UK ASBESTOS WORKING PARTY UPDATE 2008

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Summary:

The primary objective for the working party, as set out in the terms of reference, is to update the estimate made in 2004 of the future liabilities in relation to UK asbestos-related claims for the UK insurance market. The secondary objectives of the working party are to highlight and explain the key areas of uncertainty and factors that should be considered when estimating the future liabilities in relation to UK asbestos claims.

The working party has made great progress in meeting the secondary objectives; however, it is not possible to update the liability estimates at the current time.

The 2004 working party estimates were produced on the basis of epidemiological projections of future male mesothelioma deaths published by the Health & Safety Executive ("HSE") and backed by Professor Peto. New research presented by Professor Peto at Melbourne University in April 2008 has revealed trends that are inconsistent with the work that underlies the HSE 2003 model of future UK population deaths due to mesothelioma. Professor Peto is currently in the process of publishing his recent research. The HSE have also reported that they are reviewing their methodology and intend to revise their projections of future UK population deaths. The working party considers that publishing updates based on the original models when these studies are expected to be revised in the near future could be misleading.

Instead the paper provides a detailed discussion of the main issues that have an immediate impact on future liabilities in relation to UