,241	75%	509,989	4.5%	395,650,357	316,520,286
2039	771	87.0%	671	2.0	1,342	1,442	1,153	75%	532,332	4.4%	383,771,339	307,017,071
2040	721	87.0%	627	2.0	1,254	1,347	1,078	75%	555,302	4.3%	374,027,284	299,221,827
2041	677	87.0%	589	2.0	1,177	1,265	1,012	75%	578,749	4.2%	365,982,937	292,786,350
2042	637	87.0%	555	2.0	1,109	1,191	953	75%	602,803	4.2%	359,080,864	287,264,692
2043	602	87.0%	524	2.0	1,047	1,125	900	75%	627,580	4.1%	352,960,526	282,368,421
2044	569	87.0%	495	2.0	991	1,064	851	75%	653,194	4.1%	347,543,044	278,034,435
2045	540	87.0%	470	2.0	940	1,010	808	75%	679,562	4.0%	343,026,905	274,421,524
2046	513	87.0%	446	2.0	892	958	767	75%	706,917	4.0%	338,686,065	270,948,852
2047	486	87.0%	423	2.0	846	909	727	75%	735,596	4.1%	334,262,677	267,410,142
2048	460	87.0%	401	2.0	801	861	689	75%	765,865	4.1%	329,582,987	263,666,389
2049	436	87.0%	379	2.0	759	815	652	75%	797,541	4.1%	325,015,466	260,012,373
2050	413	87.0%	359	2.0	718	772	617	75%	830,792	4.2%	320,493,952	256,395,161
2009&post	**55,878**	**85.6%**	**47,856**	**2.0**	**95,712**	**102,809**	**82,247**	**74%**	**340,667**		**17,511,822,568**	**14,009,458,055**

Total Meso Cost 2004-2040 12,021,584,437

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: HSL 2009
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,591	43.1%	685	2.7	1,858	1,930	1,544	36%	156,777		111,646,609	89,317,287
2004	1,640	45.0%	738	2.5	1,842	1,930	1,544	38%	160,869	2.6%	124,348,271	99,478,617
2005	1,688	49.2%	831	2.4	2,001	2,069	1,655	41%	166,522	3.5%	143,121,044	114,496,835
2006	1,734	59.7%	1,035	2.2	2,311	2,414	1,931	50%	173,836	4.4%	187,927,170	150,341,736
2007	1,778	63.2%	1,124	2.2	2,453	2,561	2,049	53%	188,190	8.3%	220,876,282	176,701,025
2008	1,822	68.8%	1,254	2.1	2,621	2,763	2,321	61%	193,223	2.7%	255,508,044	214,626,757
2009	1,859	71.1%	1,323	2.0	2,645	2,841	2,273	61%	199,845	3.4%	283,911,396	227,129,117
2010	1,889	74.9%	1,416	2.0	2,831	3,041	2,433	64%	207,143	3.7%	314,972,767	251,978,214
2011	1,914	78.9%	1,509	2.0	3,018	3,242	2,594	68%	214,842	3.7%	348,248,744	278,598,995
2012	1,935	82.9%	1,604	2.0	3,208	3,446	2,756	71%	222,692	3.7%	383,642,738	306,914,191
2013	1,953	87.0%	1,699	2.0	3,399	3,651	2,921	75%	230,885	3.7%	421,453,275	337,162,620
2014	1,966	87.0%	1,711	2.0	3,422	3,675	2,940	75%	240,231	4.0%	441,473,084	353,178,467
2015	1,974	87.0%	1,718	2.0	3,435	3,690	2,952	75%	250,038	4.1%	461,331,338	369,065,070
2016	1,977	87.0%	1,720	2.0	3,439	3,695	2,956	75%	260,384	4.1%	480,993,780	384,795,024
2017	1,974	87.0%	1,718	2.0	3,435	3,690	2,952	75%	270,926	4.0%	499,829,929	399,863,943
2018	1,967	87.0%	1,711	2.0	3,423	3,677	2,941	75%	281,921	4.1%	518,269,480	414,615,584
2019	1,954	87.0%	1,700	2.0	3,400	3,652	2,921	75%	293,567	4.1%	536,025,976	428,820,781
2020	1,934	87.0%	1,683	2.0	3,365	3,615	2,892	75%	305,871	4.2%	552,813,364	442,250,691
2021	1,908	87.0%	1,660	2.0	3,319	3,566	2,852	75%	318,929	4.3%	568,590,655	454,872,524
2022	1,876	87.0%	1,632	2.0	3,265	3,507	2,806	75%	332,199	4.2%	582,526,893	466,021,514
2023	1,841	87.0%	1,601	2.0	3,203	3,440	2,752	75%	346,049	4.2%	595,228,623	476,182,898
2024	1,800	87.0%	1,566	2.0	3,132	3,364	2,691	75%	360,720	4.2%	606,702,751	485,362,201
2025	1,751	87.0%	1,524	2.0	3,047	3,273	2,618	75%	376,465	4.4%	616,076,204	492,860,963
2026	1,696	87.0%	1,476	2.0	2,951	3,170	2,536	75%	393,399	4.5%	623,536,063	498,828,850
2027	1,635	87.0%	1,422	2.0	2,845	3,056	2,445	75%	410,777	4.4%	627,649,849	502,119,879
2028	1,569	87.0%	1,365	2.0	2,729	2,932	2,345	75%	429,170	4.5%	629,095,584	503,276,467
2029	1,499	87.0%	1,304	2.0	2,608	2,801	2,241	75%	448,848	4.6%	628,630,097	502,904,078
2030	1,428	87.0%	1,242	2.0	2,484	2,668	2,134	75%	469,877	4.7%	626,844,792	501,475,833
2031	1,359	87.0%	1,183	2.0	2,365	2,541	2,033	75%	492,002	4.7%	625,048,373	500,038,698
2032	1,287	87.0%	1,120	2.0	2,239	2,405	1,924	75%	514,768	4.6%	619,115,002	495,292,002
2033	1,208	87.0%	1,051	2.0	2,102	2,258	1,807	75%	539,841	4.9%	609,516,287	487,613,029
2034	1,130	87.0%	983	2.0	1,966	2,112	1,689	75%	567,086	5.0%	598,703,271	478,962,617
2035	1,055	87.0%	918	2.0	1,836	1,972	1,577	75%	596,290	5.1%	587,828,129	470,262,503
2036	984	87.0%	856	2.0	1,711	1,838	1,471	75%	627,462	5.2%	576,755,262	461,404,210
2037	901	87.0%	784	2.0	1,567	1,683	1,347	75%	662,643	5.6%	557,772,198	446,217,758
2038	830	87.0%	722	2.0	1,444	1,552	1,241	75%	699,179	5.5%	542,424,077	433,939,261
2039	771	87.0%	671	2.0	1,342	1,442	1,153	75%	736,816	5.4%	531,188,410	424,950,728
2040	721	87.0%	627	2.0	1,254	1,347	1,078	75%	775,985	5.3%	522,670,195	418,136,156
2041	677	87.0%	589	2.0	1,177	1,265	1,012	75%	816,513	5.2%	516,337,156	413,069,725
2042	637	87.0%	555	2.0	1,109	1,191	953	75%	858,609	5.2%	511,461,096	409,168,877
2043	602	87.0%	524	2.0	1,047	1,125	900	75%	902,479	5.1%	507,567,752	406,054,201
2044	569	87.0%	495	2.0	991	1,064	851	75%	948,325	5.1%	504,572,741	403,658,193
2045	540	87.0%	470	2.0	940	1,010	808	75%	996,073	5.0%	502,794,358	402,235,487
2046	513	87.0%	446	2.0	892	958	767	75%	1,046,111	5.0%	501,194,561	400,955,649
2047	486	87.0%	423	2.0	846	909	727	75%	1,098,993	5.1%	499,394,306	399,515,445
2048	460	87.0%	401	2.0	801	861	689	75%	1,155,194	5.1%	497,126,710	397,701,368
2049	436	87.0%	379	2.0	759	815	652	75%	1,214,511	5.1%	494,940,308	395,952,246
2050	413	87.0%	359	2.0	718	772	617	75%	1,277,284	5.2%	492,736,832	394,189,465
2009&post	**55,878**	**85.6%**	**47,856**	**2.0**	**95,712**	**102,809**	**82,247**	**74%**	**430,838**		**22,146,994,406**	**17,717,595,525**

Total Meso Cost 2004-2040 14,450,739,838

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	160,950		114,623,447	91,698,757
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	162,934	1.2%	125,781,121	100,624,897
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.2%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	170,386	2.3%	183,176,507	146,541,206
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	180,814	6.1%	210,432,597	168,346,078
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	182,095	0.7%	238,208,741	200,095,342
2009	1,833	68.1%	1,248	2.0	2,496	2,681	2,145	59%	185,913	2.1%	249,227,922	199,382,337
2010	1,856	67.8%	1,259	2.0	2,517	2,704	2,163	58%	189,732	2.1%	256,506,697	205,205,357
2011	1,875	67.5%	1,266	2.0	2,531	2,719	2,175	58%	193,689	2.1%	263,323,493	210,658,794
2012	1,891	67.2%	1,270	2.0	2,540	2,729	2,183	58%	197,532	2.0%	269,498,471	215,598,777
2013	1,903	66.8%	1,272	2.0	2,544	2,732	2,186	57%	201,423	2.0%	275,192,154	220,153,723
2014	1,910	66.5%	1,270	2.0	2,540	2,729	2,183	57%	205,456	2.0%	280,302,839	224,242,271
2015	1,912	66.1%	1,264	2.0	2,528	2,716	2,173	57%	209,638	2.0%	284,658,920	227,727,136
2016	1,908	65.7%	1,254	2.0	2,508	2,694	2,155	56%	214,021	2.1%	288,320,736	230,656,589
2017	1,898	65.3%	1,240	2.0	2,480	2,664	2,131	56%	218,281	2.0%	290,773,258	232,618,606
2018	1,883	64.9%	1,222	2.0	2,444	2,625	2,100	56%	222,646	2.0%	292,266,445	233,813,156
2019	1,861	64.4%	1,199	2.0	2,399	2,577	2,061	55%	227,262	2.1%	292,801,857	234,241,486
2020	1,831	64.0%	1,172	2.0	2,344	2,518	2,014	55%	232,140	2.1%	292,273,922	233,819,138
2021	1,793	63.6%	1,141	2.0	2,281	2,451	1,960	55%	237,330	2.2%	290,796,512	232,637,210
2022	1,748	63.1%	1,104	2.0	2,208	2,372	1,897	54%	242,391	2.1%	287,449,111	229,959,289
2023	1,697	62.6%	1,063	2.0	2,127	2,284	1,828	54%	247,656	2.2%	282,870,770	226,296,616
2024	1,640	62.2%	1,020	2.0	2,039	2,190	1,752	53%	253,273	2.3%	277,365,238	221,892,190
2025	1,574	61.8%	972	2.0	1,944	2,088	1,671	53%	259,368	2.4%	270,800,994	216,640,795
2026	1,501	61.4%	922	2.0	1,844	1,981	1,585	53%	265,972	2.5%	263,450,111	210,760,089
2027	1,424	61.0%	868	2.0	1,736	1,865	1,492	52%	272,583	2.5%	254,189,128	203,351,303
2028	1,342	60.6%	813	2.0	1,626	1,747	1,398	52%	279,602	2.6%	244,238,267	195,390,614
2029	1,259	60.3%	759	2.0	1,518	1,631	1,304	52%	287,173	2.7%	234,131,311	187,305,049
2030	1,177	60.0%	707	2.0	1,413	1,518	1,214	52%	295,307	2.8%	224,112,454	179,289,963
2031	1,099	59.8%	657	2.0	1,315	1,412	1,130	51%	303,842	2.9%	214,571,529	171,657,223
2032	1,019	59.6%	608	2.0	1,215	1,305	1,044	51%	312,579	2.9%	203,982,606	163,186,085
2033	937	59.5%	558	2.0	1,116	1,198	959	51%	322,367	3.1%	193,147,190	154,517,752
2034	858	59.5%	511	2.0	1,022	1,098	878	51%	333,115	3.3%	182,830,029	146,264,023
2035	785	59.6%	468	2.0	936	1,006	804	51%	344,693	3.5%	173,294,845	138,635,876
2036	717	59.8%	429	2.0	857	921	737	51%	357,076	3.6%	164,432,937	131,546,350
2037	644	60.1%	387	2.0	774	832	666	52%	371,361	4.0%	154,472,359	123,577,888
2038	582	60.5%	352	2.0	705	757	606	52%	386,049	4.0%	146,110,246	116,888,197
2039	532	60.8%	324	2.0	647	695	556	52%	400,970	3.9%	139,356,839	111,485,471
2040	490	61.1%	299	2.0	598	643	514	52%	416,296	3.8%	133,799,097	107,039,278
2041	454	61.3%	278	2.0	557	598	479	53%	431,920	3.8%	129,193,470	103,354,776
2042	423	61.6%	260	2.0	521	560	448	53%	447,919	3.7%	125,334,628	100,267,702
2043	396	61.8%	245	2.0	490	526	421	53%	464,352	3.7%	122,089,641	97,671,713
2044	373	61.9%	231	2.0	462	496	397	53%	481,219	3.6%	119,412,376	95,529,901
2045	353	62.1%	219	2.0	438	471	377	53%	498,383	3.6%	117,317,561	93,854,049
2046	335	62.2%	209	2.0	417	448	358	53%	515,984	3.5%	115,592,254	92,473,804
2047	319	62.3%	199	2.0	398	427	342	54%	534,190	3.5%	114,173,723	91,338,978
2048	305	62.5%	190	2.0	381	409	327	54%	553,069	3.5%	113,034,051	90,427,240
2049	292	62.6%	183	2.0	365	392	314	54%	572,399	3.5%	112,220,929	89,776,744
2050	280	62.7%	176	2.0	351	377	302	54%	592,195	3.5%	111,683,126	89,346,501
2009&post	**48,911**	**63.6%**	**31,088**	**2.0**	**62,176**	**66,786**	**53,429**	**55%**	**265,043**		**8,850,600,049**	**7,080,480,039**

Total Meso Cost 2004-2040 6,866,205,345

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: AWP selected population model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	158,821		113,107,418	90,485,934
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	161,868	1.9%	124,958,431	99,966,745
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.9%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	172,040	3.3%	184,954,372	147,963,498
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	184,343	7.2%	214,539,441	171,631,552
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	187,452	1.7%	245,215,782	205,981,257
2009	1,833	68.1%	1,248	2.0	2,496	2,681	2,145	59%	193,240	3.1%	259,050,075	207,240,060
2010	1,856	67.8%	1,259	2.0	2,517	2,704	2,163	58%	199,124	3.0%	269,204,138	215,363,310
2011	1,875	67.5%	1,266	2.0	2,531	2,719	2,175	58%	205,250	3.1%	279,041,193	223,232,954
2012	1,891	67.2%	1,270	2.0	2,540	2,729	2,183	58%	211,355	3.0%	288,356,928	230,685,543
2013	1,903	66.8%	1,272	2.0	2,544	2,732	2,186	57%	217,610	3.0%	297,307,035	237,845,628
2014	1,910	66.5%	1,270	2.0	2,540	2,729	2,183	57%	224,121	3.0%	305,767,534	244,614,027
2015	1,912	66.1%	1,264	2.0	2,528	2,716	2,173	57%	230,902	3.0%	313,532,878	250,826,303
2016	1,908	65.7%	1,254	2.0	2,508	2,694	2,155	56%	238,018	3.1%	320,647,804	256,518,243
2017	1,898	65.3%	1,240	2.0	2,480	2,664	2,131	56%	245,111	3.0%	326,513,102	261,210,482
2018	1,883	64.9%	1,222	2.0	2,444	2,625	2,100	56%	252,438	3.0%	331,374,079	265,099,263
2019	1,861	64.4%	1,199	2.0	2,399	2,577	2,061	55%	260,172	3.1%	335,201,931	268,161,545
2020	1,831	64.0%	1,172	2.0	2,344	2,518	2,014	55%	268,333	3.1%	337,843,484	270,274,787
2021	1,793	63.6%	1,141	2.0	2,281	2,451	1,960	55%	276,994	3.2%	339,396,348	271,517,079
2022	1,748	63.1%	1,104	2.0	2,208	2,372	1,897	54%	285,645	3.1%	338,743,575	270,994,860
2023	1,697	62.6%	1,063	2.0	2,127	2,284	1,828	54%	294,680	3.2%	336,581,289	269,265,031
2024	1,640	62.2%	1,020	2.0	2,039	2,190	1,752	53%	304,286	3.3%	333,231,030	266,584,824
2025	1,574	61.8%	972	2.0	1,944	2,088	1,671	53%	314,631	3.4%	328,499,653	262,799,722
2026	1,501	61.4%	922	2.0	1,844	1,981	1,585	53%	325,771	3.5%	322,681,504	258,145,203
2027	1,424	61.0%	868	2.0	1,736	1,865	1,492	52%	337,105	3.5%	314,357,147	251,485,717
2028	1,342	60.6%	813	2.0	1,626	1,747	1,398	52%	349,138	3.6%	304,979,402	243,983,521
2029	1,259	60.3%	759	2.0	1,518	1,631	1,304	52%	362,069	3.7%	295,193,324	236,154,659
2030	1,177	60.0%	707	2.0	1,413	1,518	1,214	52%	375,934	3.8%	285,300,862	228,240,690
2031	1,099	59.8%	657	2.0	1,315	1,412	1,130	51%	390,549	3.9%	275,803,032	220,642,426
2032	1,019	59.6%	608	2.0	1,215	1,305	1,044	51%	405,673	3.9%	264,733,952	211,787,162
2033	937	59.5%	558	2.0	1,116	1,198	959	51%	422,431	4.1%	253,101,362	202,481,090
2034	858	59.5%	511	2.0	1,022	1,098	878	51%	440,748	4.3%	241,904,086	193,523,269
2035	785	59.6%	468	2.0	936	1,006	804	51%	460,488	4.5%	231,510,605	185,208,484
2036	717	59.8%	429	2.0	857	921	737	51%	481,655	4.6%	221,801,054	177,440,843
2037	644	60.1%	387	2.0	774	832	666	52%	505,779	5.0%	210,385,349	168,308,279
2038	582	60.5%	352	2.0	705	757	606	52%	530,880	5.0%	200,925,545	160,740,436
2039	532	60.8%	324	2.0	647	695	556	52%	556,744	4.9%	193,496,147	154,796,918
2040	490	61.1%	299	2.0	598	643	514	52%	583,627	4.8%	187,580,036	150,064,029
2041	454	61.3%	278	2.0	557	598	479	53%	611,400	4.8%	182,878,727	146,302,981
2042	423	61.6%	260	2.0	521	560	448	53%	640,193	4.7%	179,135,936	143,308,749
2043	396	61.8%	245	2.0	490	526	421	53%	670,113	4.7%	176,189,211	140,951,369
2044	373	61.9%	231	2.0	462	496	397	53%	701,184	4.6%	173,995,703	139,196,563
2045	353	62.1%	219	2.0	438	471	377	53%	733,232	4.6%	172,599,955	138,079,964
2046	335	62.2%	209	2.0	417	448	358	53%	766,482	4.5%	171,709,642	137,367,714
2047	319	62.3%	199	2.0	398	427	342	54%	801,216	4.5%	171,245,944	136,996,755
2048	305	62.5%	190	2.0	381	409	327	54%	837,571	4.5%	171,179,402	136,943,522
2049	292	62.6%	183	2.0	365	392	314	54%	875,244	4.5%	171,594,743	137,275,794
2050	280	62.7%	176	2.0	351	377	302	54%	914,286	4.5%	172,427,051	137,941,641
2009&post	**48,911**	**63.6%**	**31,088**	**2.0**	**62,176**	**66,786**	**53,429**	**55%**	**326,026**		**10,887,001,796**	**8,709,601,437**

Total Meso Cost 2004-2040 8,054,938,627

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	156,753		111,634,584	89,307,667
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	160,823	2.6%	124,151,442	99,321,154
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	3.5%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	173,694	4.3%	186,732,237	149,385,790
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	187,905	8.2%	218,685,974	174,948,779
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	192,912	2.7%	252,358,908	211,981,483
2009	1,833	68.1%	1,248	2.0	2,496	2,681	2,145	59%	200,781	4.1%	269,159,739	215,327,791
2010	1,856	67.8%	1,259	2.0	2,517	2,704	2,163	58%	208,885	4.0%	282,399,524	225,919,620
2011	1,875	67.5%	1,266	2.0	2,531	2,719	2,175	58%	217,381	4.1%	295,533,084	236,426,467
2012	1,891	67.2%	1,270	2.0	2,540	2,729	2,183	58%	225,998	4.0%	308,335,425	246,668,340
2013	1,903	66.8%	1,272	2.0	2,544	2,732	2,186	57%	234,923	3.9%	320,961,659	256,769,327
2014	1,910	66.5%	1,270	2.0	2,540	2,729	2,183	57%	244,279	4.0%	333,268,273	266,614,619
2015	1,912	66.1%	1,264	2.0	2,528	2,716	2,173	57%	254,088	4.0%	345,016,614	276,013,291
2016	1,908	65.7%	1,254	2.0	2,508	2,694	2,155	56%	264,436	4.1%	356,237,145	284,989,716
2017	1,898	65.3%	1,240	2.0	2,480	2,664	2,131	56%	274,933	4.0%	366,239,533	292,991,626
2018	1,883	64.9%	1,222	2.0	2,444	2,625	2,100	56%	285,872	4.0%	375,263,648	300,210,918
2019	1,861	64.4%	1,199	2.0	2,399	2,577	2,061	55%	297,462	4.1%	383,245,901	306,596,721
2020	1,831	64.0%	1,172	2.0	2,344	2,518	2,014	55%	309,741	4.1%	389,977,269	311,981,815
2021	1,793	63.6%	1,141	2.0	2,281	2,451	1,960	55%	322,810	4.2%	395,533,578	316,426,862
2022	1,748	63.1%	1,104	2.0	2,208	2,372	1,897	54%	336,090	4.1%	398,565,172	318,852,137
2023	1,697	62.6%	1,063	2.0	2,127	2,284	1,828	54%	350,050	4.2%	399,825,068	319,860,054
2024	1,640	62.2%	1,020	2.0	2,039	2,190	1,752	53%	364,933	4.3%	399,647,383	319,717,907
2025	1,574	61.8%	972	2.0	1,944	2,088	1,671	53%	380,964	4.4%	397,756,874	318,205,499
2026	1,501	61.4%	922	2.0	1,844	1,981	1,585	53%	398,241	4.5%	394,464,447	315,571,558
2027	1,424	61.0%	868	2.0	1,736	1,865	1,492	52%	416,054	4.5%	387,978,637	310,382,909
2028	1,342	60.6%	813	2.0	1,626	1,747	1,398	52%	435,043	4.6%	380,019,096	304,015,277
2029	1,259	60.3%	759	2.0	1,518	1,631	1,304	52%	455,487	4.7%	371,357,065	297,085,652
2030	1,177	60.0%	707	2.0	1,413	1,518	1,214	52%	477,470	4.8%	362,358,387	289,886,710
2031	1,099	59.8%	657	2.0	1,315	1,412	1,130	51%	500,795	4.9%	353,658,529	282,926,823
2032	1,019	59.6%	608	2.0	1,215	1,305	1,044	51%	525,183	4.9%	342,723,856	274,179,085
2033	937	59.5%	558	2.0	1,116	1,198	959	51%	552,129	5.1%	330,810,117	264,648,094
2034	858	59.5%	511	2.0	1,022	1,098	878	51%	581,599	5.3%	319,210,465	255,368,372
2035	785	59.6%	468	2.0	936	1,006	804	51%	613,482	5.5%	308,428,427	246,742,742
2036	717	59.8%	429	2.0	857	921	737	51%	647,842	5.6%	298,329,834	238,663,868
2037	644	60.1%	387	2.0	774	832	666	52%	686,821	6.0%	285,692,285	228,553,828
2038	582	60.5%	352	2.0	705	757	606	52%	727,829	6.0%	275,465,975	220,372,780
2039	532	60.8%	324	2.0	647	695	556	52%	770,616	5.9%	267,827,217	214,261,773
2040	490	61.1%	299	2.0	598	643	514	52%	815,581	5.8%	262,131,025	209,704,820
2041	454	61.3%	278	2.0	557	598	479	53%	862,595	5.8%	258,014,567	206,411,654
2042	423	61.6%	260	2.0	521	560	448	53%	911,887	5.7%	255,160,125	204,128,100
2043	396	61.8%	245	2.0	490	526	421	53%	963,667	5.7%	253,371,811	202,697,449
2044	373	61.9%	231	2.0	462	496	397	53%	1,018,028	5.6%	252,619,134	202,095,307
2045	353	62.1%	219	2.0	438	471	377	53%	1,074,775	5.6%	252,997,900	202,398,320
2046	335	62.2%	209	2.0	417	448	358	53%	1,134,296	5.5%	254,108,546	203,286,837
2047	319	62.3%	199	2.0	398	427	342	54%	1,197,079	5.5%	255,854,533	204,683,627
2048	305	62.5%	190	2.0	381	409	327	54%	1,263,405	5.5%	258,209,652	206,567,721
2049	292	62.6%	183	2.0	365	392	314	54%	1,332,902	5.5%	261,320,156	209,056,125
2050	280	62.7%	176	2.0	351	377	302	54%	1,405,720	5.5%	265,107,562	212,086,049
2009&post	**48,911**	**63.6%**	**31,088**	**2.0**	**62,176**	**66,786**	**53,429**	**55%**	**405,000**		**13,524,185,238**	**10,819,348,190**

Total Meso Cost 2004-2040 9,515,733,396

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	160,950		114,623,447	91,698,757
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	162,934	1.2%	125,781,121	100,624,897
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.2%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	170,386	2.3%	183,176,507	146,541,206
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	180,814	6.1%	210,432,597	168,346,078
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	182,095	0.7%	238,208,741	200,095,342
2009	1,833	68.9%	1,263	2.0	2,526	2,713	2,171	59%	185,572	1.9%	251,751,550	201,401,240
2010	1,856	69.4%	1,289	2.0	2,577	2,768	2,214	60%	189,057	1.9%	261,666,074	209,332,859
2011	1,875	69.9%	1,310	2.0	2,621	2,815	2,252	60%	192,682	1.9%	271,227,925	216,982,340
2012	1,891	70.3%	1,330	2.0	2,660	2,857	2,285	60%	196,203	1.8%	280,257,752	224,206,201
2013	1,903	70.7%	1,346	2.0	2,693	2,892	2,314	61%	199,783	1.8%	288,909,497	231,127,598
2014	1,910	71.1%	1,359	2.0	2,718	2,919	2,335	61%	203,511	1.9%	297,061,110	237,648,888
2015	1,912	71.5%	1,367	2.0	2,734	2,937	2,350	61%	207,388	1.9%	304,544,500	243,635,600
2016	1,908	71.9%	1,371	2.0	2,742	2,945	2,356	62%	211,465	2.0%	311,373,840	249,099,072
2017	1,898	72.2%	1,370	2.0	2,740	2,943	2,355	62%	215,439	1.9%	317,054,348	253,643,478
2018	1,883	72.5%	1,365	2.0	2,730	2,932	2,346	62%	219,527	1.9%	321,858,922	257,487,137
2019	1,861	72.3%	1,345	2.0	2,691	2,890	2,312	62%	224,051	2.1%	323,763,115	259,010,492
2020	1,831	72.1%	1,320	2.0	2,640	2,836	2,269	62%	228,825	2.1%	324,481,156	259,584,924
2021	1,793	71.9%	1,290	2.0	2,579	2,771	2,217	62%	233,910	2.2%	324,039,652	259,231,721
2022	1,748	71.7%	1,254	2.0	2,508	2,694	2,155	62%	238,879	2.1%	321,745,573	257,396,458
2023	1,697	71.5%	1,214	2.0	2,427	2,607	2,086	61%	244,026	2.2%	318,118,611	254,494,889
2024	1,640	71.3%	1,169	2.0	2,338	2,512	2,009	61%	249,510	2.2%	313,331,719	250,665,375
2025	1,574	71.1%	1,119	2.0	2,238	2,404	1,924	61%	255,467	2.4%	307,121,896	245,697,517
2026	1,501	71.0%	1,065	2.0	2,131	2,289	1,831	61%	261,942	2.5%	299,781,274	239,825,019
2027	1,424	70.8%	1,008	2.0	2,015	2,165	1,732	61%	268,395	2.5%	290,499,544	232,399,635
2028	1,342	70.6%	948	2.0	1,895	2,036	1,629	61%	275,222	2.5%	280,163,355	224,130,684
2029	1,259	70.5%	887	2.0	1,775	1,906	1,525	61%	282,576	2.7%	269,333,052	215,466,441
2030	1,177	70.4%	828	2.0	1,656	1,779	1,423	60%	290,471	2.8%	258,353,855	206,683,084
2031	1,099	70.3%	772	2.0	1,544	1,659	1,327	60%	298,742	2.8%	247,784,609	198,227,687
2032	1,019	70.2%	715	2.0	1,431	1,537	1,229	60%	307,108	2.8%	235,971,239	188,776,991
2033	937	70.1%	657	2.0	1,315	1,412	1,130	60%	316,537	3.1%	223,530,641	178,824,512
2034	858	70.1%	602	2.0	1,204	1,294	1,035	60%	326,936	3.3%	211,455,530	169,164,424
2035	785	70.2%	551	2.0	1,102	1,184	947	60%	338,163	3.4%	200,144,106	160,115,285
2036	717	70.3%	504	2.0	1,008	1,082	866	60%	350,199	3.6%	189,528,943	151,623,154
2037	644	70.4%	453	2.0	907	974	779	61%	364,156	4.0%	177,329,745	141,863,796
2038	582	70.6%	411	2.0	822	883	706	61%	378,520	3.9%	167,109,444	133,687,555
2039	532	70.7%	376	2.0	752	808	647	61%	393,120	3.9%	158,871,355	127,097,084
2040	490	70.8%	347	2.0	694	745	596	61%	408,141	3.8%	152,077,986	121,662,389
2041	454	70.9%	322	2.0	644	692	553	61%	423,456	3.8%	146,461,552	117,169,242
2042	423	71.0%	301	2.0	601	646	517	61%	439,135	3.7%	141,761,173	113,408,938
2043	396	71.1%	282	2.0	564	605	484	61%	455,228	3.7%	137,807,188	110,245,750
2044	373	71.2%	266	2.0	531	570	456	61%	471,749	3.6%	134,539,931	107,631,945
2045	353	71.3%	252	2.0	503	540	432	61%	488,554	3.6%	131,982,358	105,585,886
2046	335	71.3%	239	2.0	478	514	411	61%	505,774	3.5%	129,871,082	103,896,866
2047	319	71.4%	228	2.0	456	489	392	61%	523,578	3.5%	128,120,091	102,496,073
2048	305	71.4%	218	2.0	435	467	374	61%	542,043	3.5%	126,675,781	101,340,624
2049	292	71.5%	208	2.0	417	448	358	61%	560,933	3.5%	125,615,990	100,492,792
2050	280	71.5%	200	2.0	401	430	344	61%	580,276	3.4%	124,875,237	99,900,190
2009&post	**48,911**	**71.0%**	**34,721**	**2.0**	**69,442**	**74,591**	**59,673**	**61%**	**263,515**		**9,827,952,298**	**7,862,361,838**

Total Meso Cost 2004-2040 7,529,960,245

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	158,821		113,107,418	90,485,934
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	161,868	1.9%	124,958,431	99,966,745
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.9%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	172,040	3.3%	184,954,372	147,963,498
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	184,343	7.2%	214,539,441	171,631,552
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	187,452	1.7%	245,215,782	205,981,257
2009	1,833	68.9%	1,263	2.0	2,526	2,713	2,171	59%	192,886	2.9%	261,673,157	209,338,525
2010	1,856	69.4%	1,289	2.0	2,577	2,768	2,214	60%	198,415	2.9%	274,618,901	219,695,121
2011	1,875	69.9%	1,310	2.0	2,621	2,815	2,252	60%	204,183	2.9%	287,417,416	229,933,933
2012	1,891	70.3%	1,330	2.0	2,660	2,857	2,285	60%	209,933	2.8%	299,869,063	239,895,251
2013	1,903	70.7%	1,346	2.0	2,693	2,892	2,314	61%	215,838	2.8%	312,126,665	249,701,332
2014	1,910	71.1%	1,359	2.0	2,718	2,919	2,335	61%	222,000	2.9%	324,048,154	259,238,523
2015	1,912	71.5%	1,367	2.0	2,734	2,937	2,350	61%	228,424	2.9%	335,435,393	268,348,314
2016	1,908	71.9%	1,371	2.0	2,742	2,945	2,356	62%	235,175	3.0%	346,285,488	277,028,390
2017	1,898	72.2%	1,370	2.0	2,740	2,943	2,355	62%	241,919	2.9%	356,024,248	284,819,398
2018	1,883	72.5%	1,365	2.0	2,730	2,932	2,346	62%	248,901	2.9%	364,925,969	291,940,775
2019	1,861	72.3%	1,345	2.0	2,691	2,890	2,312	62%	256,495	3.1%	370,646,273	296,517,018
2020	1,831	72.1%	1,320	2.0	2,640	2,836	2,269	62%	264,502	3.1%	375,071,857	300,057,486
2021	1,793	71.9%	1,290	2.0	2,579	2,771	2,217	62%	273,002	3.2%	378,194,825	302,555,860
2022	1,748	71.7%	1,254	2.0	2,508	2,694	2,155	62%	281,505	3.1%	379,159,601	303,327,681
2023	1,697	71.5%	1,214	2.0	2,427	2,607	2,086	61%	290,361	3.1%	378,521,259	302,817,008
2024	1,640	71.3%	1,169	2.0	2,338	2,512	2,009	61%	299,765	3.2%	376,441,056	301,152,845
2025	1,574	71.1%	1,119	2.0	2,238	2,404	1,924	61%	309,898	3.4%	372,558,577	298,046,861
2026	1,501	71.0%	1,065	2.0	2,131	2,289	1,831	61%	320,833	3.5%	367,180,173	293,744,139
2027	1,424	70.8%	1,008	2.0	2,015	2,165	1,732	61%	331,925	3.5%	359,261,562	287,409,250
2028	1,342	70.6%	948	2.0	1,895	2,036	1,629	61%	343,668	3.5%	349,837,971	279,870,377
2029	1,259	70.5%	887	2.0	1,775	1,906	1,525	61%	356,271	3.7%	339,574,742	271,659,794
2030	1,177	70.4%	828	2.0	1,656	1,779	1,423	60%	369,776	3.8%	328,889,948	263,111,959
2031	1,099	70.3%	772	2.0	1,544	1,659	1,327	60%	383,991	3.8%	318,492,847	254,794,277
2032	1,019	70.2%	715	2.0	1,431	1,537	1,229	60%	398,571	3.8%	306,248,386	244,998,709
2033	937	70.1%	657	2.0	1,315	1,412	1,130	60%	414,790	4.1%	292,914,722	234,331,778
2034	858	70.1%	602	2.0	1,204	1,294	1,035	60%	432,570	4.3%	279,777,383	223,821,906
2035	785	70.2%	551	2.0	1,102	1,184	947	60%	451,761	4.4%	267,378,055	213,902,444
2036	717	70.3%	504	2.0	1,008	1,082	866	60%	472,375	4.6%	255,651,224	204,520,979
2037	644	70.4%	453	2.0	907	974	779	61%	495,963	5.0%	241,514,780	193,211,824
2038	582	70.6%	411	2.0	822	883	706	61%	520,524	5.0%	229,801,444	183,841,155
2039	532	70.7%	376	2.0	752	808	647	61%	545,841	4.9%	220,590,487	176,472,390
2040	490	70.8%	347	2.0	694	745	596	61%	572,190	4.8%	213,204,712	170,563,770
2041	454	70.9%	322	2.0	644	692	553	61%	599,415	4.8%	207,320,927	165,856,742
2042	423	71.0%	301	2.0	601	646	517	61%	627,634	4.7%	202,612,245	162,089,796
2043	396	71.1%	282	2.0	564	605	484	61%	656,940	4.7%	198,869,862	159,095,890
2044	373	71.2%	266	2.0	531	570	456	61%	687,379	4.6%	196,036,460	156,829,168
2045	353	71.3%	252	2.0	503	540	432	61%	718,764	4.6%	194,173,452	155,338,761
2046	335	71.3%	239	2.0	478	514	411	61%	751,309	4.5%	192,918,806	154,335,045
2047	319	71.4%	228	2.0	456	489	392	61%	785,293	4.5%	192,161,935	153,729,548
2048	305	71.4%	218	2.0	435	467	374	61%	820,865	4.5%	191,836,673	153,469,339
2049	292	71.5%	208	2.0	417	448	358	61%	857,703	4.5%	192,074,936	153,659,949
2050	280	71.5%	200	2.0	401	430	344	61%	895,877	4.5%	192,792,281	154,233,825
2009&post	**48,911**	**71.0%**	**34,721**	**2.0**	**69,442**	**74,591**	**59,673**	**61%**	**325,082**		**12,124,133,917**	**9,699,307,134**

Total Meso Cost 2004-2040 8,870,371,313

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	156,753		111,634,584	89,307,667
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	160,823	2.6%	124,151,442	99,321,154
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	3.5%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	173,694	4.3%	186,732,237	149,385,790
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	187,905	8.2%	218,685,974	174,948,779
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	192,912	2.7%	252,358,908	211,981,483
2009	1,833	68.9%	1,263	2.0	2,526	2,713	2,171	59%	200,413	3.9%	271,885,185	217,508,148
2010	1,856	69.4%	1,289	2.0	2,577	2,768	2,214	60%	208,141	3.9%	288,079,689	230,463,751
2011	1,875	69.9%	1,310	2.0	2,621	2,815	2,252	60%	216,251	3.9%	304,404,337	243,523,469
2012	1,891	70.3%	1,330	2.0	2,660	2,857	2,285	60%	224,478	3.8%	320,645,126	256,516,101
2013	1,903	70.7%	1,346	2.0	2,693	2,892	2,314	61%	233,010	3.8%	336,960,320	269,568,256
2014	1,910	71.1%	1,359	2.0	2,718	2,919	2,335	61%	241,966	3.8%	353,192,956	282,554,365
2015	1,912	71.5%	1,367	2.0	2,734	2,937	2,350	61%	251,361	3.9%	369,118,354	295,294,683
2016	1,908	71.9%	1,371	2.0	2,742	2,945	2,356	62%	261,277	3.9%	384,720,214	307,776,171
2017	1,898	72.2%	1,370	2.0	2,740	2,943	2,355	62%	271,353	3.9%	399,341,005	319,472,804
2018	1,883	72.5%	1,365	2.0	2,730	2,932	2,346	62%	281,867	3.9%	413,259,059	330,607,247
2019	1,861	72.3%	1,345	2.0	2,691	2,890	2,312	62%	293,257	4.0%	423,770,030	339,016,024
2020	1,831	72.1%	1,320	2.0	2,640	2,836	2,269	62%	305,318	4.1%	432,950,014	346,360,012
2021	1,793	71.9%	1,290	2.0	2,579	2,771	2,217	62%	318,157	4.2%	440,748,904	352,599,123
2022	1,748	71.7%	1,254	2.0	2,508	2,694	2,155	62%	331,218	4.1%	446,117,988	356,894,391
2023	1,697	71.5%	1,214	2.0	2,427	2,607	2,086	61%	344,919	4.1%	449,644,875	359,715,900
2024	1,640	71.3%	1,169	2.0	2,338	2,512	2,009	61%	359,510	4.2%	451,468,815	361,175,052
2025	1,574	71.1%	1,119	2.0	2,238	2,404	1,924	61%	375,233	4.4%	451,103,807	360,883,046
2026	1,501	71.0%	1,065	2.0	2,131	2,289	1,831	61%	392,204	4.5%	448,861,211	359,088,969
2027	1,424	70.8%	1,008	2.0	2,015	2,165	1,732	61%	409,660	4.5%	443,398,469	354,718,775
2028	1,342	70.6%	948	2.0	1,895	2,036	1,629	61%	428,225	4.5%	435,913,889	348,731,111
2029	1,259	70.5%	887	2.0	1,775	1,906	1,525	61%	448,192	4.7%	427,188,217	341,750,574
2030	1,177	70.4%	828	2.0	1,656	1,779	1,423	60%	469,647	4.8%	417,719,194	334,175,355
2031	1,099	70.3%	772	2.0	1,544	1,659	1,327	60%	492,385	4.8%	408,397,654	326,718,123
2032	1,019	70.2%	715	2.0	1,431	1,537	1,229	60%	515,987	4.8%	396,466,755	317,173,404
2033	937	70.1%	657	2.0	1,315	1,412	1,130	60%	542,139	5.1%	382,845,548	306,276,438
2034	858	70.1%	602	2.0	1,204	1,294	1,035	60%	570,806	5.3%	369,185,344	295,348,275
2035	785	70.2%	551	2.0	1,102	1,184	947	60%	601,853	5.4%	356,210,762	284,968,610
2036	717	70.3%	504	2.0	1,008	1,082	866	60%	635,357	5.6%	343,857,552	275,086,041
2037	644	70.4%	453	2.0	907	974	779	61%	673,488	6.0%	327,962,516	262,370,013
2038	582	70.6%	411	2.0	822	883	706	61%	713,627	6.0%	315,052,485	252,041,988
2039	532	70.7%	376	2.0	752	808	647	61%	755,520	5.9%	305,327,824	244,262,259
2040	490	70.8%	347	2.0	694	745	596	61%	799,594	5.8%	297,937,864	238,350,292
2041	454	70.9%	322	2.0	644	692	553	61%	845,679	5.8%	292,496,817	233,997,454
2042	423	71.0%	301	2.0	601	646	517	61%	893,991	5.7%	288,597,531	230,878,025
2043	396	71.1%	282	2.0	564	605	484	61%	944,717	5.7%	285,985,920	228,788,736
2044	373	71.2%	266	2.0	531	570	456	61%	997,977	5.6%	284,617,189	227,693,751
2045	353	71.3%	252	2.0	503	540	432	61%	1,053,559	5.6%	284,618,089	227,694,471
2046	335	71.3%	239	2.0	478	514	411	61%	1,111,833	5.5%	285,492,963	228,394,371
2047	319	71.4%	228	2.0	456	489	392	61%	1,173,278	5.5%	287,102,042	229,681,634
2048	305	71.4%	218	2.0	435	467	374	61%	1,238,194	5.5%	289,366,690	231,493,352
2049	292	71.5%	208	2.0	417	448	358	61%	1,306,176	5.5%	292,506,414	234,005,132
2050	280	71.5%	200	2.0	401	430	344	61%	1,377,402	5.5%	296,416,210	237,132,968
2009&post	**48,911**	**71.0%**	**34,721**	**2.0**	**69,442**	**74,591**	**59,673**	**61%**	**404,899**		**15,100,935,827**	**12,080,748,662**

Total Meso Cost 2004-2040 10,520,785,164

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	160,950		114,623,447	91,698,757
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	162,934	1.2%	125,781,121	100,624,897
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.2%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	170,386	2.3%	183,176,507	146,541,206
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	180,814	6.1%	210,432,597	168,346,078
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	182,095	0.7%	238,208,741	200,095,342
2009	1,833	68.9%	1,263	2.0	2,526	2,713	2,171	59%	185,572	1.9%	251,751,550	201,401,240
2010	1,856	69.4%	1,289	2.0	2,577	2,768	2,214	60%	189,057	1.9%	261,666,074	209,332,859
2011	1,875	69.9%	1,310	2.0	2,621	2,815	2,252	60%	192,682	1.9%	271,227,925	216,982,340
2012	1,891	70.3%	1,330	2.0	2,660	2,857	2,285	60%	196,203	1.8%	280,257,752	224,206,201
2013	1,903	70.7%	1,346	2.0	2,693	2,892	2,314	61%	199,783	1.8%	288,909,497	231,127,598
2014	1,910	71.1%	1,359	2.0	2,718	2,919	2,335	61%	203,511	1.9%	297,061,110	237,648,888
2015	1,912	71.5%	1,367	2.0	2,734	2,937	2,350	61%	207,388	1.9%	304,544,500	243,635,600
2016	1,908	71.9%	1,371	2.0	2,742	2,945	2,356	62%	211,465	2.0%	311,373,840	249,099,072
2017	1,898	72.2%	1,370	2.0	2,740	2,943	2,355	62%	215,439	1.9%	317,054,348	253,643,478
2018	1,883	72.5%	1,365	2.0	2,730	2,932	2,346	62%	219,527	1.9%	321,858,922	257,487,137
2019	1,861	72.8%	1,354	2.0	2,709	2,909	2,327	63%	223,876	2.0%	325,665,369	260,532,295
2020	1,831	73.0%	1,338	2.0	2,675	2,874	2,299	63%	228,483	2.1%	328,280,465	262,624,372
2021	1,793	73.3%	1,315	2.0	2,630	2,825	2,260	63%	233,406	2.2%	329,689,893	263,751,914
2022	1,748	73.6%	1,287	2.0	2,573	2,764	2,211	63%	238,222	2.1%	329,215,672	263,372,537
2023	1,697	73.8%	1,253	2.0	2,506	2,692	2,153	63%	243,220	2.1%	327,347,365	261,877,892
2024	1,640	74.1%	1,214	2.0	2,429	2,609	2,087	64%	248,555	2.2%	324,205,053	259,364,042
2025	1,574	74.3%	1,169	2.0	2,338	2,512	2,009	64%	254,366	2.3%	319,455,488	255,564,391
2026	1,501	74.5%	1,119	2.0	2,238	2,404	1,923	64%	260,700	2.5%	313,363,566	250,690,853
2027	1,424	74.7%	1,064	2.0	2,128	2,286	1,829	64%	267,010	2.4%	305,219,022	244,175,218
2028	1,342	75.0%	1,006	2.0	2,012	2,161	1,729	64%	273,684	2.5%	295,768,799	236,615,039
2029	1,259	75.2%	947	2.0	1,893	2,033	1,627	65%	280,876	2.6%	285,563,772	228,451,018
2030	1,177	75.4%	887	2.0	1,774	1,906	1,525	65%	288,600	2.8%	274,982,537	219,986,029
2031	1,099	75.6%	830	2.0	1,661	1,784	1,427	65%	296,690	2.8%	264,664,168	211,731,334
2032	1,019	75.8%	772	2.0	1,545	1,659	1,327	65%	304,832	2.7%	252,893,303	202,314,643
2033	937	76.0%	712	2.0	1,424	1,530	1,224	65%	314,034	3.0%	240,184,480	192,147,584
2034	858	76.2%	654	2.0	1,307	1,404	1,123	65%	324,204	3.2%	227,649,323	182,119,459
2035	785	76.3%	599	2.0	1,199	1,287	1,030	66%	335,195	3.4%	215,767,556	172,614,045
2036	717	76.5%	549	2.0	1,097	1,179	943	66%	346,992	3.5%	204,505,818	163,604,654
2037	644	76.7%	494	2.0	987	1,061	848	66%	360,706	4.0%	191,283,730	153,026,984
2038	582	76.8%	448	2.0	895	961	769	66%	374,827	3.9%	180,193,661	144,154,929
2039	532	77.0%	410	2.0	819	880	704	66%	389,186	3.8%	171,256,733	137,005,386
2040	490	77.1%	378	2.0	755	811	649	66%	403,971	3.8%	163,874,100	131,099,280
2041	454	77.2%	351	2.0	701	753	602	66%	419,051	3.7%	157,774,796	126,219,837
2042	423	77.3%	327	2.0	654	703	562	66%	434,489	3.7%	152,671,372	122,137,097
2043	396	77.4%	307	2.0	613	659	527	67%	450,331	3.6%	148,377,023	118,701,619
2044	373	77.5%	289	2.0	578	621	497	67%	466,599	3.6%	144,828,594	115,862,875
2045	353	77.6%	274	2.0	547	588	470	67%	483,146	3.5%	142,059,374	113,647,499
2046	335	77.6%	260	2.0	520	559	447	67%	500,098	3.5%	139,775,222	111,820,178
2047	319	77.7%	248	2.0	496	533	426	67%	517,622	3.5%	137,876,608	110,301,287
2048	305	77.7%	237	2.0	474	509	407	67%	535,797	3.5%	136,293,855	109,035,084
2049	292	77.8%	227	2.0	454	487	390	67%	554,384	3.5%	135,127,607	108,102,086
2050	280	77.8%	218	2.0	436	468	375	67%	573,418	3.4%	134,303,864	107,443,091
2009&post	**48,911**	**73.4%**	**35,905**	**2.0**	**71,810**	**77,134**	**61,707**	**63%**	**264,625**		**10,205,823,705**	**8,164,658,964**

Total Meso Cost 2004-2040 7,751,155,024

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	158,821		113,107,418	90,485,934
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	161,868	1.9%	124,958,431	99,966,745
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.9%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	172,040	3.3%	184,954,372	147,963,498
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	184,343	7.2%	214,539,441	171,631,552
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	187,452	1.7%	245,215,782	205,981,257
2009	1,833	68.9%	1,263	2.0	2,526	2,713	2,171	59%	192,886	2.9%	261,673,157	209,338,525
2010	1,856	69.4%	1,289	2.0	2,577	2,768	2,214	60%	198,415	2.9%	274,618,901	219,695,121
2011	1,875	69.9%	1,310	2.0	2,621	2,815	2,252	60%	204,183	2.9%	287,417,416	229,933,933
2012	1,891	70.3%	1,330	2.0	2,660	2,857	2,285	60%	209,933	2.8%	299,869,063	239,895,251
2013	1,903	70.7%	1,346	2.0	2,693	2,892	2,314	61%	215,838	2.8%	312,126,665	249,701,332
2014	1,910	71.1%	1,359	2.0	2,718	2,919	2,335	61%	222,000	2.9%	324,048,154	259,238,523
2015	1,912	71.5%	1,367	2.0	2,734	2,937	2,350	61%	228,424	2.9%	335,435,393	268,348,314
2016	1,908	71.9%	1,371	2.0	2,742	2,945	2,356	62%	235,175	3.0%	346,285,488	277,028,390
2017	1,898	72.2%	1,370	2.0	2,740	2,943	2,355	62%	241,919	2.9%	356,024,248	284,819,398
2018	1,883	72.5%	1,365	2.0	2,730	2,932	2,346	62%	248,901	2.9%	364,925,969	291,940,775
2019	1,861	72.8%	1,354	2.0	2,709	2,909	2,327	63%	256,295	3.0%	372,823,967	298,259,174
2020	1,831	73.0%	1,338	2.0	2,675	2,874	2,299	63%	264,106	3.0%	379,463,483	303,570,786
2021	1,793	73.3%	1,315	2.0	2,630	2,825	2,260	63%	272,414	3.1%	384,789,291	307,831,433
2022	1,748	73.6%	1,287	2.0	2,573	2,764	2,211	63%	280,732	3.1%	387,962,600	310,370,080
2023	1,697	73.8%	1,253	2.0	2,506	2,692	2,153	63%	289,401	3.1%	389,502,178	311,601,742
2024	1,640	74.1%	1,214	2.0	2,429	2,609	2,087	64%	298,617	3.2%	389,504,247	311,603,397
2025	1,574	74.3%	1,169	2.0	2,338	2,512	2,009	64%	308,562	3.3%	387,519,792	310,015,833
2026	1,501	74.5%	1,119	2.0	2,238	2,404	1,923	64%	319,312	3.5%	383,815,861	307,052,689
2027	1,424	74.7%	1,064	2.0	2,128	2,286	1,829	64%	330,212	3.4%	377,464,867	301,971,893
2028	1,342	75.0%	1,006	2.0	2,012	2,161	1,729	64%	341,747	3.5%	369,324,016	295,459,213
2029	1,259	75.2%	947	2.0	1,893	2,033	1,627	65%	354,127	3.6%	360,038,002	288,030,402
2030	1,177	75.4%	887	2.0	1,774	1,906	1,525	65%	367,394	3.7%	350,058,153	280,046,523
2031	1,099	75.6%	830	2.0	1,661	1,784	1,427	65%	381,353	3.8%	340,188,674	272,150,939
2032	1,019	75.8%	772	2.0	1,545	1,659	1,327	65%	395,616	3.7%	328,209,622	262,567,698
2033	937	76.0%	712	2.0	1,424	1,530	1,224	65%	411,509	4.0%	314,737,303	251,789,842
2034	858	76.2%	654	2.0	1,307	1,404	1,123	65%	428,954	4.2%	301,202,766	240,962,213
2035	785	76.3%	599	2.0	1,199	1,287	1,030	66%	447,795	4.4%	288,249,144	230,599,315
2036	717	76.5%	549	2.0	1,097	1,179	943	66%	468,048	4.5%	275,852,438	220,681,950
2037	644	76.7%	494	2.0	987	1,061	848	66%	491,263	5.0%	260,518,686	208,414,949
2038	582	76.8%	448	2.0	895	961	769	66%	515,444	4.9%	247,793,491	198,234,793
2039	532	77.0%	410	2.0	819	880	704	66%	540,376	4.8%	237,786,589	190,229,271
2040	490	77.1%	378	2.0	755	811	649	66%	566,343	4.8%	229,741,363	183,793,090
2041	454	77.2%	351	2.0	701	753	602	66%	593,177	4.7%	223,334,319	178,667,456
2042	423	77.3%	327	2.0	654	703	562	66%	620,991	4.7%	218,204,763	174,563,810
2043	396	77.4%	307	2.0	613	659	527	67%	649,871	4.7%	214,122,291	171,297,833
2044	373	77.5%	289	2.0	578	621	497	67%	679,873	4.6%	211,026,979	168,821,583
2045	353	77.6%	274	2.0	547	588	470	67%	710,805	4.5%	208,997,829	167,198,264
2046	335	77.6%	260	2.0	520	559	447	67%	742,873	4.5%	207,629,996	166,103,996
2047	319	77.7%	248	2.0	496	533	426	67%	776,355	4.5%	206,794,220	165,435,376
2048	305	77.7%	237	2.0	474	509	407	67%	811,402	4.5%	206,401,040	165,120,832
2049	292	77.8%	227	2.0	454	487	390	67%	847,685	4.5%	206,617,594	165,294,075
2050	280	77.8%	218	2.0	436	468	375	67%	885,282	4.4%	207,347,659	165,878,127
2009&post	**48,911**	**73.4%**	**35,905**	**2.0**	**71,810**	**77,134**	**61,707**	**63%**	**327,466**		**12,629,447,678**	**10,103,558,143**

Total Meso Cost 2004-2040 9,154,879,032

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	156,753		111,634,584	89,307,667
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	160,823	2.6%	124,151,442	99,321,154
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	3.5%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	173,694	4.3%	186,732,237	149,385,790
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	187,905	8.2%	218,685,974	174,948,779
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	192,912	2.7%	252,358,908	211,981,483
2009	1,833	68.9%	1,263	2.0	2,526	2,713	2,171	59%	200,413	3.9%	271,885,185	217,508,148
2010	1,856	69.4%	1,289	2.0	2,577	2,768	2,214	60%	208,141	3.9%	288,079,689	230,463,751
2011	1,875	69.9%	1,310	2.0	2,621	2,815	2,252	60%	216,251	3.9%	304,404,337	243,523,469
2012	1,891	70.3%	1,330	2.0	2,660	2,857	2,285	60%	224,478	3.8%	320,645,126	256,516,101
2013	1,903	70.7%	1,346	2.0	2,693	2,892	2,314	61%	233,010	3.8%	336,960,320	269,568,256
2014	1,910	71.1%	1,359	2.0	2,718	2,919	2,335	61%	241,966	3.8%	353,192,956	282,554,365
2015	1,912	71.5%	1,367	2.0	2,734	2,937	2,350	61%	251,361	3.9%	369,118,354	295,294,683
2016	1,908	71.9%	1,371	2.0	2,742	2,945	2,356	62%	261,277	3.9%	384,720,214	307,776,171
2017	1,898	72.2%	1,370	2.0	2,740	2,943	2,355	62%	271,353	3.9%	399,341,005	319,472,804
2018	1,883	72.5%	1,365	2.0	2,730	2,932	2,346	62%	281,867	3.9%	413,259,059	330,607,247
2019	1,861	72.8%	1,354	2.0	2,709	2,909	2,327	63%	293,029	4.0%	426,259,825	341,007,860
2020	1,831	73.0%	1,338	2.0	2,675	2,874	2,299	63%	304,861	4.0%	438,019,272	350,415,417
2021	1,793	73.3%	1,315	2.0	2,630	2,825	2,260	63%	317,472	4.1%	448,434,024	358,747,219
2022	1,748	73.6%	1,287	2.0	2,573	2,764	2,211	63%	330,308	4.0%	456,475,448	365,180,359
2023	1,697	73.8%	1,253	2.0	2,506	2,692	2,153	63%	343,779	4.1%	462,688,929	370,151,143
2024	1,640	74.1%	1,214	2.0	2,429	2,609	2,087	64%	358,134	4.2%	467,135,394	373,708,315
2025	1,574	74.3%	1,169	2.0	2,338	2,512	2,009	64%	373,615	4.3%	469,218,978	375,375,183
2026	1,501	74.5%	1,119	2.0	2,238	2,404	1,923	64%	390,344	4.5%	469,197,271	375,357,817
2027	1,424	74.7%	1,064	2.0	2,128	2,286	1,829	64%	407,545	4.4%	465,864,502	372,691,601
2028	1,342	75.0%	1,006	2.0	2,012	2,161	1,729	64%	425,831	4.5%	460,193,941	368,155,153
2029	1,259	75.2%	947	2.0	1,893	2,033	1,627	65%	445,495	4.6%	452,930,689	362,344,551
2030	1,177	75.4%	887	2.0	1,774	1,906	1,525	65%	466,622	4.7%	444,604,110	355,683,288
2031	1,099	75.6%	830	2.0	1,661	1,784	1,427	65%	489,002	4.8%	436,217,184	348,973,747
2032	1,019	75.8%	772	2.0	1,545	1,659	1,327	65%	512,161	4.7%	424,896,878	339,917,503
2033	937	76.0%	712	2.0	1,424	1,530	1,224	65%	537,850	5.0%	411,367,315	329,093,852
2034	858	76.2%	654	2.0	1,307	1,404	1,123	65%	566,033	5.2%	397,456,739	317,965,391
2035	785	76.3%	599	2.0	1,199	1,287	1,030	66%	596,568	5.4%	384,015,063	307,212,050
2036	717	76.5%	549	2.0	1,097	1,179	943	66%	629,535	5.5%	371,027,729	296,822,183
2037	644	76.7%	494	2.0	987	1,061	848	66%	667,103	6.0%	353,767,662	283,014,130
2038	582	76.8%	448	2.0	895	961	769	66%	706,660	5.9%	339,718,118	271,774,494
2039	532	77.0%	410	2.0	819	880	704	66%	747,953	5.8%	329,128,525	263,302,820
2040	490	77.1%	378	2.0	755	811	649	66%	791,419	5.8%	321,045,482	256,836,386
2041	454	77.2%	351	2.0	701	753	602	66%	836,875	5.7%	315,087,982	252,070,386
2042	423	77.3%	327	2.0	654	703	562	66%	884,526	5.7%	310,806,020	248,644,816
2043	396	77.4%	307	2.0	613	659	527	67%	934,547	5.7%	307,918,464	246,334,771
2044	373	77.5%	289	2.0	578	621	497	67%	987,075	5.6%	306,379,938	245,103,951
2045	353	77.6%	274	2.0	547	588	470	67%	1,041,888	5.6%	306,346,121	245,076,896
2046	335	77.6%	260	2.0	520	559	447	67%	1,099,344	5.5%	307,261,955	245,809,564
2047	319	77.7%	248	2.0	496	533	426	67%	1,159,917	5.5%	308,961,990	247,169,592
2048	305	77.7%	237	2.0	474	509	407	67%	1,223,913	5.5%	311,333,897	249,067,117
2049	292	77.8%	227	2.0	454	487	390	67%	1,290,912	5.5%	314,651,277	251,721,021
2050	280	77.8%	218	2.0	436	468	375	67%	1,361,104	5.4%	318,793,035	255,034,428
2009&post	**48,911**	**73.4%**	**35,905**	**2.0**	**71,810**	**77,134**	**61,707**	**63%**	**409,126**		**15,778,810,000**	**12,623,048,000**

Total Meso Cost 2004-2040 10,886,811,853

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	160,950		114,623,447	91,698,757
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	162,934	1.2%	125,781,121	100,624,897
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.2%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	170,386	2.3%	183,176,507	146,541,206
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	180,814	6.1%	210,432,597	168,346,078
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	182,095	0.7%	238,208,741	200,095,342
2009	1,833	71.2%	1,304	2.0	2,608	2,802	2,241	61%	184,676	1.4%	258,691,526	206,953,221
2010	1,856	73.2%	1,358	2.0	2,716	2,917	2,334	63%	187,604	1.6%	273,637,442	218,909,953
2011	1,875	74.6%	1,399	2.0	2,797	3,005	2,404	64%	190,888	1.8%	286,789,061	229,431,248
2012	1,891	75.6%	1,430	2.0	2,860	3,072	2,458	65%	194,221	1.7%	298,327,012	238,661,610
2013	1,903	76.4%	1,453	2.0	2,907	3,122	2,498	66%	197,716	1.8%	308,666,050	246,932,840
2014	1,910	76.9%	1,469	2.0	2,938	3,156	2,525	66%	201,424	1.9%	317,866,321	254,293,057
2015	1,912	77.3%	1,478	2.0	2,956	3,175	2,540	66%	205,319	1.9%	325,929,476	260,743,581
2016	1,908	77.6%	1,480	2.0	2,960	3,179	2,544	67%	209,438	2.0%	332,948,879	266,359,104
2017	1,898	77.8%	1,476	2.0	2,953	3,172	2,537	67%	213,486	1.9%	338,554,059	270,843,247
2018	1,883	77.9%	1,468	2.0	2,935	3,153	2,522	67%	217,662	2.0%	343,107,985	274,486,388
2019	1,861	77.9%	1,450	2.0	2,900	3,115	2,492	67%	222,143	2.1%	345,995,040	276,796,032
2020	1,831	77.9%	1,426	2.0	2,853	3,064	2,452	67%	226,870	2.1%	347,607,762	278,086,210
2021	1,793	77.9%	1,397	2.0	2,793	3,000	2,400	67%	231,905	2.2%	347,910,097	278,328,078
2022	1,748	77.9%	1,362	2.0	2,723	2,925	2,340	67%	236,833	2.1%	346,372,363	277,097,891
2023	1,697	77.9%	1,322	2.0	2,643	2,839	2,271	67%	241,929	2.2%	343,428,545	274,742,836
2024	1,640	77.8%	1,277	2.0	2,553	2,742	2,194	67%	247,352	2.2%	339,157,678	271,326,142
2025	1,574	77.8%	1,225	2.0	2,450	2,631	2,105	67%	253,245	2.4%	333,202,348	266,561,878
2026	1,501	77.8%	1,168	2.0	2,337	2,510	2,008	67%	259,657	2.5%	325,869,095	260,695,276
2027	1,424	77.8%	1,108	2.0	2,216	2,380	1,904	67%	266,039	2.5%	316,572,467	253,257,973
2028	1,342	77.8%	1,044	2.0	2,088	2,243	1,795	67%	272,772	2.5%	305,959,591	244,767,673
2029	1,259	77.8%	979	2.0	1,959	2,104	1,683	67%	280,018	2.7%	294,609,883	235,687,907
2030	1,177	77.8%	915	2.0	1,831	1,966	1,573	67%	287,790	2.8%	282,941,109	226,352,887
2031	1,099	77.8%	855	2.0	1,709	1,836	1,469	67%	295,924	2.8%	271,633,470	217,306,776
2032	1,019	77.8%	793	2.0	1,585	1,703	1,362	67%	304,098	2.8%	258,940,878	207,152,702
2033	937	77.8%	729	2.0	1,458	1,566	1,253	67%	313,334	3.0%	245,347,668	196,278,134
2034	858	77.8%	668	2.0	1,335	1,434	1,147	67%	323,541	3.3%	232,010,252	185,608,201
2035	785	77.8%	611	2.0	1,221	1,312	1,049	67%	334,568	3.4%	219,423,387	175,538,709
2036	717	77.8%	558	2.0	1,116	1,198	959	67%	346,403	3.5%	207,549,288	166,039,430
2037	644	77.8%	501	2.0	1,002	1,076	861	67%	360,155	4.0%	193,742,634	154,994,107
2038	582	77.8%	453	2.0	906	973	779	67%	374,317	3.9%	182,188,050	145,750,440
2039	532	77.8%	414	2.0	828	890	712	67%	388,716	3.8%	172,883,877	138,307,101
2040	490	77.8%	381	2.0	762	819	655	67%	403,544	3.8%	165,203,257	132,162,605
2041	454	77.8%	353	2.0	707	759	607	67%	418,665	3.7%	158,861,007	127,088,806
2042	423	77.8%	329	2.0	659	707	566	67%	434,145	3.7%	153,556,356	122,845,085
2043	396	77.8%	308	2.0	617	663	530	67%	450,028	3.7%	149,093,271	119,274,617
2044	373	77.8%	290	2.0	581	624	499	67%	466,337	3.6%	145,402,368	116,321,894
2045	353	77.8%	275	2.0	549	590	472	67%	482,924	3.6%	142,512,507	114,010,006
2046	335	77.8%	261	2.0	522	561	448	67%	499,915	3.5%	140,124,084	112,099,267
2047	319	77.8%	249	2.0	497	534	427	67%	517,477	3.5%	138,134,368	110,507,494
2048	305	77.9%	237	2.0	474	510	408	67%	535,691	3.5%	136,471,311	109,177,049
2049	292	77.9%	227	2.0	454	488	390	67%	554,317	3.5%	135,234,397	108,187,518
2050	280	77.9%	218	2.0	436	469	375	67%	573,388	3.4%	134,347,915	107,478,332
2009&post	**48,911**	**77.1%**	**37,697**	**2.0**	**75,394**	**80,984**	**64,787**	**66%**	**261,701**		**10,596,804,135**	**8,477,443,308**

Total Meso Cost 2004-2040 8,060,219,953

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	158,821		113,107,418	90,485,934
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	161,868	1.9%	124,958,431	99,966,745
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.9%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	172,040	3.3%	184,954,372	147,963,498
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	184,343	7.2%	214,539,441	171,631,552
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	187,452	1.7%	245,215,782	205,981,257
2009	1,833	71.2%	1,304	2.0	2,608	2,802	2,241	61%	191,954	2.4%	268,886,630	215,109,304
2010	1,856	73.2%	1,358	2.0	2,716	2,917	2,334	63%	196,891	2.6%	287,182,845	229,746,276
2011	1,875	74.6%	1,399	2.0	2,797	3,005	2,404	64%	202,282	2.7%	303,907,350	243,125,880
2012	1,891	75.6%	1,430	2.0	2,860	3,072	2,458	65%	207,812	2.7%	319,202,677	255,362,142
2013	1,903	76.4%	1,453	2.0	2,907	3,122	2,498	66%	213,604	2.8%	333,470,799	266,776,639
2014	1,910	76.9%	1,469	2.0	2,938	3,156	2,525	66%	219,723	2.9%	346,743,346	277,394,676
2015	1,912	77.3%	1,478	2.0	2,956	3,175	2,540	66%	226,145	2.9%	358,989,384	287,191,507
2016	1,908	77.6%	1,480	2.0	2,960	3,179	2,544	67%	232,920	3.0%	370,279,396	296,223,517
2017	1,898	77.8%	1,476	2.0	2,953	3,172	2,537	67%	239,726	2.9%	380,166,364	304,133,091
2018	1,883	77.9%	1,468	2.0	2,935	3,153	2,522	67%	246,787	2.9%	389,018,114	311,214,491
2019	1,861	77.9%	1,450	2.0	2,900	3,115	2,492	67%	254,311	3.0%	396,097,306	316,877,845
2020	1,831	77.9%	1,426	2.0	2,853	3,064	2,452	67%	262,241	3.1%	401,803,925	321,443,140
2021	1,793	77.9%	1,397	2.0	2,793	3,000	2,400	67%	270,661	3.2%	406,054,315	324,843,452
2022	1,748	77.9%	1,362	2.0	2,723	2,925	2,340	67%	279,095	3.1%	408,180,584	326,544,467
2023	1,697	77.9%	1,322	2.0	2,643	2,839	2,271	67%	287,865	3.1%	408,636,519	326,909,215
2024	1,640	77.8%	1,277	2.0	2,553	2,742	2,194	67%	297,172	3.2%	407,468,287	325,974,630
2025	1,574	77.8%	1,225	2.0	2,450	2,631	2,105	67%	307,202	3.4%	404,195,365	323,356,292
2026	1,501	77.8%	1,168	2.0	2,337	2,510	2,008	67%	318,035	3.5%	399,132,723	319,306,178
2027	1,424	77.8%	1,108	2.0	2,216	2,380	1,904	67%	329,010	3.5%	391,505,461	313,204,368
2028	1,342	77.8%	1,044	2.0	2,088	2,243	1,795	67%	340,608	3.5%	382,048,950	305,639,160
2029	1,259	77.8%	979	2.0	1,959	2,104	1,683	67%	353,045	3.7%	371,443,099	297,154,479
2030	1,177	77.8%	915	2.0	1,831	1,966	1,573	67%	366,362	3.8%	360,189,366	288,151,493
2031	1,099	77.8%	855	2.0	1,709	1,836	1,469	67%	380,369	3.8%	349,146,537	279,317,229
2032	1,019	77.8%	793	2.0	1,585	1,703	1,362	67%	394,663	3.8%	336,058,088	268,846,469
2033	937	77.8%	729	2.0	1,458	1,566	1,253	67%	410,592	4.0%	321,502,956	257,202,365
2034	858	77.8%	668	2.0	1,335	1,434	1,147	67%	428,076	4.3%	306,972,542	245,578,033
2035	785	77.8%	611	2.0	1,221	1,312	1,049	67%	446,958	4.4%	293,132,903	234,506,322
2036	717	77.8%	558	2.0	1,116	1,198	959	67%	467,254	4.5%	279,957,552	223,966,042
2037	644	77.8%	501	2.0	1,002	1,076	861	67%	490,513	5.0%	263,867,463	211,093,970
2038	582	77.8%	453	2.0	906	973	779	67%	514,742	4.9%	250,535,965	200,428,772
2039	532	77.8%	414	2.0	828	890	712	67%	539,724	4.9%	240,045,748	192,036,599
2040	490	77.8%	381	2.0	762	819	655	67%	565,743	4.8%	231,604,672	185,283,737
2041	454	77.8%	353	2.0	707	759	607	67%	592,631	4.8%	224,871,803	179,897,443
2042	423	77.8%	329	2.0	659	707	566	67%	620,499	4.7%	219,469,556	175,575,645
2043	396	77.8%	308	2.0	617	663	530	67%	649,434	4.7%	215,155,847	172,124,677
2044	373	77.8%	290	2.0	581	624	499	67%	679,490	4.6%	211,862,964	169,490,371
2045	353	77.8%	275	2.0	549	590	472	67%	710,478	4.6%	209,664,437	167,731,550
2046	335	77.8%	261	2.0	522	561	448	67%	742,601	4.5%	208,148,180	166,518,544
2047	319	77.8%	249	2.0	497	534	427	67%	776,138	4.5%	207,180,794	165,744,635
2048	305	77.9%	237	2.0	474	510	408	67%	811,242	4.5%	206,669,757	165,335,805
2049	292	77.9%	227	2.0	454	488	390	67%	847,581	4.5%	206,780,868	165,424,695
2050	280	77.9%	218	2.0	436	469	375	67%	885,237	4.4%	207,415,663	165,932,530
2009&post	**48,911**	**77.1%**	**37,697**	**2.0**	**75,394**	**80,984**	**64,787**	**66%**	**323,141**		**13,084,647,094**	**10,467,717,675**

Total Meso Cost 2004-2040 9,513,644,022

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	156,753		111,634,584	89,307,667
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	160,823	2.6%	124,151,442	99,321,154
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	3.5%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	173,694	4.3%	186,732,237	149,385,790
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	187,905	8.2%	218,685,974	174,948,779
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	192,912	2.7%	252,358,908	211,981,483
2009	1,833	71.2%	1,304	2.0	2,608	2,802	2,241	61%	199,446	3.4%	279,380,161	223,504,129
2010	1,856	73.2%	1,358	2.0	2,716	2,917	2,334	63%	206,542	3.6%	301,259,446	241,007,557
2011	1,875	74.6%	1,399	2.0	2,797	3,005	2,404	64%	214,237	3.7%	321,868,815	257,495,052
2012	1,891	75.6%	1,430	2.0	2,860	3,072	2,458	65%	222,210	3.7%	341,318,183	273,054,546
2013	1,903	76.4%	1,453	2.0	2,907	3,122	2,498	66%	230,599	3.8%	360,002,564	288,002,051
2014	1,910	76.9%	1,469	2.0	2,938	3,156	2,525	66%	239,484	3.9%	377,929,234	302,343,387
2015	1,912	77.3%	1,478	2.0	2,956	3,175	2,540	66%	248,853	3.9%	395,037,395	316,029,916
2016	1,908	77.6%	1,480	2.0	2,960	3,179	2,544	67%	258,772	4.0%	411,377,074	329,101,659
2017	1,898	77.8%	1,476	2.0	2,953	3,172	2,537	67%	268,893	3.9%	426,420,252	341,136,201
2018	1,883	77.9%	1,468	2.0	2,935	3,153	2,522	67%	279,473	3.9%	440,541,902	352,433,522
2019	1,861	77.9%	1,450	2.0	2,900	3,115	2,492	67%	290,760	4.0%	452,868,636	362,294,908
2020	1,831	77.9%	1,426	2.0	2,853	3,064	2,452	67%	302,708	4.1%	463,806,865	371,045,492
2021	1,793	77.9%	1,397	2.0	2,793	3,000	2,400	67%	315,429	4.2%	473,216,054	378,572,843
2022	1,748	77.9%	1,362	2.0	2,723	2,925	2,340	67%	328,382	4.1%	480,263,587	384,210,870
2023	1,697	77.9%	1,322	2.0	2,643	2,839	2,271	67%	341,955	4.1%	485,418,300	388,334,640
2024	1,640	77.8%	1,277	2.0	2,553	2,742	2,194	67%	356,400	4.2%	488,679,521	390,943,616
2025	1,574	77.8%	1,225	2.0	2,450	2,631	2,105	67%	371,967	4.4%	489,409,909	391,527,927
2026	1,501	77.8%	1,168	2.0	2,337	2,510	2,008	67%	388,783	4.5%	487,921,150	390,336,920
2027	1,424	77.8%	1,108	2.0	2,216	2,380	1,904	67%	406,062	4.4%	483,193,028	386,554,422
2028	1,342	77.8%	1,044	2.0	2,088	2,243	1,795	67%	424,412	4.5%	476,049,496	380,839,597
2029	1,259	77.8%	979	2.0	1,959	2,104	1,683	67%	444,133	4.6%	467,278,127	373,822,502
2030	1,177	77.8%	915	2.0	1,831	1,966	1,573	67%	465,311	4.8%	457,471,369	365,977,095
2031	1,099	77.8%	855	2.0	1,709	1,836	1,469	67%	487,739	4.8%	447,703,427	358,162,741
2032	1,019	77.8%	793	2.0	1,585	1,703	1,362	67%	510,927	4.8%	435,057,181	348,045,745
2033	937	77.8%	729	2.0	1,458	1,566	1,253	67%	536,650	5.0%	420,209,916	336,167,933
2034	858	77.8%	668	2.0	1,335	1,434	1,147	67%	564,874	5.3%	405,070,120	324,056,096
2035	785	77.8%	611	2.0	1,221	1,312	1,049	67%	595,452	5.4%	390,521,168	312,416,934
2036	717	77.8%	558	2.0	1,116	1,198	959	67%	628,466	5.5%	376,549,016	301,239,213
2037	644	77.8%	501	2.0	1,002	1,076	861	67%	666,085	6.0%	358,314,921	286,651,937
2038	582	77.8%	453	2.0	906	973	779	67%	705,697	5.9%	343,477,827	274,782,262
2039	532	77.8%	414	2.0	828	890	712	67%	747,050	5.9%	332,255,371	265,804,297
2040	490	77.8%	381	2.0	762	819	655	67%	790,581	5.8%	323,649,191	258,919,353
2041	454	77.8%	353	2.0	707	759	607	67%	836,104	5.8%	317,257,014	253,805,611
2042	423	77.8%	329	2.0	659	707	566	67%	883,825	5.7%	312,607,470	250,085,976
2043	396	77.8%	308	2.0	617	663	530	67%	933,917	5.7%	309,404,687	247,523,750
2044	373	77.8%	290	2.0	581	624	499	67%	986,519	5.6%	307,593,593	246,074,874
2045	353	77.8%	275	2.0	549	590	472	67%	1,041,408	5.6%	307,323,165	245,858,532
2046	335	77.8%	261	2.0	522	561	448	67%	1,098,941	5.5%	308,028,742	246,422,994
2047	319	77.8%	249	2.0	497	534	427	67%	1,159,593	5.5%	309,539,513	247,631,610
2048	305	77.9%	237	2.0	474	510	408	67%	1,223,671	5.5%	311,739,197	249,391,358
2049	292	77.9%	227	2.0	454	488	390	67%	1,290,754	5.5%	314,899,904	251,919,923
2050	280	77.9%	218	2.0	436	469	375	67%	1,361,034	5.4%	318,897,581	255,118,065
2009&post	**48,911**	**77.1%**	**37,697**	**2.0**	**75,394**	**80,984**	**64,787**	**66%**	**402,815**		**16,310,810,070**	**13,048,648,056**

Total Meso Cost 2004-2040 11,304,611,759

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: AWP selected population model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	160,950		114,623,447	91,698,757
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	162,934	1.2%	125,781,121	100,624,897
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.2%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	170,386	2.3%	183,176,507	146,541,206
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	180,814	6.1%	210,432,597	168,346,078
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	182,095	0.7%	238,208,741	200,095,342
2009	1,833	71.2%	1,304	2.0	2,608	2,802	2,241	61%	184,676	1.4%	258,691,526	206,953,221
2010	1,856	75.0%	1,391	2.0	2,783	2,989	2,391	64%	187,685	1.6%	280,520,035	224,416,028
2011	1,875	78.9%	1,479	2.0	2,958	3,177	2,542	68%	190,844	1.7%	303,152,365	242,521,892
2012	1,891	82.9%	1,567	2.0	3,134	3,366	2,693	71%	193,920	1.6%	326,416,376	261,133,101
2013	1,903	87.0%	1,656	2.0	3,311	3,557	2,845	75%	197,076	1.6%	350,476,209	280,380,967
2014	1,910	87.0%	1,662	2.0	3,324	3,570	2,856	75%	200,967	2.0%	358,749,866	286,999,892
2015	1,912	87.0%	1,663	2.0	3,327	3,573	2,859	75%	204,991	2.0%	366,259,234	293,007,387
2016	1,908	87.0%	1,660	2.0	3,320	3,566	2,853	75%	209,203	2.1%	372,976,654	298,381,323
2017	1,898	87.0%	1,651	2.0	3,303	3,548	2,838	75%	213,318	2.0%	378,403,628	302,722,903
2018	1,883	87.0%	1,639	2.0	3,277	3,520	2,816	75%	217,542	2.0%	382,873,200	306,298,560
2019	1,861	87.0%	1,619	2.0	3,238	3,479	2,783	75%	222,021	2.1%	386,156,993	308,925,595
2020	1,831	87.0%	1,593	2.0	3,186	3,423	2,738	75%	226,744	2.1%	388,018,046	310,414,437
2021	1,793	87.0%	1,560	2.0	3,120	3,352	2,681	75%	231,776	2.2%	388,411,457	310,729,166
2022	1,748	87.0%	1,521	2.0	3,042	3,268	2,614	75%	236,703	2.1%	386,761,313	309,409,051
2023	1,697	87.0%	1,477	2.0	2,953	3,172	2,538	75%	241,796	2.2%	383,543,197	306,834,558
2024	1,640	87.0%	1,427	2.0	2,853	3,065	2,452	75%	247,215	2.2%	378,837,667	303,070,133
2025	1,574	87.0%	1,369	2.0	2,738	2,941	2,353	75%	253,104	2.4%	372,240,301	297,792,240
2026	1,501	87.0%	1,306	2.0	2,612	2,806	2,245	75%	259,513	2.5%	364,092,811	291,274,249
2027	1,424	87.0%	1,239	2.0	2,477	2,661	2,129	75%	265,891	2.5%	353,762,073	283,009,658
2028	1,342	87.0%	1,168	2.0	2,335	2,509	2,007	75%	272,619	2.5%	341,948,607	273,558,886
2029	1,259	87.0%	1,095	2.0	2,191	2,353	1,883	75%	279,857	2.7%	329,297,681	263,438,145
2030	1,177	87.0%	1,024	2.0	2,047	2,199	1,759	75%	287,623	2.8%	316,279,087	253,023,270
2031	1,099	87.0%	956	2.0	1,912	2,053	1,643	75%	295,748	2.8%	303,657,982	242,926,385
2032	1,019	87.0%	887	2.0	1,774	1,905	1,524	75%	303,910	2.8%	289,487,156	231,589,724
2033	937	87.0%	815	2.0	1,631	1,752	1,402	75%	313,134	3.0%	274,294,517	219,435,613
2034	858	87.0%	747	2.0	1,494	1,604	1,284	75%	323,329	3.3%	259,377,615	207,502,092
2035	785	87.0%	683	2.0	1,366	1,467	1,174	75%	334,344	3.4%	245,293,645	196,234,916
2036	717	87.0%	624	2.0	1,248	1,340	1,072	75%	346,166	3.5%	232,002,913	185,602,330
2037	644	87.0%	560	2.0	1,120	1,203	963	75%	359,905	4.0%	216,537,964	173,230,371
2038	582	87.0%	507	2.0	1,013	1,089	871	75%	374,053	3.9%	203,596,425	162,877,140
2039	532	87.0%	463	2.0	926	995	796	75%	388,439	3.8%	193,176,069	154,540,855
2040	490	87.0%	426	2.0	852	915	732	75%	403,254	3.8%	184,573,481	147,658,785
2041	454	87.0%	395	2.0	790	848	679	75%	418,363	3.7%	177,470,447	141,976,358
2042	423	87.0%	368	2.0	736	791	633	75%	433,830	3.7%	171,529,693	137,223,754
2043	396	87.0%	345	2.0	690	741	593	75%	449,700	3.7%	166,531,367	133,225,093
2044	373	87.0%	324	2.0	649	697	558	75%	465,994	3.6%	162,397,624	129,918,099
2045	353	87.0%	307	2.0	614	660	528	75%	482,567	3.6%	159,160,989	127,328,791
2046	335	87.0%	292	2.0	583	627	501	75%	499,543	3.5%	156,485,768	125,188,614
2047	319	87.0%	278	2.0	555	597	477	75%	517,091	3.5%	154,256,524	123,405,219
2048	305	87.0%	265	2.0	530	569	456	75%	535,289	3.5%	152,391,778	121,913,422
2049	292	87.0%	254	2.0	508	545	436	75%	553,897	3.5%	151,003,741	120,802,993
2050	280	87.0%	244	2.0	487	524	419	75%	572,951	3.4%	150,007,500	120,006,000
2009&post	**48,911**	**85.5%**	**41,809**	**2.0**	**83,618**	**89,818**	**71,854**	**73%**	**262,110**		**11,771,101,524**	**9,416,881,219**

Total Meso Cost 2004-2040 8,865,659,588

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: AWP selected population model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	158,821		113,107,418	90,485,934
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	161,868	1.9%	124,958,431	99,966,745
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	2.9%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	172,040	3.3%	184,954,372	147,963,498
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	184,343	7.2%	214,539,441	171,631,552
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	187,452	1.7%	245,215,782	205,981,257
2009	1,833	71.2%	1,304	2.0	2,608	2,802	2,241	61%	191,954	2.4%	268,886,630	215,109,304
2010	1,856	75.0%	1,391	2.0	2,783	2,989	2,391	64%	196,976	2.6%	294,406,137	235,524,910
2011	1,875	78.9%	1,479	2.0	2,958	3,177	2,542	68%	202,236	2.7%	321,247,370	256,997,896
2012	1,891	82.9%	1,567	2.0	3,134	3,366	2,693	71%	207,490	2.6%	349,257,606	279,406,084
2013	1,903	87.0%	1,656	2.0	3,311	3,557	2,845	75%	212,914	2.6%	378,640,839	302,912,671
2014	1,910	87.0%	1,662	2.0	3,324	3,570	2,856	75%	219,225	3.0%	391,340,988	313,072,790
2015	1,912	87.0%	1,663	2.0	3,327	3,573	2,859	75%	225,784	3.0%	403,409,875	322,727,900
2016	1,908	87.0%	1,660	2.0	3,320	3,566	2,853	75%	232,659	3.0%	414,795,099	331,836,079
2017	1,898	87.0%	1,651	2.0	3,303	3,548	2,838	75%	239,537	3.0%	424,913,900	339,931,120
2018	1,883	87.0%	1,639	2.0	3,277	3,520	2,816	75%	246,651	3.0%	434,104,164	347,283,331
2019	1,861	87.0%	1,619	2.0	3,238	3,479	2,783	75%	254,171	3.0%	442,074,947	353,659,957
2020	1,831	87.0%	1,593	2.0	3,186	3,423	2,738	75%	262,097	3.1%	448,514,632	358,811,705
2021	1,793	87.0%	1,560	2.0	3,120	3,352	2,681	75%	270,512	3.2%	453,324,413	362,659,530
2022	1,748	87.0%	1,521	2.0	3,042	3,268	2,614	75%	278,942	3.1%	455,776,692	364,621,354
2023	1,697	87.0%	1,477	2.0	2,953	3,172	2,538	75%	287,707	3.1%	456,367,852	365,094,282
2024	1,640	87.0%	1,427	2.0	2,853	3,065	2,452	75%	297,007	3.2%	455,140,293	364,112,234
2025	1,574	87.0%	1,369	2.0	2,738	2,941	2,353	75%	307,031	3.4%	451,550,818	361,240,654
2026	1,501	87.0%	1,306	2.0	2,612	2,806	2,245	75%	317,858	3.5%	445,950,062	356,760,050
2027	1,424	87.0%	1,239	2.0	2,477	2,661	2,129	75%	328,827	3.5%	437,497,841	349,998,273
2028	1,342	87.0%	1,168	2.0	2,335	2,509	2,007	75%	340,416	3.5%	426,988,063	341,590,450
2029	1,259	87.0%	1,095	2.0	2,191	2,353	1,883	75%	352,843	3.7%	415,177,307	332,141,845
2030	1,177	87.0%	1,024	2.0	2,047	2,199	1,759	75%	366,149	3.8%	402,629,192	322,103,354
2031	1,099	87.0%	956	2.0	1,912	2,053	1,643	75%	380,143	3.8%	390,309,481	312,247,585
2032	1,019	87.0%	887	2.0	1,774	1,905	1,524	75%	394,420	3.8%	375,701,535	300,561,228
2033	937	87.0%	815	2.0	1,631	1,752	1,402	75%	410,330	4.0%	359,434,775	287,547,820
2034	858	87.0%	747	2.0	1,494	1,604	1,284	75%	427,796	4.3%	343,182,215	274,545,772
2035	785	87.0%	683	2.0	1,366	1,467	1,174	75%	446,658	4.4%	327,693,533	262,154,826
2036	717	87.0%	624	2.0	1,248	1,340	1,072	75%	466,934	4.5%	312,942,314	250,353,851
2037	644	87.0%	560	2.0	1,120	1,203	963	75%	490,172	5.0%	294,913,462	235,930,769
2038	582	87.0%	507	2.0	1,013	1,089	871	75%	514,379	4.9%	279,975,636	223,980,509
2039	532	87.0%	463	2.0	926	995	796	75%	539,340	4.9%	268,220,980	214,576,784
2040	490	87.0%	426	2.0	852	915	732	75%	565,337	4.8%	258,760,453	207,008,363
2041	454	87.0%	395	2.0	790	848	679	75%	592,203	4.8%	251,213,872	200,971,098
2042	423	87.0%	368	2.0	736	791	633	75%	620,049	4.7%	245,157,777	196,126,222
2043	396	87.0%	345	2.0	690	741	593	75%	648,959	4.7%	240,320,615	192,256,492
2044	373	87.0%	324	2.0	649	697	558	75%	678,991	4.6%	236,626,348	189,301,079
2045	353	87.0%	307	2.0	614	660	528	75%	709,953	4.6%	234,157,612	187,326,090
2046	335	87.0%	292	2.0	583	627	501	75%	742,050	4.5%	232,452,665	185,962,132
2047	319	87.0%	278	2.0	555	597	477	75%	775,558	4.5%	231,361,523	185,089,219
2048	305	87.0%	265	2.0	530	569	456	75%	810,631	4.5%	230,779,348	184,623,478
2049	292	87.0%	254	2.0	508	545	436	75%	846,939	4.5%	230,892,979	184,714,383
2050	280	87.0%	244	2.0	487	524	419	75%	884,561	4.4%	231,591,927	185,273,541
2009&post	**48,911**	**85.5%**	**41,809**	**2.0**	**83,618**	**89,818**	**71,854**	**73%**	**323,937**		**14,547,683,771**	**11,638,147,017**

Total Meso Cost 2004-2040 10,486,205,524

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: AWP selected population model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,590	43.1%	685	2.7	1,858	1,931	1,544	36%	156,753		111,634,584	89,307,667
2004	1,637	45.0%	737	2.5	1,840	1,928	1,542	38%	160,823	2.6%	124,151,442	99,321,154
2005	1,681	49.3%	829	2.4	1,995	2,063	1,651	41%	166,488	3.5%	142,698,987	114,159,190
2006	1,724	59.7%	1,029	2.2	2,298	2,401	1,921	50%	173,694	4.3%	186,732,237	149,385,790
2007	1,763	63.2%	1,115	2.2	2,432	2,540	2,032	53%	187,905	8.2%	218,685,974	174,948,779
2008	1,801	68.9%	1,241	2.1	2,593	2,733	2,296	61%	192,912	2.7%	252,358,908	211,981,483
2009	1,833	71.2%	1,304	2.0	2,608	2,802	2,241	61%	199,446	3.4%	279,380,161	223,504,129
2010	1,856	75.0%	1,391	2.0	2,783	2,989	2,391	64%	206,631	3.6%	308,836,798	247,069,439
2011	1,875	78.9%	1,479	2.0	2,958	3,177	2,542	68%	214,188	3.7%	340,233,660	272,186,928
2012	1,891	82.9%	1,567	2.0	3,134	3,366	2,693	71%	221,866	3.6%	373,455,413	298,764,330
2013	1,903	87.0%	1,656	2.0	3,311	3,557	2,845	75%	229,854	3.6%	408,766,413	327,013,131
2014	1,910	87.0%	1,662	2.0	3,324	3,570	2,856	75%	238,942	4.0%	426,537,934	341,230,347
2015	1,912	87.0%	1,663	2.0	3,327	3,573	2,859	75%	248,456	4.0%	443,918,355	355,134,684
2016	1,908	87.0%	1,660	2.0	3,320	3,566	2,853	75%	258,482	4.0%	460,833,597	368,666,878
2017	1,898	87.0%	1,651	2.0	3,303	3,548	2,838	75%	268,681	3.9%	476,612,090	381,289,672
2018	1,883	87.0%	1,639	2.0	3,277	3,520	2,816	75%	279,318	4.0%	491,599,392	393,279,513
2019	1,861	87.0%	1,619	2.0	3,238	3,479	2,783	75%	290,600	4.0%	505,436,082	404,348,866
2020	1,831	87.0%	1,593	2.0	3,186	3,423	2,738	75%	302,541	4.1%	517,725,546	414,180,436
2021	1,793	87.0%	1,560	2.0	3,120	3,352	2,681	75%	315,255	4.2%	528,304,642	422,643,714
2022	1,748	87.0%	1,521	2.0	3,042	3,268	2,614	75%	328,201	4.1%	536,264,944	429,011,955
2023	1,697	87.0%	1,477	2.0	2,953	3,172	2,538	75%	341,766	4.1%	542,118,199	433,694,560
2024	1,640	87.0%	1,427	2.0	2,853	3,065	2,452	75%	356,203	4.2%	545,852,849	436,682,279
2025	1,574	87.0%	1,369	2.0	2,738	2,941	2,353	75%	371,761	4.4%	546,749,042	437,399,234
2026	1,501	87.0%	1,306	2.0	2,612	2,806	2,245	75%	388,567	4.5%	545,153,121	436,122,497
2027	1,424	87.0%	1,239	2.0	2,477	2,661	2,129	75%	405,836	4.4%	539,956,423	431,965,139
2028	1,342	87.0%	1,168	2.0	2,335	2,509	2,007	75%	424,173	4.5%	532,045,522	425,636,417
2029	1,259	87.0%	1,095	2.0	2,191	2,353	1,883	75%	443,879	4.6%	522,296,025	417,836,820
2030	1,177	87.0%	1,024	2.0	2,047	2,199	1,759	75%	465,040	4.8%	511,373,527	409,098,822
2031	1,099	87.0%	956	2.0	1,912	2,053	1,643	75%	487,449	4.8%	500,485,760	400,388,608
2032	1,019	87.0%	887	2.0	1,774	1,905	1,524	75%	510,611	4.8%	486,379,095	389,103,276
2033	937	87.0%	815	2.0	1,631	1,752	1,402	75%	536,308	5.0%	469,787,385	375,829,908
2034	858	87.0%	747	2.0	1,494	1,604	1,284	75%	564,505	5.3%	452,851,048	362,280,839
2035	785	87.0%	683	2.0	1,366	1,467	1,174	75%	595,053	5.4%	436,563,881	349,251,104
2036	717	87.0%	624	2.0	1,248	1,340	1,072	75%	628,036	5.5%	420,914,157	336,731,325
2037	644	87.0%	560	2.0	1,120	1,203	963	75%	665,622	6.0%	400,473,291	320,378,633
2038	582	87.0%	507	2.0	1,013	1,089	871	75%	705,199	5.9%	383,838,711	307,070,969
2039	532	87.0%	463	2.0	926	995	796	75%	746,518	5.9%	371,253,567	297,002,853
2040	490	87.0%	426	2.0	852	915	732	75%	790,014	5.8%	361,597,156	289,277,725
2041	454	87.0%	395	2.0	790	848	679	75%	835,501	5.8%	354,421,235	283,536,988
2042	423	87.0%	368	2.0	736	791	633	75%	883,184	5.7%	349,197,096	279,357,677
2043	396	87.0%	345	2.0	690	741	593	75%	933,235	5.7%	345,592,763	276,474,210
2044	373	87.0%	324	2.0	649	697	558	75%	985,794	5.6%	343,546,251	274,837,001
2045	353	87.0%	307	2.0	614	660	528	75%	1,040,639	5.6%	343,224,807	274,579,846
2046	335	87.0%	292	2.0	583	627	501	75%	1,098,124	5.5%	343,995,699	275,196,559
2047	319	87.0%	278	2.0	555	597	477	75%	1,158,726	5.5%	345,666,736	276,533,389
2048	305	87.0%	265	2.0	530	569	456	75%	1,222,750	5.5%	348,105,809	278,484,647
2049	292	87.0%	254	2.0	508	545	436	75%	1,289,775	5.5%	351,619,327	281,295,461
2050	280	87.0%	244	2.0	487	524	419	75%	1,359,995	5.4%	356,067,982	284,854,386
2009&post	**48,911**	**85.5%**	**41,809**	**2.0**	**83,618**	**89,818**	**71,854**	**73%**	**404,129**		**18,149,031,490**	**14,519,225,192**

Total Meso Cost 2004-2040 12,483,871,425

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	160,976		117,849,435	94,279,548
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	162,981	1.2%	130,283,227	104,226,582
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.2%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	170,523	2.4%	189,154,283	151,323,426
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	181,083	6.2%	216,168,390	172,934,712
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	182,384	0.7%	244,239,450	205,161,138
2009	1,862	68.1%	1,267	2.0	2,534	2,722	2,178	58%	186,303	2.1%	253,561,970	202,849,576
2010	1,861	67.8%	1,261	2.0	2,522	2,709	2,167	58%	190,238	2.1%	257,677,897	206,142,318
2011	1,846	67.5%	1,245	2.0	2,491	2,676	2,140	58%	194,334	2.2%	259,980,992	207,984,794
2012	1,834	67.2%	1,232	2.0	2,464	2,646	2,117	58%	198,340	2.1%	262,439,243	209,951,394
2013	1,817	66.9%	1,215	2.0	2,429	2,609	2,087	57%	202,417	2.1%	264,075,320	211,260,256
2014	1,799	66.5%	1,197	2.0	2,394	2,572	2,057	57%	206,660	2.1%	265,732,853	212,586,283
2015	1,766	66.2%	1,169	2.0	2,339	2,512	2,010	57%	211,072	2.1%	265,099,588	212,079,670
2016	1,731	65.9%	1,140	2.0	2,280	2,449	1,959	57%	215,702	2.2%	264,147,198	211,317,758
2017	1,711	65.5%	1,120	2.0	2,241	2,407	1,926	56%	220,220	2.1%	265,026,321	212,021,057
2018	1,671	65.1%	1,088	2.0	2,175	2,337	1,869	56%	224,849	2.1%	262,695,114	210,156,091
2019	1,613	64.7%	1,043	2.0	2,086	2,241	1,793	56%	229,730	2.2%	257,428,845	205,943,076
2020	1,559	64.3%	1,002	2.0	2,004	2,153	1,723	55%	234,864	2.2%	252,846,052	202,276,842
2021	1,497	63.9%	957	2.0	1,914	2,056	1,644	55%	240,290	2.3%	246,970,383	197,576,306
2022	1,440	63.5%	914	2.0	1,829	1,964	1,571	55%	245,572	2.2%	241,172,154	192,937,723
2023	1,382	63.0%	871	2.0	1,742	1,872	1,497	54%	251,024	2.2%	234,903,713	187,922,970
2024	1,321	62.6%	826	2.0	1,653	1,775	1,420	54%	256,786	2.3%	227,902,203	182,321,762
2025	1,244	62.2%	773	2.0	1,546	1,661	1,329	53%	262,984	2.4%	218,421,016	174,736,813
2026	1,160	61.8%	718	2.0	1,435	1,542	1,233	53%	269,639	2.5%	207,866,244	166,292,995
2027	1,072	61.4%	659	2.0	1,317	1,415	1,132	53%	276,286	2.5%	195,460,600	156,368,480
2028	971	61.1%	593	2.0	1,185	1,273	1,018	52%	283,291	2.5%	180,315,809	144,252,647
2029	878	60.8%	533	2.0	1,067	1,146	917	52%	290,774	2.6%	166,567,668	133,254,134
2030	785	60.5%	475	2.0	951	1,021	817	52%	298,733	2.7%	152,567,843	122,054,275
2031	688	60.3%	415	2.0	830	892	714	52%	306,982	2.8%	136,920,713	109,536,570
2032	596	60.1%	358	2.0	717	770	616	52%	315,344	2.7%	121,430,473	97,144,379
2033	506	60.0%	303	2.0	607	652	521	52%	324,597	2.9%	105,788,857	84,631,086
2034	415	60.0%	249	2.0	499	535	428	52%	334,600	3.1%	89,584,609	71,667,687
2035	333	60.1%	200	2.0	400	430	344	52%	345,201	3.2%	74,221,717	59,377,373
2036	263	60.2%	158	2.0	316	340	272	52%	356,345	3.2%	60,520,196	48,416,157
2037	208	60.4%	126	2.0	251	270	216	52%	369,075	3.6%	49,787,158	39,829,727
2038	163	60.7%	99	2.0	198	213	170	52%	381,910	3.5%	40,690,021	32,552,017
2039	128	60.8%	78	2.0	155	167	133	52%	394,706	3.4%	32,907,977	26,326,382
2040	100	61.0%	61	2.0	121	130	104	52%	407,663	3.3%	26,583,603	21,266,882
2041	82	61.0%	50	2.0	100	108	86	52%	420,697	3.2%	22,683,408	18,146,726
2042	66	61.0%	40	2.0	80	86	69	52%	433,910	3.1%	18,658,362	14,926,690
2043	50	61.0%	30	2.0	61	65	52	52%	447,399	3.1%	14,630,371	11,704,297
2044	39	60.9%	24	2.0	48	51	41	52%	461,213	3.1%	11,791,809	9,433,447
2045	30	60.8%	18	2.0	37	40	32	52%	475,295	3.1%	9,430,278	7,544,223
2046	24	60.7%	14	2.0	29	31	25	52%	489,804	3.1%	7,606,988	6,085,590
2047	19	60.5%	11	2.0	23	24	20	52%	504,957	3.1%	6,178,532	4,942,825
2048	14	60.4%	9	2.0	17	19	15	52%	520,915	3.2%	4,828,460	3,862,768
2049	9	60.4%	6	2.0	11	12	10	52%	537,544	3.2%	3,264,400	2,611,520
2050	5	60.3%	3	2.0	6	7	5	52%	554,914	3.2%	1,865,992	1,492,794
2009&post	**36,557**	**64.4%**	**23,553**	**2.0**	**47,106**	**50,599**	**40,480**	**55%**	**238,826**		**6,042,232,947**	**4,833,786,358**

Total Meso Cost 2004-2040 5,505,248,381

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	158,847		116,290,628	93,032,503
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	161,915	1.9%	129,430,980	103,544,784
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.8%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	172,178	3.4%	190,990,167	152,792,134
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	184,617	7.2%	220,387,174	176,309,739
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	187,749	1.7%	251,423,889	211,196,066
2009	1,862	68.1%	1,267	2.0	2,534	2,722	2,178	58%	193,646	3.1%	263,554,932	210,843,945
2010	1,861	67.8%	1,261	2.0	2,522	2,709	2,167	58%	199,655	3.1%	270,433,320	216,346,656
2011	1,846	67.5%	1,245	2.0	2,491	2,676	2,140	58%	205,934	3.1%	275,499,188	220,399,351
2012	1,834	67.2%	1,232	2.0	2,464	2,646	2,117	58%	212,219	3.1%	280,803,738	224,642,991
2013	1,817	66.9%	1,215	2.0	2,429	2,609	2,087	57%	218,684	3.0%	285,296,861	228,237,489
2014	1,799	66.5%	1,197	2.0	2,394	2,572	2,057	57%	225,434	3.1%	289,873,949	231,899,159
2015	1,766	66.2%	1,169	2.0	2,339	2,512	2,010	57%	232,482	3.1%	291,989,634	233,591,707
2016	1,731	65.9%	1,140	2.0	2,280	2,449	1,959	57%	239,887	3.2%	293,763,969	235,011,175
2017	1,711	65.5%	1,120	2.0	2,241	2,407	1,926	56%	247,288	3.1%	297,601,646	238,081,317
2018	1,671	65.1%	1,088	2.0	2,175	2,337	1,869	56%	254,936	3.1%	297,846,016	238,276,813
2019	1,613	64.7%	1,043	2.0	2,086	2,241	1,793	56%	262,997	3.2%	294,706,814	235,765,451
2020	1,559	64.3%	1,002	2.0	2,004	2,153	1,723	55%	271,483	3.2%	292,268,499	233,814,800
2021	1,497	63.9%	957	2.0	1,914	2,056	1,644	55%	280,449	3.3%	288,245,990	230,596,792
2022	1,440	63.5%	914	2.0	1,829	1,964	1,571	55%	289,393	3.2%	284,208,962	227,367,169
2023	1,382	63.0%	871	2.0	1,742	1,872	1,497	54%	298,688	3.2%	279,506,795	223,605,436
2024	1,321	62.6%	826	2.0	1,653	1,775	1,420	54%	308,508	3.3%	273,805,774	219,044,619
2025	1,244	62.2%	773	2.0	1,546	1,661	1,329	53%	319,017	3.4%	264,959,706	211,967,765
2026	1,160	61.8%	718	2.0	1,435	1,542	1,233	53%	330,262	3.5%	254,601,214	203,680,971
2027	1,072	61.4%	659	2.0	1,317	1,415	1,132	53%	341,685	3.5%	241,727,730	193,382,184
2028	971	61.1%	593	2.0	1,185	1,273	1,018	52%	353,745	3.5%	225,160,154	180,128,123
2029	878	60.8%	533	2.0	1,067	1,146	917	52%	366,609	3.6%	210,009,386	168,007,509
2030	785	60.5%	475	2.0	951	1,021	817	52%	380,296	3.7%	194,223,184	155,378,548
2031	688	60.3%	415	2.0	830	892	714	52%	394,585	3.8%	175,993,661	140,794,929
2032	596	60.1%	358	2.0	717	770	616	52%	409,262	3.7%	157,595,952	126,076,762
2033	506	60.0%	303	2.0	607	652	521	52%	425,354	3.9%	138,626,655	110,901,324
2034	415	60.0%	249	2.0	499	535	428	52%	442,713	4.1%	118,530,357	94,824,286
2035	333	60.1%	200	2.0	400	430	344	52%	461,166	4.2%	99,155,416	79,324,333
2036	263	60.2%	158	2.0	316	340	272	52%	480,669	4.2%	81,634,718	65,307,774
2037	208	60.4%	126	2.0	251	270	216	52%	502,665	4.6%	67,808,055	54,246,444
2038	163	60.7%	99	2.0	198	213	170	52%	525,187	4.5%	55,955,267	44,764,214
2039	128	60.8%	78	2.0	155	167	133	52%	548,045	4.4%	45,692,300	36,553,840
2040	100	61.0%	61	2.0	121	130	104	52%	571,520	4.3%	37,268,695	29,814,956
2041	82	61.0%	50	2.0	100	108	86	52%	595,508	4.2%	32,109,005	25,687,204
2042	66	61.0%	40	2.0	80	86	69	52%	620,163	4.1%	26,667,358	21,333,886
2043	50	61.0%	30	2.0	61	65	52	52%	645,638	4.1%	21,112,978	16,890,383
2044	39	60.9%	24	2.0	48	51	41	52%	672,022	4.1%	17,181,538	13,745,231
2045	30	60.8%	18	2.0	37	40	32	52%	699,250	4.1%	13,873,733	11,098,987
2046	24	60.7%	14	2.0	29	31	25	52%	727,576	4.1%	11,299,743	9,039,794
2047	19	60.5%	11	2.0	23	24	20	52%	757,351	4.1%	9,266,763	7,413,410
2048	14	60.4%	9	2.0	17	19	15	52%	788,854	4.2%	7,312,035	5,849,628
2049	9	60.4%	6	2.0	11	12	10	52%	821,921	4.2%	4,991,370	3,993,096
2050	5	60.3%	3	2.0	6	7	5	52%	856,701	4.2%	2,880,799	2,304,639
2009&post	**36,557**	**64.4%**	**23,553**	**2.0**	**47,106**	**50,599**	**40,480**	**55%**	**279,649**		**7,075,043,858**	**5,660,035,087**

Total Meso Cost 2004-2040 6,305,088,597

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	156,779		114,776,235	91,820,988
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	160,869	2.6%	128,594,999	102,875,999
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	3.5%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	173,833	4.4%	192,826,052	154,260,842
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	188,185	8.3%	224,646,730	179,717,384
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	193,218	2.7%	258,747,858	217,348,200
2009	1,862	68.1%	1,267	2.0	2,534	2,722	2,178	58%	201,203	4.1%	273,840,403	219,072,323
2010	1,861	67.8%	1,261	2.0	2,522	2,709	2,167	58%	209,442	4.1%	283,688,961	226,951,169
2011	1,846	67.5%	1,245	2.0	2,491	2,676	2,140	58%	218,105	4.1%	291,781,749	233,425,400
2012	1,834	67.2%	1,232	2.0	2,464	2,646	2,117	58%	226,923	4.0%	300,258,937	240,207,150
2013	1,817	66.9%	1,215	2.0	2,429	2,609	2,087	57%	236,083	4.0%	307,995,949	246,396,759
2014	1,799	66.5%	1,197	2.0	2,394	2,572	2,057	57%	245,710	4.1%	315,945,263	252,756,210
2015	1,766	66.2%	1,169	2.0	2,339	2,512	2,010	57%	255,827	4.1%	321,310,147	257,048,117
2016	1,731	65.9%	1,140	2.0	2,280	2,449	1,959	57%	266,512	4.2%	326,369,511	261,095,608
2017	1,711	65.5%	1,120	2.0	2,241	2,407	1,926	56%	277,375	4.1%	333,810,585	267,048,468
2018	1,671	65.1%	1,088	2.0	2,175	2,337	1,869	56%	288,702	4.1%	337,295,056	269,836,045
2019	1,613	64.7%	1,043	2.0	2,086	2,241	1,793	56%	300,692	4.2%	336,946,898	269,557,518
2020	1,559	64.3%	1,002	2.0	2,004	2,153	1,723	55%	313,377	4.2%	337,369,721	269,895,776
2021	1,497	63.9%	957	2.0	1,914	2,056	1,644	55%	326,837	4.3%	335,923,112	268,738,489
2022	1,440	63.5%	914	2.0	1,829	1,964	1,571	55%	340,500	4.2%	334,400,211	267,520,169
2023	1,382	63.0%	871	2.0	1,742	1,872	1,497	54%	354,813	4.2%	332,026,691	265,621,353
2024	1,321	62.6%	826	2.0	1,653	1,775	1,420	54%	369,997	4.3%	328,378,561	262,702,849
2025	1,244	62.2%	773	2.0	1,546	1,661	1,329	53%	386,276	4.4%	320,821,408	256,657,127
2026	1,160	61.8%	718	2.0	1,435	1,542	1,233	53%	403,732	4.5%	311,239,751	248,991,801
2027	1,072	61.4%	659	2.0	1,317	1,415	1,132	53%	421,707	4.5%	298,340,220	238,672,176
2028	971	61.1%	593	2.0	1,185	1,273	1,018	52%	440,784	4.5%	280,561,038	224,448,830
2029	878	60.8%	533	2.0	1,067	1,146	917	52%	461,200	4.6%	264,195,129	211,356,103
2030	785	60.5%	475	2.0	951	1,021	817	52%	483,012	4.7%	246,681,879	197,345,503
2031	688	60.3%	415	2.0	830	892	714	52%	505,973	4.8%	225,674,784	180,539,827
2032	596	60.1%	358	2.0	717	770	616	52%	529,830	4.7%	204,023,688	163,218,950
2033	506	60.0%	303	2.0	607	652	521	52%	555,950	4.9%	181,188,970	144,951,176
2034	415	60.0%	249	2.0	499	535	428	52%	584,194	5.1%	156,409,818	125,127,854
2035	333	60.1%	200	2.0	400	430	344	52%	614,385	5.2%	132,099,187	105,679,350
2036	263	60.2%	158	2.0	316	340	272	52%	646,515	5.2%	109,801,372	87,841,097
2037	208	60.4%	126	2.0	251	270	216	52%	682,591	5.6%	92,079,630	73,663,704
2038	163	60.7%	99	2.0	198	213	170	52%	720,021	5.5%	76,713,605	61,370,884
2039	128	60.8%	78	2.0	155	167	133	52%	758,571	5.4%	63,244,572	50,595,658
2040	100	61.0%	61	2.0	121	130	104	52%	798,657	5.3%	52,080,241	41,664,192
2041	82	61.0%	50	2.0	100	108	86	52%	840,166	5.2%	45,300,596	36,240,476
2042	66	61.0%	40	2.0	80	86	69	52%	883,346	5.1%	37,984,381	30,387,505
2043	50	61.0%	30	2.0	61	65	52	52%	928,457	5.1%	30,361,437	24,289,149
2044	39	60.9%	24	2.0	48	51	41	52%	975,671	5.1%	24,944,936	19,955,949
2045	30	60.8%	18	2.0	37	40	32	52%	1,024,944	5.1%	20,335,787	16,268,629
2046	24	60.7%	14	2.0	29	31	25	52%	1,076,696	5.0%	16,721,810	13,377,448
2047	19	60.5%	11	2.0	23	24	20	52%	1,131,511	5.1%	13,844,899	11,075,919
2048	14	60.4%	9	2.0	17	19	15	52%	1,189,887	5.2%	11,029,275	8,823,420
2049	9	60.4%	6	2.0	11	12	10	52%	1,251,659	5.2%	7,601,080	6,080,864
2050	5	60.3%	3	2.0	6	7	5	52%	1,317,139	5.2%	4,429,098	3,543,279
2009&post	**36,557**	**64.4%**	**23,553**	**2.0**	**47,106**	**50,599**	**40,480**	**55%**	**329,057**		**8,325,050,344**	**6,660,040,276**

Total Meso Cost 2004-2040 7,262,767,107

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	160,976		117,849,435	94,279,548
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	162,981	1.2%	130,283,227	104,226,582
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.2%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	170,523	2.4%	189,154,283	151,323,426
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	181,083	6.2%	216,168,390	172,934,712
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	182,384	0.7%	244,239,450	205,161,138
2009	1,862	68.9%	1,282	2.0	2,565	2,755	2,204	59%	185,955	2.0%	256,135,179	204,908,143
2010	1,861	69.4%	1,291	2.0	2,582	2,774	2,219	60%	189,547	1.9%	262,866,000	210,292,800
2011	1,846	69.9%	1,290	2.0	2,579	2,771	2,216	60%	193,302	2.0%	267,778,712	214,222,969
2012	1,834	70.3%	1,290	2.0	2,579	2,771	2,217	60%	196,976	1.9%	272,883,388	218,306,710
2013	1,817	70.8%	1,285	2.0	2,571	2,761	2,209	61%	200,732	1.9%	277,159,117	221,727,293
2014	1,799	71.2%	1,280	2.0	2,561	2,751	2,201	61%	204,659	2.0%	281,472,057	225,177,646
2015	1,766	71.6%	1,264	2.0	2,528	2,715	2,172	61%	208,755	2.0%	283,378,903	226,703,123
2016	1,731	71.9%	1,245	2.0	2,490	2,674	2,140	62%	213,066	2.1%	284,913,195	227,930,556
2017	1,711	72.3%	1,236	2.0	2,472	2,655	2,124	62%	217,283	2.0%	288,484,699	230,787,759
2018	1,671	72.6%	1,213	2.0	2,425	2,605	2,084	62%	221,617	2.0%	288,640,030	230,912,024
2019	1,613	72.4%	1,167	2.0	2,335	2,508	2,006	62%	226,391	2.2%	283,880,728	227,104,582
2020	1,559	72.2%	1,126	2.0	2,252	2,419	1,935	62%	231,406	2.2%	279,827,697	223,862,157
2021	1,497	72.1%	1,079	2.0	2,157	2,317	1,854	62%	236,709	2.3%	274,230,815	219,384,652
2022	1,440	71.9%	1,035	2.0	2,070	2,223	1,779	62%	241,874	2.2%	268,886,183	215,108,947
2023	1,382	71.7%	991	2.0	1,981	2,128	1,703	62%	247,185	2.2%	263,037,844	210,430,276
2024	1,321	71.5%	944	2.0	1,888	2,027	1,622	61%	252,790	2.3%	256,264,637	205,011,710
2025	1,244	71.3%	887	2.0	1,773	1,905	1,524	61%	258,828	2.4%	246,506,629	197,205,303
2026	1,160	71.2%	826	2.0	1,651	1,774	1,419	61%	265,338	2.5%	235,328,357	188,262,686
2027	1,072	71.0%	761	2.0	1,522	1,635	1,308	61%	271,813	2.4%	222,180,740	177,744,592
2028	971	70.8%	687	2.0	1,374	1,476	1,181	61%	278,620	2.5%	205,675,846	164,540,677
2029	878	70.7%	620	2.0	1,241	1,333	1,066	61%	285,895	2.6%	190,502,765	152,402,212
2030	785	70.6%	554	2.0	1,109	1,191	953	61%	293,639	2.7%	174,847,663	139,878,131
2031	688	70.5%	485	2.0	970	1,042	834	61%	301,664	2.7%	157,194,134	125,755,307
2032	596	70.4%	420	2.0	840	902	722	60%	309,715	2.7%	139,668,775	111,735,020
2033	506	70.4%	356	2.0	711	764	611	60%	318,692	2.9%	121,762,050	97,409,640
2034	415	70.4%	292	2.0	584	628	502	60%	328,453	3.1%	103,097,013	82,477,610
2035	333	70.4%	235	2.0	469	504	403	60%	338,830	3.2%	85,360,296	68,288,237
2036	263	70.4%	185	2.0	370	398	318	61%	349,775	3.2%	69,533,820	55,627,056
2037	208	70.5%	147	2.0	293	315	252	61%	362,346	3.6%	57,043,275	45,634,620
2038	163	70.6%	115	2.0	231	248	198	61%	375,030	3.5%	46,519,422	37,215,537
2039	128	70.7%	90	2.0	180	194	155	61%	387,676	3.4%	37,568,940	30,055,152
2040	100	70.8%	70	2.0	141	151	121	61%	400,488	3.3%	30,319,277	24,255,422
2041	82	70.8%	58	2.0	116	125	100	61%	413,362	3.2%	25,861,024	20,688,819
2042	66	70.8%	46	2.0	93	100	80	61%	426,390	3.2%	21,273,656	17,018,925
2043	50	70.8%	35	2.0	71	76	61	61%	439,655	3.1%	16,688,050	13,350,440
2044	39	70.7%	28	2.0	55	59	48	61%	453,217	3.1%	13,459,785	10,767,828
2045	30	70.7%	21	2.0	43	46	37	61%	467,011	3.0%	10,775,202	8,620,162
2046	24	70.6%	17	2.0	34	36	29	61%	481,190	3.0%	8,701,656	6,961,325
2047	19	70.6%	13	2.0	27	29	23	61%	495,968	3.1%	7,075,138	5,660,110
2048	14	70.5%	10	2.0	20	22	17	61%	511,502	3.1%	5,533,201	4,426,561
2049	9	70.5%	7	2.0	13	14	11	61%	527,651	3.2%	3,743,001	2,994,401
2050	5	70.5%	4	2.0	7	8	6	61%	544,497	3.2%	2,140,241	1,712,193
2009&post	**36,557**	**71.1%**	**25,987**	**2.0**	**51,974**	**55,828**	**44,662**	**61%**	**237,452**		**6,628,199,138**	**5,302,559,310**

Total Meso Cost 2004-2040 5,962,571,450

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	158,847		116,290,628	93,032,503
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	161,915	1.9%	129,430,980	103,544,784
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.8%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	172,178	3.4%	190,990,167	152,792,134
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	184,617	7.2%	220,387,174	176,309,739
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	187,749	1.7%	251,423,889	211,196,066
2009	1,862	68.9%	1,282	2.0	2,565	2,755	2,204	59%	193,284	2.9%	266,229,549	212,983,639
2010	1,861	69.4%	1,291	2.0	2,582	2,774	2,219	60%	198,930	2.9%	275,878,230	220,702,584
2011	1,846	69.9%	1,290	2.0	2,579	2,771	2,216	60%	204,840	3.0%	283,762,330	227,009,864
2012	1,834	70.3%	1,290	2.0	2,579	2,771	2,217	60%	210,760	2.9%	291,978,687	233,582,950
2013	1,817	70.8%	1,285	2.0	2,571	2,761	2,209	61%	216,863	2.9%	299,432,035	239,545,628
2014	1,799	71.2%	1,280	2.0	2,561	2,751	2,201	61%	223,251	2.9%	307,042,929	245,634,343
2015	1,766	71.6%	1,264	2.0	2,528	2,715	2,172	61%	229,930	3.0%	312,122,967	249,698,374
2016	1,731	71.9%	1,245	2.0	2,490	2,674	2,140	62%	236,955	3.1%	316,858,130	253,486,504
2017	1,711	72.3%	1,236	2.0	2,472	2,655	2,124	62%	243,990	3.0%	323,943,160	259,154,528
2018	1,671	72.6%	1,213	2.0	2,425	2,605	2,084	62%	251,272	3.0%	327,262,315	261,809,852
2019	1,613	72.4%	1,167	2.0	2,335	2,508	2,006	62%	259,174	3.1%	324,988,848	259,991,078
2020	1,559	72.2%	1,126	2.0	2,252	2,419	1,935	62%	267,485	3.2%	323,456,620	258,765,296
2021	1,497	72.1%	1,079	2.0	2,157	2,317	1,854	62%	276,269	3.3%	320,061,987	256,049,590
2022	1,440	71.9%	1,035	2.0	2,070	2,223	1,779	62%	285,036	3.2%	316,868,057	253,494,445
2023	1,382	71.7%	991	2.0	1,981	2,128	1,703	62%	294,120	3.2%	312,982,467	250,385,974
2024	1,321	71.5%	944	2.0	1,888	2,027	1,622	61%	303,705	3.3%	307,880,336	246,304,269
2025	1,244	71.3%	887	2.0	1,773	1,905	1,524	61%	313,976	3.4%	299,028,862	239,223,089
2026	1,160	71.2%	826	2.0	1,651	1,774	1,419	61%	324,994	3.5%	288,237,024	230,589,619
2027	1,072	71.0%	761	2.0	1,522	1,635	1,308	61%	336,153	3.4%	274,772,046	219,817,637
2028	971	70.8%	687	2.0	1,374	1,476	1,181	61%	347,912	3.5%	256,826,480	205,461,184
2029	878	70.7%	620	2.0	1,241	1,333	1,066	61%	360,457	3.6%	240,186,134	192,148,907
2030	785	70.6%	554	2.0	1,109	1,191	953	61%	373,810	3.7%	222,585,266	178,068,213
2031	688	70.5%	485	2.0	970	1,042	834	61%	387,748	3.7%	202,051,738	161,641,390
2032	596	70.4%	420	2.0	840	902	722	60%	401,955	3.7%	181,265,396	145,012,316
2033	506	70.4%	356	2.0	711	764	611	60%	417,615	3.9%	159,557,352	127,645,881
2034	415	70.4%	292	2.0	584	628	502	60%	434,578	4.1%	136,408,106	109,126,485
2035	333	70.4%	235	2.0	469	504	403	60%	452,653	4.2%	114,035,253	91,228,202
2036	263	70.4%	185	2.0	370	398	318	61%	471,804	4.2%	93,792,542	75,034,033
2037	208	70.5%	147	2.0	293	315	252	61%	493,498	4.6%	77,690,148	62,152,119
2038	163	70.6%	115	2.0	231	248	198	61%	515,724	4.5%	63,971,248	51,176,998
2039	128	70.7%	90	2.0	180	194	155	61%	538,280	4.4%	52,163,669	41,730,935
2040	100	70.8%	70	2.0	141	151	121	61%	561,457	4.3%	42,505,629	34,004,503
2041	82	70.8%	58	2.0	116	125	100	61%	585,122	4.2%	36,606,770	29,285,416
2042	66	70.8%	46	2.0	93	100	80	61%	609,411	4.2%	30,405,045	24,324,036
2043	50	70.8%	35	2.0	71	76	61	61%	634,458	4.1%	24,082,227	19,265,782
2044	39	70.7%	28	2.0	55	59	48	61%	660,365	4.1%	19,611,757	15,689,406
2045	30	70.7%	21	2.0	43	46	37	61%	687,057	4.0%	15,852,248	12,681,798
2046	24	70.6%	17	2.0	34	36	29	61%	714,775	4.0%	12,925,702	10,340,562
2047	19	70.6%	13	2.0	27	29	23	61%	743,862	4.1%	10,611,429	8,489,143
2048	14	70.5%	10	2.0	20	22	17	61%	774,592	4.1%	8,379,190	6,703,352
2049	9	70.5%	7	2.0	13	14	11	61%	806,787	4.2%	5,723,110	4,578,488
2050	5	70.5%	4	2.0	7	8	6	61%	840,610	4.2%	3,304,161	2,643,329
2009&post	**36,557**	**71.1%**	**25,987**	**2.0**	**51,974**	**55,828**	**44,662**	**61%**	**278,834**		**7,783,327,178**	**6,226,661,742**

Total Meso Cost 2004-2040 6,855,070,198

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	156,779		114,776,235	91,820,988
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	160,869	2.6%	128,594,999	102,875,999
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	3.5%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	173,833	4.4%	192,826,052	154,260,842
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	188,185	8.3%	224,646,730	179,717,384
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	193,218	2.7%	258,747,858	217,348,200
2009	1,862	68.9%	1,282	2.0	2,565	2,755	2,204	59%	200,827	3.9%	276,619,396	221,295,517
2010	1,861	69.4%	1,291	2.0	2,582	2,774	2,219	60%	208,680	3.9%	289,400,750	231,520,600
2011	1,846	69.9%	1,290	2.0	2,579	2,771	2,216	60%	216,946	4.0%	300,533,238	240,426,590
2012	1,834	70.3%	1,290	2.0	2,579	2,771	2,217	60%	225,362	3.9%	312,208,092	249,766,474
2013	1,817	70.8%	1,285	2.0	2,571	2,761	2,209	61%	234,117	3.9%	323,255,698	258,604,559
2014	1,799	71.2%	1,280	2.0	2,561	2,751	2,201	61%	243,331	3.9%	334,658,331	267,726,665
2015	1,766	71.6%	1,264	2.0	2,528	2,715	2,172	61%	253,019	4.0%	343,465,064	274,772,051
2016	1,731	71.9%	1,245	2.0	2,490	2,674	2,140	62%	263,255	4.0%	352,026,769	281,621,415
2017	1,711	72.3%	1,236	2.0	2,472	2,655	2,124	62%	273,676	4.0%	363,356,812	290,685,449
2018	1,671	72.6%	1,213	2.0	2,425	2,605	2,084	62%	284,552	4.0%	370,607,176	296,485,741
2019	1,613	72.4%	1,167	2.0	2,335	2,508	2,006	62%	296,321	4.1%	371,568,878	297,255,103
2020	1,559	72.2%	1,126	2.0	2,252	2,419	1,935	62%	308,761	4.2%	373,370,207	298,696,166
2021	1,497	72.1%	1,079	2.0	2,157	2,317	1,854	62%	321,964	4.3%	373,001,144	298,400,916
2022	1,440	71.9%	1,035	2.0	2,070	2,223	1,779	62%	335,372	4.2%	372,826,368	298,261,094
2023	1,382	71.7%	991	2.0	1,981	2,128	1,703	62%	349,385	4.2%	371,791,914	297,433,531
2024	1,321	71.5%	944	2.0	1,888	2,027	1,622	61%	364,237	4.3%	369,243,925	295,395,140
2025	1,244	71.3%	887	2.0	1,773	1,905	1,524	61%	380,171	4.4%	362,072,662	289,658,130
2026	1,160	71.2%	826	2.0	1,651	1,774	1,419	61%	397,291	4.5%	352,357,386	281,885,908
2027	1,072	71.0%	761	2.0	1,522	1,635	1,308	61%	414,878	4.4%	339,122,653	271,298,123
2028	971	70.8%	687	2.0	1,374	1,476	1,181	61%	433,514	4.5%	320,018,014	256,014,412
2029	878	70.7%	620	2.0	1,241	1,333	1,066	61%	453,459	4.6%	302,157,038	241,725,631
2030	785	70.6%	554	2.0	1,109	1,191	953	61%	474,773	4.7%	282,703,476	226,162,780
2031	688	70.5%	485	2.0	970	1,042	834	61%	497,204	4.7%	259,087,835	207,270,268
2032	596	70.4%	420	2.0	840	902	722	60%	520,369	4.7%	234,665,202	187,732,162
2033	506	70.4%	356	2.0	711	764	611	60%	545,832	4.9%	208,545,072	166,836,058
2034	415	70.4%	292	2.0	584	628	502	60%	573,456	5.1%	180,000,021	144,000,016
2035	333	70.4%	235	2.0	469	504	403	60%	603,041	5.2%	151,921,997	121,537,598
2036	263	70.4%	185	2.0	370	398	318	61%	634,588	5.2%	126,153,376	100,922,701
2037	208	70.5%	147	2.0	293	315	252	61%	670,140	5.6%	105,498,392	84,398,714
2038	163	70.6%	115	2.0	231	248	198	61%	707,043	5.5%	87,702,861	70,162,289
2039	128	70.7%	90	2.0	180	194	155	61%	745,051	5.4%	72,201,429	57,761,143
2040	100	70.8%	70	2.0	141	151	121	61%	784,590	5.3%	59,398,103	47,518,483
2041	82	70.8%	58	2.0	116	125	100	61%	825,507	5.2%	51,645,883	41,316,706
2042	66	70.8%	46	2.0	93	100	80	61%	868,026	5.2%	43,307,970	34,646,376
2043	50	70.8%	35	2.0	71	76	61	61%	912,374	5.1%	34,631,113	27,704,890
2044	39	70.7%	28	2.0	55	59	48	61%	958,741	5.1%	28,473,031	22,778,425
2045	30	70.7%	21	2.0	43	46	37	61%	1,007,064	5.0%	23,235,669	18,588,535
2046	24	70.6%	17	2.0	34	36	29	61%	1,057,743	5.0%	19,127,816	15,302,253
2047	19	70.6%	13	2.0	27	29	23	61%	1,111,349	5.1%	15,853,746	12,682,997
2048	14	70.5%	10	2.0	20	22	17	61%	1,168,364	5.1%	12,638,829	10,111,063
2049	9	70.5%	7	2.0	13	14	11	61%	1,228,600	5.2%	8,715,324	6,972,259
2050	5	70.5%	4	2.0	7	8	6	61%	1,292,386	5.2%	5,079,947	4,063,958
2009&post	**36,557**	**71.1%**	**25,987**	**2.0**	**51,974**	**55,828**	**44,662**	**61%**	**329,021**		**9,184,248,607**	**7,347,398,886**

Total Meso Cost 2004-2040 7,926,000,896

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	160,976		117,849,435	94,279,548
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	162,981	1.2%	130,283,227	104,226,582
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.2%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	170,523	2.4%	189,154,283	151,323,426
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	181,083	6.2%	216,168,390	172,934,712
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	182,384	0.7%	244,239,450	205,161,138
2009	1,862	68.9%	1,282	2.0	2,565	2,755	2,204	59%	185,955	2.0%	256,135,179	204,908,143
2010	1,861	69.4%	1,291	2.0	2,582	2,774	2,219	60%	189,547	1.9%	262,866,000	210,292,800
2011	1,846	69.9%	1,290	2.0	2,579	2,771	2,216	60%	193,302	2.0%	267,778,712	214,222,969
2012	1,834	70.3%	1,290	2.0	2,579	2,771	2,217	60%	196,976	1.9%	272,883,388	218,306,710
2013	1,817	70.8%	1,285	2.0	2,571	2,761	2,209	61%	200,732	1.9%	277,159,117	221,727,293
2014	1,799	71.2%	1,280	2.0	2,561	2,751	2,201	61%	204,659	2.0%	281,472,057	225,177,646
2015	1,766	71.6%	1,264	2.0	2,528	2,715	2,172	61%	208,755	2.0%	283,378,903	226,703,123
2016	1,731	71.9%	1,245	2.0	2,490	2,674	2,140	62%	213,066	2.1%	284,913,195	227,930,556
2017	1,711	72.3%	1,236	2.0	2,472	2,655	2,124	62%	217,283	2.0%	288,484,699	230,787,759
2018	1,671	72.6%	1,213	2.0	2,425	2,605	2,084	62%	221,617	2.0%	288,640,030	230,912,024
2019	1,613	72.9%	1,175	2.0	2,350	2,524	2,019	63%	226,208	2.1%	285,505,927	228,404,742
2020	1,559	73.1%	1,140	2.0	2,281	2,450	1,960	63%	231,047	2.1%	283,010,572	226,408,458
2021	1,497	73.4%	1,099	2.0	2,198	2,361	1,889	63%	236,179	2.2%	278,864,192	223,091,354
2022	1,440	73.7%	1,061	2.0	2,122	2,280	1,824	63%	241,180	2.1%	274,922,565	219,938,052
2023	1,382	73.9%	1,022	2.0	2,044	2,195	1,756	64%	246,328	2.1%	270,404,054	216,323,243
2024	1,321	74.2%	979	2.0	1,959	2,104	1,683	64%	251,770	2.2%	264,839,127	211,871,301
2025	1,244	74.4%	925	2.0	1,850	1,988	1,590	64%	257,649	2.3%	256,043,740	204,834,992
2026	1,160	74.6%	866	2.0	1,732	1,861	1,488	64%	264,006	2.5%	245,594,982	196,475,986
2027	1,072	74.8%	802	2.0	1,605	1,724	1,379	64%	270,325	2.4%	233,012,522	186,410,018
2028	971	75.0%	728	2.0	1,457	1,565	1,252	64%	276,969	2.5%	216,691,954	173,353,563
2029	878	75.3%	660	2.0	1,321	1,419	1,135	65%	284,078	2.6%	201,538,692	161,230,954
2030	785	75.5%	593	2.0	1,185	1,273	1,019	65%	291,655	2.7%	185,667,431	148,533,945
2031	688	75.7%	521	2.0	1,041	1,118	895	65%	299,508	2.7%	167,497,496	133,997,997
2032	596	75.8%	452	2.0	905	972	777	65%	307,354	2.6%	149,316,880	119,453,504
2033	506	76.0%	384	2.0	769	826	661	65%	316,137	2.9%	130,517,309	104,413,847
2034	415	76.2%	317	2.0	633	680	544	65%	325,715	3.0%	110,741,144	88,592,915
2035	333	76.4%	255	2.0	509	547	437	66%	335,915	3.1%	91,841,780	73,473,424
2036	263	76.5%	201	2.0	402	432	346	66%	346,693	3.2%	74,913,000	59,930,400
2037	208	76.7%	159	2.0	319	342	274	66%	359,110	3.6%	61,472,992	49,178,393
2038	163	76.9%	126	2.0	251	270	216	66%	371,646	3.5%	50,151,615	40,121,292
2039	128	77.0%	98	2.0	196	211	169	66%	384,150	3.4%	40,527,136	32,421,709
2040	100	77.1%	77	2.0	154	165	132	66%	396,827	3.3%	32,730,061	26,184,049
2041	82	77.2%	64	2.0	127	136	109	66%	409,564	3.2%	27,942,850	22,354,280
2042	66	77.3%	51	2.0	101	109	87	66%	422,447	3.1%	23,010,685	18,408,548
2043	50	77.4%	39	2.0	77	83	66	66%	435,550	3.1%	18,071,811	14,457,449
2044	39	77.4%	30	2.0	61	65	52	67%	448,939	3.1%	14,594,222	11,675,378
2045	30	77.5%	24	2.0	47	51	40	67%	462,546	3.0%	11,699,376	9,359,501
2046	24	77.6%	18	2.0	37	40	32	67%	476,517	3.0%	9,460,944	7,568,755
2047	19	77.6%	15	2.0	29	31	25	67%	491,062	3.1%	7,702,380	6,161,904
2048	14	77.7%	11	2.0	22	24	19	67%	506,337	3.1%	6,030,077	4,824,062
2049	9	77.7%	7	2.0	15	16	13	67%	522,195	3.1%	4,082,848	3,266,279
2050	5	77.8%	4	2.0	8	9	7	67%	538,724	3.2%	2,336,251	1,869,001
2009&post	**36,557**	**72.7%**	**26,580**	**2.0**	**53,159**	**57,101**	**45,681**	**62%**	**237,980**		**6,794,447,894**	**5,435,558,316**

Total Meso Cost 2004-2040 6,087,826,063

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	158,847		116,290,628	93,032,503
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	161,915	1.9%	129,430,980	103,544,784
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.8%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	172,178	3.4%	190,990,167	152,792,134
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	184,617	7.2%	220,387,174	176,309,739
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	187,749	1.7%	251,423,889	211,196,066
2009	1,862	68.9%	1,282	2.0	2,565	2,755	2,204	59%	193,284	2.9%	266,229,549	212,983,639
2010	1,861	69.4%	1,291	2.0	2,582	2,774	2,219	60%	198,930	2.9%	275,878,230	220,702,584
2011	1,846	69.9%	1,290	2.0	2,579	2,771	2,216	60%	204,840	3.0%	283,762,330	227,009,864
2012	1,834	70.3%	1,290	2.0	2,579	2,771	2,217	60%	210,760	2.9%	291,978,687	233,582,950
2013	1,817	70.8%	1,285	2.0	2,571	2,761	2,209	61%	216,863	2.9%	299,432,035	239,545,628
2014	1,799	71.2%	1,280	2.0	2,561	2,751	2,201	61%	223,251	2.9%	307,042,929	245,634,343
2015	1,766	71.6%	1,264	2.0	2,528	2,715	2,172	61%	229,930	3.0%	312,122,967	249,698,374
2016	1,731	71.9%	1,245	2.0	2,490	2,674	2,140	62%	236,955	3.1%	316,858,130	253,486,504
2017	1,711	72.3%	1,236	2.0	2,472	2,655	2,124	62%	243,990	3.0%	323,943,160	259,154,528
2018	1,671	72.6%	1,213	2.0	2,425	2,605	2,084	62%	251,272	3.0%	327,262,315	261,809,852
2019	1,613	72.9%	1,175	2.0	2,350	2,524	2,019	63%	258,965	3.1%	326,849,371	261,479,496
2020	1,559	73.1%	1,140	2.0	2,281	2,450	1,960	63%	267,070	3.1%	327,135,710	261,708,568
2021	1,497	73.4%	1,099	2.0	2,198	2,361	1,889	63%	275,650	3.2%	325,469,661	260,375,729
2022	1,440	73.7%	1,061	2.0	2,122	2,280	1,824	63%	284,218	3.1%	323,981,521	259,185,217
2023	1,382	73.9%	1,022	2.0	2,044	2,195	1,756	64%	293,100	3.1%	321,747,224	257,397,779
2024	1,321	74.2%	979	2.0	1,959	2,104	1,683	64%	302,480	3.2%	318,181,707	254,545,366
2025	1,244	74.4%	925	2.0	1,850	1,988	1,590	64%	312,545	3.3%	310,597,823	248,478,258
2026	1,160	74.6%	866	2.0	1,732	1,861	1,488	64%	323,362	3.5%	300,811,665	240,649,332
2027	1,072	74.8%	802	2.0	1,605	1,724	1,379	64%	334,312	3.4%	288,167,516	230,534,013
2028	971	75.0%	728	2.0	1,457	1,565	1,252	64%	345,850	3.5%	270,581,966	216,465,573
2029	878	75.3%	660	2.0	1,321	1,419	1,135	65%	358,166	3.6%	254,099,944	203,279,956
2030	785	75.5%	593	2.0	1,185	1,273	1,019	65%	371,283	3.7%	236,358,769	189,087,015
2031	688	75.7%	521	2.0	1,041	1,118	895	65%	384,977	3.7%	215,294,979	172,235,983
2032	596	75.8%	452	2.0	905	972	777	65%	398,891	3.6%	193,786,589	155,029,271
2033	506	76.0%	384	2.0	769	826	661	65%	414,266	3.9%	171,029,928	136,823,943
2034	415	76.2%	317	2.0	633	680	544	65%	430,954	4.0%	146,521,765	117,217,412
2035	333	76.4%	255	2.0	509	547	437	66%	448,758	4.1%	122,693,755	98,155,004
2036	263	76.5%	201	2.0	402	432	346	66%	467,645	4.2%	101,048,127	80,838,502
2037	208	76.7%	159	2.0	319	342	274	66%	489,088	4.6%	83,722,972	66,978,378
2038	163	76.9%	126	2.0	251	270	216	66%	511,068	4.5%	68,965,859	55,172,687
2039	128	77.0%	98	2.0	196	211	169	66%	533,382	4.4%	56,270,885	45,016,708
2040	100	77.1%	77	2.0	154	165	132	66%	556,323	4.3%	45,885,237	36,708,189
2041	82	77.2%	64	2.0	127	136	109	66%	579,744	4.2%	39,553,497	31,642,797
2042	66	77.3%	51	2.0	101	109	87	66%	603,774	4.1%	32,887,546	26,310,037
2043	50	77.4%	39	2.0	77	83	66	66%	628,533	4.1%	26,079,007	20,863,205
2044	39	77.4%	30	2.0	61	65	52	67%	654,130	4.1%	21,264,616	17,011,693
2045	30	77.5%	24	2.0	47	51	40	67%	680,484	4.0%	17,211,798	13,769,439
2046	24	77.6%	18	2.0	37	40	32	67%	707,829	4.0%	14,053,507	11,242,806
2047	19	77.6%	15	2.0	29	31	25	67%	736,500	4.1%	11,552,122	9,241,698
2048	14	77.7%	11	2.0	22	24	19	67%	766,766	4.1%	9,131,586	7,305,269
2049	9	77.7%	7	2.0	15	16	13	67%	798,440	4.1%	6,242,707	4,994,166
2050	5	77.8%	4	2.0	8	9	7	67%	831,692	4.2%	3,606,745	2,885,396
2009&post	**36,557**	**72.7%**	**26,580**	**2.0**	**53,159**	**57,101**	**45,681**	**62%**	**280,040**		**7,995,296,437**	**6,396,237,150**

Total Meso Cost 2004-2040 7,013,380,413

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	156,779		114,776,235	91,820,988
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	160,869	2.6%	128,594,999	102,875,999
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	3.5%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	173,833	4.4%	192,826,052	154,260,842
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	188,185	8.3%	224,646,730	179,717,384
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	193,218	2.7%	258,747,858	217,348,200
2009	1,862	68.9%	1,282	2.0	2,565	2,755	2,204	59%	200,827	3.9%	276,619,396	221,295,517
2010	1,861	69.4%	1,291	2.0	2,582	2,774	2,219	60%	208,680	3.9%	289,400,750	231,520,600
2011	1,846	69.9%	1,290	2.0	2,579	2,771	2,216	60%	216,946	4.0%	300,533,238	240,426,590
2012	1,834	70.3%	1,290	2.0	2,579	2,771	2,217	60%	225,362	3.9%	312,208,092	249,766,474
2013	1,817	70.8%	1,285	2.0	2,571	2,761	2,209	61%	234,117	3.9%	323,255,698	258,604,559
2014	1,799	71.2%	1,280	2.0	2,561	2,751	2,201	61%	243,331	3.9%	334,658,331	267,726,665
2015	1,766	71.6%	1,264	2.0	2,528	2,715	2,172	61%	253,019	4.0%	343,465,064	274,772,051
2016	1,731	71.9%	1,245	2.0	2,490	2,674	2,140	62%	263,255	4.0%	352,026,769	281,621,415
2017	1,711	72.3%	1,236	2.0	2,472	2,655	2,124	62%	273,676	4.0%	363,356,812	290,685,449
2018	1,671	72.6%	1,213	2.0	2,425	2,605	2,084	62%	284,552	4.0%	370,607,176	296,485,741
2019	1,613	72.9%	1,175	2.0	2,350	2,524	2,019	63%	296,082	4.1%	373,696,047	298,956,838
2020	1,559	73.1%	1,140	2.0	2,281	2,450	1,960	63%	308,283	4.1%	377,616,986	302,093,589
2021	1,497	73.4%	1,099	2.0	2,198	2,361	1,889	63%	321,243	4.2%	379,303,192	303,442,553
2022	1,440	73.7%	1,061	2.0	2,122	2,280	1,824	63%	334,410	4.1%	381,195,954	304,956,763
2023	1,382	73.9%	1,022	2.0	2,044	2,195	1,756	64%	348,173	4.1%	382,203,430	305,762,744
2024	1,321	74.2%	979	2.0	1,959	2,104	1,683	64%	362,767	4.2%	381,598,281	305,278,625
2025	1,244	74.4%	925	2.0	1,850	1,988	1,590	64%	378,438	4.3%	376,080,469	300,864,375
2026	1,160	74.6%	866	2.0	1,732	1,861	1,488	64%	395,296	4.5%	367,729,084	294,183,267
2027	1,072	74.8%	802	2.0	1,605	1,724	1,379	64%	412,606	4.4%	355,654,993	284,523,994
2028	971	75.0%	728	2.0	1,457	1,565	1,252	64%	430,945	4.4%	337,157,670	269,726,136
2029	878	75.3%	660	2.0	1,321	1,419	1,135	65%	450,577	4.6%	319,660,409	255,728,328
2030	785	75.5%	593	2.0	1,185	1,273	1,019	65%	471,562	4.7%	300,196,674	240,157,340
2031	688	75.7%	521	2.0	1,041	1,118	895	65%	493,649	4.7%	276,069,024	220,855,219
2032	596	75.8%	452	2.0	905	972	777	65%	516,401	4.6%	250,874,637	200,699,710
2033	506	76.0%	384	2.0	769	826	661	65%	541,454	4.9%	223,539,556	178,831,645
2034	415	76.2%	317	2.0	633	680	544	65%	568,673	5.0%	193,345,284	154,676,228
2035	333	76.4%	255	2.0	509	547	437	66%	597,850	5.1%	163,456,791	130,765,432
2036	263	76.5%	201	2.0	402	432	346	66%	628,994	5.2%	135,911,978	108,729,582
2037	208	76.7%	159	2.0	319	342	274	66%	664,150	5.6%	113,690,283	90,952,227
2038	163	76.9%	126	2.0	251	270	216	66%	700,659	5.5%	94,550,067	75,640,053
2039	128	77.0%	98	2.0	196	211	169	66%	738,270	5.4%	77,886,123	62,308,898
2040	100	77.1%	77	2.0	154	165	132	66%	777,413	5.3%	64,120,619	51,296,496
2041	82	77.2%	64	2.0	127	136	109	66%	817,917	5.2%	55,803,019	44,642,415
2042	66	77.3%	51	2.0	101	109	87	66%	859,993	5.1%	46,843,796	37,475,037
2043	50	77.4%	39	2.0	77	83	66	66%	903,849	5.1%	37,502,412	30,001,929
2044	39	77.4%	30	2.0	61	65	52	67%	949,685	5.1%	30,872,585	24,698,068
2045	30	77.5%	24	2.0	47	51	40	67%	997,426	5.0%	25,228,342	20,182,674
2046	24	77.6%	18	2.0	37	40	32	67%	1,047,460	5.0%	20,796,680	16,637,344
2047	19	77.6%	15	2.0	29	31	25	67%	1,100,345	5.0%	17,259,083	13,807,267
2048	14	77.7%	11	2.0	22	24	19	67%	1,156,553	5.1%	13,773,642	11,018,913
2049	9	77.7%	7	2.0	15	16	13	67%	1,215,882	5.1%	9,506,530	7,605,224
2050	5	77.8%	4	2.0	8	9	7	67%	1,278,669	5.2%	5,545,120	4,436,096
2009&post	**36,557**	**72.7%**	**26,580**	**2.0**	**53,159**	**57,101**	**45,681**	**62%**	**331,160**		**9,454,800,084**	**7,563,840,068**

Total Meso Cost 2004-2040 8,126,104,571

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	160,976		117,849,435	94,279,548
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	162,981	1.2%	130,283,227	104,226,582
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.2%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	170,523	2.4%	189,154,283	151,323,426
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	181,083	6.2%	216,168,390	172,934,712
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	182,384	0.7%	244,239,450	205,161,138
2009	1,862	71.1%	1,324	2.0	2,649	2,845	2,276	61%	185,040	1.5%	263,211,506	210,569,204
2010	1,861	73.1%	1,361	2.0	2,722	2,924	2,339	63%	188,060	1.6%	274,904,018	219,923,215
2011	1,846	74.6%	1,377	2.0	2,753	2,958	2,366	64%	191,464	1.8%	283,129,767	226,503,814
2012	1,834	75.6%	1,387	2.0	2,774	2,980	2,384	65%	194,942	1.8%	290,423,406	232,338,725
2013	1,817	76.4%	1,388	2.0	2,775	2,981	2,385	66%	198,607	1.9%	296,003,196	236,802,557
2014	1,799	76.9%	1,384	2.0	2,768	2,973	2,378	66%	202,510	2.0%	301,012,108	240,809,686
2015	1,766	77.3%	1,365	2.0	2,731	2,933	2,347	66%	206,621	2.0%	303,036,502	242,429,201
2016	1,731	77.6%	1,343	2.0	2,686	2,885	2,308	67%	210,972	2.1%	304,347,767	243,478,214
2017	1,711	77.8%	1,331	2.0	2,661	2,859	2,287	67%	215,261	2.0%	307,675,240	246,140,192
2018	1,671	77.9%	1,302	2.0	2,604	2,797	2,238	67%	219,679	2.1%	307,269,941	245,815,953
2019	1,613	77.9%	1,257	2.0	2,513	2,699	2,160	67%	224,400	2.1%	302,874,669	242,299,735
2020	1,559	77.9%	1,214	2.0	2,429	2,609	2,087	67%	229,356	2.2%	299,202,037	239,361,629
2021	1,497	77.9%	1,166	2.0	2,332	2,505	2,004	67%	234,598	2.3%	293,805,339	235,044,271
2022	1,440	77.9%	1,122	2.0	2,243	2,409	1,928	67%	239,710	2.2%	288,786,416	231,029,133
2023	1,382	77.9%	1,076	2.0	2,153	2,313	1,850	67%	244,954	2.2%	283,239,735	226,591,788
2024	1,321	77.9%	1,028	2.0	2,056	2,209	1,767	67%	250,483	2.3%	276,630,462	221,304,370
2025	1,244	77.8%	968	2.0	1,936	2,080	1,664	67%	256,445	2.4%	266,673,679	213,338,943
2026	1,160	77.8%	903	2.0	1,806	1,940	1,552	67%	262,884	2.5%	255,047,700	204,038,160
2027	1,072	77.8%	834	2.0	1,669	1,793	1,434	67%	269,278	2.4%	241,367,305	193,093,844
2028	971	77.8%	755	2.0	1,510	1,622	1,298	67%	275,989	2.5%	223,885,781	179,108,625
2029	878	77.8%	683	2.0	1,366	1,467	1,174	67%	283,159	2.6%	207,689,512	166,151,609
2030	785	77.8%	611	2.0	1,222	1,313	1,050	67%	290,793	2.7%	190,845,828	152,676,662
2031	688	77.8%	535	2.0	1,071	1,150	920	67%	298,702	2.7%	171,751,591	137,401,273
2032	596	77.8%	464	2.0	928	997	797	67%	306,591	2.6%	152,764,902	122,211,921
2033	506	77.8%	393	2.0	786	845	676	67%	315,420	2.9%	133,231,701	106,585,361
2034	415	77.8%	323	2.0	646	694	555	67%	325,048	3.1%	112,799,680	90,239,744
2035	333	77.8%	259	2.0	518	557	445	67%	335,298	3.2%	93,358,423	74,686,739
2036	263	77.8%	204	2.0	409	439	351	67%	346,127	3.2%	76,006,110	60,804,888
2037	208	77.8%	162	2.0	323	347	278	67%	358,592	3.6%	62,253,575	49,802,860
2038	163	77.8%	127	2.0	254	273	219	67%	371,178	3.5%	50,705,259	40,564,207
2039	128	77.8%	99	2.0	199	213	171	67%	383,729	3.4%	40,915,773	32,732,618
2040	100	77.8%	77	2.0	155	166	133	67%	396,451	3.3%	33,001,702	26,401,361
2041	82	77.8%	64	2.0	128	138	110	67%	409,233	3.2%	28,142,731	22,514,185
2042	66	77.8%	51	2.0	102	110	88	67%	422,156	3.2%	23,151,585	18,521,268
2043	50	77.8%	39	2.0	78	83	67	67%	435,298	3.1%	18,165,579	14,532,463
2044	39	77.8%	30	2.0	61	65	52	67%	448,722	3.1%	14,657,487	11,725,989
2045	30	77.8%	24	2.0	47	51	41	67%	462,363	3.0%	11,740,934	9,392,747
2046	24	77.8%	19	2.0	37	40	32	67%	476,367	3.0%	9,487,689	7,590,151
2047	19	77.8%	15	2.0	29	31	25	67%	490,944	3.1%	7,718,951	6,175,161
2048	14	77.8%	11	2.0	22	24	19	67%	506,251	3.1%	6,039,245	4,831,396
2049	9	77.8%	7	2.0	15	16	13	67%	522,139	3.1%	4,086,664	3,269,331
2050	5	77.8%	4	2.0	8	9	7	67%	538,700	3.2%	2,337,167	1,869,733
2009&post	**36,557**	**76.8%**	**28,088**	**2.0**	**56,175**	**60,340**	**48,272**	**66%**	**235,775**		**7,113,378,660**	**5,690,702,928**

Total Meso Cost 2004-2040 6,342,493,406

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	158,847		116,290,628	93,032,503
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	161,915	1.9%	129,430,980	103,544,784
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.8%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	172,178	3.4%	190,990,167	152,792,134
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	184,617	7.2%	220,387,174	176,309,739
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	187,749	1.7%	251,423,889	211,196,066
2009	1,862	71.1%	1,324	2.0	2,649	2,845	2,276	61%	192,332	2.4%	273,584,746	218,867,797
2010	1,861	73.1%	1,361	2.0	2,722	2,924	2,339	63%	197,369	2.6%	288,512,124	230,809,699
2011	1,846	74.6%	1,377	2.0	2,753	2,958	2,366	64%	202,892	2.8%	300,029,644	240,023,715
2012	1,834	75.6%	1,387	2.0	2,774	2,980	2,384	65%	208,583	2.8%	310,746,026	248,596,821
2013	1,817	76.4%	1,388	2.0	2,775	2,981	2,385	66%	214,567	2.9%	319,790,371	255,832,297
2014	1,799	76.9%	1,384	2.0	2,768	2,973	2,378	66%	220,907	3.0%	328,358,031	262,686,425
2015	1,766	77.3%	1,365	2.0	2,731	2,933	2,347	66%	227,580	3.0%	333,774,378	267,019,503
2016	1,731	77.6%	1,343	2.0	2,686	2,885	2,308	67%	234,626	3.1%	338,471,596	270,777,277
2017	1,711	77.8%	1,331	2.0	2,661	2,859	2,287	67%	241,719	3.0%	345,492,303	276,393,842
2018	1,671	77.9%	1,302	2.0	2,604	2,797	2,238	67%	249,074	3.0%	348,384,874	278,707,899
2019	1,613	77.9%	1,257	2.0	2,513	2,699	2,160	67%	256,895	3.1%	346,733,052	277,386,442
2020	1,559	77.9%	1,214	2.0	2,429	2,609	2,087	67%	265,116	3.2%	345,851,446	276,681,157
2021	1,497	77.9%	1,166	2.0	2,332	2,505	2,004	67%	273,805	3.3%	342,907,663	274,326,131
2022	1,440	77.9%	1,122	2.0	2,243	2,409	1,928	67%	282,485	3.2%	340,319,125	272,255,300
2023	1,382	77.9%	1,076	2.0	2,153	2,313	1,850	67%	291,465	3.2%	337,019,885	269,615,908
2024	1,321	77.9%	1,028	2.0	2,056	2,209	1,767	67%	300,934	3.2%	332,347,790	265,878,232
2025	1,244	77.8%	968	2.0	1,936	2,080	1,664	67%	311,085	3.4%	323,492,434	258,793,947
2026	1,160	77.8%	903	2.0	1,806	1,940	1,552	67%	321,988	3.5%	312,389,428	249,911,543
2027	1,072	77.8%	834	2.0	1,669	1,793	1,434	67%	333,018	3.4%	298,499,726	238,799,780
2028	971	77.8%	755	2.0	1,510	1,622	1,298	67%	344,625	3.5%	279,564,684	223,651,747
2029	878	77.8%	683	2.0	1,366	1,467	1,174	67%	357,006	3.6%	261,854,737	209,483,790
2030	785	77.8%	611	2.0	1,222	1,313	1,050	67%	370,186	3.7%	242,950,838	194,360,670
2031	688	77.8%	535	2.0	1,071	1,150	920	67%	383,940	3.7%	220,762,904	176,610,323
2032	596	77.8%	464	2.0	928	997	797	67%	397,900	3.6%	198,261,388	158,609,111
2033	506	77.8%	393	2.0	786	845	676	67%	413,327	3.9%	174,586,770	139,669,416
2034	415	77.8%	323	2.0	646	694	555	67%	430,071	4.1%	149,245,336	119,396,269
2035	333	77.8%	259	2.0	518	557	445	67%	447,933	4.2%	124,719,813	99,775,850
2036	263	77.8%	204	2.0	409	439	351	67%	466,881	4.2%	102,522,544	82,018,035
2037	208	77.8%	162	2.0	323	347	278	67%	488,384	4.6%	84,786,048	67,828,838
2038	163	77.8%	127	2.0	254	273	219	67%	510,424	4.5%	69,727,173	55,781,738
2039	128	77.8%	99	2.0	199	213	171	67%	532,798	4.4%	56,810,476	45,448,381
2040	100	77.8%	77	2.0	155	166	133	67%	555,797	4.3%	46,266,043	37,012,834
2041	82	77.8%	64	2.0	128	138	110	67%	579,274	4.2%	39,836,419	31,869,135
2042	66	77.8%	51	2.0	102	110	88	67%	603,358	4.2%	33,088,915	26,471,132
2043	50	77.8%	39	2.0	78	83	67	67%	628,167	4.1%	26,214,315	20,971,452
2044	39	77.8%	30	2.0	61	65	52	67%	653,814	4.1%	21,356,792	17,085,433
2045	30	77.8%	24	2.0	47	51	41	67%	680,216	4.0%	17,272,933	13,818,346
2046	24	77.8%	19	2.0	37	40	32	67%	707,607	4.0%	14,093,233	11,274,586
2047	19	77.8%	15	2.0	29	31	25	67%	736,324	4.1%	11,576,974	9,261,579
2048	14	77.8%	11	2.0	22	24	19	67%	766,635	4.1%	9,145,468	7,316,374
2049	9	77.8%	7	2.0	15	16	13	67%	798,355	4.1%	6,248,541	4,998,833
2050	5	77.8%	4	2.0	8	9	7	67%	831,654	4.2%	3,608,159	2,886,527
2009&post	**36,557**	**76.8%**	**28,088**	**2.0**	**56,175**	**60,340**	**48,272**	**66%**	**277,134**		**8,361,205,144**	**6,688,964,115**

Total Meso Cost 2004-2040 7,305,420,485

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	156,779		114,776,235	91,820,988
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	160,869	2.6%	128,594,999	102,875,999
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	3.5%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	173,833	4.4%	192,826,052	154,260,842
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	188,185	8.3%	224,646,730	179,717,384
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	193,218	2.7%	258,747,858	217,348,200
2009	1,862	71.1%	1,324	2.0	2,649	2,845	2,276	61%	199,838	3.4%	284,261,626	227,409,301
2010	1,861	73.1%	1,361	2.0	2,722	2,924	2,339	63%	207,044	3.6%	302,653,886	242,123,109
2011	1,846	74.6%	1,377	2.0	2,753	2,958	2,366	64%	214,883	3.8%	317,761,939	254,209,552
2012	1,834	75.6%	1,387	2.0	2,774	2,980	2,384	65%	223,034	3.8%	332,275,641	265,820,513
2013	1,817	76.4%	1,388	2.0	2,775	2,981	2,385	66%	231,639	3.9%	345,233,717	276,186,973
2014	1,799	76.9%	1,384	2.0	2,768	2,973	2,378	66%	240,776	3.9%	357,890,402	286,312,321
2015	1,766	77.3%	1,365	2.0	2,731	2,933	2,347	66%	250,432	4.0%	367,290,488	293,832,391
2016	1,731	77.6%	1,343	2.0	2,686	2,885	2,308	67%	260,668	4.1%	376,038,996	300,831,197
2017	1,711	77.8%	1,331	2.0	2,661	2,859	2,287	67%	271,128	4.0%	387,527,627	310,022,102
2018	1,671	77.9%	1,302	2.0	2,604	2,797	2,238	67%	282,063	4.0%	394,527,154	315,621,723
2019	1,613	77.9%	1,257	2.0	2,513	2,699	2,160	67%	293,715	4.1%	396,429,409	317,143,527
2020	1,559	77.9%	1,214	2.0	2,429	2,609	2,087	67%	306,026	4.2%	399,220,584	319,376,467
2021	1,497	77.9%	1,166	2.0	2,332	2,505	2,004	67%	319,093	4.3%	399,625,259	319,700,207
2022	1,440	77.9%	1,122	2.0	2,243	2,409	1,928	67%	332,371	4.2%	400,418,512	320,334,809
2023	1,382	77.9%	1,076	2.0	2,153	2,313	1,850	67%	346,231	4.2%	400,345,582	320,276,466
2024	1,321	77.9%	1,028	2.0	2,056	2,209	1,767	67%	360,913	4.2%	398,587,557	318,870,045
2025	1,244	77.8%	968	2.0	1,936	2,080	1,664	67%	376,670	4.4%	391,693,385	313,354,708
2026	1,160	77.8%	903	2.0	1,806	1,940	1,552	67%	393,616	4.5%	381,882,162	305,505,730
2027	1,072	77.8%	834	2.0	1,669	1,793	1,434	67%	411,008	4.4%	368,406,736	294,725,389
2028	971	77.8%	755	2.0	1,510	1,622	1,298	67%	429,419	4.5%	348,350,345	278,680,276
2029	878	77.8%	683	2.0	1,366	1,467	1,174	67%	449,117	4.6%	329,415,826	263,532,661
2030	785	77.8%	611	2.0	1,222	1,313	1,050	67%	470,168	4.7%	308,569,010	246,855,208
2031	688	77.8%	535	2.0	1,071	1,150	920	67%	492,319	4.7%	283,080,287	226,464,230
2032	596	77.8%	464	2.0	928	997	797	67%	515,118	4.6%	256,667,534	205,334,027
2033	506	77.8%	393	2.0	786	845	676	67%	540,226	4.9%	228,188,294	182,550,635
2034	415	77.8%	323	2.0	646	694	555	67%	567,508	5.1%	196,939,114	157,551,291
2035	333	77.8%	259	2.0	518	557	445	67%	596,751	5.2%	166,155,890	132,924,712
2036	263	77.8%	204	2.0	409	439	351	67%	627,964	5.2%	137,895,036	110,316,029
2037	208	77.8%	162	2.0	323	347	278	67%	663,192	5.6%	115,133,819	92,107,055
2038	163	77.8%	127	2.0	254	273	219	67%	699,775	5.5%	95,593,766	76,475,013
2039	128	77.8%	99	2.0	199	213	171	67%	737,460	5.4%	78,632,957	62,906,365
2040	100	77.8%	77	2.0	155	166	133	67%	776,677	5.3%	64,652,741	51,722,193
2041	82	77.8%	64	2.0	128	138	110	67%	817,254	5.2%	56,202,156	44,961,725
2042	66	77.8%	51	2.0	102	110	88	67%	859,400	5.2%	47,130,606	37,704,485
2043	50	77.8%	39	2.0	78	83	67	67%	903,324	5.1%	37,696,981	30,157,584
2044	39	77.8%	30	2.0	61	65	52	67%	949,226	5.1%	31,006,402	24,805,121
2045	30	77.8%	24	2.0	47	51	41	67%	997,032	5.0%	25,317,947	20,254,358
2046	24	77.8%	19	2.0	37	40	32	67%	1,047,132	5.0%	20,855,464	16,684,371
2047	19	77.8%	15	2.0	29	31	25	67%	1,100,081	5.1%	17,296,211	13,836,969
2048	14	77.8%	11	2.0	22	24	19	67%	1,156,355	5.1%	13,794,579	11,035,663
2049	9	77.8%	7	2.0	15	16	13	67%	1,215,753	5.1%	9,515,413	7,612,331
2050	5	77.8%	4	2.0	8	9	7	67%	1,278,611	5.2%	5,547,293	4,437,834
2009&post	**36,557**	**76.8%**	**28,088**	**2.0**	**56,175**	**60,340**	**48,272**	**66%**	**327,333**		**9,875,708,331**	**7,900,566,665**

Total Meso Cost 2004-2040 8,461,845,694

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	160,976		117,849,435	94,279,548
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	162,981	1.2%	130,283,227	104,226,582
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.2%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	170,523	2.4%	189,154,283	151,323,426
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	181,083	6.2%	216,168,390	172,934,712
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	182,384	0.7%	244,239,450	205,161,138
2009	1,862	71.1%	1,324	2.0	2,649	2,845	2,276	61%	185,040	1.5%	263,211,506	210,569,204
2010	1,861	74.9%	1,394	2.0	2,789	2,996	2,397	64%	188,143	1.7%	281,817,795	225,454,236
2011	1,846	78.9%	1,456	2.0	2,911	3,127	2,502	68%	191,419	1.7%	299,283,965	239,427,172
2012	1,834	82.9%	1,520	2.0	3,040	3,265	2,612	71%	194,633	1.7%	317,759,565	254,207,652
2013	1,817	87.0%	1,581	2.0	3,161	3,395	2,716	75%	197,950	1.7%	336,059,333	268,847,467
2014	1,799	87.0%	1,565	2.0	3,130	3,363	2,690	75%	202,040	2.1%	339,684,551	271,747,641
2015	1,766	87.0%	1,537	2.0	3,073	3,301	2,641	75%	206,284	2.1%	340,490,175	272,392,140
2016	1,731	87.0%	1,506	2.0	3,012	3,235	2,588	75%	210,728	2.2%	340,896,690	272,717,352
2017	1,711	87.0%	1,488	2.0	2,977	3,197	2,558	75%	215,086	2.1%	343,854,054	275,083,243
2018	1,671	87.0%	1,454	2.0	2,908	3,123	2,499	75%	219,554	2.1%	342,850,745	274,280,596
2019	1,613	87.0%	1,403	2.0	2,806	3,014	2,411	75%	224,272	2.1%	337,995,242	270,396,193
2020	1,559	87.0%	1,356	2.0	2,713	2,914	2,331	75%	229,225	2.2%	333,943,936	267,155,149
2021	1,497	87.0%	1,302	2.0	2,604	2,798	2,238	75%	234,463	2.3%	327,963,075	262,370,460
2022	1,440	87.0%	1,253	2.0	2,506	2,692	2,153	75%	239,571	2.2%	322,411,665	257,929,332
2023	1,382	87.0%	1,203	2.0	2,405	2,584	2,067	75%	244,812	2.2%	316,271,997	253,017,598
2024	1,321	87.0%	1,149	2.0	2,298	2,468	1,975	75%	250,337	2.3%	308,941,029	247,152,824
2025	1,244	87.0%	1,082	2.0	2,164	2,324	1,860	75%	256,294	2.4%	297,862,576	238,290,061
2026	1,160	87.0%	1,010	2.0	2,019	2,169	1,735	75%	262,729	2.5%	284,910,223	227,928,179
2027	1,072	87.0%	933	2.0	1,866	2,004	1,603	75%	269,119	2.4%	269,668,611	215,734,889
2028	971	87.0%	844	2.0	1,689	1,814	1,451	75%	275,823	2.5%	250,169,223	200,135,378
2029	878	87.0%	764	2.0	1,527	1,640	1,312	75%	282,987	2.6%	232,094,298	185,675,438
2030	785	87.0%	683	2.0	1,367	1,468	1,174	75%	290,614	2.7%	213,287,241	170,629,793
2031	688	87.0%	599	2.0	1,197	1,286	1,029	75%	298,516	2.7%	191,960,086	153,568,069
2032	596	87.0%	519	2.0	1,038	1,115	892	75%	306,396	2.6%	170,750,834	136,600,668
2033	506	87.0%	440	2.0	880	945	756	75%	315,216	2.9%	148,921,586	119,137,269
2034	415	87.0%	361	2.0	723	776	621	75%	324,835	3.1%	126,082,789	100,866,231
2035	333	87.0%	290	2.0	580	623	498	75%	335,077	3.2%	104,349,668	83,479,735
2036	263	87.0%	229	2.0	457	491	393	75%	345,898	3.2%	84,951,405	67,961,124
2037	208	87.0%	181	2.0	361	388	311	75%	358,357	3.6%	69,573,285	55,658,628
2038	163	87.0%	142	2.0	284	306	244	75%	370,936	3.5%	56,662,654	45,330,123
2039	128	87.0%	111	2.0	222	238	191	75%	383,481	3.4%	45,720,610	36,576,488
2040	100	87.0%	87	2.0	173	186	149	75%	396,198	3.3%	36,875,852	29,500,682
2041	82	87.0%	72	2.0	143	154	123	75%	408,973	3.2%	31,446,029	25,156,823
2042	66	87.0%	57	2.0	114	123	98	75%	421,890	3.2%	25,869,108	20,695,286
2043	50	87.0%	43	2.0	87	93	75	75%	435,024	3.1%	20,298,159	16,238,527
2044	39	87.0%	34	2.0	68	73	58	75%	448,440	3.1%	16,378,653	13,102,923
2045	30	87.0%	26	2.0	53	57	45	75%	462,071	3.0%	13,120,113	10,496,090
2046	24	87.0%	21	2.0	41	45	36	75%	476,065	3.0%	10,602,621	8,482,097
2047	19	87.0%	16	2.0	33	35	28	75%	490,629	3.1%	8,626,366	6,901,093
2048	14	87.0%	12	2.0	25	27	21	75%	505,921	3.1%	6,749,378	5,399,503
2049	9	87.0%	8	2.0	16	18	14	75%	521,794	3.1%	4,567,296	3,653,837
2050	5	87.0%	5	2.0	9	10	8	75%	538,337	3.2%	2,612,070	2,089,656
2009&post	**36,557**	**85.0%**	**31,059**	**2.0**	**62,118**	**66,724**	**53,379**	**73%**	**236,124**		**7,877,546,058**	**6,302,036,847**

Total Meso Cost 2004-2040 6,942,033,916

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	158,847		116,290,628	93,032,503
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	161,915	1.9%	129,430,980	103,544,784
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	2.8%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	172,178	3.4%	190,990,167	152,792,134
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	184,617	7.2%	220,387,174	176,309,739
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	187,749	1.7%	251,423,889	211,196,066
2009	1,862	71.1%	1,324	2.0	2,649	2,845	2,276	61%	192,332	2.4%	273,584,746	218,867,797
2010	1,861	74.9%	1,394	2.0	2,789	2,996	2,397	64%	197,456	2.7%	295,768,142	236,614,514
2011	1,846	78.9%	1,456	2.0	2,911	3,127	2,502	68%	202,844	2.7%	317,148,077	253,718,462
2012	1,834	82.9%	1,520	2.0	3,040	3,265	2,612	71%	208,253	2.7%	339,995,046	271,996,037
2013	1,817	87.0%	1,581	2.0	3,161	3,395	2,716	75%	213,857	2.7%	363,065,440	290,452,352
2014	1,799	87.0%	1,565	2.0	3,130	3,363	2,690	75%	220,395	3.1%	370,543,708	296,434,967
2015	1,766	87.0%	1,537	2.0	3,073	3,301	2,641	75%	227,208	3.1%	375,027,065	300,021,652
2016	1,731	87.0%	1,506	2.0	3,012	3,235	2,588	75%	234,356	3.1%	379,118,408	303,294,727
2017	1,711	87.0%	1,488	2.0	2,977	3,197	2,558	75%	241,523	3.1%	386,117,920	308,894,336
2018	1,671	87.0%	1,454	2.0	2,908	3,123	2,499	75%	248,932	3.1%	388,726,633	310,981,306
2019	1,613	87.0%	1,403	2.0	2,806	3,014	2,411	75%	256,748	3.1%	386,939,316	309,551,453
2020	1,559	87.0%	1,356	2.0	2,713	2,914	2,331	75%	264,964	3.2%	386,010,033	308,808,026
2021	1,497	87.0%	1,302	2.0	2,604	2,798	2,238	75%	273,647	3.3%	382,774,005	306,219,204
2022	1,440	87.0%	1,253	2.0	2,506	2,692	2,153	75%	282,322	3.2%	379,944,635	303,955,708
2023	1,382	87.0%	1,203	2.0	2,405	2,584	2,067	75%	291,296	3.2%	376,324,125	301,059,300
2024	1,321	87.0%	1,149	2.0	2,298	2,468	1,975	75%	300,758	3.2%	371,166,141	296,932,913
2025	1,244	87.0%	1,082	2.0	2,164	2,324	1,860	75%	310,901	3.4%	361,326,556	289,061,245
2026	1,160	87.0%	1,010	2.0	2,019	2,169	1,735	75%	321,798	3.5%	348,965,837	279,172,669
2027	1,072	87.0%	933	2.0	1,866	2,004	1,603	75%	332,820	3.4%	333,500,012	266,800,009
2028	971	87.0%	844	2.0	1,689	1,814	1,451	75%	344,418	3.5%	312,384,611	249,907,689
2029	878	87.0%	764	2.0	1,527	1,640	1,312	75%	356,790	3.6%	292,624,235	234,099,388
2030	785	87.0%	683	2.0	1,367	1,468	1,174	75%	369,958	3.7%	271,519,205	217,215,364
2031	688	87.0%	599	2.0	1,197	1,286	1,029	75%	383,701	3.7%	246,738,094	197,390,476
2032	596	87.0%	519	2.0	1,038	1,115	892	75%	397,646	3.6%	221,603,864	177,283,091
2033	506	87.0%	440	2.0	880	945	756	75%	413,059	3.9%	195,146,758	156,117,406
2034	415	87.0%	361	2.0	723	776	621	75%	429,790	4.1%	166,820,199	133,456,159
2035	333	87.0%	290	2.0	580	623	498	75%	447,638	4.2%	139,403,261	111,522,609
2036	263	87.0%	229	2.0	457	491	393	75%	466,573	4.2%	114,588,583	91,670,866
2037	208	87.0%	181	2.0	361	388	311	75%	488,063	4.6%	94,755,083	75,804,066
2038	163	87.0%	142	2.0	284	306	244	75%	510,091	4.5%	77,919,448	62,335,559
2039	128	87.0%	111	2.0	222	238	191	75%	532,453	4.4%	63,481,851	50,785,481
2040	100	87.0%	87	2.0	173	186	149	75%	555,441	4.3%	51,697,315	41,357,852
2041	82	87.0%	72	2.0	143	154	123	75%	578,907	4.2%	44,512,271	35,609,817
2042	66	87.0%	57	2.0	114	123	98	75%	602,977	4.2%	36,972,868	29,578,294
2043	50	87.0%	43	2.0	87	93	75	75%	627,772	4.1%	29,291,782	23,433,426
2044	39	87.0%	34	2.0	68	73	58	75%	653,402	4.1%	23,864,623	19,091,698
2045	30	87.0%	26	2.0	53	57	45	75%	679,786	4.0%	19,301,937	15,441,549
2046	24	87.0%	21	2.0	41	45	36	75%	707,157	4.0%	15,749,373	12,599,499
2047	19	87.0%	16	2.0	33	35	28	75%	735,851	4.1%	12,937,921	10,350,337
2048	14	87.0%	12	2.0	25	27	21	75%	766,137	4.1%	10,220,848	8,176,678
2049	9	87.0%	8	2.0	16	18	14	75%	797,827	4.1%	6,983,428	5,586,743
2050	5	87.0%	5	2.0	9	10	8	75%	831,094	4.2%	4,032,558	3,226,047
2009&post	**36,557**	**85.0%**	**31,059**	**2.0**	**62,118**	**66,724**	**53,379**	**73%**	**277,820**		**9,268,595,962**	**7,414,876,769**

Total Meso Cost 2004-2040 8,014,192,450

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Latency Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,636	43.1%	705	2.7	1,910	1,985	1,588	36%	156,779		114,776,235	91,820,988
2004	1,696	45.0%	763	2.5	1,905	1,996	1,597	38%	160,869	2.6%	128,594,999	102,875,999
2005	1,748	49.2%	861	2.4	2,072	2,143	1,714	41%	166,521	3.5%	148,208,806	118,567,045
2006	1,779	59.7%	1,062	2.2	2,371	2,477	1,982	50%	173,833	4.4%	192,826,052	154,260,842
2007	1,808	63.2%	1,143	2.2	2,495	2,605	2,084	53%	188,185	8.3%	224,646,730	179,717,384
2008	1,845	68.8%	1,270	2.1	2,654	2,798	2,350	61%	193,218	2.7%	258,747,858	217,348,200
2009	1,862	71.1%	1,324	2.0	2,649	2,845	2,276	61%	199,838	3.4%	284,261,626	227,409,301
2010	1,861	74.9%	1,394	2.0	2,789	2,996	2,397	64%	207,135	3.7%	310,265,568	248,212,455
2011	1,846	78.9%	1,456	2.0	2,911	3,127	2,502	68%	214,833	3.7%	335,892,101	268,713,681
2012	1,834	82.9%	1,520	2.0	3,040	3,265	2,612	71%	222,681	3.7%	363,551,129	290,840,903
2013	1,817	87.0%	1,581	2.0	3,161	3,395	2,716	75%	230,872	3.7%	391,951,830	313,561,464
2014	1,799	87.0%	1,565	2.0	3,130	3,363	2,690	75%	240,217	4.0%	403,870,213	323,096,170
2015	1,766	87.0%	1,537	2.0	3,073	3,301	2,641	75%	250,023	4.1%	412,685,559	330,148,447
2016	1,731	87.0%	1,506	2.0	3,012	3,235	2,588	75%	260,367	4.1%	421,197,230	336,957,784
2017	1,711	87.0%	1,488	2.0	2,977	3,197	2,558	75%	270,909	4.0%	433,096,061	346,476,849
2018	1,671	87.0%	1,454	2.0	2,908	3,123	2,499	75%	281,902	4.1%	440,212,015	352,169,612
2019	1,613	87.0%	1,403	2.0	2,806	3,014	2,411	75%	293,547	4.1%	442,398,317	353,918,653
2020	1,559	87.0%	1,356	2.0	2,713	2,914	2,331	75%	305,851	4.2%	445,576,116	356,460,893
2021	1,497	87.0%	1,302	2.0	2,604	2,798	2,238	75%	318,909	4.3%	446,085,549	356,868,439
2022	1,440	87.0%	1,253	2.0	2,506	2,692	2,153	75%	332,179	4.2%	447,041,749	357,633,399
2023	1,382	87.0%	1,203	2.0	2,405	2,584	2,067	75%	346,030	4.2%	447,035,022	357,628,017
2024	1,321	87.0%	1,149	2.0	2,298	2,468	1,975	75%	360,702	4.2%	445,142,708	356,114,166
2025	1,244	87.0%	1,082	2.0	2,164	2,324	1,860	75%	376,448	4.4%	437,503,930	350,003,144
2026	1,160	87.0%	1,010	2.0	2,019	2,169	1,735	75%	393,384	4.5%	426,595,157	341,276,125
2027	1,072	87.0%	933	2.0	1,866	2,004	1,603	75%	410,764	4.4%	411,603,860	329,283,088
2028	971	87.0%	844	2.0	1,689	1,814	1,451	75%	429,161	4.5%	389,245,431	311,396,345
2029	878	87.0%	764	2.0	1,527	1,640	1,312	75%	448,845	4.6%	368,124,115	294,499,292
2030	785	87.0%	683	2.0	1,367	1,468	1,174	75%	469,880	4.7%	344,853,316	275,882,653
2031	688	87.0%	599	2.0	1,197	1,286	1,029	75%	492,013	4.7%	316,387,764	253,110,211
2032	596	87.0%	519	2.0	1,038	1,115	892	75%	514,790	4.6%	286,886,466	229,509,173
2033	506	87.0%	440	2.0	880	945	756	75%	539,876	4.9%	255,060,556	204,048,445
2034	415	87.0%	361	2.0	723	776	621	75%	567,136	5.0%	220,130,273	176,104,219
2035	333	87.0%	290	2.0	580	623	498	75%	596,358	5.2%	185,717,636	148,574,109
2036	263	87.0%	229	2.0	457	491	393	75%	627,550	5.2%	154,124,089	123,299,272
2037	208	87.0%	181	2.0	361	388	311	75%	662,757	5.6%	128,671,081	102,936,865
2038	163	87.0%	142	2.0	284	306	244	75%	699,319	5.5%	106,825,096	85,460,077
2039	128	87.0%	111	2.0	222	238	191	75%	736,983	5.4%	87,866,973	70,293,579
2040	100	87.0%	87	2.0	173	186	149	75%	776,180	5.3%	72,242,451	57,793,961
2041	82	87.0%	72	2.0	143	154	123	75%	816,735	5.2%	62,798,944	50,239,155
2042	66	87.0%	57	2.0	114	123	98	75%	858,858	5.2%	52,662,749	42,130,199
2043	50	87.0%	43	2.0	87	93	75	75%	902,755	5.1%	42,122,461	33,697,969
2044	39	87.0%	34	2.0	68	73	58	75%	948,628	5.1%	34,647,334	27,717,867
2045	30	87.0%	26	2.0	53	57	45	75%	996,402	5.0%	28,291,968	22,633,575
2046	24	87.0%	21	2.0	41	45	36	75%	1,046,466	5.0%	23,306,248	18,644,998
2047	19	87.0%	16	2.0	33	35	28	75%	1,099,375	5.1%	19,329,485	15,463,588
2048	14	87.0%	12	2.0	25	27	21	75%	1,155,603	5.1%	15,416,625	12,333,300
2049	9	87.0%	8	2.0	16	18	14	75%	1,214,948	5.1%	10,634,512	8,507,609
2050	5	87.0%	5	2.0	9	10	8	75%	1,277,748	5.2%	6,199,775	4,959,820
2009&post	**36,557**	**85.0%**	**31,059**	**2.0**	**62,118**	**66,724**	**53,379**	**73%**	**328,444**		**10,957,511,089**	**8,766,008,871**

Total Meso Cost 2004-2040 9,302,450,261

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	160,955		121,788,408	97,430,726
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	162,786	1.1%	135,860,928	108,688,743
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.2%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	170,425	2.5%	206,349,719	165,079,775
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	181,234	6.3%	243,047,463	194,437,971
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	182,462	0.7%	279,790,922	235,024,375
2009	2,191	68.3%	1,497	2.0	2,994	3,216	2,573	59%	186,307	2.1%	299,567,131	239,653,705
2010	2,279	68.1%	1,551	2.0	3,102	3,332	2,666	58%	190,096	2.0%	316,715,021	253,372,017
2011	2,362	67.8%	1,602	2.0	3,204	3,441	2,753	58%	194,070	2.1%	333,932,629	267,146,103
2012	2,445	67.6%	1,653	2.0	3,305	3,551	2,840	58%	198,226	2.1%	351,910,478	281,528,383
2013	2,520	67.2%	1,693	2.0	3,387	3,638	2,910	58%	202,029	1.9%	367,497,952	293,998,362
2014	2,595	66.8%	1,734	2.0	3,468	3,726	2,980	57%	205,993	2.0%	383,719,419	306,975,535
2015	2,684	66.5%	1,784	2.0	3,568	3,832	3,066	57%	210,120	2.0%	402,612,457	322,089,966
2016	2,759	66.1%	1,825	2.0	3,650	3,920	3,136	57%	214,414	2.0%	420,266,791	336,213,433
2017	2,834	65.8%	1,866	2.0	3,731	4,008	3,206	57%	218,877	2.1%	438,637,362	350,909,890
2018	2,877	65.3%	1,879	2.0	3,757	4,036	3,229	56%	223,356	2.0%	450,719,341	360,575,473
2019	2,919	64.8%	1,892	2.0	3,783	4,064	3,251	56%	227,946	2.1%	463,150,884	370,520,707
2020	2,975	64.3%	1,913	2.0	3,826	4,110	3,288	55%	232,649	2.1%	478,091,099	382,472,879
2021	3,017	63.8%	1,926	2.0	3,852	4,138	3,310	55%	237,469	2.1%	491,313,830	393,051,064
2022	3,060	63.4%	1,939	2.0	3,878	4,166	3,333	54%	242,410	2.1%	504,921,218	403,936,974
2023	3,044	62.8%	1,912	2.0	3,825	4,109	3,287	54%	247,890	2.3%	509,229,689	407,383,751
2024	3,028	62.3%	1,886	2.0	3,772	4,051	3,241	54%	253,436	2.2%	513,356,195	410,684,956
2025	3,027	61.7%	1,868	2.0	3,737	4,014	3,211	53%	259,042	2.2%	519,854,585	415,883,668
2026	3,011	61.2%	1,841	2.0	3,683	3,956	3,165	53%	264,703	2.2%	523,588,634	418,870,908
2027	2,995	60.6%	1,815	2.0	3,629	3,898	3,119	52%	270,412	2.2%	527,090,969	421,672,775
2028	2,897	60.3%	1,747	2.0	3,494	3,753	3,003	52%	277,831	2.7%	521,379,307	417,103,445
2029	2,800	60.0%	1,679	2.0	3,359	3,608	2,886	52%	285,391	2.7%	514,844,902	411,875,922
2030	2,688	59.7%	1,603	2.0	3,207	3,445	2,756	51%	293,084	2.7%	504,767,593	403,814,074
2031	2,591	59.3%	1,536	2.0	3,072	3,300	2,640	51%	300,896	2.7%	496,489,247	397,191,398
2032	2,494	58.9%	1,469	2.0	2,938	3,156	2,524	51%	308,812	2.6%	487,246,515	389,797,212
2033	2,350	59.0%	1,386	2.0	2,773	2,978	2,382	51%	319,514	3.5%	475,776,312	380,621,049
2034	2,207	59.1%	1,304	2.0	2,607	2,801	2,241	51%	330,748	3.5%	463,150,253	370,520,202
2035	2,008	59.2%	1,188	2.0	2,376	2,552	2,042	51%	342,572	3.6%	437,148,225	349,718,580
2036	1,868	59.3%	1,108	2.0	2,215	2,379	1,904	51%	355,062	3.6%	422,428,352	337,942,682
2037	1,729	59.4%	1,027	2.0	2,054	2,207	1,765	51%	368,314	3.7%	406,391,845	325,113,476
2038	1,637	59.7%	977	2.0	1,955	2,100	1,680	51%	382,487	3.8%	401,582,397	321,265,917
2039	1,544	60.1%	928	2.0	1,855	1,993	1,594	52%	397,499	3.9%	396,093,046	316,874,437
2040	1,474	60.5%	891	2.0	1,782	1,915	1,532	52%	413,449	4.0%	395,781,000	316,624,800
2041	1,380	60.9%	841	2.0	1,681	1,806	1,445	52%	430,463	4.1%	388,706,995	310,965,596
2042	1,287	61.4%	790	2.0	1,580	1,697	1,358	53%	448,691	4.2%	380,817,681	304,654,144
2043	1,196	61.7%	737	2.0	1,475	1,584	1,267	53%	465,039	3.6%	368,330,515	294,664,412
2044	1,105	62.0%	685	2.0	1,369	1,471	1,177	53%	482,365	3.7%	354,708,484	283,766,787
2045	1,073	62.3%	669	2.0	1,338	1,437	1,150	54%	500,823	3.8%	359,847,549	287,878,040
2046	977	62.8%	613	2.0	1,226	1,317	1,054	54%	520,622	4.0%	342,827,684	274,262,147
2047	880	63.3%	557	2.0	1,114	1,197	958	54%	542,049	4.1%	324,405,317	259,524,254
2048	704	63.3%	446	2.0	891	958	766	54%	558,900	3.1%	267,592,329	214,073,863
2049	528	63.3%	334	2.0	669	718	575	54%	576,289	3.1%	206,938,536	165,550,828
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**62.9%**	**56,592**	**2.0**	**113,183**	**121,576**	**97,261**	**54%**	**283,172**		**17,213,429,769**	**13,770,743,815**

Total Meso Cost 2004-2040 12,204,701,197

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	158,826		120,177,583	96,142,066
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	161,722	1.8%	134,972,642	107,978,114
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.9%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	172,079	3.4%	208,352,498	166,681,998
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	184,771	7.4%	247,790,826	198,232,661
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	187,829	1.7%	288,021,129	241,937,748
2009	2,191	68.3%	1,497	2.0	2,994	3,216	2,573	59%	193,649	3.1%	311,373,175	249,098,540
2010	2,279	68.1%	1,551	2.0	3,102	3,332	2,666	58%	199,506	3.0%	332,392,868	265,914,294
2011	2,362	67.8%	1,602	2.0	3,204	3,441	2,753	58%	205,654	3.1%	353,864,980	283,091,984
2012	2,445	67.6%	1,653	2.0	3,305	3,551	2,840	58%	212,098	3.1%	376,535,837	301,228,669
2013	2,520	67.2%	1,693	2.0	3,387	3,638	2,910	58%	218,264	2.9%	397,030,708	317,624,566
2014	2,595	66.8%	1,734	2.0	3,468	3,726	2,980	57%	224,706	3.0%	418,579,246	334,863,397
2015	2,684	66.5%	1,784	2.0	3,568	3,832	3,066	57%	231,434	3.0%	443,450,903	354,760,723
2016	2,759	66.1%	1,825	2.0	3,650	3,920	3,136	57%	238,455	3.0%	467,387,953	373,910,362
2017	2,834	65.8%	1,866	2.0	3,731	4,008	3,206	57%	245,780	3.1%	492,551,728	394,041,382
2018	2,877	65.3%	1,879	2.0	3,757	4,036	3,229	56%	253,243	3.0%	511,029,374	408,823,499
2019	2,919	64.8%	1,892	2.0	3,783	4,064	3,251	56%	260,954	3.0%	530,218,993	424,175,194
2020	2,975	64.3%	1,913	2.0	3,826	4,110	3,288	55%	268,923	3.1%	552,632,248	442,105,798
2021	3,017	63.8%	1,926	2.0	3,852	4,138	3,310	55%	277,157	3.1%	573,425,501	458,740,401
2022	3,060	63.4%	1,939	2.0	3,878	4,166	3,333	54%	285,667	3.1%	595,022,990	476,018,392
2023	3,044	62.8%	1,912	2.0	3,825	4,109	3,287	54%	294,959	3.3%	605,920,541	484,736,433
2024	3,028	62.3%	1,886	2.0	3,772	4,051	3,241	54%	304,482	3.2%	616,754,406	493,403,525
2025	3,027	61.7%	1,868	2.0	3,737	4,014	3,211	53%	314,235	3.2%	630,618,170	504,494,536
2026	3,011	61.2%	1,841	2.0	3,683	3,956	3,165	53%	324,215	3.2%	641,306,447	513,045,158
2027	2,995	60.6%	1,815	2.0	3,629	3,898	3,119	52%	334,419	3.1%	651,855,603	521,484,482
2028	2,897	60.3%	1,747	2.0	3,494	3,753	3,003	52%	346,926	3.7%	651,043,666	520,834,933
2029	2,800	60.0%	1,679	2.0	3,359	3,608	2,886	52%	359,822	3.7%	649,116,946	519,293,556
2030	2,688	59.7%	1,603	2.0	3,207	3,445	2,756	51%	373,103	3.7%	642,581,018	514,064,815
2031	2,591	59.3%	1,536	2.0	3,072	3,300	2,640	51%	386,761	3.7%	638,169,231	510,535,385
2032	2,494	58.9%	1,469	2.0	2,938	3,156	2,524	51%	400,783	3.6%	632,359,461	505,887,569
2033	2,350	59.0%	1,386	2.0	2,773	2,978	2,382	51%	418,693	4.5%	623,459,076	498,767,261
2034	2,207	59.1%	1,304	2.0	2,607	2,801	2,241	51%	437,615	4.5%	612,797,203	490,237,763
2035	2,008	59.2%	1,188	2.0	2,376	2,552	2,042	51%	457,653	4.6%	584,000,504	467,200,403
2036	1,868	59.3%	1,108	2.0	2,215	2,379	1,904	51%	478,937	4.7%	569,806,140	455,844,912
2037	1,729	59.4%	1,027	2.0	2,054	2,207	1,765	51%	501,628	4.7%	553,488,473	442,790,778
2038	1,637	59.7%	977	2.0	1,955	2,100	1,680	51%	525,981	4.9%	552,239,972	441,791,978
2039	1,544	60.1%	928	2.0	1,855	1,993	1,594	52%	551,923	4.9%	549,971,222	439,976,978
2040	1,474	60.5%	891	2.0	1,782	1,915	1,532	52%	579,635	5.0%	554,864,963	443,891,971
2041	1,380	60.9%	841	2.0	1,681	1,806	1,445	52%	609,337	5.1%	550,230,183	440,184,146
2042	1,287	61.4%	790	2.0	1,580	1,697	1,358	53%	641,298	5.2%	544,288,274	435,430,619
2043	1,196	61.7%	737	2.0	1,475	1,584	1,267	53%	671,105	4.6%	531,543,008	425,234,406
2044	1,105	62.0%	685	2.0	1,369	1,471	1,177	53%	702,854	4.7%	516,845,992	413,476,793
2045	1,073	62.3%	669	2.0	1,338	1,437	1,150	54%	736,822	4.8%	529,416,022	423,532,817
2046	977	62.8%	613	2.0	1,226	1,317	1,054	54%	773,375	5.0%	509,264,645	407,411,716
2047	880	63.3%	557	2.0	1,114	1,197	958	54%	813,009	5.1%	486,569,595	389,255,676
2048	704	63.3%	446	2.0	891	958	766	54%	846,406	4.1%	405,245,337	324,196,269
2049	528	63.3%	334	2.0	669	718	575	54%	881,195	4.1%	316,426,568	253,141,254
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**62.9%**	**56,592**	**2.0**	**113,183**	**121,576**	**97,261**	**54%**	**357,072**		**21,705,679,168**	**17,364,543,334**

Total Meso Cost 2004-2040 14,693,576,748

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	156,758		118,612,654	94,890,123
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	160,678	2.5%	134,101,310	107,281,048
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	3.5%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	173,733	4.4%	210,355,276	168,284,221
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	188,342	8.4%	252,580,030	202,064,024
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	193,301	2.6%	296,411,177	248,985,388
2009	2,191	68.3%	1,497	2.0	2,994	3,216	2,573	59%	201,207	4.1%	323,524,801	258,819,841
2010	2,279	68.1%	1,551	2.0	3,102	3,332	2,666	58%	209,286	4.0%	348,685,540	278,948,432
2011	2,362	67.8%	1,602	2.0	3,204	3,441	2,753	58%	217,808	4.1%	374,779,121	299,823,296
2012	2,445	67.6%	1,653	2.0	3,305	3,551	2,840	58%	226,793	4.1%	402,623,744	322,098,995
2013	2,520	67.2%	1,693	2.0	3,387	3,638	2,910	58%	235,630	3.9%	428,619,677	342,895,742
2014	2,595	66.8%	1,734	2.0	3,468	3,726	2,980	57%	244,916	3.9%	456,226,314	364,981,051
2015	2,684	66.5%	1,784	2.0	3,568	3,832	3,066	57%	254,673	4.0%	487,980,544	390,384,435
2016	2,759	66.1%	1,825	2.0	3,650	3,920	3,136	57%	264,922	4.0%	519,264,330	415,411,464
2017	2,834	65.8%	1,866	2.0	3,731	4,008	3,206	57%	275,684	4.1%	552,479,959	441,983,967
2018	2,877	65.3%	1,879	2.0	3,757	4,036	3,229	56%	286,785	4.0%	578,713,905	462,971,124
2019	2,919	64.8%	1,892	2.0	3,783	4,064	3,251	56%	298,357	4.0%	606,214,589	484,971,671
2020	2,975	64.3%	1,913	2.0	3,826	4,110	3,288	55%	310,421	4.0%	637,910,947	510,328,757
2021	3,017	63.8%	1,926	2.0	3,852	4,138	3,310	55%	323,000	4.1%	668,271,956	534,617,564
2022	3,060	63.4%	1,939	2.0	3,878	4,166	3,333	54%	336,115	4.1%	700,103,187	560,082,549
2023	3,044	62.8%	1,912	2.0	3,825	4,109	3,287	54%	350,381	4.2%	719,773,392	575,818,714
2024	3,028	62.3%	1,886	2.0	3,772	4,051	3,241	54%	365,168	4.2%	739,679,950	591,743,960
2025	3,027	61.7%	1,868	2.0	3,737	4,014	3,211	53%	380,484	4.2%	763,570,604	610,856,484
2026	3,011	61.2%	1,841	2.0	3,683	3,956	3,165	53%	396,339	4.2%	783,969,411	627,175,529
2027	2,995	60.6%	1,815	2.0	3,629	3,898	3,119	52%	412,739	4.1%	804,517,235	643,613,788
2028	2,897	60.3%	1,747	2.0	3,494	3,753	3,003	52%	432,286	4.7%	811,231,064	648,984,851
2029	2,800	60.0%	1,679	2.0	3,359	3,608	2,886	52%	452,660	4.7%	816,596,689	653,277,351
2030	2,688	59.7%	1,603	2.0	3,207	3,445	2,756	51%	473,874	4.7%	816,135,891	652,908,712
2031	2,591	59.3%	1,536	2.0	3,072	3,300	2,640	51%	495,937	4.7%	818,314,145	654,651,316
2032	2,494	58.9%	1,469	2.0	2,938	3,156	2,524	51%	518,852	4.6%	818,648,589	654,918,871
2033	2,350	59.0%	1,386	2.0	2,773	2,978	2,382	51%	547,241	5.5%	814,875,620	651,900,496
2034	2,207	59.1%	1,304	2.0	2,607	2,801	2,241	51%	577,464	5.5%	808,630,099	646,904,079
2035	2,008	59.2%	1,188	2.0	2,376	2,552	2,042	51%	609,704	5.6%	778,029,398	622,423,518
2036	1,868	59.3%	1,108	2.0	2,215	2,379	1,904	51%	644,186	5.7%	766,407,064	613,125,651
2037	1,729	59.4%	1,027	2.0	2,054	2,207	1,765	51%	681,183	5.7%	751,606,473	601,285,178
2038	1,637	59.7%	977	2.0	1,955	2,100	1,680	51%	721,110	5.9%	757,110,673	605,688,538
2039	1,544	60.1%	928	2.0	1,855	1,993	1,594	52%	763,940	5.9%	761,239,115	608,991,292
2040	1,474	60.5%	891	2.0	1,782	1,915	1,532	52%	810,001	6.0%	775,386,203	620,308,962
2041	1,380	60.9%	841	2.0	1,681	1,806	1,445	52%	859,683	6.1%	776,291,604	621,033,283
2042	1,287	61.4%	790	2.0	1,580	1,697	1,358	53%	913,461	6.3%	775,281,276	620,225,021
2043	1,196	61.7%	737	2.0	1,475	1,584	1,267	53%	965,094	5.7%	764,394,586	611,515,669
2044	1,105	62.0%	685	2.0	1,369	1,471	1,177	53%	1,020,453	5.7%	750,393,827	600,315,062
2045	1,073	62.3%	669	2.0	1,338	1,437	1,150	54%	1,080,040	5.8%	776,022,248	620,817,799
2046	977	62.8%	613	2.0	1,226	1,317	1,054	54%	1,144,502	6.0%	753,650,104	602,920,083
2047	880	63.3%	557	2.0	1,114	1,197	958	54%	1,214,706	6.1%	726,976,868	581,581,494
2048	704	63.3%	446	2.0	891	958	766	54%	1,276,737	5.1%	611,281,271	489,025,016
2049	528	63.3%	334	2.0	669	718	575	54%	1,341,969	5.1%	481,884,865	385,507,892
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**62.9%**	**56,592**	**2.0**	**113,183**	**121,576**	**97,261**	**54%**	**454,157**		**27,607,296,873**	**22,085,837,499**

Total Meso Cost 2004-2040 17,805,577,452

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	160,955		121,788,408	97,430,726
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	162,786	1.1%	135,860,928	108,688,743
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.2%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	170,425	2.5%	206,349,719	165,079,775
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	181,234	6.3%	243,047,463	194,437,971
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	182,462	0.7%	279,790,922	235,024,375
2009	2,191	69.1%	1,514	2.0	3,029	3,253	2,603	59%	185,979	1.9%	302,533,953	242,027,163
2010	2,279	69.6%	1,587	2.0	3,174	3,409	2,727	60%	189,450	1.9%	322,931,127	258,344,902
2011	2,362	70.1%	1,657	2.0	3,313	3,559	2,847	60%	193,114	1.9%	343,656,655	274,925,324
2012	2,445	70.6%	1,727	2.0	3,454	3,710	2,968	61%	196,976	2.0%	365,404,584	292,323,668
2013	2,520	71.0%	1,789	2.0	3,578	3,843	3,074	61%	200,470	1.8%	385,208,667	308,166,933
2014	2,595	71.3%	1,851	2.0	3,703	3,977	3,182	61%	204,139	1.8%	405,976,832	324,781,466
2015	2,684	71.7%	1,924	2.0	3,848	4,134	3,307	62%	207,988	1.9%	429,881,805	343,905,444
2016	2,759	72.1%	1,988	2.0	3,976	4,271	3,417	62%	212,020	1.9%	452,766,984	362,213,588
2017	2,834	72.4%	2,052	2.0	4,105	4,409	3,527	62%	216,240	2.0%	476,700,504	381,360,403
2018	2,877	72.7%	2,090	2.0	4,180	4,490	3,592	62%	220,420	1.9%	494,845,654	395,876,523
2019	2,919	72.4%	2,114	2.0	4,229	4,542	3,634	62%	224,898	2.0%	510,783,381	408,626,705
2020	2,975	72.2%	2,148	2.0	4,297	4,615	3,692	62%	229,506	2.0%	529,635,636	423,708,509
2021	3,017	72.0%	2,173	2.0	4,346	4,668	3,734	62%	234,249	2.1%	546,738,129	437,390,503
2022	3,060	71.8%	2,197	2.0	4,395	4,721	3,776	62%	239,130	2.1%	564,416,036	451,532,829
2023	3,044	71.6%	2,179	2.0	4,357	4,681	3,744	62%	244,422	2.2%	572,012,252	457,609,802
2024	3,028	71.3%	2,160	2.0	4,320	4,640	3,712	61%	249,791	2.2%	579,574,712	463,659,770
2025	3,027	71.1%	2,152	2.0	4,304	4,623	3,699	61%	255,235	2.2%	590,010,250	472,008,200
2026	3,011	70.9%	2,133	2.0	4,267	4,583	3,666	61%	260,752	2.2%	597,514,334	478,011,467
2027	2,995	70.6%	2,115	2.0	4,229	4,543	3,634	61%	266,338	2.1%	604,955,294	483,964,235
2028	2,897	70.5%	2,042	2.0	4,084	4,387	3,509	61%	273,519	2.7%	599,942,778	479,954,223
2029	2,800	70.3%	1,969	2.0	3,939	4,231	3,385	60%	280,827	2.7%	594,080,648	475,264,519
2030	2,688	70.2%	1,887	2.0	3,774	4,054	3,243	60%	288,254	2.6%	584,225,509	467,380,407
2031	2,591	70.0%	1,815	2.0	3,629	3,898	3,119	60%	295,787	2.6%	576,555,172	461,244,138
2032	2,494	69.9%	1,742	2.0	3,485	3,743	2,995	60%	303,410	2.6%	567,886,198	454,308,958
2033	2,350	69.9%	1,643	2.0	3,286	3,530	2,824	60%	313,785	3.4%	553,814,048	443,051,238
2034	2,207	69.9%	1,544	2.0	3,087	3,316	2,653	60%	324,658	3.5%	538,350,994	430,680,795
2035	2,008	70.0%	1,405	2.0	2,811	3,019	2,415	60%	336,081	3.5%	507,313,071	405,850,457
2036	1,868	70.0%	1,309	2.0	2,617	2,811	2,249	60%	348,122	3.6%	489,338,426	391,470,740
2037	1,729	70.1%	1,212	2.0	2,424	2,604	2,083	60%	360,868	3.7%	469,780,150	375,824,120
2038	1,637	70.2%	1,149	2.0	2,299	2,469	1,975	60%	374,658	3.8%	462,583,104	370,066,483
2039	1,544	70.4%	1,087	2.0	2,174	2,335	1,868	60%	389,272	3.9%	454,498,236	363,598,589
2040	1,474	70.5%	1,040	2.0	2,080	2,234	1,787	61%	404,817	4.0%	452,212,431	361,769,944
2041	1,380	70.7%	977	2.0	1,953	2,098	1,678	61%	421,422	4.1%	442,047,370	353,637,896
2042	1,287	71.0%	913	2.0	1,826	1,962	1,569	61%	439,253	4.2%	430,820,729	344,656,583
2043	1,196	71.1%	850	2.0	1,700	1,826	1,461	61%	455,374	3.7%	415,695,191	332,556,152
2044	1,105	71.2%	787	2.0	1,573	1,690	1,352	61%	472,493	3.8%	399,222,293	319,377,834
2045	1,073	71.4%	766	2.0	1,532	1,645	1,316	61%	490,779	3.9%	403,719,979	322,975,983
2046	977	71.6%	699	2.0	1,398	1,501	1,201	61%	510,464	4.0%	383,196,133	306,556,907
2047	880	71.8%	632	2.0	1,264	1,358	1,086	62%	531,867	4.2%	361,007,935	288,806,348
2048	704	71.8%	506	2.0	1,011	1,086	869	62%	548,414	3.1%	297,791,202	238,232,961
2049	528	71.8%	379	2.0	758	815	652	62%	565,489	3.1%	230,297,457	184,237,965
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**71.0%**	**63,904**	**2.0**	**127,807**	**137,284**	**109,827**	**61%**	**281,022**		**19,289,925,842**	**15,431,940,673**

Total Meso Cost 2004-2040 13,570,199,497

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	158,826		120,177,583	96,142,066
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	161,722	1.8%	134,972,642	107,978,114
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.9%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	172,079	3.4%	208,352,498	166,681,998
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	184,771	7.4%	247,790,826	198,232,661
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	187,829	1.7%	288,021,129	241,937,748
2009	2,191	69.1%	1,514	2.0	3,029	3,253	2,603	59%	193,309	2.9%	314,456,917	251,565,534
2010	2,279	69.6%	1,587	2.0	3,174	3,409	2,727	60%	198,828	2.9%	338,916,668	271,133,334
2011	2,362	70.1%	1,657	2.0	3,313	3,559	2,847	60%	204,641	2.9%	364,169,406	291,335,525
2012	2,445	70.6%	1,727	2.0	3,454	3,710	2,968	61%	210,759	3.0%	390,974,163	312,779,330
2013	2,520	71.0%	1,789	2.0	3,578	3,843	3,074	61%	216,580	2.8%	416,164,609	332,931,687
2014	2,595	71.3%	1,851	2.0	3,703	3,977	3,182	61%	222,685	2.8%	442,858,566	354,286,853
2015	2,684	71.7%	1,924	2.0	3,848	4,134	3,307	62%	229,085	2.9%	473,486,108	378,788,886
2016	2,759	72.1%	1,988	2.0	3,976	4,271	3,417	62%	235,792	2.9%	503,531,892	402,825,514
2017	2,834	72.4%	2,052	2.0	4,105	4,409	3,527	62%	242,819	3.0%	535,293,011	428,234,409
2018	2,877	72.7%	2,090	2.0	4,180	4,490	3,592	62%	249,914	2.9%	561,059,725	448,847,780
2019	2,919	72.4%	2,114	2.0	4,229	4,542	3,634	62%	257,465	3.0%	584,748,545	467,798,836
2020	2,975	72.2%	2,148	2.0	4,297	4,615	3,692	62%	265,289	3.0%	612,212,668	489,770,135
2021	3,017	72.0%	2,173	2.0	4,346	4,668	3,734	62%	273,398	3.1%	638,111,927	510,489,542
2022	3,060	71.8%	2,197	2.0	4,395	4,721	3,776	62%	281,801	3.1%	665,133,610	532,106,888
2023	3,044	71.6%	2,179	2.0	4,357	4,681	3,744	62%	290,832	3.2%	680,623,009	544,498,407
2024	3,028	71.3%	2,160	2.0	4,320	4,640	3,712	61%	300,103	3.2%	696,309,186	557,047,349
2025	3,027	71.1%	2,152	2.0	4,304	4,623	3,699	61%	309,617	3.2%	715,720,247	572,576,197
2026	3,011	70.9%	2,133	2.0	4,267	4,583	3,666	61%	319,376	3.2%	731,851,165	585,480,932
2027	2,995	70.6%	2,115	2.0	4,229	4,543	3,634	61%	329,381	3.1%	748,148,920	598,519,136
2028	2,897	70.5%	2,042	2.0	4,084	4,387	3,509	61%	341,541	3.7%	749,143,435	599,314,748
2029	2,800	70.3%	1,969	2.0	3,939	4,231	3,385	60%	354,066	3.7%	749,015,182	599,212,145
2030	2,688	70.2%	1,887	2.0	3,774	4,054	3,243	60%	366,953	3.6%	743,730,310	594,984,248
2031	2,591	70.0%	1,815	2.0	3,629	3,898	3,119	60%	380,192	3.6%	741,080,295	592,864,236
2032	2,494	69.9%	1,742	2.0	3,485	3,743	2,995	60%	393,771	3.6%	737,012,409	589,609,927
2033	2,350	69.9%	1,643	2.0	3,286	3,530	2,824	60%	411,184	4.4%	725,716,761	580,573,409
2034	2,207	69.9%	1,544	2.0	3,087	3,316	2,653	60%	429,555	4.5%	712,292,330	569,833,864
2035	2,008	70.0%	1,405	2.0	2,811	3,019	2,415	60%	448,979	4.5%	677,732,402	542,185,922
2036	1,868	70.0%	1,309	2.0	2,617	2,811	2,249	60%	469,573	4.6%	660,056,149	528,044,919
2037	1,729	70.1%	1,212	2.0	2,424	2,604	2,083	60%	491,484	4.7%	639,816,649	511,853,319
2038	1,637	70.2%	1,149	2.0	2,299	2,469	1,975	60%	515,211	4.8%	636,121,465	508,897,172
2039	1,544	70.4%	1,087	2.0	2,174	2,335	1,868	60%	540,496	4.9%	631,061,811	504,849,449
2040	1,474	70.5%	1,040	2.0	2,080	2,234	1,787	61%	567,528	5.0%	633,974,294	507,179,435
2041	1,380	70.7%	977	2.0	1,953	2,098	1,678	61%	596,535	5.1%	625,730,765	500,584,612
2042	1,287	71.0%	913	2.0	1,826	1,962	1,569	61%	627,802	5.2%	615,750,791	492,600,633
2043	1,196	71.1%	850	2.0	1,700	1,826	1,461	61%	657,151	4.7%	599,890,688	479,912,551
2044	1,105	71.2%	787	2.0	1,573	1,690	1,352	61%	688,464	4.8%	581,702,177	465,361,742
2045	1,073	71.4%	766	2.0	1,532	1,645	1,316	61%	722,040	4.9%	593,957,051	475,165,641
2046	977	71.6%	699	2.0	1,398	1,501	1,201	61%	758,278	5.0%	569,226,363	455,381,091
2047	880	71.8%	632	2.0	1,264	1,358	1,086	62%	797,731	5.2%	541,464,545	433,171,636
2048	704	71.8%	506	2.0	1,011	1,086	869	62%	830,518	4.1%	450,974,879	360,779,904
2049	528	71.8%	379	2.0	758	815	652	62%	864,673	4.1%	352,141,071	281,712,857
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**71.0%**	**63,904**	**2.0**	**127,807**	**137,284**	**109,827**	**61%**	**355,196**		**24,381,362,165**	**19,505,089,732**

Total Meso Cost 2004-2040 16,401,316,178

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	156,758		118,612,654	94,890,123
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	160,678	2.5%	134,101,310	107,281,048
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	3.5%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	173,733	4.4%	210,355,276	168,284,221
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	188,342	8.4%	252,580,030	202,064,024
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	193,301	2.6%	296,411,177	248,985,388
2009	2,191	69.1%	1,514	2.0	3,029	3,253	2,603	59%	200,853	3.9%	326,728,884	261,383,107
2010	2,279	69.6%	1,587	2.0	3,174	3,409	2,727	60%	208,573	3.8%	355,529,101	284,423,280
2011	2,362	70.1%	1,657	2.0	3,313	3,559	2,847	60%	216,736	3.9%	385,692,532	308,554,026
2012	2,445	70.6%	1,727	2.0	3,454	3,710	2,968	61%	225,361	4.0%	418,062,367	334,449,894
2013	2,520	71.0%	1,789	2.0	3,578	3,843	3,074	61%	233,812	3.7%	449,275,849	359,420,679
2014	2,595	71.3%	1,851	2.0	3,703	3,977	3,182	61%	242,713	3.8%	482,689,194	386,151,355
2015	2,684	71.7%	1,924	2.0	3,848	4,134	3,307	62%	252,088	3.9%	521,031,584	416,825,267
2016	2,759	72.1%	1,988	2.0	3,976	4,271	3,417	62%	261,963	3.9%	559,419,702	447,535,761
2017	2,834	72.4%	2,052	2.0	4,105	4,409	3,527	62%	272,362	4.0%	600,421,171	480,336,937
2018	2,877	72.7%	2,090	2.0	4,180	4,490	3,592	62%	283,014	3.9%	635,370,171	508,296,137
2019	2,919	72.4%	2,114	2.0	4,229	4,542	3,634	62%	294,367	4.0%	668,559,203	534,847,363
2020	2,975	72.2%	2,148	2.0	4,297	4,615	3,692	62%	306,227	4.0%	706,684,723	565,347,779
2021	3,017	72.0%	2,173	2.0	4,346	4,668	3,734	62%	318,618	4.0%	743,656,872	594,925,497
2022	3,060	71.8%	2,197	2.0	4,395	4,721	3,776	62%	331,567	4.1%	782,594,230	626,075,384
2023	3,044	71.6%	2,179	2.0	4,357	4,681	3,744	62%	345,479	4.2%	808,511,297	646,809,038
2024	3,028	71.3%	2,160	2.0	4,320	4,640	3,712	61%	359,916	4.2%	835,089,403	668,071,522
2025	3,027	71.1%	2,152	2.0	4,304	4,623	3,699	61%	374,892	4.2%	866,612,983	693,290,387
2026	3,011	70.9%	2,133	2.0	4,267	4,583	3,666	61%	390,422	4.1%	894,654,498	715,723,599
2027	2,995	70.6%	2,115	2.0	4,229	4,543	3,634	61%	406,519	4.1%	923,359,825	738,687,860
2028	2,897	70.5%	2,042	2.0	4,084	4,387	3,509	61%	425,575	4.7%	933,465,523	746,772,419
2029	2,800	70.3%	1,969	2.0	3,939	4,231	3,385	60%	445,418	4.7%	942,267,054	753,813,643
2030	2,688	70.2%	1,887	2.0	3,774	4,054	3,243	60%	466,062	4.6%	944,601,522	755,681,218
2031	2,591	70.0%	1,815	2.0	3,629	3,898	3,119	60%	487,512	4.6%	950,271,892	760,217,514
2032	2,494	69.9%	1,742	2.0	3,485	3,743	2,995	60%	509,771	4.6%	954,127,802	763,302,241
2033	2,350	69.9%	1,643	2.0	3,286	3,530	2,824	60%	537,424	5.4%	948,524,660	758,819,728
2034	2,207	69.9%	1,544	2.0	3,087	3,316	2,653	60%	566,826	5.5%	939,916,621	751,933,297
2035	2,008	70.0%	1,405	2.0	2,811	3,019	2,415	60%	598,145	5.5%	902,898,204	722,318,563
2036	1,868	70.0%	1,309	2.0	2,617	2,811	2,249	60%	631,587	5.6%	887,791,158	710,232,926
2037	1,729	70.1%	1,212	2.0	2,424	2,604	2,083	60%	667,404	5.7%	868,830,014	695,064,011
2038	1,637	70.2%	1,149	2.0	2,299	2,469	1,975	60%	706,340	5.8%	872,104,982	697,683,985
2039	1,544	70.4%	1,087	2.0	2,174	2,335	1,868	60%	748,120	5.9%	873,474,151	698,779,321
2040	1,474	70.5%	1,040	2.0	2,080	2,234	1,787	61%	793,077	6.0%	885,929,756	708,743,805
2041	1,380	70.7%	977	2.0	1,953	2,098	1,678	61%	841,615	6.1%	882,804,863	706,243,891
2042	1,287	71.0%	913	2.0	1,826	1,962	1,569	61%	894,231	6.3%	877,065,236	701,652,189
2043	1,196	71.1%	850	2.0	1,700	1,826	1,461	61%	945,020	5.7%	862,676,201	690,140,961
2044	1,105	71.2%	787	2.0	1,573	1,690	1,352	61%	999,553	5.8%	844,549,699	675,639,759
2045	1,073	71.4%	766	2.0	1,532	1,645	1,316	61%	1,058,363	5.9%	870,619,718	696,495,774
2046	977	71.6%	699	2.0	1,398	1,501	1,201	61%	1,122,151	6.0%	842,379,101	673,903,280
2047	880	71.8%	632	2.0	1,264	1,358	1,086	62%	1,191,869	6.2%	808,987,883	647,190,306
2048	704	71.8%	506	2.0	1,011	1,086	869	62%	1,252,761	5.1%	680,254,832	544,203,865
2049	528	71.8%	379	2.0	758	815	652	62%	1,316,796	5.1%	536,269,500	429,015,600
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**71.0%**	**63,904**	**2.0**	**127,807**	**137,284**	**109,827**	**61%**	**452,693**		**31,073,753,962**	**24,859,003,170**

Total Meso Cost 2004-2040 19,947,198,815

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	160,955		121,788,408	97,430,726
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	162,786	1.1%	135,860,928	108,688,743
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.2%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	170,425	2.5%	206,349,719	165,079,775
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	181,234	6.3%	243,047,463	194,437,971
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	182,462	0.7%	279,790,922	235,024,375
2009	2,191	69.1%	1,514	2.0	3,029	3,253	2,603	59%	185,979	1.9%	302,533,953	242,027,163
2010	2,279	69.6%	1,587	2.0	3,174	3,409	2,727	60%	189,450	1.9%	322,931,127	258,344,902
2011	2,362	70.1%	1,657	2.0	3,313	3,559	2,847	60%	193,114	1.9%	343,656,655	274,925,324
2012	2,445	70.6%	1,727	2.0	3,454	3,710	2,968	61%	196,976	2.0%	365,404,584	292,323,668
2013	2,520	71.0%	1,789	2.0	3,578	3,843	3,074	61%	200,470	1.8%	385,208,667	308,166,933
2014	2,595	71.3%	1,851	2.0	3,703	3,977	3,182	61%	204,139	1.8%	405,976,832	324,781,466
2015	2,684	71.7%	1,924	2.0	3,848	4,134	3,307	62%	207,988	1.9%	429,881,805	343,905,444
2016	2,759	72.1%	1,988	2.0	3,976	4,271	3,417	62%	212,020	1.9%	452,766,984	362,213,588
2017	2,834	72.4%	2,052	2.0	4,105	4,409	3,527	62%	216,240	2.0%	476,700,504	381,360,403
2018	2,877	72.7%	2,090	2.0	4,180	4,490	3,592	62%	220,420	1.9%	494,845,654	395,876,523
2019	2,919	72.9%	2,128	2.0	4,256	4,572	3,657	63%	224,731	2.0%	513,709,913	410,967,931
2020	2,975	73.2%	2,176	2.0	4,352	4,675	3,740	63%	229,180	2.0%	535,716,060	428,572,848
2021	3,017	73.4%	2,215	2.0	4,430	4,758	3,806	63%	233,773	2.0%	556,158,438	444,926,751
2022	3,060	73.7%	2,254	2.0	4,507	4,841	3,873	63%	238,515	2.0%	577,374,579	461,899,663
2023	3,044	73.9%	2,248	2.0	4,497	4,830	3,864	63%	243,650	2.2%	588,450,275	470,760,220
2024	3,028	74.1%	2,243	2.0	4,486	4,819	3,855	64%	248,865	2.1%	599,593,796	479,675,037
2025	3,027	74.3%	2,248	2.0	4,497	4,830	3,864	64%	254,161	2.1%	613,833,210	491,066,568
2026	3,011	74.5%	2,242	2.0	4,485	4,817	3,854	64%	259,539	2.1%	625,151,224	500,120,979
2027	2,995	74.7%	2,236	2.0	4,472	4,804	3,843	64%	264,998	2.1%	636,519,852	509,215,881
2028	2,897	74.9%	2,170	2.0	4,340	4,662	3,730	64%	272,011	2.6%	634,069,843	507,255,875
2029	2,800	75.1%	2,103	2.0	4,206	4,518	3,615	65%	279,147	2.6%	630,614,445	504,491,556
2030	2,688	75.3%	2,025	2.0	4,049	4,349	3,479	65%	286,396	2.6%	622,812,725	498,250,180
2031	2,591	75.5%	1,956	2.0	3,912	4,203	3,362	65%	293,748	2.6%	617,246,294	493,797,035
2032	2,494	75.7%	1,887	2.0	3,774	4,054	3,243	65%	301,186	2.5%	610,544,786	488,435,829
2033	2,350	75.9%	1,784	2.0	3,568	3,832	3,066	65%	311,345	3.4%	596,588,253	477,270,602
2034	2,207	76.1%	1,680	2.0	3,359	3,608	2,887	65%	321,984	3.4%	580,892,965	464,714,372
2035	2,008	76.3%	1,532	2.0	3,063	3,291	2,633	66%	333,151	3.5%	548,141,643	438,513,314
2036	1,868	76.5%	1,429	2.0	2,857	3,069	2,455	66%	344,911	3.5%	529,269,234	423,415,387
2037	1,729	76.6%	1,325	2.0	2,649	2,846	2,277	66%	357,344	3.6%	508,477,467	406,781,974
2038	1,637	76.8%	1,257	2.0	2,513	2,700	2,160	66%	370,863	3.8%	500,591,534	400,473,227
2039	1,544	76.9%	1,188	2.0	2,376	2,552	2,042	66%	385,195	3.9%	491,566,554	393,253,244
2040	1,474	77.1%	1,136	2.0	2,272	2,440	1,952	66%	400,446	4.0%	488,629,940	390,903,952
2041	1,380	77.2%	1,066	2.0	2,131	2,289	1,831	66%	416,749	4.1%	476,993,501	381,594,801
2042	1,287	77.3%	995	2.0	1,990	2,137	1,710	66%	434,273	4.2%	464,031,803	371,225,442
2043	1,196	77.4%	925	2.0	1,851	1,988	1,591	67%	450,195	3.7%	447,547,288	358,037,830
2044	1,105	77.5%	856	2.0	1,712	1,839	1,471	67%	467,123	3.8%	429,497,348	343,597,878
2045	1,073	77.6%	832	2.0	1,665	1,788	1,431	67%	485,234	3.9%	433,867,223	347,093,778
2046	977	77.6%	758	2.0	1,517	1,629	1,303	67%	504,768	4.0%	411,196,667	328,957,333
2047	880	77.7%	684	2.0	1,368	1,470	1,176	67%	526,067	4.2%	386,614,178	309,291,342
2048	704	77.8%	548	2.0	1,095	1,177	941	67%	542,397	3.1%	319,082,856	255,266,285
2049	528	77.8%	411	2.0	822	883	706	67%	559,251	3.1%	246,884,252	197,507,402
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**74.1%**	**66,717**	**2.0**	**133,434**	**143,328**	**114,662**	**64%**	**281,893**		**20,201,574,911**	**16,161,259,929**

Total Meso Cost 2004-2040 14,097,985,291

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	158,826		120,177,583	96,142,066
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	161,722	1.8%	134,972,642	107,978,114
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.9%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	172,079	3.4%	208,352,498	166,681,998
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	184,771	7.4%	247,790,826	198,232,661
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	187,829	1.7%	288,021,129	241,937,748
2009	2,191	69.1%	1,514	2.0	3,029	3,253	2,603	59%	193,309	2.9%	314,456,917	251,565,534
2010	2,279	69.6%	1,587	2.0	3,174	3,409	2,727	60%	198,828	2.9%	338,916,668	271,133,334
2011	2,362	70.1%	1,657	2.0	3,313	3,559	2,847	60%	204,641	2.9%	364,169,406	291,335,525
2012	2,445	70.6%	1,727	2.0	3,454	3,710	2,968	61%	210,759	3.0%	390,974,163	312,779,330
2013	2,520	71.0%	1,789	2.0	3,578	3,843	3,074	61%	216,580	2.8%	416,164,609	332,931,687
2014	2,595	71.3%	1,851	2.0	3,703	3,977	3,182	61%	222,685	2.8%	442,858,566	354,286,853
2015	2,684	71.7%	1,924	2.0	3,848	4,134	3,307	62%	229,085	2.9%	473,486,108	378,788,886
2016	2,759	72.1%	1,988	2.0	3,976	4,271	3,417	62%	235,792	2.9%	503,531,892	402,825,514
2017	2,834	72.4%	2,052	2.0	4,105	4,409	3,527	62%	242,819	3.0%	535,293,011	428,234,409
2018	2,877	72.7%	2,090	2.0	4,180	4,490	3,592	62%	249,914	2.9%	561,059,725	448,847,780
2019	2,919	72.9%	2,128	2.0	4,256	4,572	3,657	63%	257,274	2.9%	588,098,831	470,479,065
2020	2,975	73.2%	2,176	2.0	4,352	4,675	3,740	63%	264,912	3.0%	619,241,041	495,392,833
2021	3,017	73.4%	2,215	2.0	4,430	4,758	3,806	63%	272,842	3.0%	649,106,494	519,285,195
2022	3,060	73.7%	2,254	2.0	4,507	4,841	3,873	63%	281,077	3.0%	680,404,376	544,323,501
2023	3,044	73.9%	2,248	2.0	4,497	4,830	3,864	63%	289,913	3.1%	700,181,958	560,145,566
2024	3,028	74.1%	2,243	2.0	4,486	4,819	3,855	64%	298,990	3.1%	720,360,069	576,288,055
2025	3,027	74.3%	2,248	2.0	4,497	4,830	3,864	64%	308,314	3.1%	744,618,603	595,694,882
2026	3,011	74.5%	2,242	2.0	4,485	4,817	3,854	64%	317,890	3.1%	765,701,023	612,560,819
2027	2,995	74.7%	2,236	2.0	4,472	4,804	3,843	64%	327,723	3.1%	787,184,203	629,747,363
2028	2,897	74.9%	2,170	2.0	4,340	4,662	3,730	64%	339,658	3.6%	791,756,841	633,405,473
2029	2,800	75.1%	2,103	2.0	4,206	4,518	3,615	65%	351,947	3.6%	795,075,981	636,060,785
2030	2,688	75.3%	2,025	2.0	4,049	4,349	3,479	65%	364,588	3.6%	792,851,528	634,281,222
2031	2,591	75.5%	1,956	2.0	3,912	4,203	3,362	65%	377,571	3.6%	793,381,778	634,705,422
2032	2,494	75.7%	1,887	2.0	3,774	4,054	3,243	65%	390,883	3.5%	792,374,073	633,899,259
2033	2,350	75.9%	1,784	2.0	3,568	3,832	3,066	65%	407,985	4.4%	781,766,454	625,413,163
2034	2,207	76.1%	1,680	2.0	3,359	3,608	2,887	65%	426,016	4.4%	768,577,929	614,862,343
2035	2,008	76.3%	1,532	2.0	3,063	3,291	2,633	66%	445,064	4.5%	732,274,524	585,819,619
2036	1,868	76.5%	1,429	2.0	2,857	3,069	2,455	66%	465,241	4.5%	713,915,840	571,132,672
2037	1,729	76.6%	1,325	2.0	2,649	2,846	2,277	66%	486,682	4.6%	692,518,307	554,014,646
2038	1,637	76.8%	1,257	2.0	2,513	2,700	2,160	66%	509,991	4.8%	688,386,495	550,709,196
2039	1,544	76.9%	1,188	2.0	2,376	2,552	2,042	66%	534,834	4.9%	682,527,986	546,022,388
2040	1,474	77.1%	1,136	2.0	2,272	2,440	1,952	66%	561,399	5.0%	685,026,780	548,021,424
2041	1,380	77.2%	1,066	2.0	2,131	2,289	1,831	66%	589,918	5.1%	675,195,232	540,156,186
2042	1,287	77.3%	995	2.0	1,990	2,137	1,710	66%	620,682	5.2%	663,214,837	530,571,870
2043	1,196	77.4%	925	2.0	1,851	1,988	1,591	67%	649,675	4.7%	645,853,571	516,682,857
2044	1,105	77.5%	856	2.0	1,712	1,839	1,471	67%	680,637	4.8%	625,812,638	500,650,110
2045	1,073	77.6%	832	2.0	1,665	1,788	1,431	67%	713,877	4.9%	638,306,866	510,645,493
2046	977	77.6%	758	2.0	1,517	1,629	1,303	67%	749,814	5.0%	610,817,262	488,653,810
2047	880	77.7%	684	2.0	1,368	1,470	1,176	67%	789,027	5.2%	579,867,630	463,894,104
2048	704	77.8%	548	2.0	1,095	1,177	941	67%	821,401	4.1%	483,216,402	386,573,121
2049	528	77.8%	411	2.0	822	883	706	67%	855,130	4.1%	377,501,367	302,001,094
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**74.1%**	**66,717**	**2.0**	**133,434**	**143,328**	**114,662**	**64%**	**357,307**		**25,606,027,983**	**20,484,822,386**

Total Meso Cost 2004-2040 17,085,890,854

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	156,758		118,612,654	94,890,123
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	160,678	2.5%	134,101,310	107,281,048
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	3.5%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	173,733	4.4%	210,355,276	168,284,221
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	188,342	8.4%	252,580,030	202,064,024
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	193,301	2.6%	296,411,177	248,985,388
2009	2,191	69.1%	1,514	2.0	3,029	3,253	2,603	59%	200,853	3.9%	326,728,884	261,383,107
2010	2,279	69.6%	1,587	2.0	3,174	3,409	2,727	60%	208,573	3.8%	355,529,101	284,423,280
2011	2,362	70.1%	1,657	2.0	3,313	3,559	2,847	60%	216,736	3.9%	385,692,532	308,554,026
2012	2,445	70.6%	1,727	2.0	3,454	3,710	2,968	61%	225,361	4.0%	418,062,367	334,449,894
2013	2,520	71.0%	1,789	2.0	3,578	3,843	3,074	61%	233,812	3.7%	449,275,849	359,420,679
2014	2,595	71.3%	1,851	2.0	3,703	3,977	3,182	61%	242,713	3.8%	482,689,194	386,151,355
2015	2,684	71.7%	1,924	2.0	3,848	4,134	3,307	62%	252,088	3.9%	521,031,584	416,825,267
2016	2,759	72.1%	1,988	2.0	3,976	4,271	3,417	62%	261,963	3.9%	559,419,702	447,535,761
2017	2,834	72.4%	2,052	2.0	4,105	4,409	3,527	62%	272,362	4.0%	600,421,171	480,336,937
2018	2,877	72.7%	2,090	2.0	4,180	4,490	3,592	62%	283,014	3.9%	635,370,171	508,296,137
2019	2,919	72.9%	2,128	2.0	4,256	4,572	3,657	63%	294,149	3.9%	672,389,646	537,911,717
2020	2,975	73.2%	2,176	2.0	4,352	4,675	3,740	63%	305,792	4.0%	714,797,586	571,838,069
2021	3,017	73.4%	2,215	2.0	4,430	4,758	3,806	63%	317,971	4.0%	756,469,830	605,175,864
2022	3,060	73.7%	2,254	2.0	4,507	4,841	3,873	63%	330,714	4.0%	800,561,571	640,449,257
2023	3,044	73.9%	2,248	2.0	4,497	4,830	3,864	63%	344,387	4.1%	831,745,069	665,396,055
2024	3,028	74.1%	2,243	2.0	4,486	4,819	3,855	64%	358,581	4.1%	863,933,447	691,146,757
2025	3,027	74.3%	2,248	2.0	4,497	4,830	3,864	64%	373,314	4.1%	901,603,379	721,282,703
2026	3,011	74.5%	2,242	2.0	4,485	4,817	3,854	64%	388,605	4.1%	936,033,771	748,827,017
2027	2,995	74.7%	2,236	2.0	4,472	4,804	3,843	64%	404,473	4.1%	971,536,108	777,228,887
2028	2,897	74.9%	2,170	2.0	4,340	4,662	3,730	64%	423,228	4.6%	986,562,761	789,250,209
2029	2,800	75.1%	2,103	2.0	4,206	4,518	3,615	65%	442,752	4.6%	1,000,210,795	800,168,636
2030	2,688	75.3%	2,025	2.0	4,049	4,349	3,479	65%	463,057	4.6%	1,006,988,397	805,590,718
2031	2,591	75.5%	1,956	2.0	3,912	4,203	3,362	65%	484,150	4.6%	1,017,335,487	813,868,390
2032	2,494	75.7%	1,887	2.0	3,774	4,054	3,243	65%	506,032	4.5%	1,025,796,635	820,637,308
2033	2,350	75.9%	1,784	2.0	3,568	3,832	3,066	65%	533,243	5.4%	1,021,780,648	817,424,518
2034	2,207	76.1%	1,680	2.0	3,359	3,608	2,887	65%	562,154	5.4%	1,014,186,998	811,349,599
2035	2,008	76.3%	1,532	2.0	3,063	3,291	2,633	66%	592,928	5.5%	975,558,736	780,446,989
2036	1,868	76.5%	1,429	2.0	2,857	3,069	2,455	66%	625,758	5.5%	960,231,147	768,184,918
2037	1,729	76.6%	1,325	2.0	2,649	2,846	2,277	66%	660,881	5.6%	940,392,687	752,314,150
2038	1,637	76.8%	1,257	2.0	2,513	2,700	2,160	66%	699,181	5.8%	943,755,841	755,004,673
2039	1,544	76.9%	1,188	2.0	2,376	2,552	2,042	66%	740,279	5.9%	944,706,930	755,765,544
2040	1,474	77.1%	1,136	2.0	2,272	2,440	1,952	66%	784,509	6.0%	957,268,031	765,814,425
2041	1,380	77.2%	1,066	2.0	2,131	2,289	1,831	66%	832,276	6.1%	952,587,392	762,069,914
2042	1,287	77.3%	995	2.0	1,990	2,137	1,710	66%	884,086	6.2%	944,668,209	755,734,567
2043	1,196	77.4%	925	2.0	1,851	1,988	1,591	67%	934,264	5.7%	928,769,245	743,015,396
2044	1,105	77.5%	856	2.0	1,712	1,839	1,471	67%	988,184	5.8%	908,587,675	726,870,140
2045	1,073	77.6%	832	2.0	1,665	1,788	1,431	67%	1,046,393	5.9%	935,623,024	748,498,419
2046	977	77.6%	758	2.0	1,517	1,629	1,303	67%	1,109,619	6.0%	903,923,680	723,138,944
2047	880	77.7%	684	2.0	1,368	1,470	1,176	67%	1,178,859	6.2%	866,360,664	693,088,531
2048	704	77.8%	548	2.0	1,095	1,177	941	67%	1,239,003	5.1%	728,884,502	583,107,602
2049	528	77.8%	411	2.0	822	883	706	67%	1,302,256	5.1%	574,887,158	459,909,727
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**74.1%**	**66,717**	**2.0**	**133,434**	**143,328**	**114,662**	**64%**	**456,608**		**32,722,357,605**	**26,177,886,084**

Total Meso Cost 2004-2040 20,835,134,116

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	160,955		121,788,408	97,430,726
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	162,786	1.1%	135,860,928	108,688,743
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.2%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	170,425	2.5%	206,349,719	165,079,775
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	181,234	6.3%	243,047,463	194,437,971
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	182,462	0.7%	279,790,922	235,024,375
2009	2,191	71.3%	1,563	2.0	3,125	3,357	2,685	61%	185,117	1.5%	310,692,715	248,554,172
2010	2,279	73.3%	1,670	2.0	3,340	3,588	2,870	63%	188,056	1.6%	337,354,436	269,883,549
2011	2,362	74.7%	1,765	2.0	3,529	3,791	3,033	64%	191,407	1.8%	362,799,953	290,239,962
2012	2,445	75.7%	1,852	2.0	3,704	3,978	3,182	65%	195,101	1.9%	388,066,743	310,453,394
2013	2,520	76.4%	1,926	2.0	3,853	4,138	3,311	66%	198,497	1.7%	410,716,714	328,573,371
2014	2,595	76.9%	1,997	2.0	3,994	4,290	3,432	66%	202,141	1.8%	433,609,170	346,887,336
2015	2,684	77.3%	2,075	2.0	4,150	4,458	3,566	66%	206,017	1.9%	459,207,294	367,365,835
2016	2,759	77.6%	2,141	2.0	4,282	4,599	3,679	67%	210,110	2.0%	483,183,408	386,546,727
2017	2,834	77.8%	2,205	2.0	4,410	4,737	3,790	67%	214,415	2.0%	507,838,732	406,270,986
2018	2,877	77.9%	2,242	2.0	4,484	4,816	3,853	67%	218,653	2.0%	526,530,830	421,224,664
2019	2,919	77.9%	2,274	2.0	4,549	4,886	3,909	67%	223,078	2.0%	544,986,195	435,988,956
2020	2,975	77.9%	2,317	2.0	4,635	4,978	3,983	67%	227,643	2.0%	566,647,515	453,318,012
2021	3,017	77.9%	2,350	2.0	4,700	5,049	4,039	67%	232,354	2.1%	586,535,895	469,228,716
2022	3,060	77.9%	2,383	2.0	4,766	5,119	4,095	67%	237,213	2.1%	607,136,665	485,709,332
2023	3,044	77.9%	2,370	2.0	4,740	5,091	4,073	67%	242,413	2.2%	617,093,667	493,674,933
2024	3,028	77.8%	2,357	2.0	4,714	5,064	4,051	67%	247,698	2.2%	627,123,335	501,698,668
2025	3,027	77.8%	2,356	2.0	4,712	5,061	4,049	67%	253,068	2.2%	640,385,967	512,308,773
2026	3,011	77.8%	2,343	2.0	4,686	5,033	4,027	67%	258,522	2.2%	650,597,147	520,477,718
2027	2,995	77.8%	2,330	2.0	4,660	5,005	4,004	67%	264,060	2.1%	660,866,262	528,693,010
2028	2,897	77.8%	2,254	2.0	4,508	4,842	3,873	67%	271,119	2.7%	656,355,773	525,084,619
2029	2,800	77.8%	2,178	2.0	4,355	4,678	3,743	67%	278,300	2.6%	650,976,374	520,781,099
2030	2,688	77.8%	2,090	2.0	4,181	4,491	3,593	67%	285,594	2.6%	641,280,765	513,024,612
2031	2,591	77.8%	2,015	2.0	4,029	4,328	3,462	67%	292,989	2.6%	634,047,013	507,237,611
2032	2,494	77.8%	1,939	2.0	3,878	4,165	3,332	67%	300,471	2.6%	625,790,030	500,632,024
2033	2,350	77.8%	1,828	2.0	3,655	3,926	3,141	67%	310,665	3.4%	609,849,535	487,879,628
2034	2,207	77.8%	1,716	2.0	3,432	3,687	2,949	67%	321,336	3.4%	592,349,359	473,879,487
2035	2,008	77.8%	1,561	2.0	3,123	3,354	2,683	67%	332,534	3.5%	557,695,380	446,156,304
2036	1,868	77.8%	1,453	2.0	2,906	3,121	2,497	67%	344,323	3.5%	537,383,625	429,906,900
2037	1,729	77.8%	1,345	2.0	2,689	2,889	2,311	67%	356,784	3.6%	515,296,521	412,237,217
2038	1,637	77.8%	1,273	2.0	2,546	2,735	2,188	67%	370,341	3.8%	506,385,046	405,108,037
2039	1,544	77.8%	1,201	2.0	2,403	2,581	2,065	67%	384,710	3.9%	496,436,451	397,149,160
2040	1,474	77.8%	1,147	2.0	2,294	2,464	1,971	67%	400,000	4.0%	492,733,374	394,186,699
2041	1,380	77.8%	1,074	2.0	2,148	2,307	1,846	67%	416,341	4.1%	480,348,762	384,279,010
2042	1,287	77.8%	1,001	2.0	2,003	2,151	1,721	67%	433,905	4.2%	466,725,732	373,380,585
2043	1,196	77.8%	931	2.0	1,861	1,999	1,599	67%	449,875	3.7%	449,705,694	359,764,555
2044	1,105	77.8%	860	2.0	1,720	1,847	1,478	67%	466,849	3.8%	431,185,713	344,948,571
2045	1,073	77.8%	835	2.0	1,671	1,795	1,436	67%	485,005	3.9%	435,222,853	348,178,283
2046	977	77.9%	760	2.0	1,521	1,634	1,307	67%	504,583	4.0%	412,182,953	329,746,362
2047	880	77.9%	686	2.0	1,371	1,473	1,178	67%	525,926	4.2%	387,290,675	309,832,540
2048	704	77.9%	548	2.0	1,097	1,178	943	67%	542,294	3.1%	319,475,692	255,580,554
2049	528	77.9%	411	2.0	823	884	707	67%	559,187	3.1%	247,070,477	197,656,382
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**77.3%**	**69,622**	**2.0**	**139,243**	**149,568**	**119,654**	**66%**	**279,032**		**20,867,160,441**	**16,693,728,353**

Total Meso Cost 2004-2040 14,619,658,966

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: Initial Birth Cohort Model

Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too

Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	158,826		120,177,583	96,142,066
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	161,722	1.8%	134,972,642	107,978,114
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.9%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	172,079	3.4%	208,352,498	166,681,998
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	184,771	7.4%	247,790,826	198,232,661
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	187,829	1.7%	288,021,129	241,937,748
2009	2,191	71.3%	1,563	2.0	3,125	3,357	2,685	61%	192,412	2.4%	322,937,207	258,349,766
2010	2,279	73.3%	1,670	2.0	3,340	3,588	2,870	63%	197,365	2.6%	354,053,923	283,243,139
2011	2,362	74.7%	1,765	2.0	3,529	3,791	3,033	64%	202,832	2.8%	384,455,312	307,564,250
2012	2,445	75.7%	1,852	2.0	3,704	3,978	3,182	65%	208,753	2.9%	415,222,056	332,177,645
2013	2,520	76.4%	1,926	2.0	3,853	4,138	3,311	66%	214,448	2.7%	443,722,416	354,977,933
2014	2,595	76.9%	1,997	2.0	3,994	4,290	3,432	66%	220,505	2.8%	473,001,078	378,400,863
2015	2,684	77.3%	2,075	2.0	4,150	4,458	3,566	66%	226,913	2.9%	505,786,003	404,628,802
2016	2,759	77.6%	2,141	2.0	4,282	4,599	3,679	67%	233,668	3.0%	537,358,442	429,886,754
2017	2,834	77.8%	2,205	2.0	4,410	4,737	3,790	67%	240,769	3.0%	570,258,275	456,206,620
2018	2,877	77.9%	2,242	2.0	4,484	4,816	3,853	67%	247,911	3.0%	596,984,334	477,587,467
2019	2,919	77.9%	2,274	2.0	4,549	4,886	3,909	67%	255,381	3.0%	623,903,833	499,123,066
2020	2,975	77.9%	2,317	2.0	4,635	4,978	3,983	67%	263,135	3.0%	654,994,764	523,995,812
2021	3,017	77.9%	2,350	2.0	4,700	5,049	4,039	67%	271,186	3.1%	684,560,422	547,648,338
2022	3,060	77.9%	2,383	2.0	4,766	5,119	4,095	67%	279,543	3.1%	715,476,982	572,381,586
2023	3,044	77.9%	2,370	2.0	4,740	5,091	4,073	67%	288,440	3.2%	734,263,587	587,410,869
2024	3,028	77.8%	2,357	2.0	4,714	5,064	4,051	67%	297,587	3.2%	753,433,997	602,747,197
2025	3,027	77.8%	2,356	2.0	4,712	5,061	4,049	67%	306,987	3.2%	776,828,329	621,462,663
2026	3,011	77.8%	2,343	2.0	4,686	5,033	4,027	67%	316,644	3.1%	796,867,369	637,493,895
2027	2,995	77.8%	2,330	2.0	4,660	5,005	4,004	67%	326,563	3.1%	817,292,943	653,834,354
2028	2,897	77.8%	2,254	2.0	4,508	4,842	3,873	67%	338,543	3.7%	819,584,591	655,667,672
2029	2,800	77.8%	2,178	2.0	4,355	4,678	3,743	67%	350,879	3.6%	820,747,739	656,598,191
2030	2,688	77.8%	2,090	2.0	4,181	4,491	3,593	67%	363,566	3.6%	816,361,196	653,088,956
2031	2,591	77.8%	2,015	2.0	4,029	4,328	3,462	67%	376,596	3.6%	814,976,232	651,980,985
2032	2,494	77.8%	1,939	2.0	3,878	4,165	3,332	67%	389,956	3.5%	812,159,117	649,727,294
2033	2,350	77.8%	1,828	2.0	3,655	3,926	3,141	67%	407,094	4.4%	799,143,535	639,314,828
2034	2,207	77.8%	1,716	2.0	3,432	3,687	2,949	67%	425,158	4.4%	783,735,431	626,988,345
2035	2,008	77.8%	1,561	2.0	3,123	3,354	2,683	67%	444,240	4.5%	745,037,182	596,029,745
2036	1,868	77.8%	1,453	2.0	2,906	3,121	2,497	67%	464,448	4.5%	724,860,736	579,888,589
2037	1,729	77.8%	1,345	2.0	2,689	2,889	2,311	67%	485,920	4.6%	701,805,139	561,444,111
2038	1,637	77.8%	1,273	2.0	2,546	2,735	2,188	67%	509,272	4.8%	696,353,099	557,082,479
2039	1,544	77.8%	1,201	2.0	2,403	2,581	2,065	67%	534,161	4.9%	689,289,418	551,431,534
2040	1,474	77.8%	1,147	2.0	2,294	2,464	1,971	67%	560,773	5.0%	690,779,246	552,623,397
2041	1,380	77.8%	1,074	2.0	2,148	2,307	1,846	67%	589,341	5.1%	679,944,433	543,955,547
2042	1,287	77.8%	1,001	2.0	2,003	2,151	1,721	67%	620,156	5.2%	667,064,901	533,651,921
2043	1,196	77.8%	931	2.0	1,861	1,999	1,599	67%	649,212	4.7%	648,968,170	519,174,536
2044	1,105	77.8%	860	2.0	1,720	1,847	1,478	67%	680,237	4.8%	628,272,569	502,618,056
2045	1,073	77.8%	835	2.0	1,671	1,795	1,436	67%	713,541	4.9%	640,301,143	512,240,915
2046	977	77.9%	760	2.0	1,521	1,634	1,307	67%	749,540	5.0%	612,282,253	489,825,802
2047	880	77.9%	686	2.0	1,371	1,473	1,178	67%	788,816	5.2%	580,882,209	464,705,768
2048	704	77.9%	548	2.0	1,097	1,178	943	67%	821,246	4.1%	483,811,265	387,049,012
2049	528	77.9%	411	2.0	823	884	707	67%	855,031	4.1%	377,786,094	302,228,876
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**77.3%**	**69,622**	**2.0**	**139,243**	**149,568**	**119,654**	**66%**	**352,957**		**26,395,546,971**	**21,116,437,577**

Total Meso Cost 2004-2040 17,701,884,257

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	156,758		118,612,654	94,890,123
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	160,678	2.5%	134,101,310	107,281,048
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	3.5%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	173,733	4.4%	210,355,276	168,284,221
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	188,342	8.4%	252,580,030	202,064,024
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	193,301	2.6%	296,411,177	248,985,388
2009	2,191	71.3%	1,563	2.0	3,125	3,357	2,685	61%	199,921	3.4%	335,540,115	268,432,092
2010	2,279	73.3%	1,670	2.0	3,340	3,588	2,870	63%	207,039	3.6%	371,408,300	297,126,640
2011	2,362	74.7%	1,765	2.0	3,529	3,791	3,033	64%	214,820	3.8%	407,177,325	325,741,860
2012	2,445	75.7%	1,852	2.0	3,704	3,978	3,182	65%	223,216	3.9%	443,990,171	355,192,137
2013	2,520	76.4%	1,926	2.0	3,853	4,138	3,311	66%	231,510	3.7%	479,026,124	383,220,899
2014	2,595	76.9%	1,997	2.0	3,994	4,290	3,432	66%	240,337	3.8%	515,542,573	412,434,058
2015	2,684	77.3%	2,075	2.0	4,150	4,458	3,566	66%	249,699	3.9%	556,574,712	445,259,770
2016	2,759	77.6%	2,141	2.0	4,282	4,599	3,679	67%	259,603	4.0%	597,000,488	477,600,390
2017	2,834	77.8%	2,205	2.0	4,410	4,737	3,790	67%	270,063	4.0%	639,640,331	511,712,265
2018	2,877	77.9%	2,242	2.0	4,484	4,816	3,853	67%	280,746	4.0%	676,052,559	540,842,047
2019	2,919	77.9%	2,274	2.0	4,549	4,886	3,909	67%	291,984	4.0%	713,326,146	570,660,917
2020	2,975	77.9%	2,317	2.0	4,635	4,978	3,983	67%	303,740	4.0%	756,068,167	604,854,533
2021	3,017	77.9%	2,350	2.0	4,700	5,049	4,039	67%	316,040	4.0%	797,787,485	638,229,988
2022	3,060	77.9%	2,383	2.0	4,766	5,119	4,095	67%	328,909	4.1%	841,827,442	673,461,954
2023	3,044	77.9%	2,370	2.0	4,740	5,091	4,073	67%	342,638	4.2%	872,230,108	697,784,087
2024	3,028	77.8%	2,357	2.0	4,714	5,064	4,051	67%	356,898	4.2%	903,598,761	722,879,009
2025	3,027	77.8%	2,356	2.0	4,712	5,061	4,049	67%	371,707	4.1%	940,603,212	752,482,569
2026	3,011	77.8%	2,343	2.0	4,686	5,033	4,027	67%	387,082	4.1%	974,132,622	779,306,097
2027	2,995	77.8%	2,330	2.0	4,660	5,005	4,004	67%	403,041	4.1%	1,008,695,495	806,956,396
2028	2,897	77.8%	2,254	2.0	4,508	4,842	3,873	67%	421,839	4.7%	1,021,236,746	816,989,397
2029	2,800	77.8%	2,178	2.0	4,355	4,678	3,743	67%	441,408	4.6%	1,032,505,451	826,004,361
2030	2,688	77.8%	2,090	2.0	4,181	4,491	3,593	67%	461,759	4.6%	1,036,847,077	829,477,662
2031	2,591	77.8%	2,015	2.0	4,029	4,328	3,462	67%	482,900	4.6%	1,045,024,983	836,019,986
2032	2,494	77.8%	1,939	2.0	3,878	4,165	3,332	67%	504,831	4.5%	1,051,409,503	841,127,603
2033	2,350	77.8%	1,828	2.0	3,655	3,926	3,141	67%	532,077	5.4%	1,044,492,194	835,593,756
2034	2,207	77.8%	1,716	2.0	3,432	3,687	2,949	67%	561,023	5.4%	1,034,187,734	827,350,187
2035	2,008	77.8%	1,561	2.0	3,123	3,354	2,683	67%	591,829	5.5%	992,561,036	794,048,829
2036	1,868	77.8%	1,453	2.0	2,906	3,121	2,497	67%	624,691	5.6%	974,951,770	779,961,416
2037	1,729	77.8%	1,345	2.0	2,689	2,889	2,311	67%	659,845	5.6%	953,003,116	762,402,493
2038	1,637	77.8%	1,273	2.0	2,546	2,735	2,188	67%	698,196	5.8%	954,677,369	763,741,895
2039	1,544	77.8%	1,201	2.0	2,403	2,581	2,065	67%	739,347	5.9%	954,065,225	763,252,180
2040	1,474	77.8%	1,147	2.0	2,294	2,464	1,971	67%	783,633	6.0%	965,306,250	772,245,000
2041	1,380	77.8%	1,074	2.0	2,148	2,307	1,846	67%	831,461	6.1%	959,287,379	767,429,903
2042	1,287	77.8%	1,001	2.0	2,003	2,151	1,721	67%	883,336	6.2%	950,151,849	760,121,479
2043	1,196	77.8%	931	2.0	1,861	1,999	1,599	67%	933,599	5.7%	933,247,932	746,598,346
2044	1,105	77.8%	860	2.0	1,720	1,847	1,478	67%	987,604	5.8%	912,158,915	729,727,132
2045	1,073	77.8%	835	2.0	1,671	1,795	1,436	67%	1,045,900	5.9%	938,546,026	750,836,821
2046	977	77.9%	760	2.0	1,521	1,634	1,307	67%	1,109,213	6.1%	906,091,515	724,873,212
2047	880	77.9%	686	2.0	1,371	1,473	1,178	67%	1,178,542	6.3%	867,876,408	694,301,126
2048	704	77.9%	548	2.0	1,097	1,178	943	67%	1,238,769	5.1%	729,781,731	583,825,385
2049	528	77.9%	411	2.0	823	884	707	67%	1,302,105	5.1%	575,320,730	460,256,584
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**77.3%**	**69,622**	**2.0**	**139,243**	**149,568**	**119,654**	**66%**	**450,136**		**33,662,953,075**	**26,930,362,460**

Total Meso Cost 2004-2040 21,565,073,742

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	160,955		121,788,408	97,430,726
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	162,786	1.1%	135,860,928	108,688,743
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.2%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	170,425	2.5%	206,349,719	165,079,775
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	181,234	6.3%	243,047,463	194,437,971
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	182,462	0.7%	279,790,922	235,024,375
2009	2,191	71.3%	1,563	2.0	3,125	3,357	2,685	61%	185,117	1.5%	310,692,715	248,554,172
2010	2,279	75.1%	1,711	2.0	3,423	3,677	2,941	65%	188,133	1.6%	345,859,796	276,687,837
2011	2,362	79.0%	1,866	2.0	3,731	4,008	3,206	68%	191,366	1.7%	383,485,204	306,788,163
2012	2,445	83.0%	2,028	2.0	4,057	4,358	3,486	71%	194,815	1.8%	424,455,118	339,564,094
2013	2,520	87.0%	2,193	2.0	4,385	4,710	3,768	75%	197,884	1.6%	466,053,278	372,842,622
2014	2,595	87.0%	2,258	2.0	4,516	4,850	3,880	75%	201,703	1.9%	489,179,180	391,343,344
2015	2,684	87.0%	2,335	2.0	4,669	5,016	4,013	75%	205,704	2.0%	515,873,787	412,699,030
2016	2,759	87.0%	2,400	2.0	4,801	5,157	4,125	75%	209,888	2.0%	541,147,008	432,917,606
2017	2,834	87.0%	2,466	2.0	4,932	5,297	4,238	75%	214,257	2.1%	567,498,538	453,998,830
2018	2,877	87.0%	2,503	2.0	5,005	5,376	4,301	75%	218,539	2.0%	587,482,852	469,986,282
2019	2,919	87.0%	2,539	2.0	5,079	5,456	4,364	75%	222,960	2.0%	608,183,374	486,546,699
2020	2,975	87.0%	2,588	2.0	5,176	5,560	4,448	75%	227,524	2.0%	632,468,589	505,974,871
2021	3,017	87.0%	2,625	2.0	5,250	5,639	4,511	75%	232,232	2.1%	654,782,079	523,825,663
2022	3,060	87.0%	2,662	2.0	5,324	5,718	4,575	75%	237,091	2.1%	677,897,699	542,318,159
2023	3,044	87.0%	2,648	2.0	5,296	5,689	4,551	75%	242,285	2.2%	689,143,473	551,314,779
2024	3,028	87.0%	2,634	2.0	5,268	5,659	4,527	75%	247,565	2.2%	700,478,213	560,382,570
2025	3,027	87.0%	2,633	2.0	5,267	5,657	4,526	75%	252,931	2.2%	715,432,945	572,346,356
2026	3,011	87.0%	2,619	2.0	5,239	5,627	4,502	75%	258,382	2.2%	726,987,902	581,590,322
2027	2,995	87.0%	2,605	2.0	5,211	5,597	4,478	75%	263,917	2.1%	738,616,587	590,893,270
2028	2,897	87.0%	2,521	2.0	5,041	5,415	4,332	75%	270,969	2.7%	733,643,729	586,914,983
2029	2,800	87.0%	2,436	2.0	4,871	5,233	4,186	75%	278,142	2.6%	727,703,924	582,163,139
2030	2,688	87.0%	2,338	2.0	4,677	5,024	4,019	75%	285,428	2.6%	716,943,353	573,554,682
2031	2,591	87.0%	2,254	2.0	4,508	4,842	3,874	75%	292,815	2.6%	708,939,590	567,151,672
2032	2,494	87.0%	2,170	2.0	4,339	4,661	3,729	75%	300,289	2.6%	699,797,002	559,837,601
2033	2,350	87.0%	2,045	2.0	4,090	4,393	3,514	75%	310,471	3.4%	681,940,958	545,552,766
2034	2,207	87.0%	1,920	2.0	3,840	4,125	3,300	75%	321,129	3.4%	662,338,891	529,871,113
2035	2,008	87.0%	1,747	2.0	3,494	3,753	3,002	75%	332,314	3.5%	623,555,025	498,844,020
2036	1,868	87.0%	1,626	2.0	3,251	3,492	2,794	75%	344,087	3.5%	600,805,798	480,644,639
2037	1,729	87.0%	1,504	2.0	3,008	3,232	2,585	75%	356,529	3.6%	576,069,147	460,855,318
2038	1,637	87.0%	1,424	2.0	2,848	3,059	2,447	75%	370,071	3.8%	566,035,019	452,828,015
2039	1,544	87.0%	1,344	2.0	2,687	2,887	2,309	75%	384,425	3.9%	554,836,997	443,869,597
2040	1,474	87.0%	1,282	2.0	2,565	2,755	2,204	75%	399,698	4.0%	550,612,942	440,490,354
2041	1,380	87.0%	1,201	2.0	2,402	2,580	2,064	75%	416,022	4.1%	536,680,737	429,344,590
2042	1,287	87.0%	1,119	2.0	2,239	2,405	1,924	75%	433,568	4.2%	521,358,847	417,087,077
2043	1,196	87.0%	1,040	2.0	2,081	2,235	1,788	75%	449,527	3.7%	502,301,288	401,841,031
2044	1,105	87.0%	961	2.0	1,922	2,065	1,652	75%	466,492	3.8%	481,565,336	385,252,269
2045	1,073	87.0%	934	2.0	1,867	2,006	1,605	75%	484,639	3.9%	486,015,457	388,812,365
2046	977	87.0%	850	2.0	1,699	1,826	1,460	75%	504,210	4.0%	460,221,129	368,176,903
2047	880	87.0%	766	2.0	1,532	1,645	1,316	75%	525,547	4.2%	432,354,074	345,883,260
2048	704	87.0%	613	2.0	1,225	1,316	1,053	75%	541,904	3.1%	356,648,746	285,318,997
2049	528	87.0%	460	2.0	919	987	790	75%	558,785	3.1%	275,818,953	220,655,163
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**86.0%**	**77,430**	**2.0**	**154,859**	**166,342**	**133,073**	**74%**	**279,327**		**23,231,905,277**	**18,585,524,222**

Total Meso Cost 2004-2040 16,172,450,022

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	158,826		120,177,583	96,142,066
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	161,722	1.8%	134,972,642	107,978,114
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	2.9%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	172,079	3.4%	208,352,498	166,681,998
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	184,771	7.4%	247,790,826	198,232,661
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	187,829	1.7%	288,021,129	241,937,748
2009	2,191	71.3%	1,563	2.0	3,125	3,357	2,685	61%	192,412	2.4%	322,937,207	258,349,766
2010	2,279	75.1%	1,711	2.0	3,423	3,677	2,941	65%	197,446	2.6%	362,980,312	290,384,249
2011	2,362	79.0%	1,866	2.0	3,731	4,008	3,206	68%	202,788	2.7%	406,375,255	325,100,204
2012	2,445	83.0%	2,028	2.0	4,057	4,358	3,486	71%	208,448	2.8%	454,156,727	363,325,382
2013	2,520	87.0%	2,193	2.0	4,385	4,710	3,768	75%	213,787	2.6%	503,505,857	402,804,686
2014	2,595	87.0%	2,258	2.0	4,516	4,850	3,880	75%	220,027	2.9%	533,619,398	426,895,518
2015	2,684	87.0%	2,335	2.0	4,669	5,016	4,013	75%	226,569	3.0%	568,200,310	454,560,248
2016	2,759	87.0%	2,400	2.0	4,801	5,157	4,125	75%	233,421	3.0%	601,820,954	481,456,763
2017	2,834	87.0%	2,466	2.0	4,932	5,297	4,238	75%	240,592	3.1%	637,250,971	509,800,777
2018	2,877	87.0%	2,503	2.0	5,005	5,376	4,301	75%	247,782	3.0%	666,092,142	532,873,714
2019	2,919	87.0%	2,539	2.0	5,079	5,456	4,364	75%	255,247	3.0%	696,252,360	557,001,888
2020	2,975	87.0%	2,588	2.0	5,176	5,560	4,448	75%	262,997	3.0%	731,078,115	584,862,492
2021	3,017	87.0%	2,625	2.0	5,250	5,639	4,511	75%	271,044	3.1%	764,212,181	611,369,745
2022	3,060	87.0%	2,662	2.0	5,324	5,718	4,575	75%	279,399	3.1%	798,864,907	639,091,926
2023	3,044	87.0%	2,648	2.0	5,296	5,689	4,551	75%	288,288	3.2%	819,993,717	655,994,973
2024	3,028	87.0%	2,634	2.0	5,268	5,659	4,527	75%	297,428	3.2%	841,563,430	673,250,744
2025	3,027	87.0%	2,633	2.0	5,267	5,657	4,526	75%	306,821	3.2%	867,864,955	694,291,964
2026	3,011	87.0%	2,619	2.0	5,239	5,627	4,502	75%	316,472	3.1%	890,432,571	712,346,057
2027	2,995	87.0%	2,605	2.0	5,211	5,597	4,478	75%	326,386	3.1%	913,446,646	730,757,317
2028	2,897	87.0%	2,521	2.0	5,041	5,415	4,332	75%	338,356	3.7%	916,093,163	732,874,530
2029	2,800	87.0%	2,436	2.0	4,871	5,233	4,186	75%	350,680	3.6%	917,485,347	733,988,278
2030	2,688	87.0%	2,338	2.0	4,677	5,024	4,019	75%	363,355	3.6%	912,680,833	730,144,666
2031	2,591	87.0%	2,254	2.0	4,508	4,842	3,874	75%	376,372	3.6%	911,239,746	728,991,797
2032	2,494	87.0%	2,170	2.0	4,339	4,661	3,729	75%	389,719	3.5%	908,206,277	726,565,022
2033	2,350	87.0%	2,045	2.0	4,090	4,393	3,514	75%	406,840	4.4%	893,611,604	714,889,283
2034	2,207	87.0%	1,920	2.0	3,840	4,125	3,300	75%	424,885	4.4%	876,338,193	701,070,554
2035	2,008	87.0%	1,747	2.0	3,494	3,753	3,002	75%	443,945	4.5%	833,020,332	666,416,266
2036	1,868	87.0%	1,626	2.0	3,251	3,492	2,794	75%	464,129	4.5%	810,408,847	648,327,078
2037	1,729	87.0%	1,504	2.0	3,008	3,232	2,585	75%	485,573	4.6%	784,573,892	627,659,114
2038	1,637	87.0%	1,424	2.0	2,848	3,059	2,447	75%	508,902	4.8%	778,380,302	622,704,241
2039	1,544	87.0%	1,344	2.0	2,687	2,887	2,309	75%	533,765	4.9%	770,376,899	616,301,519
2040	1,474	87.0%	1,282	2.0	2,565	2,755	2,204	75%	560,349	5.0%	771,922,322	617,537,858
2041	1,380	87.0%	1,201	2.0	2,402	2,580	2,064	75%	588,888	5.1%	759,683,389	607,746,712
2042	1,287	87.0%	1,119	2.0	2,239	2,405	1,924	75%	619,674	5.2%	745,148,723	596,118,979
2043	1,196	87.0%	1,040	2.0	2,081	2,235	1,788	75%	648,711	4.7%	724,868,401	579,894,720
2044	1,105	87.0%	961	2.0	1,922	2,065	1,652	75%	679,717	4.8%	701,679,543	561,343,634
2045	1,073	87.0%	934	2.0	1,867	2,006	1,605	75%	713,002	4.9%	715,027,137	572,021,710
2046	977	87.0%	850	2.0	1,699	1,826	1,460	75%	748,984	5.0%	683,640,927	546,912,742
2047	880	87.0%	766	2.0	1,532	1,645	1,316	75%	788,247	5.2%	648,470,832	518,776,666
2048	704	87.0%	613	2.0	1,225	1,316	1,053	75%	820,655	4.1%	540,105,634	432,084,507
2049	528	87.0%	460	2.0	919	987	790	75%	854,417	4.1%	421,744,147	337,395,318
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**86.0%**	**77,430**	**2.0**	**154,859**	**166,342**	**133,073**	**74%**	**353,553**		**29,405,354,505**	**23,524,283,604**

Total Meso Cost 2004-2040 19,612,885,729

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Initial Birth Cohort Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,690	43.1%	728	2.7	1,974	2,051	1,641	36%	156,758		118,612,654	94,890,123
2004	1,772	44.9%	796	2.5	1,989	2,084	1,668	38%	160,678	2.5%	134,101,310	107,281,048
2005	1,860	49.2%	916	2.4	2,205	2,281	1,824	41%	166,345	3.5%	157,583,238	126,066,591
2006	1,943	59.7%	1,159	2.2	2,589	2,704	2,163	50%	173,733	4.4%	210,355,276	168,284,221
2007	2,025	63.4%	1,284	2.2	2,803	2,927	2,341	53%	188,342	8.4%	252,580,030	202,064,024
2008	2,108	69.0%	1,455	2.1	3,039	3,204	2,691	61%	193,301	2.6%	296,411,177	248,985,388
2009	2,191	71.3%	1,563	2.0	3,125	3,357	2,685	61%	199,921	3.4%	335,540,115	268,432,092
2010	2,279	75.1%	1,711	2.0	3,423	3,677	2,941	65%	207,124	3.6%	380,772,227	304,617,782
2011	2,362	79.0%	1,866	2.0	3,731	4,008	3,206	68%	214,773	3.7%	430,392,775	344,314,220
2012	2,445	83.0%	2,028	2.0	4,057	4,358	3,486	71%	222,890	3.8%	485,622,366	388,497,893
2013	2,520	87.0%	2,193	2.0	4,385	4,710	3,768	75%	230,796	3.5%	543,566,052	434,852,841
2014	2,595	87.0%	2,258	2.0	4,516	4,850	3,880	75%	239,816	3.9%	581,612,839	465,290,271
2015	2,684	87.0%	2,335	2.0	4,669	5,016	4,013	75%	249,320	4.0%	625,256,344	500,205,075
2016	2,759	87.0%	2,400	2.0	4,801	5,157	4,125	75%	259,329	4.0%	668,617,741	534,894,192
2017	2,834	87.0%	2,466	2.0	4,932	5,297	4,238	75%	269,864	4.1%	714,783,853	571,827,082
2018	2,877	87.0%	2,503	2.0	5,005	5,376	4,301	75%	280,599	4.0%	754,313,402	603,450,721
2019	2,919	87.0%	2,539	2.0	5,079	5,456	4,364	75%	291,830	4.0%	796,044,148	636,835,318
2020	2,975	87.0%	2,588	2.0	5,176	5,560	4,448	75%	303,581	4.0%	843,892,041	675,113,633
2021	3,017	87.0%	2,625	2.0	5,250	5,639	4,511	75%	315,875	4.0%	890,613,695	712,490,956
2022	3,060	87.0%	2,662	2.0	5,324	5,718	4,575	75%	328,739	4.1%	939,941,304	751,953,044
2023	3,044	87.0%	2,648	2.0	5,296	5,689	4,551	75%	342,457	4.2%	974,068,687	779,254,949
2024	3,028	87.0%	2,634	2.0	5,268	5,659	4,527	75%	356,707	4.2%	1,009,292,953	807,434,363
2025	3,027	87.0%	2,633	2.0	5,267	5,657	4,526	75%	371,506	4.1%	1,050,832,566	840,666,053
2026	3,011	87.0%	2,619	2.0	5,239	5,627	4,502	75%	386,872	4.1%	1,088,511,565	870,809,252
2027	2,995	87.0%	2,605	2.0	5,211	5,597	4,478	75%	402,823	4.1%	1,127,367,421	901,893,937
2028	2,897	87.0%	2,521	2.0	5,041	5,415	4,332	75%	421,605	4.7%	1,141,490,362	913,192,290
2029	2,800	87.0%	2,436	2.0	4,871	5,233	4,186	75%	441,157	4.6%	1,154,201,806	923,361,445
2030	2,688	87.0%	2,338	2.0	4,677	5,024	4,019	75%	461,491	4.6%	1,159,180,947	927,344,757
2031	2,591	87.0%	2,254	2.0	4,508	4,842	3,874	75%	482,613	4.6%	1,168,461,288	934,769,030
2032	2,494	87.0%	2,170	2.0	4,339	4,661	3,729	75%	504,524	4.5%	1,175,750,608	940,600,486
2033	2,350	87.0%	2,045	2.0	4,090	4,393	3,514	75%	531,745	5.4%	1,167,963,152	934,370,521
2034	2,207	87.0%	1,920	2.0	3,840	4,125	3,300	75%	560,662	5.4%	1,156,382,654	925,106,123
2035	2,008	87.0%	1,747	2.0	3,494	3,753	3,002	75%	591,437	5.5%	1,109,774,644	887,819,715
2036	1,868	87.0%	1,626	2.0	3,251	3,492	2,794	75%	624,262	5.6%	1,090,015,424	872,012,339
2037	1,729	87.0%	1,504	2.0	3,008	3,232	2,585	75%	659,375	5.6%	1,065,397,159	852,317,727
2038	1,637	87.0%	1,424	2.0	2,848	3,059	2,447	75%	697,688	5.8%	1,067,133,738	853,706,991
2039	1,544	87.0%	1,344	2.0	2,687	2,887	2,309	75%	738,799	5.9%	1,066,300,464	853,040,372
2040	1,474	87.0%	1,282	2.0	2,565	2,755	2,204	75%	783,041	6.0%	1,078,696,631	862,957,305
2041	1,380	87.0%	1,201	2.0	2,402	2,580	2,064	75%	830,823	6.1%	1,071,785,353	857,428,283
2042	1,287	87.0%	1,119	2.0	2,239	2,405	1,924	75%	882,649	6.2%	1,061,372,333	849,097,866
2043	1,196	87.0%	1,040	2.0	2,081	2,235	1,788	75%	932,878	5.7%	1,042,395,855	833,916,684
2044	1,105	87.0%	961	2.0	1,922	2,065	1,652	75%	986,848	5.8%	1,018,734,674	814,987,739
2045	1,073	87.0%	934	2.0	1,867	2,006	1,605	75%	1,045,110	5.9%	1,048,078,191	838,462,553
2046	977	87.0%	850	2.0	1,699	1,826	1,460	75%	1,108,391	6.1%	1,011,691,978	809,353,582
2047	880	87.0%	766	2.0	1,532	1,645	1,316	75%	1,177,693	6.3%	968,857,963	775,086,370
2048	704	87.0%	613	2.0	1,225	1,316	1,053	75%	1,237,877	5.1%	814,695,977	651,756,781
2049	528	87.0%	460	2.0	919	987	790	75%	1,301,169	5.1%	642,263,093	513,810,474
2050	-		-	2.0	-	-	-				-	-
2009&post	**90,038**	**86.0%**	**77,430**	**2.0**	**154,859**	**166,342**	**133,073**	**74%**	**451,139**		**37,521,666,385**	**30,017,333,108**

Total Meso Cost 2004-2040 23,926,114,046

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	156,603		109,675,728	87,740,583
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	158,619	1.3%	122,558,983	98,047,187
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	2.4%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	165,911	2.2%	184,972,856	147,978,285
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	176,455	6.4%	216,906,817	173,525,453
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	177,942	0.8%	250,006,576	210,005,524
2009	2,003	67.6%	1,355	2.0	2,709	2,910	2,328	58%	181,493	2.0%	264,083,887	211,267,109
2010	2,069	67.3%	1,392	2.0	2,785	2,991	2,393	58%	185,113	2.0%	276,864,495	221,491,596
2011	2,130	67.0%	1,426	2.0	2,853	3,064	2,451	58%	188,884	2.0%	289,388,241	231,510,592
2012	2,191	66.7%	1,460	2.0	2,921	3,137	2,510	57%	192,807	2.1%	302,425,584	241,940,467
2013	2,232	66.2%	1,477	2.0	2,955	3,174	2,539	57%	196,562	1.9%	311,949,064	249,559,251
2014	2,273	65.8%	1,495	2.0	2,989	3,211	2,569	57%	200,425	2.0%	321,785,147	257,428,117
2015	2,326	65.3%	1,519	2.0	3,039	3,264	2,611	56%	204,399	2.0%	333,587,556	266,870,045
2016	2,367	64.9%	1,537	2.0	3,073	3,301	2,641	56%	208,487	2.0%	344,133,573	275,306,858
2017	2,409	64.5%	1,554	2.0	3,108	3,338	2,671	55%	212,693	2.0%	355,027,487	284,021,990
2018	2,409	64.0%	1,542	2.0	3,085	3,314	2,651	55%	217,135	2.1%	359,745,193	287,796,154
2019	2,409	63.5%	1,531	2.0	3,062	3,289	2,631	55%	221,630	2.1%	364,440,013	291,552,010
2020	2,418	63.1%	1,525	2.0	3,049	3,275	2,620	54%	226,176	2.1%	370,417,276	296,333,820
2021	2,418	62.6%	1,513	2.0	3,026	3,251	2,600	54%	230,771	2.0%	375,065,300	300,052,240
2022	2,418	62.1%	1,501	2.0	3,003	3,226	2,580	53%	235,410	2.0%	379,672,138	303,737,710
2023	2,363	61.6%	1,456	2.0	2,913	3,129	2,503	53%	240,907	2.3%	376,875,090	301,500,072
2024	2,307	61.2%	1,411	2.0	2,823	3,032	2,426	53%	246,423	2.3%	373,573,369	298,858,695
2025	2,247	60.7%	1,363	2.0	2,727	2,929	2,343	52%	251,938	2.2%	368,943,843	295,155,074
2026	2,192	60.1%	1,318	2.0	2,637	2,832	2,266	52%	257,432	2.2%	364,553,640	291,642,912
2027	2,137	59.6%	1,273	2.0	2,547	2,736	2,188	51%	262,880	2.1%	359,568,691	287,654,953
2028	2,040	59.3%	1,209	2.0	2,419	2,598	2,078	51%	269,694	2.6%	350,327,438	280,261,950
2029	1,943	58.9%	1,145	2.0	2,290	2,460	1,968	51%	276,549	2.5%	340,197,887	272,158,309
2030	1,845	58.5%	1,080	2.0	2,160	2,320	1,856	50%	283,410	2.5%	328,746,678	262,997,343
2031	1,748	58.1%	1,016	2.0	2,032	2,182	1,746	50%	290,235	2.4%	316,710,219	253,368,175
2032	1,651	57.6%	952	2.0	1,904	2,045	1,636	50%	296,963	2.3%	303,637,829	242,910,263
2033	1,526	57.7%	880	2.0	1,760	1,890	1,512	50%	306,673	3.3%	289,801,909	231,841,527
2034	1,400	57.7%	808	2.0	1,615	1,735	1,388	50%	316,811	3.3%	274,833,328	219,866,662
2035	1,226	57.7%	707	2.0	1,414	1,519	1,215	50%	327,430	3.4%	248,728,304	198,982,643
2036	1,105	57.7%	638	2.0	1,276	1,370	1,096	50%	338,600	3.4%	231,984,406	185,587,525
2037	985	57.7%	568	2.0	1,137	1,221	977	50%	350,421	3.5%	213,973,594	171,178,875
2038	912	57.9%	528	2.0	1,055	1,133	907	50%	363,122	3.6%	205,784,981	164,627,985
2039	839	58.0%	487	2.0	973	1,046	836	50%	376,602	3.7%	196,888,094	157,510,476
2040	777	58.2%	452	2.0	905	972	778	50%	390,997	3.8%	190,015,287	152,012,230
2041	703	58.4%	411	2.0	822	883	706	50%	406,494	4.0%	179,433,520	143,546,816
2042	629	58.7%	369	2.0	739	794	635	50%	423,359	4.1%	168,013,685	134,410,948
2043	570	59.0%	336	2.0	672	722	578	51%	439,444	3.8%	158,697,258	126,957,806
2044	511	59.3%	303	2.0	606	651	521	51%	456,789	3.9%	148,641,567	118,913,253
2045	464	59.8%	277	2.0	554	595	476	51%	475,729	4.1%	141,603,947	113,283,158
2046	403	60.3%	243	2.0	486	522	418	52%	496,778	4.4%	129,632,222	103,705,777
2047	342	61.1%	209	2.0	418	448	359	52%	520,781	4.8%	116,777,419	93,421,935
2048	274	61.1%	167	2.0	334	359	287	52%	536,996	3.1%	96,330,709	77,064,568
2049	205	61.1%	125	2.0	251	269	215	52%	553,730	3.1%	74,499,434	59,599,547
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**62.0%**	**40,562**	**2.0**	**81,123**	**87,138**	**69,711**	**53%**	**257,002**		**11,197,359,300**	**8,957,887,440**

Total Meso Cost 2004-2040 8,730,865,505

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	154,555		108,241,439	86,593,151
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	157,593	2.0%	121,766,657	97,413,325
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.0%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	167,521	3.2%	186,768,126	149,414,501
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	179,899	7.4%	221,140,003	176,912,003
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	183,176	1.8%	257,360,637	216,182,935
2009	2,003	67.6%	1,355	2.0	2,709	2,910	2,328	58%	188,645	3.0%	274,491,482	219,593,186
2010	2,069	67.3%	1,392	2.0	2,785	2,991	2,393	58%	194,277	3.0%	290,569,615	232,455,692
2011	2,130	67.0%	1,426	2.0	2,853	3,064	2,451	58%	200,158	3.0%	306,661,645	245,329,316
2012	2,191	66.7%	1,460	2.0	2,921	3,137	2,510	57%	206,299	3.1%	323,588,027	258,870,422
2013	2,232	66.2%	1,477	2.0	2,955	3,174	2,539	57%	212,358	2.9%	337,017,616	269,614,093
2014	2,273	65.8%	1,495	2.0	2,989	3,211	2,569	57%	218,633	3.0%	351,018,157	280,814,526
2015	2,326	65.3%	1,519	2.0	3,039	3,264	2,611	56%	225,132	3.0%	367,424,214	293,939,371
2016	2,367	64.9%	1,537	2.0	3,073	3,301	2,641	56%	231,863	3.0%	382,718,088	306,174,471
2017	2,409	64.5%	1,554	2.0	3,108	3,338	2,671	55%	238,836	3.0%	398,664,537	318,931,630
2018	2,409	64.0%	1,542	2.0	3,085	3,314	2,651	55%	246,189	3.1%	407,881,471	326,305,177
2019	2,409	63.5%	1,531	2.0	3,062	3,289	2,631	55%	253,724	3.1%	417,213,199	333,770,559
2020	2,418	63.1%	1,525	2.0	3,049	3,275	2,620	54%	261,440	3.0%	428,169,651	342,535,721
2021	2,418	62.6%	1,513	2.0	3,026	3,251	2,600	54%	269,338	3.0%	437,747,668	350,198,135
2022	2,418	62.1%	1,501	2.0	3,003	3,226	2,580	53%	277,418	3.0%	447,422,304	357,937,843
2023	2,363	61.6%	1,456	2.0	2,913	3,129	2,503	53%	286,649	3.3%	448,433,518	358,746,814
2024	2,307	61.2%	1,411	2.0	2,823	3,032	2,426	53%	296,055	3.3%	448,815,577	359,052,462
2025	2,247	60.7%	1,363	2.0	2,727	2,929	2,343	52%	305,617	3.2%	447,551,785	358,041,428
2026	2,192	60.1%	1,318	2.0	2,637	2,832	2,266	52%	315,309	3.2%	446,514,022	357,211,218
2027	2,137	59.6%	1,273	2.0	2,547	2,736	2,188	51%	325,103	3.1%	444,678,131	355,742,505
2028	2,040	59.3%	1,209	2.0	2,419	2,598	2,078	51%	336,764	3.6%	437,449,856	349,959,885
2029	1,943	58.9%	1,145	2.0	2,290	2,460	1,968	51%	348,671	3.5%	428,919,323	343,135,458
2030	1,845	58.5%	1,080	2.0	2,160	2,320	1,856	50%	360,786	3.5%	418,499,441	334,799,553
2031	1,748	58.1%	1,016	2.0	2,032	2,182	1,746	50%	373,054	3.4%	407,084,628	325,667,702
2032	1,651	57.6%	952	2.0	1,904	2,045	1,636	50%	385,402	3.3%	394,064,395	315,251,516
2033	1,526	57.7%	880	2.0	1,760	1,890	1,512	50%	401,861	4.3%	379,753,657	303,802,926
2034	1,400	57.7%	808	2.0	1,615	1,735	1,388	50%	419,170	4.3%	363,629,706	290,903,765
2035	1,226	57.7%	707	2.0	1,414	1,519	1,215	50%	437,419	4.4%	332,280,042	265,824,033
2036	1,105	57.7%	638	2.0	1,276	1,370	1,096	50%	456,725	4.4%	312,915,313	250,332,250
2037	985	57.7%	568	2.0	1,137	1,221	977	50%	477,251	4.5%	291,418,493	233,134,794
2038	912	57.9%	528	2.0	1,055	1,133	907	50%	499,342	4.6%	282,982,474	226,385,979
2039	839	58.0%	487	2.0	973	1,046	836	50%	522,899	4.7%	273,372,136	218,697,709
2040	777	58.2%	452	2.0	905	972	778	50%	548,147	4.8%	266,386,558	213,109,247
2041	703	58.4%	411	2.0	822	883	706	50%	575,396	5.0%	253,989,895	203,191,916
2042	629	58.7%	369	2.0	739	794	635	50%	605,077	5.2%	240,130,232	192,104,186
2043	570	59.0%	336	2.0	672	722	578	51%	634,153	4.8%	229,013,084	183,210,467
2044	511	59.3%	303	2.0	606	651	521	51%	665,573	5.0%	216,580,827	173,264,662
2045	464	59.8%	277	2.0	554	595	476	51%	699,888	5.2%	208,326,376	166,661,101
2046	403	60.3%	243	2.0	486	522	418	52%	737,940	5.4%	192,562,415	154,049,932
2047	342	61.1%	209	2.0	418	448	359	52%	781,096	5.8%	175,149,089	140,119,271
2048	274	61.1%	167	2.0	334	359	287	52%	813,219	4.1%	145,881,699	116,705,359
2049	205	61.1%	125	2.0	251	269	215	52%	846,684	4.1%	113,913,686	91,130,948
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**62.0%**	**40,562**	**2.0**	**81,123**	**87,138**	**69,711**	**53%**	**316,069**		**13,770,884,033**	**11,016,707,226**

Total Meso Cost 2004-2040 10,350,517,574

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 1: Stays constant at 2008 level
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	152,566		106,848,017	85,478,414
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	156,588	2.6%	120,989,454	96,791,563
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.7%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	169,131	4.2%	188,563,395	150,850,716
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	183,376	8.4%	225,414,101	180,331,281
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	188,512	2.8%	264,857,524	222,480,320
2009	2,003	67.6%	1,355	2.0	2,709	2,910	2,328	58%	196,007	4.0%	285,203,723	228,162,978
2010	2,069	67.3%	1,392	2.0	2,785	2,991	2,393	58%	203,799	4.0%	304,812,196	243,849,757
2011	2,130	67.0%	1,426	2.0	2,853	3,064	2,451	58%	211,988	4.0%	324,785,866	259,828,693
2012	2,191	66.7%	1,460	2.0	2,921	3,137	2,510	57%	220,592	4.1%	346,007,342	276,805,874
2013	2,232	66.2%	1,477	2.0	2,955	3,174	2,539	57%	229,253	3.9%	363,831,551	291,065,240
2014	2,273	65.8%	1,495	2.0	2,989	3,211	2,569	57%	238,296	3.9%	382,588,493	306,070,795
2015	2,326	65.3%	1,519	2.0	3,039	3,264	2,611	56%	247,738	4.0%	404,319,180	323,455,344
2016	2,367	64.9%	1,537	2.0	3,073	3,301	2,641	56%	257,598	4.0%	425,196,307	340,157,046
2017	2,409	64.5%	1,554	2.0	3,108	3,338	2,671	55%	267,894	4.0%	447,169,015	357,735,212
2018	2,409	64.0%	1,542	2.0	3,085	3,314	2,651	55%	278,796	4.1%	461,903,610	369,522,888
2019	2,409	63.5%	1,531	2.0	3,062	3,289	2,631	55%	290,089	4.1%	477,010,971	381,608,776
2020	2,418	63.1%	1,525	2.0	3,049	3,275	2,620	54%	301,783	4.0%	494,241,055	395,392,844
2021	2,418	62.6%	1,513	2.0	3,026	3,251	2,600	54%	313,886	4.0%	510,151,354	408,121,083
2022	2,418	62.1%	1,501	2.0	3,003	3,226	2,580	53%	326,408	4.0%	526,434,988	421,147,990
2023	2,363	61.6%	1,456	2.0	2,913	3,129	2,503	53%	340,510	4.3%	532,692,874	426,154,299
2024	2,307	61.2%	1,411	2.0	2,823	3,032	2,426	53%	355,061	4.3%	538,267,431	430,613,945
2025	2,247	60.7%	1,363	2.0	2,727	2,929	2,343	52%	370,048	4.2%	541,906,651	433,525,321
2026	2,192	60.1%	1,318	2.0	2,637	2,832	2,266	52%	385,451	4.2%	545,841,971	436,673,577
2027	2,137	59.6%	1,273	2.0	2,547	2,736	2,188	51%	401,239	4.1%	548,817,369	439,053,895
2028	2,040	59.3%	1,209	2.0	2,419	2,598	2,078	51%	419,622	4.6%	545,080,427	436,064,342
2029	1,943	58.9%	1,145	2.0	2,290	2,460	1,968	51%	438,630	4.5%	539,582,449	431,665,959
2030	1,845	58.5%	1,080	2.0	2,160	2,320	1,856	50%	458,227	4.5%	531,528,582	425,222,866
2031	1,748	58.1%	1,016	2.0	2,032	2,182	1,746	50%	478,358	4.4%	521,994,107	417,595,286
2032	1,651	57.6%	952	2.0	1,904	2,045	1,636	50%	498,935	4.3%	510,148,761	408,119,009
2033	1,526	57.7%	880	2.0	1,760	1,890	1,512	50%	525,236	5.3%	496,342,015	397,073,612
2034	1,400	57.7%	808	2.0	1,615	1,735	1,388	50%	553,119	5.3%	479,830,334	383,864,267
2035	1,226	57.7%	707	2.0	1,414	1,519	1,215	50%	582,740	5.4%	442,671,670	354,137,336
2036	1,105	57.7%	638	2.0	1,276	1,370	1,096	50%	614,301	5.4%	420,875,170	336,700,136
2037	985	57.7%	568	2.0	1,137	1,221	977	50%	648,070	5.5%	395,724,137	316,579,309
2038	912	57.9%	528	2.0	1,055	1,133	907	50%	684,578	5.6%	387,957,318	310,365,855
2039	839	58.0%	487	2.0	973	1,046	836	50%	723,754	5.7%	378,379,521	302,703,617
2040	777	58.2%	452	2.0	905	972	778	50%	765,984	5.8%	372,249,991	297,799,993
2041	703	58.4%	411	2.0	822	883	706	50%	811,780	6.0%	358,333,952	286,667,161
2042	629	58.7%	369	2.0	739	794	635	50%	861,850	6.2%	342,032,767	273,626,214
2043	570	59.0%	336	2.0	672	722	578	51%	911,935	5.8%	329,328,944	263,463,155
2044	511	59.3%	303	2.0	606	651	521	51%	966,305	6.0%	314,440,528	251,552,423
2045	464	59.8%	277	2.0	554	595	476	51%	1,025,879	6.2%	305,359,872	244,287,897
2046	403	60.3%	243	2.0	486	522	418	52%	1,092,040	6.4%	284,963,284	227,970,627
2047	342	61.1%	209	2.0	418	448	359	52%	1,167,004	6.9%	261,683,123	209,346,498
2048	274	61.1%	167	2.0	334	359	287	52%	1,226,655	5.1%	220,047,162	176,037,730
2049	205	61.1%	125	2.0	251	269	215	52%	1,289,386	5.1%	173,475,373	138,780,298
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**62.0%**	**40,562**	**2.0**	**81,123**	**87,138**	**69,711**	**53%**	**391,864**		**17,073,211,432**	**13,658,569,146**

Total Meso Cost 2004-2040 12,351,616,447

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	156,603		109,675,728	87,740,583
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	158,619	1.3%	122,558,983	98,047,187
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	2.4%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	165,911	2.2%	184,972,856	147,978,285
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	176,455	6.4%	216,906,817	173,525,453
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	177,942	0.8%	250,006,576	210,005,524
2009	2,003	68.5%	1,372	2.0	2,743	2,947	2,357	59%	181,168	1.8%	266,932,603	213,546,083
2010	2,069	69.0%	1,427	2.0	2,855	3,066	2,453	59%	184,469	1.8%	282,830,424	226,264,339
2011	2,130	69.5%	1,480	2.0	2,959	3,179	2,543	60%	187,931	1.9%	298,711,759	238,969,407
2012	2,191	70.0%	1,533	2.0	3,065	3,292	2,634	60%	191,559	1.9%	315,352,462	252,281,969
2013	2,232	70.3%	1,570	2.0	3,139	3,372	2,698	60%	194,999	1.8%	328,758,814	263,007,051
2014	2,273	70.7%	1,607	2.0	3,214	3,452	2,762	61%	198,560	1.8%	342,734,738	274,187,791
2015	2,326	71.1%	1,653	2.0	3,306	3,551	2,841	61%	202,247	1.9%	359,059,530	287,247,624
2016	2,367	71.4%	1,691	2.0	3,382	3,633	2,906	61%	206,069	1.9%	374,283,733	299,426,986
2017	2,409	71.8%	1,729	2.0	3,458	3,715	2,972	62%	210,029	1.9%	390,117,423	312,093,938
2018	2,409	72.1%	1,737	2.0	3,474	3,731	2,985	62%	214,194	2.0%	399,602,557	319,682,046
2019	2,409	71.9%	1,732	2.0	3,464	3,721	2,976	62%	218,598	2.1%	406,657,775	325,326,220
2020	2,418	71.7%	1,733	2.0	3,466	3,723	2,979	62%	223,070	2.0%	415,262,650	332,210,120
2021	2,418	71.5%	1,728	2.0	3,456	3,713	2,970	61%	227,610	2.0%	422,501,835	338,001,468
2022	2,418	71.3%	1,723	2.0	3,446	3,702	2,961	61%	232,217	2.0%	429,818,157	343,854,526
2023	2,363	71.1%	1,679	2.0	3,358	3,607	2,886	61%	237,609	2.3%	428,546,516	342,837,213
2024	2,307	70.9%	1,635	2.0	3,270	3,512	2,810	61%	243,032	2.3%	426,818,948	341,455,158
2025	2,247	70.6%	1,587	2.0	3,175	3,410	2,728	61%	248,472	2.2%	423,696,105	338,956,884
2026	2,192	70.4%	1,544	2.0	3,087	3,316	2,653	61%	253,914	2.2%	420,978,877	336,783,101
2027	2,137	70.2%	1,500	2.0	2,999	3,221	2,577	60%	259,340	2.1%	417,720,579	334,176,463
2028	2,040	70.0%	1,429	2.0	2,858	3,070	2,456	60%	265,986	2.6%	408,235,800	326,588,640
2029	1,943	69.9%	1,358	2.0	2,716	2,918	2,334	60%	272,669	2.5%	397,795,630	318,236,504
2030	1,845	69.7%	1,286	2.0	2,572	2,763	2,210	60%	279,357	2.5%	385,895,583	308,716,466
2031	1,748	69.5%	1,215	2.0	2,431	2,611	2,089	60%	286,010	2.4%	373,402,550	298,722,040
2032	1,651	69.3%	1,145	2.0	2,290	2,459	1,968	60%	292,577	2.3%	359,793,885	287,835,108
2033	1,526	69.3%	1,058	2.0	2,116	2,273	1,818	60%	302,064	3.2%	343,262,492	274,609,993
2034	1,400	69.3%	971	2.0	1,942	2,086	1,669	60%	311,954	3.3%	325,379,999	260,303,999
2035	1,226	69.3%	850	2.0	1,700	1,826	1,461	60%	322,292	3.3%	294,308,810	235,447,048
2036	1,105	69.4%	767	2.0	1,533	1,647	1,317	60%	333,138	3.4%	274,309,627	219,447,702
2037	985	69.4%	683	2.0	1,366	1,467	1,174	60%	344,577	3.4%	252,799,155	202,239,324
2038	912	69.4%	633	2.0	1,266	1,360	1,088	60%	356,879	3.6%	242,633,219	194,106,575
2039	839	69.5%	583	2.0	1,166	1,252	1,002	60%	369,908	3.7%	231,599,706	185,279,765
2040	777	69.6%	541	2.0	1,081	1,162	929	60%	383,790	3.8%	222,902,049	178,321,639
2041	703	69.7%	490	2.0	980	1,052	842	60%	398,697	3.9%	209,803,066	167,842,453
2042	629	69.8%	439	2.0	878	943	755	60%	414,879	4.1%	195,677,907	156,542,326
2043	570	69.9%	398	2.0	797	856	685	60%	430,505	3.8%	184,228,015	147,382,412
2044	511	70.1%	358	2.0	715	768	615	60%	447,347	3.9%	171,879,189	137,503,351
2045	464	70.2%	326	2.0	651	700	560	60%	465,737	4.1%	162,952,832	130,362,265
2046	403	70.5%	284	2.0	568	610	488	61%	486,196	4.4%	148,271,082	118,616,865
2047	342	70.8%	242	2.0	484	520	416	61%	509,595	4.8%	132,515,815	106,012,652
2048	274	70.8%	194	2.0	387	416	333	61%	525,476	3.1%	109,316,283	87,453,027
2049	205	70.8%	145	2.0	291	312	250	61%	541,865	3.1%	84,544,333	67,635,466
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**70.4%**	**46,053**	**2.0**	**92,106**	**98,935**	**79,148**	**60%**	**255,963**		**12,661,892,512**	**10,129,514,009**

Total Meso Cost 2004-2040 9,754,045,064

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	154,555		108,241,439	86,593,151
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	157,593	2.0%	121,766,657	97,413,325
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.0%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	167,521	3.2%	186,768,126	149,414,501
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	179,899	7.4%	221,140,003	176,912,003
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	183,176	1.8%	257,360,637	216,182,935
2009	2,003	68.5%	1,372	2.0	2,743	2,947	2,357	59%	188,308	2.8%	277,452,463	221,961,970
2010	2,069	69.0%	1,427	2.0	2,855	3,066	2,453	59%	193,601	2.8%	296,830,853	237,464,683
2011	2,130	69.5%	1,480	2.0	2,959	3,179	2,543	60%	199,149	2.9%	316,541,656	253,233,325
2012	2,191	70.0%	1,533	2.0	3,065	3,292	2,634	60%	204,963	2.9%	337,419,430	269,935,544
2013	2,232	70.3%	1,570	2.0	3,139	3,372	2,698	60%	210,670	2.8%	355,178,146	284,142,517
2014	2,273	70.7%	1,607	2.0	3,214	3,452	2,762	61%	216,598	2.8%	373,870,837	299,096,670
2015	2,326	71.1%	1,653	2.0	3,306	3,551	2,841	61%	222,762	2.8%	395,479,723	316,383,778
2016	2,367	71.4%	1,691	2.0	3,382	3,633	2,906	61%	229,173	2.9%	416,248,493	332,998,794
2017	2,409	71.8%	1,729	2.0	3,458	3,715	2,972	62%	235,844	2.9%	438,067,150	350,453,720
2018	2,409	72.1%	1,737	2.0	3,474	3,731	2,985	62%	242,855	3.0%	453,071,640	362,457,312
2019	2,409	71.9%	1,732	2.0	3,464	3,721	2,976	62%	250,252	3.0%	465,543,911	372,435,128
2020	2,418	71.7%	1,733	2.0	3,466	3,723	2,979	62%	257,849	3.0%	480,006,414	384,005,132
2021	2,418	71.5%	1,728	2.0	3,456	3,713	2,970	61%	265,648	3.0%	493,111,369	394,489,095
2022	2,418	71.3%	1,723	2.0	3,446	3,702	2,961	61%	273,655	3.0%	506,515,872	405,212,697
2023	2,363	71.1%	1,679	2.0	3,358	3,607	2,886	61%	282,724	3.3%	509,915,164	407,932,131
2024	2,307	70.9%	1,635	2.0	3,270	3,512	2,810	61%	291,981	3.3%	512,784,574	410,227,659
2025	2,247	70.6%	1,587	2.0	3,175	3,410	2,728	61%	301,411	3.2%	513,968,697	411,174,958
2026	2,192	70.4%	1,544	2.0	3,087	3,316	2,653	61%	311,000	3.2%	515,623,929	412,499,143
2027	2,137	70.2%	1,500	2.0	2,999	3,221	2,577	60%	320,725	3.1%	516,593,334	413,274,668
2028	2,040	70.0%	1,429	2.0	2,858	3,070	2,456	60%	332,133	3.6%	509,758,093	407,806,474
2029	1,943	69.9%	1,358	2.0	2,716	2,918	2,334	60%	343,778	3.5%	501,536,807	401,229,445
2030	1,845	69.7%	1,286	2.0	2,572	2,763	2,210	60%	355,624	3.4%	491,249,359	392,999,488
2031	1,748	69.5%	1,215	2.0	2,431	2,611	2,089	60%	367,623	3.4%	479,952,721	383,962,177
2032	1,651	69.3%	1,145	2.0	2,290	2,459	1,968	60%	379,708	3.3%	466,942,622	373,554,097
2033	1,526	69.3%	1,058	2.0	2,116	2,273	1,818	60%	395,821	4.2%	449,806,124	359,844,900
2034	1,400	69.3%	971	2.0	1,942	2,086	1,669	60%	412,742	4.3%	430,505,756	344,404,605
2035	1,226	69.3%	850	2.0	1,700	1,826	1,461	60%	430,553	4.3%	393,169,943	314,535,955
2036	1,105	69.4%	767	2.0	1,533	1,647	1,317	60%	449,355	4.4%	370,004,413	296,003,530
2037	985	69.4%	683	2.0	1,366	1,467	1,174	60%	469,290	4.4%	344,294,578	275,435,662
2038	912	69.4%	633	2.0	1,266	1,360	1,088	60%	490,754	4.6%	333,651,875	266,921,500
2039	839	69.5%	583	2.0	1,166	1,252	1,002	60%	513,601	4.7%	321,565,931	257,252,744
2040	777	69.6%	541	2.0	1,081	1,162	929	60%	538,040	4.8%	312,489,069	249,991,255
2041	703	69.7%	490	2.0	980	1,052	842	60%	564,356	4.9%	296,976,063	237,580,850
2042	629	69.8%	439	2.0	878	943	755	60%	592,952	5.1%	279,666,507	223,733,206
2043	570	69.9%	398	2.0	797	856	685	60%	621,248	4.8%	265,853,772	212,683,017
2044	511	70.1%	358	2.0	715	768	615	60%	651,809	4.9%	250,437,355	200,349,884
2045	464	70.2%	326	2.0	651	700	560	60%	685,182	5.1%	239,732,376	191,785,901
2046	403	70.5%	284	2.0	568	610	488	61%	722,214	5.4%	220,247,357	176,197,886
2047	342	70.8%	242	2.0	484	520	416	61%	764,311	5.8%	198,752,348	159,001,878
2048	274	70.8%	194	2.0	387	416	333	61%	795,764	4.1%	165,545,079	132,436,063
2049	205	70.8%	145	2.0	291	312	250	61%	828,532	4.1%	129,271,449	103,417,160
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**70.4%**	**46,053**	**2.0**	**92,106**	**98,935**	**79,148**	**60%**	**315,876**		**15,625,633,251**	**12,500,506,600**

Total Meso Cost 2004-2040 11,617,568,944

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 2: Proportionate increases for 10 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	152,566		106,848,017	85,478,414
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	156,588	2.6%	120,989,454	96,791,563
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.7%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	169,131	4.2%	188,563,395	150,850,716
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	183,376	8.4%	225,414,101	180,331,281
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	188,512	2.8%	264,857,524	222,480,320
2009	2,003	68.5%	1,372	2.0	2,743	2,947	2,357	59%	195,657	3.8%	288,280,255	230,624,204
2010	2,069	69.0%	1,427	2.0	2,855	3,066	2,453	59%	203,090	3.8%	311,380,324	249,104,259
2011	2,130	69.5%	1,480	2.0	2,959	3,179	2,543	60%	210,919	3.9%	335,249,777	268,199,821
2012	2,191	70.0%	1,533	2.0	3,065	3,292	2,634	60%	219,164	3.9%	360,796,990	288,637,592
2013	2,232	70.3%	1,570	2.0	3,139	3,372	2,698	60%	227,431	3.8%	383,436,902	306,749,522
2014	2,273	70.7%	1,607	2.0	3,214	3,452	2,762	61%	236,079	3.8%	407,496,415	325,997,132
2015	2,326	71.1%	1,653	2.0	3,306	3,551	2,841	61%	245,130	3.8%	435,191,721	348,153,377
2016	2,367	71.4%	1,691	2.0	3,382	3,633	2,906	61%	254,609	3.9%	462,448,049	369,958,439
2017	2,409	71.8%	1,729	2.0	3,458	3,715	2,972	62%	264,539	3.9%	491,365,327	393,092,262
2018	2,409	72.1%	1,737	2.0	3,474	3,731	2,985	62%	275,020	4.0%	513,078,608	410,462,887
2019	2,409	71.9%	1,732	2.0	3,464	3,721	2,976	62%	286,119	4.0%	532,268,263	425,814,611
2020	2,418	71.7%	1,733	2.0	3,466	3,723	2,979	62%	297,637	4.0%	554,076,222	443,260,978
2021	2,418	71.5%	1,728	2.0	3,456	3,713	2,970	61%	309,586	4.0%	574,671,543	459,737,234
2022	2,418	71.3%	1,723	2.0	3,446	3,702	2,961	61%	321,980	4.0%	595,963,400	476,770,720
2023	2,363	71.1%	1,679	2.0	3,358	3,607	2,886	61%	335,846	4.3%	605,725,825	484,580,660
2024	2,307	70.9%	1,635	2.0	3,270	3,512	2,810	61%	350,174	4.3%	614,984,827	491,987,862
2025	2,247	70.6%	1,587	2.0	3,175	3,410	2,728	61%	364,956	4.2%	622,324,716	497,859,773
2026	2,192	70.4%	1,544	2.0	3,087	3,316	2,653	61%	380,181	4.2%	630,324,237	504,259,389
2027	2,137	70.2%	1,500	2.0	2,999	3,221	2,577	60%	395,834	4.1%	637,573,008	510,058,406
2028	2,040	70.0%	1,429	2.0	2,858	3,070	2,456	60%	413,850	4.6%	635,177,906	508,142,324
2029	1,943	69.9%	1,358	2.0	2,716	2,918	2,334	60%	432,473	4.5%	630,933,878	504,747,102
2030	1,845	69.7%	1,286	2.0	2,572	2,763	2,210	60%	451,671	4.4%	623,925,094	499,140,075
2031	1,748	69.5%	1,215	2.0	2,431	2,611	2,089	60%	471,392	4.4%	615,428,983	492,343,187
2032	1,651	69.3%	1,145	2.0	2,290	2,459	1,968	60%	491,562	4.3%	604,493,474	483,594,779
2033	1,526	69.3%	1,058	2.0	2,116	2,273	1,818	60%	517,340	5.2%	587,899,070	470,319,256
2034	1,400	69.3%	971	2.0	1,942	2,086	1,669	60%	544,635	5.3%	568,074,776	454,459,821
2035	1,226	69.3%	850	2.0	1,700	1,826	1,461	60%	573,590	5.3%	523,788,347	419,030,678
2036	1,105	69.4%	767	2.0	1,533	1,647	1,317	60%	604,385	5.4%	497,658,328	398,126,663
2037	985	69.4%	683	2.0	1,366	1,467	1,174	60%	637,256	5.4%	467,523,360	374,018,688
2038	912	69.4%	633	2.0	1,266	1,360	1,088	60%	672,800	5.6%	457,420,359	365,936,287
2039	839	69.5%	583	2.0	1,166	1,252	1,002	60%	710,881	5.7%	445,082,699	356,066,159
2040	777	69.6%	541	2.0	1,081	1,162	929	60%	751,855	5.8%	436,670,951	349,336,761
2041	703	69.7%	490	2.0	980	1,052	842	60%	796,198	5.9%	418,976,634	335,181,307
2042	629	69.8%	439	2.0	878	943	755	60%	844,573	6.1%	398,343,653	318,674,923
2043	570	69.9%	398	2.0	797	856	685	60%	893,369	5.8%	382,303,969	305,843,175
2044	511	70.1%	358	2.0	715	768	615	60%	946,313	5.9%	363,591,561	290,873,249
2045	464	70.2%	326	2.0	651	700	560	60%	1,004,314	6.1%	351,390,792	281,112,634
2046	403	70.5%	284	2.0	568	610	488	61%	1,068,757	6.4%	325,929,664	260,743,731
2047	342	70.8%	242	2.0	484	520	416	61%	1,141,914	6.8%	296,944,822	237,555,858
2048	274	70.8%	194	2.0	387	416	333	61%	1,200,313	5.1%	249,704,701	199,763,761
2049	205	70.8%	145	2.0	291	312	250	61%	1,261,730	5.1%	196,861,074	157,488,859
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**70.4%**	**46,053**	**2.0**	**92,106**	**98,935**	**79,148**	**60%**	**392,879**		**19,434,760,502**	**15,547,808,401**

Total Meso Cost 2004-2040 13,925,350,210

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	156,603		109,675,728	87,740,583
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	158,619	1.3%	122,558,983	98,047,187
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	2.4%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	165,911	2.2%	184,972,856	147,978,285
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	176,455	6.4%	216,906,817	173,525,453
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	177,942	0.8%	250,006,576	210,005,524
2009	2,003	68.5%	1,372	2.0	2,743	2,947	2,357	59%	181,168	1.8%	266,932,603	213,546,083
2010	2,069	69.0%	1,427	2.0	2,855	3,066	2,453	59%	184,469	1.8%	282,830,424	226,264,339
2011	2,130	69.5%	1,480	2.0	2,959	3,179	2,543	60%	187,931	1.9%	298,711,759	238,969,407
2012	2,191	70.0%	1,533	2.0	3,065	3,292	2,634	60%	191,559	1.9%	315,352,462	252,281,969
2013	2,232	70.3%	1,570	2.0	3,139	3,372	2,698	60%	194,999	1.8%	328,758,814	263,007,051
2014	2,273	70.7%	1,607	2.0	3,214	3,452	2,762	61%	198,560	1.8%	342,734,738	274,187,791
2015	2,326	71.1%	1,653	2.0	3,306	3,551	2,841	61%	202,247	1.9%	359,059,530	287,247,624
2016	2,367	71.4%	1,691	2.0	3,382	3,633	2,906	61%	206,069	1.9%	374,283,733	299,426,986
2017	2,409	71.8%	1,729	2.0	3,458	3,715	2,972	62%	210,029	1.9%	390,117,423	312,093,938
2018	2,409	72.1%	1,737	2.0	3,474	3,731	2,985	62%	214,194	2.0%	399,602,557	319,682,046
2019	2,409	72.4%	1,744	2.0	3,488	3,747	2,998	62%	218,434	2.0%	409,251,627	327,401,302
2020	2,418	72.7%	1,758	2.0	3,515	3,776	3,021	62%	222,752	2.0%	420,552,810	336,442,248
2021	2,418	73.0%	1,765	2.0	3,529	3,791	3,033	63%	227,149	2.0%	430,564,487	344,451,590
2022	2,418	73.3%	1,771	2.0	3,543	3,806	3,044	63%	231,628	2.0%	440,740,441	352,592,353
2023	2,363	73.5%	1,737	2.0	3,475	3,732	2,986	63%	236,885	2.3%	442,075,370	353,660,296
2024	2,307	73.8%	1,703	2.0	3,405	3,658	2,926	63%	242,182	2.2%	442,916,072	354,332,858
2025	2,247	74.0%	1,664	2.0	3,327	3,574	2,859	64%	247,507	2.2%	442,288,487	353,830,790
2026	2,192	74.3%	1,628	2.0	3,255	3,497	2,797	64%	252,849	2.2%	442,073,274	353,658,620
2027	2,137	74.5%	1,591	2.0	3,182	3,418	2,735	64%	258,191	2.1%	441,294,130	353,035,304
2028	2,040	74.7%	1,524	2.0	3,048	3,274	2,620	64%	264,708	2.5%	433,390,523	346,712,419
2029	1,943	74.9%	1,456	2.0	2,913	3,129	2,503	64%	271,262	2.5%	424,352,636	339,482,109
2030	1,845	75.1%	1,386	2.0	2,772	2,978	2,382	65%	277,823	2.4%	413,648,855	330,919,084
2031	1,748	75.3%	1,317	2.0	2,634	2,829	2,263	65%	284,354	2.4%	402,214,738	321,771,791
2032	1,651	75.5%	1,247	2.0	2,494	2,679	2,143	65%	290,806	2.3%	389,500,576	311,600,461
2033	1,526	75.7%	1,156	2.0	2,311	2,483	1,986	65%	300,141	3.2%	372,565,416	298,052,333
2034	1,400	75.9%	1,063	2.0	2,127	2,285	1,828	65%	309,868	3.2%	353,974,863	283,179,890
2035	1,226	76.1%	933	2.0	1,867	2,005	1,604	65%	320,026	3.3%	320,831,878	256,665,502
2036	1,105	76.3%	843	2.0	1,687	1,812	1,450	66%	330,672	3.3%	299,568,609	239,654,887
2037	985	76.5%	753	2.0	1,506	1,618	1,294	66%	341,884	3.4%	276,501,398	221,201,118
2038	912	76.6%	699	2.0	1,397	1,501	1,201	66%	353,941	3.5%	265,592,685	212,474,148
2039	839	76.8%	644	2.0	1,288	1,383	1,107	66%	366,697	3.6%	253,630,301	202,904,241
2040	777	76.9%	598	2.0	1,195	1,284	1,027	66%	380,269	3.7%	244,125,221	195,300,177
2041	703	77.0%	542	2.0	1,083	1,164	931	66%	394,822	3.8%	229,699,779	183,759,823
2042	629	77.2%	485	2.0	971	1,043	834	66%	410,591	4.0%	214,051,958	171,241,566
2043	570	77.3%	440	2.0	880	946	757	66%	425,914	3.7%	201,397,101	161,117,681
2044	511	77.4%	395	2.0	790	848	679	66%	442,421	3.9%	187,683,730	150,146,984
2045	464	77.5%	359	2.0	718	772	617	67%	460,440	4.1%	177,622,866	142,098,293
2046	403	77.5%	312	2.0	625	671	537	67%	480,488	4.4%	161,199,446	128,959,557
2047	342	77.6%	265	2.0	531	570	456	67%	503,441	4.8%	143,525,990	114,820,792
2048	274	77.7%	212	2.0	425	456	365	67%	519,091	3.1%	118,471,736	94,777,389
2049	205	77.7%	159	2.0	319	343	274	67%	535,247	3.1%	91,677,055	73,341,644
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**73.3%**	**47,948**	**2.0**	**95,897**	**103,008**	**82,406**	**63%**	**257,173**		**13,245,368,102**	**10,596,294,482**

Total Meso Cost 2004-2040 10,119,912,627

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	154,555		108,241,439	86,593,151
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	157,593	2.0%	121,766,657	97,413,325
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.0%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	167,521	3.2%	186,768,126	149,414,501
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	179,899	7.4%	221,140,003	176,912,003
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	183,176	1.8%	257,360,637	216,182,935
2009	2,003	68.5%	1,372	2.0	2,743	2,947	2,357	59%	188,308	2.8%	277,452,463	221,961,970
2010	2,069	69.0%	1,427	2.0	2,855	3,066	2,453	59%	193,601	2.8%	296,830,853	237,464,683
2011	2,130	69.5%	1,480	2.0	2,959	3,179	2,543	60%	199,149	2.9%	316,541,656	253,233,325
2012	2,191	70.0%	1,533	2.0	3,065	3,292	2,634	60%	204,963	2.9%	337,419,430	269,935,544
2013	2,232	70.3%	1,570	2.0	3,139	3,372	2,698	60%	210,670	2.8%	355,178,146	284,142,517
2014	2,273	70.7%	1,607	2.0	3,214	3,452	2,762	61%	216,598	2.8%	373,870,837	299,096,670
2015	2,326	71.1%	1,653	2.0	3,306	3,551	2,841	61%	222,762	2.8%	395,479,723	316,383,778
2016	2,367	71.4%	1,691	2.0	3,382	3,633	2,906	61%	229,173	2.9%	416,248,493	332,998,794
2017	2,409	71.8%	1,729	2.0	3,458	3,715	2,972	62%	235,844	2.9%	438,067,150	350,453,720
2018	2,409	72.1%	1,737	2.0	3,474	3,731	2,985	62%	242,855	3.0%	453,071,640	362,457,312
2019	2,409	72.4%	1,744	2.0	3,488	3,747	2,998	62%	250,065	3.0%	468,513,341	374,810,673
2020	2,418	72.7%	1,758	2.0	3,515	3,776	3,021	62%	257,481	3.0%	486,121,311	388,897,049
2021	2,418	73.0%	1,765	2.0	3,529	3,791	3,033	63%	265,111	3.0%	502,521,379	402,017,103
2022	2,418	73.3%	1,771	2.0	3,543	3,806	3,044	63%	272,960	3.0%	519,387,018	415,509,614
2023	2,363	73.5%	1,737	2.0	3,475	3,732	2,986	63%	281,862	3.3%	526,012,575	420,810,060
2024	2,307	73.8%	1,703	2.0	3,405	3,658	2,926	63%	290,960	3.2%	532,123,586	425,698,869
2025	2,247	74.0%	1,664	2.0	3,327	3,574	2,859	64%	300,241	3.2%	536,522,078	429,217,663
2026	2,192	74.3%	1,628	2.0	3,255	3,497	2,797	64%	309,695	3.1%	541,460,450	433,168,360
2027	2,137	74.5%	1,591	2.0	3,182	3,418	2,735	64%	319,304	3.1%	545,746,243	436,596,995
2028	2,040	74.7%	1,524	2.0	3,048	3,274	2,620	64%	330,537	3.5%	541,167,956	432,934,365
2029	1,943	74.9%	1,456	2.0	2,913	3,129	2,503	64%	342,004	3.5%	535,019,073	428,015,259
2030	1,845	75.1%	1,386	2.0	2,772	2,978	2,382	65%	353,672	3.4%	526,578,965	421,263,172
2031	1,748	75.3%	1,317	2.0	2,634	2,829	2,263	65%	365,494	3.3%	516,985,759	413,588,607
2032	1,651	75.5%	1,247	2.0	2,494	2,679	2,143	65%	377,409	3.3%	505,495,380	404,396,304
2033	1,526	75.7%	1,156	2.0	2,311	2,483	1,986	65%	393,300	4.2%	488,203,427	390,562,742
2034	1,400	75.9%	1,063	2.0	2,127	2,285	1,828	65%	409,981	4.2%	468,338,349	374,670,679
2035	1,226	76.1%	933	2.0	1,867	2,005	1,604	65%	427,525	4.3%	428,601,472	342,881,178
2036	1,105	76.3%	843	2.0	1,687	1,812	1,450	66%	446,029	4.3%	404,074,229	323,259,383
2037	985	76.5%	753	2.0	1,506	1,618	1,294	66%	465,620	4.4%	376,574,390	301,259,512
2038	912	76.6%	699	2.0	1,397	1,501	1,201	66%	486,713	4.5%	365,223,055	292,178,444
2039	839	76.8%	644	2.0	1,288	1,383	1,107	66%	509,141	4.6%	352,153,331	281,722,664
2040	777	76.9%	598	2.0	1,195	1,284	1,027	66%	533,102	4.7%	342,240,904	273,792,724
2041	703	77.0%	542	2.0	1,083	1,164	931	66%	558,868	4.8%	325,138,599	260,110,879
2042	629	77.2%	485	2.0	971	1,043	834	66%	586,822	5.0%	305,925,750	244,740,600
2043	570	77.3%	440	2.0	880	946	757	66%	614,620	4.7%	290,628,631	232,502,905
2044	511	77.4%	395	2.0	790	848	679	66%	644,628	4.9%	273,464,103	218,771,282
2045	464	77.5%	359	2.0	718	772	617	67%	677,385	5.1%	261,313,226	209,050,581
2046	403	77.5%	312	2.0	625	671	537	67%	713,730	5.4%	239,450,303	191,560,242
2047	342	77.6%	265	2.0	531	570	456	67%	755,075	5.8%	215,264,576	172,211,661
2048	274	77.7%	212	2.0	425	456	365	67%	786,091	4.1%	179,408,706	143,526,965
2049	205	77.7%	159	2.0	319	343	274	67%	818,407	4.1%	140,176,751	112,141,401
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**73.3%**	**47,948**	**2.0**	**95,897**	**103,008**	**82,406**	**63%**	**318,423**		**16,399,995,309**	**13,119,996,247**

Total Meso Cost 2004-2040 12,089,627,919

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:

Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 3: Proportionate increases for 50 years, eligible ratio to 75% in 10 years
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	152,566		106,848,017	85,478,414
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	156,588	2.6%	120,989,454	96,791,563
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.7%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	169,131	4.2%	188,563,395	150,850,716
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	183,376	8.4%	225,414,101	180,331,281
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	188,512	2.8%	264,857,524	222,480,320
2009	2,003	68.5%	1,372	2.0	2,743	2,947	2,357	59%	195,657	3.8%	288,280,255	230,624,204
2010	2,069	69.0%	1,427	2.0	2,855	3,066	2,453	59%	203,090	3.8%	311,380,324	249,104,259
2011	2,130	69.5%	1,480	2.0	2,959	3,179	2,543	60%	210,919	3.9%	335,249,777	268,199,821
2012	2,191	70.0%	1,533	2.0	3,065	3,292	2,634	60%	219,164	3.9%	360,796,990	288,637,592
2013	2,232	70.3%	1,570	2.0	3,139	3,372	2,698	60%	227,431	3.8%	383,436,902	306,749,522
2014	2,273	70.7%	1,607	2.0	3,214	3,452	2,762	61%	236,079	3.8%	407,496,415	325,997,132
2015	2,326	71.1%	1,653	2.0	3,306	3,551	2,841	61%	245,130	3.8%	435,191,721	348,153,377
2016	2,367	71.4%	1,691	2.0	3,382	3,633	2,906	61%	254,609	3.9%	462,448,049	369,958,439
2017	2,409	71.8%	1,729	2.0	3,458	3,715	2,972	62%	264,539	3.9%	491,365,327	393,092,262
2018	2,409	72.1%	1,737	2.0	3,474	3,731	2,985	62%	275,020	4.0%	513,078,608	410,462,887
2019	2,409	72.4%	1,744	2.0	3,488	3,747	2,998	62%	285,905	4.0%	535,663,262	428,530,610
2020	2,418	72.7%	1,758	2.0	3,515	3,776	3,021	62%	297,213	4.0%	561,134,646	448,907,717
2021	2,418	73.0%	1,765	2.0	3,529	3,791	3,033	63%	308,960	4.0%	585,637,855	468,510,284
2022	2,418	73.3%	1,771	2.0	3,543	3,806	3,044	63%	321,163	3.9%	611,107,356	488,885,885
2023	2,363	73.5%	1,737	2.0	3,475	3,732	2,986	63%	334,823	4.3%	624,847,652	499,878,122
2024	2,307	73.8%	1,703	2.0	3,405	3,658	2,926	63%	348,949	4.2%	638,177,916	510,542,333
2025	2,247	74.0%	1,664	2.0	3,327	3,574	2,859	64%	363,538	4.2%	649,632,508	519,706,007
2026	2,192	74.3%	1,628	2.0	3,255	3,497	2,797	64%	378,586	4.1%	661,907,667	529,526,133
2027	2,137	74.5%	1,591	2.0	3,182	3,418	2,735	64%	394,081	4.1%	673,552,675	538,842,140
2028	2,040	74.7%	1,524	2.0	3,048	3,274	2,620	64%	411,861	4.5%	674,315,210	539,452,168
2029	1,943	74.9%	1,456	2.0	2,913	3,129	2,503	64%	430,241	4.5%	673,053,939	538,443,151
2030	1,845	75.1%	1,386	2.0	2,772	2,978	2,382	65%	449,190	4.4%	668,795,691	535,036,553
2031	1,748	75.3%	1,317	2.0	2,634	2,829	2,263	65%	468,661	4.3%	662,914,476	530,331,581
2032	1,651	75.5%	1,247	2.0	2,494	2,679	2,143	65%	488,585	4.3%	654,402,056	523,521,645
2033	1,526	75.7%	1,156	2.0	2,311	2,483	1,986	65%	514,045	5.2%	638,083,512	510,466,809
2034	1,400	75.9%	1,063	2.0	2,127	2,285	1,828	65%	540,990	5.2%	617,995,727	494,396,581
2035	1,226	76.1%	933	2.0	1,867	2,005	1,604	65%	569,556	5.3%	570,989,735	456,791,788
2036	1,105	76.3%	843	2.0	1,687	1,812	1,450	66%	599,910	5.3%	543,481,229	434,784,983
2037	985	76.5%	753	2.0	1,506	1,618	1,294	66%	632,272	5.4%	511,355,377	409,084,302
2038	912	76.6%	699	2.0	1,397	1,501	1,201	66%	667,258	5.5%	500,701,513	400,561,211
2039	839	76.8%	644	2.0	1,288	1,383	1,107	66%	704,705	5.6%	487,417,542	389,934,034
2040	777	76.9%	598	2.0	1,195	1,284	1,027	66%	744,952	5.7%	478,244,430	382,595,544
2041	703	77.0%	542	2.0	1,083	1,164	931	66%	788,453	5.8%	458,706,897	366,965,517
2042	629	77.2%	485	2.0	971	1,043	834	66%	835,837	6.0%	435,744,274	348,595,419
2043	570	77.3%	440	2.0	880	946	757	66%	883,834	5.7%	417,928,951	334,343,161
2044	511	77.4%	395	2.0	790	848	679	66%	935,884	5.9%	397,020,519	317,616,415
2045	464	77.5%	359	2.0	718	772	617	67%	992,880	6.1%	383,021,258	306,417,006
2046	403	77.5%	312	2.0	625	671	537	67%	1,056,197	6.4%	354,344,936	283,475,949
2047	342	77.6%	265	2.0	531	570	456	67%	1,128,109	6.8%	321,612,993	257,290,395
2048	274	77.7%	212	2.0	425	456	365	67%	1,185,716	5.1%	270,614,689	216,491,751
2049	205	77.7%	159	2.0	319	343	274	67%	1,246,304	5.1%	213,466,885	170,773,508
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**73.3%**	**47,948**	**2.0**	**95,897**	**103,008**	**82,406**	**63%**	**397,341**		**20,464,597,743**	**16,371,678,194**

Total Meso Cost 2004-2040 14,534,488,378

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	156,603		109,675,728	87,740,583
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	158,619	1.3%	122,558,983	98,047,187
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	2.4%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	165,911	2.2%	184,972,856	147,978,285
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	176,455	6.4%	216,906,817	173,525,453
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	177,942	0.8%	250,006,576	210,005,524
2009	2,003	70.8%	1,419	2.0	2,837	3,048	2,438	61%	180,315	1.3%	274,766,573	219,813,259
2010	2,069	72.9%	1,509	2.0	3,017	3,241	2,593	63%	183,091	1.5%	296,673,243	237,338,595
2011	2,130	74.4%	1,585	2.0	3,170	3,405	2,724	64%	186,244	1.7%	317,066,594	253,653,275
2012	2,191	75.5%	1,654	2.0	3,308	3,553	2,843	65%	189,708	1.9%	337,062,011	269,649,609
2013	2,232	76.3%	1,702	2.0	3,404	3,657	2,925	66%	193,046	1.8%	352,969,238	282,375,391
2014	2,273	76.8%	1,746	2.0	3,493	3,752	3,001	66%	196,578	1.8%	368,743,430	294,994,744
2015	2,326	77.2%	1,796	2.0	3,593	3,859	3,087	66%	200,290	1.9%	386,452,123	309,161,698
2016	2,367	77.5%	1,835	2.0	3,671	3,943	3,154	67%	204,173	1.9%	402,500,798	322,000,638
2017	2,409	77.7%	1,873	2.0	3,745	4,023	3,218	67%	208,221	2.0%	418,823,366	335,058,693
2018	2,409	77.9%	1,876	2.0	3,753	4,031	3,225	67%	212,459	2.0%	428,222,388	342,577,911
2019	2,409	77.9%	1,876	2.0	3,752	4,031	3,225	67%	216,821	2.1%	436,972,505	349,578,004
2020	2,418	77.9%	1,883	2.0	3,765	4,045	3,236	67%	221,263	2.0%	447,464,152	357,971,322
2021	2,418	77.9%	1,883	2.0	3,765	4,044	3,235	67%	225,785	2.0%	456,563,937	365,251,150
2022	2,418	77.8%	1,882	2.0	3,765	4,044	3,235	67%	230,388	2.0%	465,825,821	372,660,657
2023	2,363	77.8%	1,839	2.0	3,678	3,951	3,161	67%	235,733	2.3%	465,649,509	372,519,607
2024	2,307	77.8%	1,796	2.0	3,591	3,857	3,086	67%	241,118	2.3%	465,052,271	372,041,817
2025	2,247	77.8%	1,748	2.0	3,497	3,756	3,005	67%	246,531	2.2%	463,011,311	370,409,049
2026	2,192	77.8%	1,705	2.0	3,410	3,663	2,931	67%	251,961	2.2%	461,495,373	369,196,298
2027	2,137	77.8%	1,662	2.0	3,324	3,570	2,856	67%	257,392	2.2%	459,476,908	367,581,527
2028	2,040	77.8%	1,586	2.0	3,173	3,408	2,727	67%	263,956	2.6%	449,817,263	359,853,810
2029	1,943	77.8%	1,511	2.0	3,022	3,246	2,597	67%	270,557	2.5%	439,154,052	351,323,241
2030	1,845	77.7%	1,434	2.0	2,868	3,081	2,465	67%	277,165	2.4%	426,931,713	341,545,371
2031	1,748	77.7%	1,359	2.0	2,717	2,919	2,335	67%	283,743	2.4%	414,110,835	331,288,668
2032	1,651	77.7%	1,283	2.0	2,567	2,757	2,206	67%	290,241	2.3%	400,117,095	320,093,676
2033	1,526	77.7%	1,186	2.0	2,372	2,548	2,038	67%	299,609	3.2%	381,650,199	305,320,159
2034	1,400	77.7%	1,088	2.0	2,177	2,338	1,871	67%	309,366	3.3%	361,675,353	289,340,283
2035	1,226	77.7%	953	2.0	1,906	2,047	1,637	67%	319,553	3.3%	327,038,179	261,630,544
2036	1,105	77.7%	859	2.0	1,718	1,845	1,476	67%	330,225	3.3%	304,701,519	243,761,215
2037	985	77.7%	765	2.0	1,531	1,644	1,315	67%	341,460	3.4%	280,678,093	224,542,474
2038	912	77.7%	709	2.0	1,417	1,522	1,218	67%	353,541	3.5%	269,092,328	215,273,863
2039	839	77.7%	652	2.0	1,304	1,401	1,120	67%	366,320	3.6%	256,524,598	205,219,678
2040	777	77.7%	604	2.0	1,208	1,298	1,038	67%	379,914	3.7%	246,516,595	197,213,276
2041	703	77.7%	547	2.0	1,093	1,174	939	67%	394,488	3.8%	231,610,109	185,288,087
2042	629	77.7%	489	2.0	978	1,051	841	67%	410,279	4.0%	215,542,376	172,433,901
2043	570	77.8%	443	2.0	886	952	761	67%	425,634	3.7%	202,560,536	162,048,429
2044	511	77.8%	397	2.0	794	853	682	67%	442,173	3.9%	188,565,110	150,852,088
2045	464	77.8%	361	2.0	721	775	620	67%	460,225	4.1%	178,282,533	142,626,026
2046	403	77.8%	313	2.0	627	673	539	67%	480,305	4.4%	161,654,832	129,323,866
2047	342	77.8%	266	2.0	532	572	457	67%	503,293	4.8%	143,816,870	115,053,496
2048	274	77.8%	213	2.0	426	457	366	67%	518,984	3.1%	118,640,656	94,912,525
2049	205	77.8%	160	2.0	319	343	274	67%	535,179	3.1%	91,757,136	73,405,709
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**77.1%**	**50,447**	**2.0**	**100,894**	**108,375**	**86,700**	**66%**	**254,583**		**13,795,229,535**	**11,036,183,628**

Total Meso Cost 2004-2040 10,554,121,374

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	154,555		108,241,439	86,593,151
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	157,593	2.0%	121,766,657	97,413,325
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.0%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	167,521	3.2%	186,768,126	149,414,501
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	179,899	7.4%	221,140,003	176,912,003
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	183,176	1.8%	257,360,637	216,182,935
2009	2,003	70.8%	1,419	2.0	2,837	3,048	2,438	61%	187,421	2.3%	285,595,161	228,476,129
2010	2,069	72.9%	1,509	2.0	3,017	3,241	2,593	63%	192,154	2.5%	311,358,883	249,087,106
2011	2,130	74.4%	1,585	2.0	3,170	3,405	2,724	64%	197,360	2.7%	335,992,033	268,793,626
2012	2,191	75.5%	1,654	2.0	3,308	3,553	2,843	65%	202,983	2.8%	360,648,050	288,518,440
2013	2,232	76.3%	1,702	2.0	3,404	3,657	2,925	66%	208,559	2.7%	381,334,045	305,067,236
2014	2,273	76.8%	1,746	2.0	3,493	3,752	3,001	66%	214,436	2.8%	402,242,191	321,793,753
2015	2,326	77.2%	1,796	2.0	3,593	3,859	3,087	66%	220,606	2.9%	425,650,651	340,520,521
2016	2,367	77.5%	1,835	2.0	3,671	3,943	3,154	67%	227,065	2.9%	447,629,076	358,103,261
2017	2,409	77.7%	1,873	2.0	3,745	4,023	3,218	67%	233,813	3.0%	470,301,157	376,240,925
2018	2,409	77.9%	1,876	2.0	3,753	4,031	3,225	67%	240,887	3.0%	485,520,724	388,416,580
2019	2,409	77.9%	1,876	2.0	3,752	4,031	3,225	67%	248,218	3.0%	500,248,082	400,198,466
2020	2,418	77.9%	1,883	2.0	3,765	4,045	3,236	67%	255,760	3.0%	517,228,129	413,782,503
2021	2,418	77.9%	1,883	2.0	3,765	4,044	3,235	67%	263,519	3.0%	532,865,622	426,292,498
2022	2,418	77.8%	1,882	2.0	3,765	4,044	3,235	67%	271,499	3.0%	548,948,380	439,158,704
2023	2,363	77.8%	1,839	2.0	3,678	3,951	3,161	67%	280,492	3.3%	554,062,446	443,249,957
2024	2,307	77.8%	1,796	2.0	3,591	3,857	3,086	67%	289,681	3.3%	558,717,914	446,974,332
2025	2,247	77.8%	1,748	2.0	3,497	3,756	3,005	67%	299,057	3.2%	561,659,779	449,327,823
2026	2,192	77.8%	1,705	2.0	3,410	3,663	2,931	67%	308,607	3.2%	565,248,732	452,198,985
2027	2,137	77.8%	1,662	2.0	3,324	3,570	2,856	67%	318,315	3.1%	568,232,499	454,585,999
2028	2,040	77.8%	1,586	2.0	3,173	3,408	2,727	67%	329,598	3.5%	561,679,477	449,343,581
2029	1,943	77.8%	1,511	2.0	3,022	3,246	2,597	67%	341,115	3.5%	553,680,248	442,944,198
2030	1,845	77.7%	1,434	2.0	2,868	3,081	2,465	67%	352,833	3.4%	543,487,896	434,790,317
2031	1,748	77.7%	1,359	2.0	2,717	2,919	2,335	67%	364,708	3.4%	532,276,114	425,820,891
2032	1,651	77.7%	1,283	2.0	2,567	2,757	2,206	67%	376,676	3.3%	519,273,291	415,418,632
2033	1,526	77.7%	1,186	2.0	2,372	2,548	2,038	67%	392,603	4.2%	500,107,739	400,086,191
2034	1,400	77.7%	1,088	2.0	2,177	2,338	1,871	67%	409,318	4.3%	478,526,525	382,821,220
2035	1,226	77.7%	953	2.0	1,906	2,047	1,637	67%	426,893	4.3%	436,892,320	349,513,856
2036	1,105	77.7%	859	2.0	1,718	1,845	1,476	67%	445,425	4.3%	410,997,600	328,798,080
2037	985	77.7%	765	2.0	1,531	1,644	1,315	67%	465,043	4.4%	382,262,583	305,810,066
2038	912	77.7%	709	2.0	1,417	1,522	1,218	67%	486,163	4.5%	370,035,357	296,028,285
2039	839	77.7%	652	2.0	1,304	1,401	1,120	67%	508,617	4.6%	356,171,788	284,937,430
2040	777	77.7%	604	2.0	1,208	1,298	1,038	67%	532,604	4.7%	345,593,267	276,474,614
2041	703	77.7%	547	2.0	1,093	1,174	939	67%	558,395	4.8%	327,842,551	262,274,041
2042	629	77.7%	489	2.0	978	1,051	841	67%	586,375	5.0%	308,055,779	246,444,623
2043	570	77.8%	443	2.0	886	952	761	67%	614,216	4.7%	292,307,459	233,845,967
2044	511	77.8%	397	2.0	794	853	682	67%	644,267	4.9%	274,748,248	219,798,598
2045	464	77.8%	361	2.0	721	775	620	67%	677,068	5.1%	262,283,652	209,826,922
2046	403	77.8%	313	2.0	627	673	539	67%	713,459	5.4%	240,126,704	192,101,363
2047	342	77.8%	266	2.0	532	572	457	67%	754,853	5.8%	215,700,817	172,560,653
2048	274	77.8%	213	2.0	426	457	366	67%	785,928	4.1%	179,664,493	143,731,595
2049	205	77.8%	160	2.0	319	343	274	67%	818,304	4.1%	140,299,188	112,239,351
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**77.1%**	**50,447**	**2.0**	**100,894**	**108,375**	**86,700**	**66%**	**314,565**		**17,045,496,649**	**13,636,397,320**

Total Meso Cost 2004-2040 12,597,822,395

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 4: Proportionate increases for 10 years, max eligible ratio reached by oldest band too
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	152,566		106,848,017	85,478,414
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	156,588	2.6%	120,989,454	96,791,563
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.7%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	169,131	4.2%	188,563,395	150,850,716
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	183,376	8.4%	225,414,101	180,331,281
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	188,512	2.8%	264,857,524	222,480,320
2009	2,003	70.8%	1,419	2.0	2,837	3,048	2,438	61%	194,735	3.3%	296,740,718	237,392,574
2010	2,069	72.9%	1,509	2.0	3,017	3,241	2,593	63%	201,572	3.5%	326,620,434	261,296,347
2011	2,130	74.4%	1,585	2.0	3,170	3,405	2,724	64%	209,025	3.7%	355,849,656	284,679,725
2012	2,191	75.5%	1,654	2.0	3,308	3,553	2,843	65%	217,046	3.8%	385,634,895	308,507,916
2013	2,232	76.3%	1,702	2.0	3,404	3,657	2,925	66%	225,153	3.7%	411,673,723	329,338,978
2014	2,273	76.8%	1,746	2.0	3,493	3,752	3,001	66%	233,722	3.8%	438,419,329	350,735,463
2015	2,326	77.2%	1,796	2.0	3,593	3,859	3,087	66%	242,758	3.9%	468,392,090	374,713,672
2016	2,367	77.5%	1,835	2.0	3,671	3,943	3,154	67%	252,267	3.9%	497,311,373	397,849,098
2017	2,409	77.7%	1,873	2.0	3,745	4,023	3,218	67%	262,260	4.0%	527,520,905	422,016,724
2018	2,409	77.9%	1,876	2.0	3,753	4,031	3,225	67%	272,791	4.0%	549,825,138	439,860,111
2019	2,409	77.9%	1,876	2.0	3,752	4,031	3,225	67%	283,794	4.0%	571,946,110	457,556,888
2020	2,418	77.9%	1,883	2.0	3,765	4,045	3,236	67%	295,226	4.0%	597,041,240	477,632,992
2021	2,418	77.9%	1,883	2.0	3,765	4,044	3,235	67%	307,104	4.0%	621,000,671	496,800,537
2022	2,418	77.8%	1,882	2.0	3,765	4,044	3,235	67%	319,444	4.0%	645,888,714	516,710,971
2023	2,363	77.8%	1,839	2.0	3,678	3,951	3,161	67%	333,195	4.3%	658,167,595	526,534,076
2024	2,307	77.8%	1,796	2.0	3,591	3,857	3,086	67%	347,415	4.3%	670,072,236	536,057,788
2025	2,247	77.8%	1,748	2.0	3,497	3,756	3,005	67%	362,104	4.2%	680,069,413	544,055,531
2026	2,192	77.8%	1,705	2.0	3,410	3,663	2,931	67%	377,256	4.2%	690,987,259	552,789,807
2027	2,137	77.8%	1,662	2.0	3,324	3,570	2,856	67%	392,861	4.1%	701,304,553	561,043,642
2028	2,040	77.8%	1,586	2.0	3,173	3,408	2,727	67%	410,691	4.5%	699,872,967	559,898,374
2029	1,943	77.8%	1,511	2.0	3,022	3,246	2,597	67%	429,122	4.5%	696,529,346	557,223,477
2030	1,845	77.7%	1,434	2.0	2,868	3,081	2,465	67%	448,125	4.4%	690,270,990	552,216,792
2031	1,748	77.7%	1,359	2.0	2,717	2,919	2,335	67%	467,653	4.4%	682,520,484	546,016,387
2032	1,651	77.7%	1,283	2.0	2,567	2,757	2,206	67%	487,636	4.3%	672,238,288	537,790,631
2033	1,526	77.7%	1,186	2.0	2,372	2,548	2,038	67%	513,133	5.2%	653,642,189	522,913,751
2034	1,400	77.7%	1,088	2.0	2,177	2,338	1,871	67%	540,115	5.3%	631,439,253	505,151,402
2035	1,226	77.7%	953	2.0	1,906	2,047	1,637	67%	568,714	5.3%	582,034,688	465,627,750
2036	1,105	77.7%	859	2.0	1,718	1,845	1,476	67%	599,098	5.3%	552,792,959	442,234,367
2037	985	77.7%	765	2.0	1,531	1,644	1,315	67%	631,488	5.4%	519,079,243	415,263,395
2038	912	77.7%	709	2.0	1,417	1,522	1,218	67%	666,504	5.5%	507,298,732	405,838,985
2039	839	77.7%	652	2.0	1,304	1,401	1,120	67%	703,979	5.6%	492,979,335	394,383,468
2040	777	77.7%	604	2.0	1,208	1,298	1,038	67%	744,256	5.7%	482,928,826	386,343,061
2041	703	77.7%	547	2.0	1,093	1,174	939	67%	787,786	5.8%	462,521,494	370,017,195
2042	629	77.7%	489	2.0	978	1,051	841	67%	835,201	6.0%	438,778,039	351,022,431
2043	570	77.8%	443	2.0	886	952	761	67%	883,253	5.8%	420,343,020	336,274,416
2044	511	77.8%	397	2.0	794	853	682	67%	935,360	5.9%	398,884,769	319,107,816
2045	464	77.8%	361	2.0	721	775	620	67%	992,416	6.1%	384,443,584	307,554,867
2046	403	77.8%	313	2.0	627	673	539	67%	1,055,796	6.4%	355,345,831	284,276,665
2047	342	77.8%	266	2.0	532	572	457	67%	1,127,777	6.8%	322,264,707	257,811,766
2048	274	77.8%	213	2.0	426	457	366	67%	1,185,470	5.1%	271,000,483	216,800,386
2049	205	77.8%	160	2.0	319	343	274	67%	1,246,146	5.1%	213,653,323	170,922,659
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**77.1%**	**50,447**	**2.0**	**100,894**	**108,375**	**86,700**	**66%**	**391,701**		**21,225,328,601**	**16,980,262,881**

Total Meso Cost 2004-2040 15,131,253,984

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 1.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	156,603		109,675,728	87,740,583
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	158,619	1.3%	122,558,983	98,047,187
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	2.4%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	165,911	2.2%	184,972,856	147,978,285
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	176,455	6.4%	216,906,817	173,525,453
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	177,942	0.8%	250,006,576	210,005,524
2009	2,003	70.8%	1,419	2.0	2,837	3,048	2,438	61%	180,315	1.3%	274,766,573	219,813,259
2010	2,069	74.7%	1,546	2.0	3,091	3,320	2,656	64%	183,167	1.6%	304,083,408	243,266,726
2011	2,130	78.7%	1,676	2.0	3,352	3,600	2,880	68%	186,203	1.7%	335,189,286	268,151,429
2012	2,191	82.8%	1,814	2.0	3,627	3,896	3,117	71%	189,429	1.7%	369,029,771	295,223,817
2013	2,232	87.0%	1,942	2.0	3,884	4,172	3,337	75%	192,445	1.6%	401,395,896	321,116,717
2014	2,273	87.0%	1,978	2.0	3,955	4,249	3,399	75%	196,147	1.9%	416,671,835	333,337,468
2015	2,326	87.0%	2,023	2.0	4,047	4,347	3,478	75%	199,982	2.0%	434,662,738	347,730,190
2016	2,367	87.0%	2,060	2.0	4,119	4,424	3,540	75%	203,954	2.0%	451,190,433	360,952,347
2017	2,409	87.0%	2,096	2.0	4,191	4,502	3,601	75%	208,066	2.0%	468,340,016	374,672,013
2018	2,409	87.0%	2,096	2.0	4,191	4,502	3,602	75%	212,347	2.1%	478,014,364	382,411,491
2019	2,409	87.0%	2,096	2.0	4,192	4,503	3,602	75%	216,708	2.1%	487,867,696	390,294,157
2020	2,418	87.0%	2,103	2.0	4,207	4,519	3,615	75%	221,148	2.0%	499,670,890	399,736,712
2021	2,418	87.0%	2,104	2.0	4,207	4,519	3,615	75%	225,669	2.0%	509,925,547	407,940,437
2022	2,418	87.0%	2,104	2.0	4,208	4,520	3,616	75%	230,273	2.0%	520,366,880	416,293,504
2023	2,363	87.0%	2,056	2.0	4,111	4,416	3,533	75%	235,615	2.3%	520,255,623	416,204,498
2024	2,307	87.0%	2,008	2.0	4,015	4,313	3,450	75%	240,997	2.3%	519,679,376	415,743,501
2025	2,247	87.0%	1,955	2.0	3,910	4,200	3,360	75%	246,410	2.2%	517,495,250	413,996,200
2026	2,192	87.0%	1,907	2.0	3,814	4,097	3,278	75%	251,839	2.2%	515,903,709	412,722,967
2027	2,137	87.0%	1,859	2.0	3,718	3,994	3,195	75%	257,271	2.2%	513,756,783	411,005,426
2028	2,040	87.0%	1,775	2.0	3,550	3,813	3,051	75%	263,830	2.5%	503,010,330	402,408,264
2029	1,943	87.0%	1,691	2.0	3,382	3,632	2,906	75%	270,426	2.5%	491,145,081	392,916,065
2030	1,845	87.0%	1,605	2.0	3,210	3,448	2,758	75%	277,029	2.4%	477,539,799	382,031,839
2031	1,748	87.0%	1,521	2.0	3,042	3,267	2,614	75%	283,602	2.4%	463,269,042	370,615,234
2032	1,651	87.0%	1,437	2.0	2,873	3,086	2,469	75%	290,097	2.3%	447,690,685	358,152,548
2033	1,526	87.0%	1,328	2.0	2,655	2,852	2,282	75%	299,458	3.2%	427,022,338	341,617,871
2034	1,400	87.0%	1,218	2.0	2,437	2,617	2,094	75%	309,207	3.3%	404,666,370	323,733,096
2035	1,226	87.0%	1,067	2.0	2,133	2,291	1,833	75%	319,385	3.3%	365,905,046	292,724,037
2036	1,105	87.0%	962	2.0	1,923	2,066	1,653	75%	330,046	3.3%	340,905,896	272,724,717
2037	985	87.0%	857	2.0	1,713	1,840	1,472	75%	341,268	3.4%	314,019,002	251,215,202
2038	912	87.0%	793	2.0	1,586	1,704	1,363	75%	353,335	3.5%	301,036,208	240,828,966
2039	839	87.0%	730	2.0	1,459	1,568	1,254	75%	366,098	3.6%	286,953,500	229,562,800
2040	777	87.0%	676	2.0	1,352	1,452	1,162	75%	379,674	3.7%	275,732,235	220,585,788
2041	703	87.0%	612	2.0	1,223	1,314	1,051	75%	394,228	3.8%	259,029,791	207,223,833
2042	629	87.0%	547	2.0	1,095	1,176	941	75%	409,993	4.0%	241,026,634	192,821,307
2043	570	87.0%	496	2.0	991	1,065	852	75%	425,331	3.7%	226,483,980	181,187,184
2044	511	87.0%	444	2.0	888	954	763	75%	441,851	3.9%	210,806,259	168,645,007
2045	464	87.0%	403	2.0	807	867	693	75%	459,881	4.1%	199,276,366	159,421,093
2046	403	87.0%	350	2.0	701	753	602	75%	479,937	4.4%	180,650,762	144,520,610
2047	342	87.0%	297	2.0	595	639	511	75%	502,896	4.8%	160,669,856	128,535,885
2048	274	87.0%	238	2.0	476	511	409	75%	518,576	3.1%	132,543,529	106,034,823
2049	205	87.0%	178	2.0	357	383	307	75%	534,759	3.1%	102,509,771	82,007,817
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**85.7%**	**56,063**	**2.0**	**112,126**	**120,440**	**96,352**	**74%**	**254,901**		**15,350,158,552**	**12,280,126,842**

Total Meso Cost 2004-2040 11,653,611,156

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 2.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	154,555		108,241,439	86,593,151
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	157,593	2.0%	121,766,657	97,413,325
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.0%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	167,521	3.2%	186,768,126	149,414,501
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	179,899	7.4%	221,140,003	176,912,003
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	183,176	1.8%	257,360,637	216,182,935
2009	2,003	70.8%	1,419	2.0	2,837	3,048	2,438	61%	187,421	2.3%	285,595,161	228,476,129
2010	2,069	74.7%	1,546	2.0	3,091	3,320	2,656	64%	192,234	2.6%	319,135,860	255,308,688
2011	2,130	78.7%	1,676	2.0	3,352	3,600	2,880	68%	197,317	2.6%	355,196,452	284,157,162
2012	2,191	82.8%	1,814	2.0	3,627	3,896	3,117	71%	202,684	2.7%	394,852,754	315,882,203
2013	2,232	87.0%	1,942	2.0	3,884	4,172	3,337	75%	207,910	2.6%	433,652,263	346,921,810
2014	2,273	87.0%	1,978	2.0	3,955	4,249	3,399	75%	213,966	2.9%	454,524,655	363,619,724
2015	2,326	87.0%	2,023	2.0	4,047	4,347	3,478	75%	220,267	2.9%	478,751,327	383,001,062
2016	2,367	87.0%	2,060	2.0	4,119	4,424	3,540	75%	226,821	3.0%	501,777,755	401,422,204
2017	2,409	87.0%	2,096	2.0	4,191	4,502	3,601	75%	233,639	3.0%	525,903,902	420,723,122
2018	2,409	87.0%	2,096	2.0	4,191	4,502	3,602	75%	240,760	3.0%	541,975,102	433,580,082
2019	2,409	87.0%	2,096	2.0	4,192	4,503	3,602	75%	248,088	3.0%	558,513,104	446,810,483
2020	2,418	87.0%	2,103	2.0	4,207	4,519	3,615	75%	255,627	3.0%	577,574,375	462,059,500
2021	2,418	87.0%	2,104	2.0	4,207	4,519	3,615	75%	263,384	3.0%	595,145,080	476,116,064
2022	2,418	87.0%	2,104	2.0	4,208	4,520	3,616	75%	271,363	3.0%	613,221,783	490,577,427
2023	2,363	87.0%	2,056	2.0	4,111	4,416	3,533	75%	280,351	3.3%	619,036,595	495,229,276
2024	2,307	87.0%	2,008	2.0	4,015	4,313	3,450	75%	289,536	3.3%	624,347,362	499,477,890
2025	2,247	87.0%	1,955	2.0	3,910	4,200	3,360	75%	298,909	3.2%	627,751,937	502,201,550
2026	2,192	87.0%	1,907	2.0	3,814	4,097	3,278	75%	308,457	3.2%	631,889,098	505,511,279
2027	2,137	87.0%	1,859	2.0	3,718	3,994	3,195	75%	318,165	3.1%	635,360,062	508,288,050
2028	2,040	87.0%	1,775	2.0	3,550	3,813	3,051	75%	329,440	3.5%	628,100,737	502,480,589
2029	1,943	87.0%	1,691	2.0	3,382	3,632	2,906	75%	340,950	3.5%	619,229,865	495,383,892
2030	1,845	87.0%	1,605	2.0	3,210	3,448	2,758	75%	352,661	3.4%	607,912,379	486,329,903
2031	1,748	87.0%	1,521	2.0	3,042	3,267	2,614	75%	364,528	3.4%	595,461,400	476,369,120
2032	1,651	87.0%	1,437	2.0	2,873	3,086	2,469	75%	376,489	3.3%	581,014,381	464,811,505
2033	1,526	87.0%	1,328	2.0	2,655	2,852	2,282	75%	392,405	4.2%	559,562,521	447,650,017
2034	1,400	87.0%	1,218	2.0	2,437	2,617	2,094	75%	409,107	4.3%	535,407,133	428,325,706
2035	1,226	87.0%	1,067	2.0	2,133	2,291	1,833	75%	426,668	4.3%	488,814,730	391,051,784
2036	1,105	87.0%	962	2.0	1,923	2,066	1,653	75%	445,183	4.3%	459,831,910	367,865,528
2037	985	87.0%	857	2.0	1,713	1,840	1,472	75%	464,782	4.4%	427,670,330	342,136,264
2038	912	87.0%	793	2.0	1,586	1,704	1,363	75%	485,880	4.5%	413,962,073	331,169,658
2039	839	87.0%	730	2.0	1,459	1,568	1,254	75%	508,309	4.6%	398,420,735	318,736,588
2040	777	87.0%	676	2.0	1,352	1,452	1,162	75%	532,268	4.7%	386,550,776	309,240,621
2041	703	87.0%	612	2.0	1,223	1,314	1,051	75%	558,027	4.8%	366,654,831	293,323,865
2042	629	87.0%	547	2.0	1,095	1,176	941	75%	585,967	5.0%	344,478,091	275,582,473
2043	570	87.0%	496	2.0	991	1,065	852	75%	613,779	4.7%	326,830,379	261,464,303
2044	511	87.0%	444	2.0	888	954	763	75%	643,798	4.9%	307,154,551	245,723,641
2045	464	87.0%	403	2.0	807	867	693	75%	676,562	5.1%	293,169,019	234,535,215
2046	403	87.0%	350	2.0	701	753	602	75%	712,911	5.4%	268,343,704	214,674,963
2047	342	87.0%	297	2.0	595	639	511	75%	754,258	5.8%	240,977,334	192,781,867
2048	274	87.0%	238	2.0	476	511	409	75%	785,310	4.1%	200,718,348	160,574,679
2049	205	87.0%	178	2.0	357	383	307	75%	817,660	4.1%	156,740,199	125,392,159
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**85.7%**	**56,063**	**2.0**	**112,126**	**120,440**	**96,352**	**74%**	**315,198**		**18,981,210,055**	**15,184,968,044**

Total Meso Cost 2004-2040 13,935,163,069

Appendix D: AWP Mesothelioma Projection 2009

Key Assumptions:
Population Deaths: Alternative Birth Cohort Model
Claim to death ratio: AWP 5: Max (assuming 100% propensity) reached linearly by 2013
Inflation (RPI): 3.50%

Mesothelioma Projection - Detailed outputs

Calendar Year	Male GB Population Deaths	% Claims to Deaths Ratio	Male GB Insurance and Government Claimants	Insurance claims to claimant ratio	Male GB Insurance and Government Claims	Male and Female GB & NI Insurance and Government Claims	Male and Female GB & NI Insurance Claims	Final CD Ratio	Average cost per claimant	Inflation	Total GB & NI Insurance and Government Cost	Total GB & NI Insurance Cost
2003	1,600	42.1%	674	2.7	1,827	1,898	1,519	35%	152,566		106,848,017	85,478,414
2004	1,669	44.2%	737	2.5	1,841	1,930	1,544	37%	156,588	2.6%	120,989,454	96,791,563
2005	1,744	48.8%	851	2.4	2,049	2,119	1,695	40%	162,370	3.7%	142,906,781	114,325,425
2006	1,813	58.9%	1,067	2.2	2,384	2,490	1,992	49%	169,131	4.2%	188,563,395	150,850,716
2007	1,881	62.6%	1,177	2.2	2,569	2,683	2,146	52%	183,376	8.4%	225,414,101	180,331,281
2008	1,942	68.6%	1,333	2.1	2,785	2,935	2,466	61%	188,512	2.8%	264,857,524	222,480,320
2009	2,003	70.8%	1,419	2.0	2,837	3,048	2,438	61%	194,735	3.3%	296,740,718	237,392,574
2010	2,069	74.7%	1,546	2.0	3,091	3,320	2,656	64%	201,657	3.6%	334,778,608	267,822,887
2011	2,130	78.7%	1,676	2.0	3,352	3,600	2,880	68%	208,978	3.6%	376,189,084	300,951,267
2012	2,191	82.8%	1,814	2.0	3,627	3,896	3,117	71%	216,727	3.7%	422,209,398	337,767,519
2013	2,232	87.0%	1,942	2.0	3,884	4,172	3,337	75%	224,452	3.6%	468,154,444	374,523,555
2014	2,273	87.0%	1,978	2.0	3,955	4,249	3,399	75%	233,210	3.9%	495,403,977	396,323,182
2015	2,326	87.0%	2,023	2.0	4,047	4,347	3,478	75%	242,385	3.9%	526,824,807	421,459,845
2016	2,367	87.0%	2,060	2.0	4,119	4,424	3,540	75%	251,996	4.0%	557,469,982	445,975,985
2017	2,409	87.0%	2,096	2.0	4,191	4,502	3,601	75%	262,065	4.0%	589,888,602	471,910,881
2018	2,409	87.0%	2,096	2.0	4,191	4,502	3,602	75%	272,648	4.0%	613,756,553	491,005,242
2019	2,409	87.0%	2,096	2.0	4,192	4,503	3,602	75%	283,645	4.0%	638,561,940	510,849,552
2020	2,418	87.0%	2,103	2.0	4,207	4,519	3,615	75%	295,073	4.0%	666,699,447	533,359,557
2021	2,418	87.0%	2,104	2.0	4,207	4,519	3,615	75%	306,947	4.0%	693,581,011	554,864,809
2022	2,418	87.0%	2,104	2.0	4,208	4,520	3,616	75%	319,283	4.0%	721,512,302	577,209,841
2023	2,363	87.0%	2,056	2.0	4,111	4,416	3,533	75%	333,027	4.3%	735,349,972	588,279,977
2024	2,307	87.0%	2,008	2.0	4,015	4,313	3,450	75%	347,242	4.3%	748,781,803	599,025,442
2025	2,247	87.0%	1,955	2.0	3,910	4,200	3,360	75%	361,925	4.2%	760,095,130	608,076,104
2026	2,192	87.0%	1,907	2.0	3,814	4,097	3,278	75%	377,073	4.2%	772,451,595	617,961,276
2027	2,137	87.0%	1,859	2.0	3,718	3,994	3,195	75%	392,675	4.1%	784,152,387	627,321,909
2028	2,040	87.0%	1,775	2.0	3,550	3,813	3,051	75%	410,494	4.5%	782,636,195	626,108,956
2029	1,943	87.0%	1,691	2.0	3,382	3,632	2,906	75%	428,914	4.5%	778,990,643	623,192,515
2030	1,845	87.0%	1,605	2.0	3,210	3,448	2,758	75%	447,906	4.4%	772,094,907	617,675,926
2031	1,748	87.0%	1,521	2.0	3,042	3,267	2,614	75%	467,422	4.4%	763,540,853	610,832,682
2032	1,651	87.0%	1,437	2.0	2,873	3,086	2,469	75%	487,394	4.3%	752,166,679	601,733,343
2033	1,526	87.0%	1,328	2.0	2,655	2,852	2,282	75%	512,874	5.2%	731,349,657	585,079,726
2034	1,400	87.0%	1,218	2.0	2,437	2,617	2,094	75%	539,836	5.3%	706,495,909	565,196,727
2035	1,226	87.0%	1,067	2.0	2,133	2,291	1,833	75%	568,413	5.3%	651,206,424	520,965,139
2036	1,105	87.0%	962	2.0	1,923	2,066	1,653	75%	598,773	5.3%	618,475,144	494,780,115
2037	985	87.0%	857	2.0	1,713	1,840	1,472	75%	631,133	5.4%	580,738,899	464,591,119
2038	912	87.0%	793	2.0	1,586	1,704	1,363	75%	666,115	5.5%	567,519,805	454,015,844
2039	839	87.0%	730	2.0	1,459	1,568	1,254	75%	703,553	5.6%	551,456,218	441,164,974
2040	777	87.0%	676	2.0	1,352	1,452	1,162	75%	743,786	5.7%	540,162,344	432,129,875
2041	703	87.0%	612	2.0	1,223	1,314	1,051	75%	787,266	5.8%	517,277,871	413,822,297
2042	629	87.0%	547	2.0	1,095	1,176	941	75%	834,620	6.0%	490,655,881	392,524,705
2043	570	87.0%	496	2.0	991	1,065	852	75%	882,625	5.8%	469,987,417	375,989,934
2044	511	87.0%	444	2.0	888	954	763	75%	934,678	5.9%	445,932,721	356,746,177
2045	464	87.0%	403	2.0	807	867	693	75%	991,673	6.1%	429,713,823	343,771,058
2046	403	87.0%	350	2.0	701	753	602	75%	1,054,984	6.4%	397,101,951	317,681,561
2047	342	87.0%	297	2.0	595	639	511	75%	1,126,888	6.8%	360,028,591	288,022,873
2048	274	87.0%	238	2.0	476	511	409	75%	1,184,537	5.1%	302,757,363	242,205,891
2049	205	87.0%	178	2.0	357	383	307	75%	1,245,166	5.1%	238,690,269	190,952,215
2050	-		-	2.0	-	-	-				-	-
2009&post	**65,414**	**85.7%**	**56,063**	**2.0**	**112,126**	**120,440**	**96,352**	**74%**	**392,753**		**23,651,581,320**	**18,921,265,056**

Total Meso Cost 2004-2040 16,764,327,651

Appendix E:

- Summary of Non - Mesothelioma Projections

Appendix E - Lung Cancer Modelled Figures

	Claim Numbers			Cost Per Claim			Total Cost								
	Scenario 1	Scenario 2	Scenario 3	Inflation A	Inflation B	Inflation C	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation
				1%	*3%*	*5%*	*1/A*	*1/B*	*1/C*	*2/A*	*2/B*	*2/C*	*3/A*	*3/B*	*3/C*
2009	313	337	356	42,055	42,888	43,721	13,142,227	13,402,469	13,662,711	14,172,577	14,453,222	14,733,867	14,982,138	15,278,814	15,575,490
2010	319	367	413	42,476	44,175	45,907	13,539,122	14,080,634	14,632,763	15,588,573	16,212,055	16,847,762	17,521,217	18,221,997	18,936,517
2011	319	397	475	42,900	45,500	48,202	13,674,513	14,503,053	15,364,402	17,031,472	18,063,410	19,136,212	20,377,706	21,612,392	22,895,971
2012	313	431	538	43,329	46,865	50,612	13,540,449	14,645,240	15,816,296	18,685,820	20,210,431	21,826,488	23,289,573	25,189,812	27,204,029
2013	304	450	600	43,763	48,271	53,143	13,303,871	14,674,296	16,155,397	19,693,229	21,721,819	23,914,239	26,257,639	28,962,426	31,885,652
2014	293	463	675	44,200	49,719	55,800	12,950,705	14,567,617	16,349,368	20,442,666	22,994,959	25,807,450	29,835,243	33,560,211	37,664,927
2015	267	450	756	44,642	51,210	58,590	11,919,511	13,673,176	15,643,500	20,089,063	23,044,678	26,365,449	33,760,787	38,727,862	44,308,601
2016	233	438	831	45,089	52,747	61,519	10,505,687	12,289,983	14,334,016	19,726,344	23,076,685	26,914,729	37,480,054	43,845,701	51,137,985
2017	208	419	869	45,540	54,329	64,595	9,472,252	11,300,455	13,435,833	19,069,739	22,750,314	27,049,302	39,564,093	47,200,204	56,119,339
2018	186	394	900	45,995	55,959	67,825	8,555,083	10,408,371	12,615,472	18,110,559	22,033,849	26,706,140	41,395,564	50,363,084	61,042,605
2019	167	369	896	46,455	57,638	71,216	7,757,989	9,625,505	11,893,134	17,130,289	21,253,921	26,261,037	41,623,700	51,643,425	63,809,870
2020	153	344	886	46,920	59,367	74,777	7,178,695	9,083,133	11,440,910	16,128,603	20,407,366	25,704,659	41,570,741	52,599,059	66,252,591
2021	137	324	866	47,389	61,148	78,516	6,492,261	8,377,261	10,756,699	15,342,114	19,796,630	25,419,571	41,038,673	52,954,073	67,994,900
2022	118	306	831	47,863	62,982	82,442	5,647,793	7,431,915	9,728,139	14,657,938	19,288,338	25,247,818	39,785,832	52,354,060	68,529,790
2023	105	288	806	48,341	64,872	86,564	5,075,835	6,811,539	9,089,214	13,922,289	18,683,078	24,930,416	38,963,073	52,286,668	69,770,540
2024	91	273	763	48,825	66,818	90,892	4,443,047	6,080,434	8,271,185	13,304,729	18,207,892	24,768,109	37,228,830	50,948,688	69,305,259
2025	78	254	719	49,313	68,822	95,437	3,846,409	5,368,154	7,444,067	12,513,159	17,463,707	24,217,075	35,443,677	49,466,164	68,595,164
2026	63	240	687	49,806	70,887	100,209	3,137,782	4,465,891	6,313,141	11,953,457	17,012,919	24,050,061	34,216,771	48,699,482	68,843,300
2027	50	225	654	50,304	73,014	105,219	2,515,207	3,650,689	5,260,951	11,318,430	16,428,100	23,674,279	32,898,902	47,751,012	68,813,237
2028	38	213	615	50,807	75,204	110,480	1,930,673	2,857,759	4,198,239	10,821,928	16,018,493	23,532,233	31,246,412	46,250,578	67,945,180
2029	26	198	574	51,315	77,460	116,004	1,334,196	2,013,968	3,016,103	10,160,419	15,337,143	22,968,785	29,442,122	44,442,858	66,557,276
2030	15	185	539	51,828	79,784	121,804	777,426	1,196,762	1,827,062	9,588,254	14,760,064	22,533,770	27,922,549	42,983,699	65,621,994
2031	4	169	504	52,347	82,178	127,894	209,387	328,711	511,577	8,833,503	13,867,479	21,582,175	26,369,641	41,396,992	64,426,790
2032	0	151	464	52,870	84,643	134,289	0	0	0	7,996,610	12,802,251	20,311,225	24,518,531	39,253,183	62,276,566
2033	0	135	429	53,399	87,182	141,004	0	0	0	7,208,845	11,769,607	19,035,479	22,894,757	37,379,399	60,455,270
2034	0	119	391	53,933	89,798	148,054	0	0	0	6,404,525	10,663,481	17,581,380	21,101,223	35,133,365	57,926,019
2035	0	104	353	54,472	92,492	155,456	0	0	0	5,651,487	9,596,011	16,128,603	19,201,439	32,603,314	54,798,384
2036	0	89	316	55,017	95,266	163,229	0	0	0	4,882,749	8,454,895	14,486,594	17,399,091	30,128,006	51,621,244
2037	0	70	280	55,567	98,124	171,391	0	0	0	3,889,694	6,868,709	11,997,348	15,558,776	27,474,836	47,989,394
2038	0	55	253	56,123	101,068	179,960	0	0	0	3,086,750	5,558,748	9,897,812	14,199,050	25,570,241	45,529,937
2039	0	43	220	56,684	104,100	188,958	0	0	0	2,409,068	4,424,258	8,030,725	12,470,470	22,902,042	41,570,812
2040	0	30	189	57,251	107,223	198,406	0	0	0	1,717,524	3,216,696	5,952,184	10,820,400	20,265,184	37,498,762
2041	0	21	159	57,823	110,440	208,326	0	0	0	1,228,745	2,346,848	4,426,937	9,193,905	17,559,943	33,123,907
2042	0	15	139	58,402	113,753	218,743	0	0	0	876,023	1,706,296	3,281,142	8,117,813	15,811,679	30,405,246
2043	0	10	120	58,986	117,166	229,680	0	0	0	589,856	1,171,657	2,296,799	7,078,266	14,059,882	27,561,590
2044	0	5	103	59,575	120,681	241,164	0	0	0	297,877	603,403	1,205,820	6,136,267	12,430,107	24,839,883
2045	0	0	88	60,171	124,301	253,222	0	0	0	0	0	0	5,264,977	10,876,344	22,156,935
2046	0	0	75	60,773	128,030	265,883	0	0	0	0	0	0	4,557,965	9,602,258	19,941,241
2047	0	0	63	61,381	131,871	279,177	0	0	0	0	0	0	3,836,288	8,241,938	17,448,586
2048	0	0	50	61,994	135,827	293,136	0	0	0	0	0	0	3,099,720	6,791,357	14,656,812
2049	0	0	38	62,614	139,902	307,793	0	0	0	0	0	0	2,348,038	5,246,323	11,542,240
2050	0	0	25	63,240	144,099	323,183	0	0	0	0	0	0	1,581,012	3,602,475	8,079,568
	3,799	8,378	19,504				171.0	200.8	237.8	394.5	512.3	678.8	951.6	1,331.7	1,912.7

Appendix E - Asbestosis Modelled Figures

	Claim Numbers			Cost Per Claim			Total Cost								
	Scenario 1	Scenario 2	Scenario 3	Inflation A	Inflation B	Inflation C	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation
				1%	*3%*	*5%*	*1/A*	*1/B*	*1/C*	*2/A*	*2/B*	*2/C*	*3/A*	*3/B*	*3/C*
2009	1,576	1,669	1,760	16,160	19,313	23,100	25,467,075	30,435,203	36,404,048	26,967,987	32,228,914	38,549,536	28,447,403	33,996,935	40,664,295
2010	1,455	1,603	1,783	16,322	19,892	24,255	23,741,171	28,934,443	35,280,984	26,163,251	31,886,342	38,880,358	29,100,179	35,465,710	43,244,832
2011	1,330	1,534	1,801	16,485	20,489	25,468	21,926,016	27,251,384	33,873,978	25,279,787	31,419,716	39,055,291	29,691,054	36,902,387	45,870,354
2012	1,205	1,461	1,816	16,650	21,103	26,741	20,059,191	25,424,833	32,217,202	24,318,985	30,824,082	39,058,886	30,240,583	38,329,650	48,569,604
2013	1,081	1,385	1,806	16,816	21,736	28,078	18,177,077	23,495,495	30,350,537	23,284,186	30,096,889	38,877,953	30,362,274	39,245,949	50,696,342
2014	961	1,306	1,787	16,984	22,388	29,482	16,313,672	21,504,440	28,317,962	22,177,185	29,233,634	38,496,094	30,348,423	40,004,839	52,680,075
2015	845	1,224	1,760	17,154	23,060	30,956	14,499,592	19,491,624	26,165,796	20,997,578	28,226,788	37,891,987	30,195,322	40,591,202	54,490,129
2016	737	1,140	1,726	17,326	23,752	32,504	12,761,294	17,494,551	23,940,919	19,759,084	27,087,873	37,069,174	29,902,520	40,993,584	56,098,842
2017	635	1,056	1,684	17,499	24,464	34,129	11,120,549	15,547,128	21,689,036	18,476,987	25,831,826	36,036,714	29,476,344	41,209,521	57,489,383
2018	543	971	1,636	17,674	25,198	35,836	9,594,165	13,678,767	19,453,113	17,166,609	24,475,091	34,806,990	28,921,904	41,235,064	58,642,008
2019	459	888	1,582	17,851	25,954	37,627	8,193,954	11,913,769	17,272,030	15,843,553	23,036,061	33,396,615	28,246,945	41,070,230	59,541,718
2020	384	805	1,523	18,029	26,733	39,509	6,926,923	10,270,979	15,179,524	14,522,050	21,532,747	31,823,338	27,459,415	40,715,782	60,174,028
2021	335	726	1,459	18,209	27,535	41,484	6,101,909	9,226,842	13,901,174	13,215,185	19,982,996	30,106,411	26,571,493	40,179,388	60,534,323
2022	290	649	1,392	18,392	28,361	43,558	5,333,460	8,224,551	12,631,725	11,937,173	18,407,918	28,271,908	25,599,091	39,475,509	60,628,691
2023	249	576	1,321	18,576	29,212	45,736	4,625,184	7,273,578	11,388,082	10,704,217	16,833,482	26,355,818	24,544,915	38,599,403	60,434,246
2024	212	508	1,248	18,761	30,088	48,023	3,978,418	6,380,362	10,183,567	9,524,045	15,274,126	24,378,723	23,412,129	37,547,049	59,928,087
2025	179	444	1,172	18,949	30,991	50,424	3,393,633	5,550,289	9,030,718	8,409,076	13,753,050	22,377,198	22,205,658	36,317,371	59,090,964
2026	150	385	1,096	19,138	31,921	52,946	2,870,670	4,787,952	7,941,610	7,367,670	12,288,440	20,382,409	20,971,121	34,977,459	58,015,896
2027	125	331	1,009	19,330	32,878	55,593	2,407,915	4,095,657	6,925,232	6,405,442	10,895,108	18,422,238	19,498,519	33,165,312	56,078,310
2028	103	283	914	19,523	33,865	58,373	2,002,714	3,473,899	5,987,976	5,526,036	9,585,439	16,522,468	17,835,065	30,936,630	53,325,619
2029	84	240	814	19,718	34,881	61,291	1,649,042	2,917,063	5,125,790	4,730,765	8,368,460	14,704,847	16,046,865	28,386,010	49,879,182
2030	68	202	713	19,915	35,927	64,356	1,346,197	2,428,502	4,350,163	4,019,648	7,251,335	12,989,279	14,199,468	25,615,456	45,884,832
2031	54	169	614	20,115	37,005	67,574	1,089,903	2,005,090	3,661,449	3,391,630	6,239,566	11,393,929	12,355,445	22,730,253	41,507,195
2032	43	140	520	20,316	38,115	70,952	874,276	1,640,251	3,053,385	2,840,134	5,328,446	9,919,088	10,571,529	19,833,506	36,920,765
2033	34	115	433	20,519	39,258	74,500	694,337	1,328,458	2,520,990	2,359,856	4,515,055	8,568,134	8,893,716	17,016,131	32,291,194
2034	26	94	355	20,724	40,436	78,225	545,460	1,064,282	2,058,884	1,942,298	3,789,739	7,331,362	7,355,556	14,351,884	27,764,141
2035	20	76	286	20,931	41,649	82,136	423,442	842,565	1,661,617	1,585,562	3,154,949	6,221,854	5,980,369	11,899,734	23,467,384
2036	15	61	226	21,141	42,899	86,243	324,355	658,182	1,323,200	1,283,646	2,604,776	5,236,605	4,781,516	9,702,658	19,506,089
2037	11	48	176	21,352	44,186	90,555	244,404	505,765	1,036,527	1,029,675	2,130,791	4,366,893	3,760,236	7,781,370	15,947,317
2038	8	38	135	21,566	45,511	95,083	180,400	380,709	795,384	817,683	1,725,607	3,605,169	2,907,704	6,136,306	12,820,076
2039	6	29	101	21,781	46,877	99,837	129,630	278,984	594,176	642,306	1,382,340	2,944,086	2,210,754	4,757,875	10,133,249
2040	4	23	75	21,999	48,283	104,829	89,723	196,921	427,543	498,480	1,094,048	2,375,332	1,652,515	3,626,886	7,874,477
2041	0	17	53	22,219	49,731	110,070	0	0	0	368,438	824,649	1,825,193	1,176,417	2,633,089	5,827,811
2042	0	12	36	22,441	51,223	115,574	0	0	0	259,353	591,987	1,335,685	797,605	1,820,572	4,107,711
2043	0	8	23	22,666	52,760	121,352	0	0	0	173,872	404,731	930,915	515,021	1,198,839	2,757,433
2044	0	5	14	22,892	54,343	127,420	0	0	0	111,014	263,530	617,912	316,718	751,839	1,762,872
2045	0	3	8	23,121	55,973	133,791	0	0	0	67,505	163,420	390,620	185,495	449,055	1,073,365
2046	0	2	4	23,352	57,652	140,481	0	0	0	39,094	96,514	235,175	103,467	255,437	622,421
2047	0	1	2	23,586	59,382	147,505	0	0	0	21,562	54,286	134,847	54,964	138,382	343,742
2048	0	0	1	23,822	61,163	154,880	0	0	0	11,326	29,080	73,638	27,808	71,398	180,797
2049	0	0	1	24,060	62,998	162,624	0	0	0	5,666	14,836	38,297	13,399	35,084	90,565
2050	0	0	0	24,301	64,888	170,755	0	0	0	2,700	7,208	18,969	6,149	16,418	43,206
	13,227	20,224	34,867				227.1	308.7	424.7	354.2	502.9	726.0	626.9	940.2	1,437.0

Appendix E - Pleural Thickening Modelled Figures

	Claim Numbers			Cost Per Claim			Total Cost								
	Scenario 1	Scenario 2	Scenario 3	Inflation A	Inflation B	Inflation C	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation	Scenario/ Inflation
				1%	*3%*	*5%*	*1/A*	*1/B*	*1/C*	*2/A*	*2/B*	*2/C*	*3/A*	*3/B*	*3/C*
2009	425	452	475	20,200	20,600	21,000	8,584,776	8,754,771	8,924,767	9,121,705	9,302,333	9,482,961	9,589,424	9,779,313	9,969,203
2010	392	437	481	20,402	21,218	22,050	8,002,985	8,323,073	8,649,438	8,906,892	9,263,133	9,626,359	9,809,470	10,201,811	10,601,844
2011	359	422	486	20,606	21,855	23,153	7,391,109	7,838,937	8,304,498	8,686,871	9,213,209	9,760,390	10,008,650	10,615,075	11,245,513
2012	325	407	490	20,812	22,510	24,310	6,761,815	7,313,524	7,898,325	8,461,559	9,151,953	9,883,757	10,193,893	11,025,631	11,907,258
2013	291	392	493	21,020	23,185	25,526	6,127,368	6,758,545	7,440,696	8,230,871	9,078,729	9,995,060	10,362,338	11,429,757	12,583,382
2014	259	377	495	21,230	23,881	26,802	5,499,227	6,185,812	6,942,393	7,994,724	8,992,875	10,092,785	10,505,611	11,817,249	13,262,605
2015	228	362	495	21,443	24,597	28,142	4,887,713	5,606,820	6,414,771	7,753,030	8,893,699	10,175,294	10,620,127	12,182,619	13,938,152
2016	199	347	494	21,657	25,335	29,549	4,301,744	5,032,357	5,869,323	7,505,704	8,780,479	10,240,822	10,703,174	12,521,011	14,603,467
2017	171	332	492	21,874	26,095	31,027	3,748,661	4,472,175	5,317,254	7,252,655	8,652,462	10,287,465	10,755,914	12,831,871	15,256,632
2018	146	317	488	22,092	26,878	32,578	3,234,127	3,934,736	4,769,099	6,993,795	8,508,861	10,313,169	10,778,359	13,113,275	15,893,952
2019	124	302	482	22,313	27,685	34,207	2,762,125	3,427,029	4,234,387	6,729,033	8,348,856	10,315,726	10,758,032	13,347,724	16,492,254
2020	104	287	474	22,537	28,515	35,917	2,335,018	2,954,476	3,721,391	6,458,275	8,171,594	10,292,756	10,690,520	13,526,613	17,037,817
2021	91	272	465	22,762	29,371	37,713	2,076,398	2,679,271	3,440,279	6,181,430	7,976,181	10,241,699	10,573,714	13,643,746	17,519,052
2022	80	257	453	22,989	30,252	39,599	1,846,422	2,429,701	3,180,401	5,898,402	7,761,690	10,159,804	10,412,744	13,702,099	17,935,610
2023	70	242	440	23,219	31,159	41,579	1,625,357	2,181,154	2,910,499	5,609,095	7,527,150	10,044,116	10,209,686	13,700,933	18,282,318
2024	60	227	425	23,452	32,094	43,657	1,407,094	1,925,648	2,619,450	5,313,413	7,271,553	9,891,459	9,962,011	13,633,289	18,545,299
2025	50	212	408	23,686	33,057	45,840	1,184,304	1,652,848	2,292,018	5,011,256	6,993,845	9,698,427	9,656,381	13,476,710	18,688,272
2026	40	197	389	23,923	34,049	48,132	956,918	1,361,946	1,925,295	4,702,524	6,692,931	9,461,362	9,303,888	13,241,884	18,719,193
2027	30	182	369	24,162	35,070	50,539	724,865	1,052,104	1,516,170	4,387,116	6,367,667	9,176,345	8,911,308	12,934,290	18,639,404
2028	20	167	348	24,404	36,122	53,066	488,076	722,444	1,061,319	4,064,931	6,016,863	8,839,173	8,485,158	12,559,633	18,450,937
2029	10	152	326	24,648	37,206	55,719	246,478	372,059	557,193	3,735,862	5,639,281	8,445,343	8,039,476	12,135,582	18,174,153
2030	0	137	305	24,894	38,322	58,505	0	0	0	3,399,806	5,233,628	7,990,032	7,584,032	11,674,785	17,823,563
2031	0	122	283	25,143	39,472	61,430	0	0	0	3,056,655	4,798,561	7,468,077	7,118,675	11,175,418	17,392,478
2032	0	107	262	25,395	40,656	64,502	0	0	0	2,706,302	4,332,680	6,873,950	6,643,253	10,635,581	16,873,726
2033	0	92	240	25,649	41,876	67,727	0	0	0	2,348,635	3,834,527	6,201,741	6,157,610	10,053,296	16,259,618
2034	0	77	219	25,905	43,132	71,113	0	0	0	1,983,544	3,302,585	5,445,127	5,666,036	9,433,904	15,554,119
2035	0	62	199	26,164	44,426	74,669	0	0	0	1,610,917	2,735,276	4,597,346	5,194,056	8,819,311	14,823,155
2036	0	47	178	26,426	45,759	78,403	0	0	0	1,230,639	2,130,956	3,651,175	4,702,448	8,142,688	13,951,660
2037	0	32	157	26,690	47,131	82,323	0	0	0	842,594	1,487,915	2,598,893	4,182,907	7,386,487	12,901,734
2038	0	17	136	26,957	48,545	86,439	0	0	0	446,666	804,374	1,432,255	3,673,597	6,615,566	11,779,565
2039	0	2	117	27,227	50,002	90,761	0	0	0	42,734	78,481	142,456	3,192,940	5,863,841	10,643,795
2040	0	0	100	27,499	51,502	95,299	0	0	0	0	0	0	2,741,212	5,133,928	9,499,837
2041	0	0	81	27,774	53,047	100,064	0	0	0	0	0	0	2,240,831	4,279,886	8,073,292
2042	0	0	65	28,052	54,638	105,067	0	0	0	0	0	0	1,817,251	3,539,598	6,806,510
2043	0	0	52	28,332	56,277	110,320	0	0	0	0	0	0	1,466,421	2,912,818	5,709,998
2044	0	0	41	28,615	57,966	115,836	0	0	0	0	0	0	1,166,938	2,363,843	4,723,819
2045	0	0	31	28,902	59,705	121,628	0	0	0	0	0	0	910,157	1,880,195	3,830,272
2046	0	0	24	29,191	61,496	127,710	0	0	0	0	0	0	686,076	1,445,354	3,001,603
2047	0	0	17	29,482	63,341	134,095	0	0	0	0	0	0	488,070	1,048,576	2,219,887
2048	0	0	11	29,777	65,241	140,800	0	0	0	0	0	0	312,841	685,422	1,479,248
2049	0	0	5	30,075	67,198	147,840	0	0	0	0	0	0	160,273	358,104	787,852
2050	0	0	1	30,376	69,214	155,232	0	0	0	0	0	0	22,405	51,052	114,499
	3,475	7,024	11,986				74.2	85.0	98.0	156.7	197.3	252.8	276.5	374.9	522.0

Appendix F:

- Summary of Data used for Section 3 Graphs

Appendix F - Section 3 Data : Notified Number of Claims

NUMBER OF CLAIMS NOTIFIED BY NOTIFICATION YEAR									
	2009 Survey					2004 Survey / Projection			
Notification Year	Pleural Plaques + Thickening	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma	Pleural Plaques + Thickening	Asbestosis	Asbestos Related Lung Cancer	Mesothelioma
1990	160	870	118	5	490	220	1,141	104	734
1991	202	885	126	2	564	309	1,106	149	808
1992	392	982	89	2	531	541	1,408	124	719
1993	339	1,336	108	2	750	621	1,791	168	1,013
1994	407	1,277	111	2	804	677	1,775	155	987
1995	487	1,191	84	2	731	743	1,583	107	825
1996	671	1,194	131	12	952	1,286	1,312	159	975
1997	851	1,333	127	16	933	1,298	1,456	133	917
1998	1,127	1,436	89	32	930	1,626	1,355	100	1,061
1999	1,400	1,689	97	87	1,194	1,834	1,535	102	1,180
2000	2,673	1,909	109	118	1,459	2,687	1,625	75	1,310
2001	3,340	1,880	112	202	1,403	3,399	1,703	88	1,268
2002	4,070	1,803	140	160	1,326	4,119	1,978	96	1,319
2003	6,248	2,197	182	404	1,951	9,072	1,900	100	2,619
2004	8,626	1,929	188	420	2,016	12,000	1,961	100	1,422
2005	9,887	1,965	228	601	2,181	14,000	1,925	100	1,461
2006	3,890	1,735	296	535	2,444	12,000	1,881	100	1,496
2007	1,690	1,588	311	394	2,641	10,000	1,830	100	1,529
2008	647	1,730	322	467	3,052	7,000	1,773	100	1,558

All data grossed up to 100% insurance market share.
Data for previous survey is actual data up to 2003 and projections from 2004-2008.

Appendix F - Section 3 Data : Incurred Claims

	Incurred Average Cost / Projection (2004)				
Notification Year	Pleural Plaques + Thickening	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
1990	5,202	11,321	12,139		26,520
1991	4,609	12,806	12,386		25,508
1992	4,065	11,994	12,640		28,712
1993	4,573	10,986	19,365		27,504
1994	4,276	12,271	22,559		31,086
1995	6,479	11,810	24,586		33,370
1996	6,102	13,088	15,580		41,957
1997	7,309	14,652	18,364		33,717
1998	7,289	14,273	21,549		41,884
1999	8,556	13,634	28,324		39,442
2000	8,099	14,497	33,248		37,028
2001	9,824	15,541	37,752		43,007
2002	10,454	16,468	39,334		44,473
2003	11,449	22,217	37,600		43,983
2004	11,330	17,510	39,393		51,834
2005	11,670	18,035	40,830		53,724
2006	12,020	18,576	42,332		55,701
2007	12,381	19,134	43,887		57,746
2008	12,752	19,708	45,551		59,935

	Incurred Average Cost (2009)					
Notification Year	Pleural Plaques + Thickening	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
1990	8,030	5,293	12,801	9,168	94,256	26,313
1991	6,491	6,499	13,989	10,245	5,878	28,938
1992	4,368	4,218	15,435	18,415	29,899	30,800
1993	6,649	6,300	13,780	18,013	67,745	33,140
1994	6,395	6,114	15,745	24,100	57,842	37,781
1995	8,891	8,874	15,626	28,576	12,789	45,560
1996	8,628	8,574	15,563	17,957	11,520	45,859
1997	8,545	8,339	16,137	25,146	19,533	52,313
1998	9,749	9,031	14,560	21,145	33,985	56,320
1999	13,228	11,111	17,529	28,661	45,128	56,911
2000	8,656	8,347	12,534	32,581	15,324	60,888
2001	8,699	8,028	12,502	35,427	19,142	63,841
2002	7,970	7,470	11,991	31,568	20,228	63,735
2003	7,362	6,729	12,400	30,612	16,522	65,552
2004	5,479	4,852	14,613	39,200	17,752	65,438
2005	5,088	4,465	17,396	31,650	14,706	70,739
2006	6,036	4,525	19,449	34,592	15,517	72,987
2007	8,431	5,231	21,389	44,639	18,951	77,313
2008	17,330	11,242	25,303	60,737	20,021	83,698

	Incurred Cost / Projection (2004)				
Notification Year	Pleural Plaques + Thickening	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
1990	1,142,854	12,913,637	1,265,042		19,460,793
1991	1,425,750	14,158,465	1,844,748		20,603,829
1992	2,198,487	16,892,706	1,561,661		20,653,491
1993	2,838,463	19,678,974	3,257,698		27,870,285
1994	2,894,365	21,786,602	3,504,519		30,691,233
1995	4,816,944	18,699,030	2,640,300		27,526,202
1996	7,848,530	17,173,937	2,484,380		40,918,089
1997	9,487,439	21,327,690	2,439,427		30,927,995
1998	11,851,594	19,346,158	2,153,723		44,449,046
1999	15,687,504	20,926,110	2,881,970		46,555,251
2000	21,760,668	23,555,965	2,482,221		48,495,023
2001	33,389,195	26,471,788	3,338,209		54,552,584
2002	43,061,287	32,567,850	3,766,092		58,638,843
2003	103,865,121	42,213,029	3,759,991		115,190,256
2004	135,960,000	34,342,194	3,939,348		73,728,595
2005	163,378,600	34,720,319	4,083,029		78,473,034
2006	144,239,964	34,944,823	4,233,242		83,346,762
2007	123,805,969	35,013,596	4,388,705		88,285,549
2008	89,264,104	34,931,999	4,555,088		93,406,330

	Incurred Cost (2009)				
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
1990	821,763	11,135,918	1,084,499	464,549	12,903,862
1991	1,298,055	12,373,740	1,291,168	13,977	16,308,012
1992	1,643,613	15,157,857	1,636,429	68,127	16,351,792
1993	2,125,913	18,414,663	1,945,121	130,631	24,858,087
1994	2,476,782	20,110,436	2,667,325	128,039	30,357,975
1995	4,302,021	18,617,337	2,406,693	26,271	33,317,370
1996	5,645,369	18,578,117	2,357,219	141,769	43,645,183
1997	6,963,358	21,503,151	3,188,852	304,873	48,784,710
1998	9,888,721	20,902,674	1,886,579	1,102,593	52,390,733
1999	14,588,560	29,600,761	2,775,100	3,932,566	67,976,872
2000	21,326,885	23,930,340	3,547,536	1,812,414	88,810,287
2001	25,197,939	23,499,631	3,975,672	3,859,974	89,555,765
2002	29,213,297	21,622,248	4,407,052	3,227,400	84,496,667
2003	39,322,485	27,243,867	5,567,244	6,672,273	127,893,174
2004	39,816,776	28,188,480	7,356,532	7,448,105	131,928,205
2005	41,460,736	34,186,749	7,225,434	8,838,136	154,291,074
2006	15,181,730	33,740,939	10,242,596	8,298,178	178,411,351
2007	6,777,682	33,974,206	13,878,978	7,470,065	204,170,078
2008	2,028,911	43,777,256	19,526,945	9,341,139	255,459,177

	Case Estimates				
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
1990	15	12,321	0	0	0
1991	14	0	0	14	0
1992	82	41	150,386	0	0
1993	139	38,961	2,892	12	25,580
1994	61,507	0	0	0	16,633
1995	74	32,999	0	0	76,047
1996	23,000	11,018	0	12	178,608
1997	94	32,935	0	39,043	19,512
1998	315,278	658,844	0	0	1,580,804
1999	289,706	1,144,168	0	0	2,127,674
2000	341,539	1,034,331	116,662	23	3,856,765
2001	800,690	2,050,350	111,214	1,964	3,525,815
2002	895,315	1,146,833	62,345	148,520	6,683,542
2003	2,626,118	2,900,778	506,114	267,132	10,842,183
2004	8,652,499	8,115,475	1,923,009	1,022,778	16,059,191
2005	29,620,557	14,384,413	3,156,729	2,594,255	31,733,157
2006	13,857,098	21,104,353	7,038,024	4,593,936	62,543,271
2007	6,469,547	27,177,242	11,303,239	5,716,434	119,846,923
2008	1,720,615	42,313,336	19,020,597	8,965,653	216,816,611

	Paid to Date				
	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
	821,748	11,123,596	1,084,499	464,549	12,903,862
	1,298,041	12,373,740	1,291,168	13,963	16,308,012
	1,643,531	15,157,816	1,486,044	68,127	16,351,792
	2,125,774	18,375,702	1,942,229	130,620	24,832,506
	2,415,275	20,110,436	2,667,325	128,039	30,341,343
	4,301,947	18,584,337	2,406,693	26,271	33,241,322
	5,622,369	18,567,099	2,357,219	141,757	43,466,575
	6,963,265	21,470,216	3,188,852	265,830	48,765,199
	9,573,442	20,243,830	1,886,579	1,102,593	50,809,928
	14,298,854	28,456,593	2,775,100	3,932,566	65,849,198
	20,985,345	22,896,008	3,430,874	1,812,391	84,953,521
	24,397,249	21,449,282	3,864,458	3,858,010	86,029,949
	28,317,982	20,475,416	4,344,707	3,078,880	77,813,126
	36,696,367	24,343,090	5,061,130	6,405,141	117,050,991
	31,164,276	20,073,005	5,433,522	6,425,327	115,869,014
	11,840,179	19,802,336	4,068,704	6,243,882	122,557,917
	1,324,631	12,636,586	3,204,572	3,704,241	115,868,080
	308,135	6,796,964	2,575,739	1,753,631	84,323,155
	308,296	1,463,921	506,348	375,485	38,642,566

All data grossed up to 100% insurance market share.
Data for previous survey is actual data up to 2003 and projections from 2004-2008.

Appendix F - Section 3 Data : Settled Claims

GROSS AVERAGE PAID AMOUNT FOR SETTLED CLAIMS BY CLAIM SETTLEMENT YEAR									
Settlement Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Total Non-Mesothelioma	Mesothelioma	Total Identified Asbestos Related	Total Unidentified Asbestos Related	**Total**
1990	7,924	12,937	8,936		11,143	19,804	14,427	11,340	**13,282**
1991	6,694	14,475	9,557		12,365	29,758	18,616	9,256	**14,565**
1992	7,531	18,392	12,752	1,904	15,164	24,685	19,106	11,637	**16,193**
1993	4,964	15,187	12,605	108,254	12,537	32,099	19,433	36,688	**25,205**
1994	7,368	16,764	14,104		14,485	31,836	20,323	14,892	**18,160**
1995	8,355	15,623	18,463		14,564	30,133	20,548	18,214	**19,569**
1996	8,572	19,119	11,792		16,657	34,119	21,961	16,282	**19,389**
1997	4,101	12,707	9,169	57,842	9,946	38,505	15,714	18,152	**16,567**
1998	6,937	17,297	22,048		13,886	48,504	22,309	16,623	**21,287**
1999	9,684	23,303	30,929	71,871	18,704	46,101	26,281	22,598	**25,618**
2000	9,335	19,288	30,541	63,535	16,710	59,478	26,778	16,698	**24,725**
2001	10,279	25,219	19,043	68,364	18,696	60,294	29,007	14,429	**25,300**
2002	10,665	17,112	29,088	22,424	14,267	70,722	26,129	21,543	**25,361**
2003	10,408	22,902	37,676	20,898	15,962	65,934	23,996	14,408	**23,079**
2004	8,126	16,670	33,041	18,861	11,430	73,354	21,989	20,282	**21,925**
2005	8,784	19,329	47,204	21,635	12,839	74,938	23,711	9,971	**22,759**
2006	8,380	18,597	21,060	18,965	12,017	89,370	30,509	16,897	**30,079**
2007	9,506	21,945	44,467	18,446	14,176	82,707	31,909	17,622	**31,718**
2008	7,614	21,552	35,927	22,563	16,070	79,566	40,740	14,108	**39,433**

Appendix G:

- British Population Projections

Appendix G - **British Population Projections**

G1 Background and Summary

Importance of Population Projections

Estimated future numbers of mesotheliomas and other asbestos-related diseases are affected by the projected number of subjects at risk of developing the disease, unless the estimates are based on pure extrapolation from past data or directly linked to some past indices (e.g. as in our latency model). The HSE model and the birth-cohort model arrive at their estimates of future male mesothelioma deaths by applying estimated mortality rates (at by age and period, or age and cohort) to the projected number of persons alive at selected ages in all future years.

Population projections are uncertain, and different assumptions will lead to different estimates of future mesothelioma deaths. The original AWP 2004 (and HSE 2005) mesothelioma projections used the so-called 2001-based population projections produced by the Government Actuary's Department (GAD).[1] The AWP 2009 and HSE 2009 projections use the updated 2006-based projections, which are now produced by the Office of National Statistics (ONS).

In both cases, the principal projections were used. We also tested the impact of alternative projections, both in terms of assumed mortality (including the impact of alternative assumptions about future improvements) and assuming no future net migration.

Impact on Mesothelioma Projections

While the fact mesothelioma projections would be affected by different underlying population assumptions was always known, it is probably fair to say that the degree of their sensitivity was not fully appreciated and that the impact of moving to the more recent 2006-based projections came as a bit of a surprise. In fact, we showed in section 4 that about half the increase in the future projected deaths from the HSE 2005 to the HSE 2009 parameterised models is due to the change in population assumptions. Indeed, the HSE 2005 model and the AWP 2009 preferred parameterisation produce similar forecasts if the same 2006-based GB population projection is used.

As discussed in more detail below, most of the impact of the updated projections is due to lower actual (to 2006) and projected mortality rates for the cohorts born in the 1923-1940 years. The number of projected mesothelioma deaths is much less sensitive to assumptions about long term mortality improvement rates for other cohorts. Finally, changes in population due to past and projected net migration to the UK seem to have minimal impact on the projected number of mesothelioma deaths.

G2 2001 – Based Projections

The GAD (until 2005) and the ONS (since 2006) have produced population projections by age and sex for the United Kingdom and constituent countries every two years. In some years, interim projections are also produced. The 2001-based projection was such an interim projection, using the same long term assumptions as the 2000-based projection but with starting mortality rates updated to the 2001 rates.

[1] In all cases, the population of Great Britain (excluding Northern Ireland) is used to match the information on mesothelioma deaths produced by the HSE.

Appendix G - **British Population Projections**

Methodology

Population projections rely on a number of demographic assumptions, including fertility rates and net migration figures. Since most mesothelioma cases develop at older ages and asbestos exposure dramatically decreased after 1980, the most important assumptions for our purposes relate to initial and projected mortality rates. The latter are not directly estimated, rather they are derived by applying selected rates of mortality improvement.

In this respect, the general methodology of adopted by the GAD and then ONS has been to select initial mortality rates from the most recent interim population and mortality tables at the time of the projection – in this instance these were the 2001 interim tables. Initial rates of mortality improvements are derived from recent experience and then assumed to converge over time to a common long term rate.[2] While detailed assumptions used have changed in the last decade, this approach, used by many other national statistical offices, has been maintained. It is interesting to note that, although with several differences in the details, the prototype mortality projection model recently proposed by the Continuous Mortality Investigation (CMI) group of the actuarial profession also has a similar structure.

High level assumptions

Future mortality rates were derived by applying projected improvement rates to the initial 2001 interim mortality table by sex and single year of age. The initial rates of improvement were taken from the observed (smoothed) improvement rates between 2000 and 2001, which were then assumed to decrease to the long term target rate of 0.75% per annum by 2025, which is assumed to halve thereafter every ten years (i.e. 0.375% in 2035 etc.) The transition was not assumed to occur linearly, but more rapidly in the earlier years.

The higher improvement rates observed for the generations (cohorts) born around 1931 were assumed to continue, but at a slower rate than in the past and to also converge to an annual 0.75% by 2025.[3]

Cohort life expectancies

The following table summarises projected cohort life expectancies at various ages attained in specified years. These are the life expectancies implied by the projected life tables, including improvements. E.g. the projected life expectancy of a 40 year old in 2010 is derived applying the survival rate of a 40 year old in 2010, that of a 41 year old in 2011 and so on. These life expectancies provide a synthetic measure of the projected mortality levels of the underlying tables.

2001 based principal

(GB) Males

Age / Yr	2010	2020	2030	2040
40	40.5	40.9	41.3	41.7
50	30.9	31.3	31.7	32.0
60	21.9	22.3	22.7	23.0
70	14.0	14.5	14.8	15.1
80	7.8	8.4	8.6	8.8
90	4.1	4.4	4.6	4.7

[2] See the detailed discussion in the National Statistics / GAD 2001 report n.8, available at http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/nat-stats-qual-revs/qual-revs-by-theme/population/nsqr-8-pop-rev-mort.pdf

[3] The same long term assumption, but with somewhat lower interim improvement rates, was used for Scottish males. See section 7 in http://www.statistics.gov.uk/downloads/theme_population/pp2no23.pdf for more details.

G3 2006 – Based Projections

High level assumptions

The 2006-based projections had similar assumptions to the 2001-based projections, with the following main differences:

- Actual mortality improvements in 2001-2006 were higher than assumed in the 2001 principal projection (closer to the high life expectancy variant). These were reflected in lower mortality rates in the 2006 interim table and in higher initial improvement rates.
- The long term target rate of improvement was increased from 0.75% to 1% per year.
- Most importantly, since those born in the 1923-1940 period continued to display higher mortality improvements compared to other cohorts, with no evidence of a decline in the differentials, it was assumed that they would continue to experience higher improvements in the future as well, by up to 1.5% more per year for those born in 1931.[4]

The 2006-based ONS principal projections imply rates of future mortality improvement that are now more broadly in line (although perhaps a bit lower) with those commonly assumed by many UK life actuaries in commercial (pricing and reserving) calculations.

Of the above changes in assumptions from 2001, it is the third that has had by far the strongest impact on mesothelioma death projections. This is due to the large degree of coincidence between the generations most affected by the above mentioned mortality improvement "cohort effect" and those from whose ranks the largest numbers of future mesothelioma deaths are expected to arise. In fact, about one half of UK meso sufferers projected to die in the next 20 years are expected to be born between 1923 and 1940, and the vast majority of the remaining future mesothelioma sufferers is expected to have been born after 1940.

It is important to note that, although experience from other countries suggests that the mortality improvement "cohort effect" is likely to persist for many years, this is by no means certain, and it is quite possible that future mortality developments may be significantly different from current expectations. As demonstrated by the impact of moving to the more recent 2006-based projections, this may significantly affect the future number of mesothelioma deaths.

Cohort life expectancies

The cohort life expectancies implied by the 2006-based projections for British males are as follows:

2006 based principal

(GB) Males

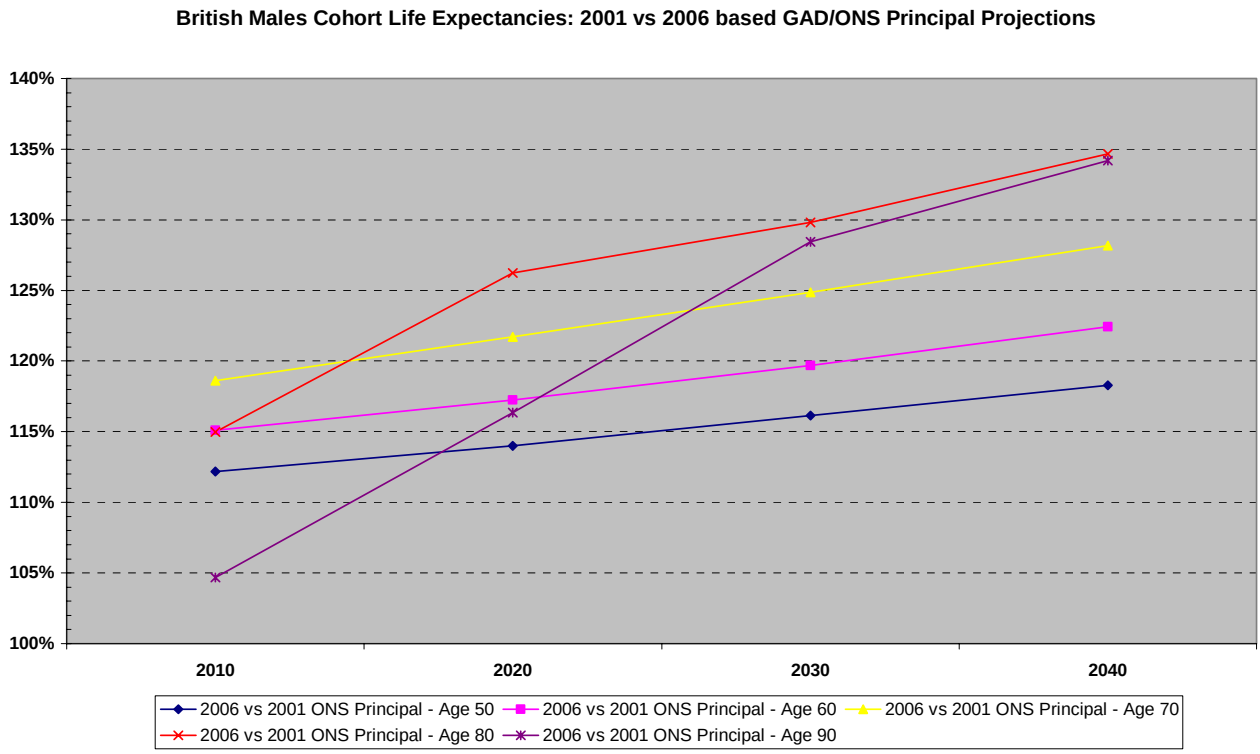
Age / Yr	2010	2020	2030	2040
40	44.8	46.0	47.1	48.3
50	34.6	35.7	36.8	37.9
60	25.2	26.2	27.2	28.2
70	16.7	17.7	18.5	19.3
80	9.0	10.5	11.2	11.8
90	4.3	5.1	5.9	6.3

[4] See section 7 in http://www.statistics.gov.uk/downloads/theme_population/pp2no26.pdf for more details.

G4 - Comparison of 2001– and 2006–Based Projections

The cohort life expectancies at the older ages are significantly higher for the 2006-based projections than they were in the 2001-based projections. This is particularly visible for those born in the 1923-1940 "cohort-effect" period. For example, the life expectancy of 1930 born males, who will be 80 in 2010, is over one year or 15% higher using the 2006-based tables than the 2001-based projections. The life expectancy of males born in 1940, who will be 70 years old in 2010, has increased by over 2.5 years or almost 20%.

The following graph compares the relative cohort life expectancies between 2006- and 201-based projections at selected ages and intervals. One can see the particularly rapid increase in the life expectancy differences at age 80 (until 2020) and age 90 (until 2030), which reflects the cumulative impact of the higher mortality improvements of the 1923-1940 cohorts, where of course those born in 1940, the last years of these cohorts, will be aged 80 in 2020 and 90 in 2030.



Another way of looking at the projections is to compare the projected period life expectancies. These are the life expectancies that may be derived by assuming the (actual or estimated) mortality rates reached in a certain year will continue to be applicable without further changes, and are a common synthetic measure of mortality levels at different ages.

The following table synthesizes the period life expectancies projected to be achieved in different periods – we included the latest 2008 based projections (discussed in the last section) as in this case the 2008 values reflect the actual interim table.

Period life expectancies under alternative projection bases

2001 based principal				2006 based principal			2008 based principal		
(GB) Males									
Age / Yr	2008	2015	2025	2008	2015	2025	2008	2015	2025
40	38.1	39.0	39.8	39.2	41.0	42.7	39.0	41.2	43.0
50	28.9	29.8	30.6	30.1	31.8	33.5	29.8	31.9	33.8
60	20.4	21.2	21.9	21.5	23.2	24.8	21.3	23.3	25.0
70	13.0	13.7	14.3	13.9	15.5	17.0	13.7	15.6	17.2
80	7.3	7.9	8.3	7.8	8.9	10.3	7.7	9.0	10.4
90	3.9	4.1	4.4	3.9	4.4	5.2	3.8	4.5	5.3

The absolute differences in life expectancies are lower, of course, because they only reflect shorter periods of mortality improvement. However, one can see that the 2006-based projections imply much faster improvements – the period life expectancies in 2008 are already higher than those projected to be achieved only in 2015 using the 2001-based assumptions. In other words, the combination of higher actual and projected rates of improvement imply that between 2001 and 2008 mortality rates improved almost twice as fast as expected. The period life expectancies derived from the 2008 interim table used in the newly published 2008-based projections are slightly lower than those implied by the 2006-based projections, however the projected future life expectancies are slightly higher.

G5 - Net Migration

Population projections are affected by assumptions about population inflows and outflows, i.e. migration. Since these projections affect mesothelioma death estimates in principle the latter may be distorted if the people entering and/or leaving the country have, on average, significantly different asbestos exposure history. Insurance claims projections may be further distorted if the propensity or anyway ability to present claims new entrants and leavers is different from expected.

The UK has seen significant net immigration in the last two decades, so in principle this might cause some distortions in mesothelioma projections. For example, over one million males moved into the UK between 1991 and 2007.[5] However, closer examination of actual estimates of net migration flows reveals that net inflows into the UK are limited to people of age 44 or younger. For ages 45-59/64, the statistics show a net outflow over the period of about 70,000 people, with a small cumulative outflow of nearly 10,000 people of age 60/65 and higher.

The ONS assumes that flows of a similar magnitude and sign will continue to occur in their 2006- and 2008-based projections, notably an annual net outflow of about 15,000 males for ages 50 and higher. The 2001-based projections made similar, if slightly lower assumptions.

Since mesothelioma projections only depend on population figures at older ages, and males born after 1960 contribute extremely little to projections, we would expect that net migration assumptions of the magnitude just described would have only a small impact on the projections.

[5] See National Statistics information on total international migration at http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15053 , particularly table 2.07 by age and sex.

In fact, we estimated the impact of stripping out migration figures by overlaying actual and projected survival rates onto the actual population in a selected year and projecting forward. The impact on mesothelioma projections was a very small increase in projected deaths, with results little affected by the initial selected year. We tried a number of different years from 1985 onwards, with results ranging from essentially no change if 1985 is selected to an increase of about 0.5% in mesothelioma deaths if 2008 is chosen.

These results were initially somewhat surprising, however they are perfectly consistent with our models of mesothelioma deaths given actual and projected population outflows at older ages.

Of course, if future migration patterns changed materially and differed significantly from expectations, this could distort the projections, especially of deaths leading to potential insurance claims, as discussed in section 4.4.

G6 - Addendum: 2008 – Based Projections

At the end of October 2009, the ONS produced a new set of mortality projections, the 2008-based projections, followed by the publication of additional variants in November 2009.

The following table summarises the cohort life expectancies implied by the new projections.

2008 based principal

(GB) Males

Age / Yr	2010	2020	2030	2040
40	45.2	46.4	47.5	48.6
50	34.9	36.1	37.2	38.2
60	25.4	26.5	27.4	28.4
70	16.9	17.9	18.8	19.6
80	9.1	10.7	11.4	12.0
90	4.3	5.2	6.0	6.4

These are slightly higher than those implied by the 2006-based projections, although as mentioned the actual mortality rates in 2008 were slightly higher than expected.

We have quickly tested the impact that the updated population projections would have on future mesothelioma deaths estimates. Using either our preferred parameterisation or HSE's 2009 parameterisation, the new population projections would imply a very small increase in projected mesothelioma deaths of less than 1%.

Appendix H:

- Comparison Between GB Mesothelioma Deaths Projections

Appendix H - Comparison between GB male mesothelioma deaths projections:

	2007-2040	2041-2050	Total 2007-2050	Total 2009-2050	Peak Year	Peak Deaths	Total 2009-2050 / 2009 Ratio
AWP 2004	44,851	0	44,851	41,311	2013	1,846	22.78
HSE 2003/5	44,851	2,298	47,149	43,609	2013	1,846	24.04
HSL 2009 Report	53,975	4,935	58,910	55,284	2016	1,990	29.58
HSL 2009 (AWP Projection Model)	54,145	5,334	59,479	55,878	2016	1,977	30.05
AWP 2009	48,945	3,530	52,475	48,911	2015	1,912	26.69

Notes

The deaths are for males aged between 20 and 89.
The peak number of deaths outlined in the HSL report in 2016 is 1,990 for ages 20 to 89 as per Table 6.
The HSE 2003/5 numbers based on the non-clearance with background exposure assumption.
The HSL 2009 Report numbers have been taken from the HSL 2009 Report.
The HSL 2009 (AWP Projection Model) are based on the fminsearch parameter estimates for Model A as per Table 4 in the HSL report.
Differences occur due to the use of the median parameter values.
The median projection as set out in the HSL paper doesn't necessarily coincide with the set of median parameter values.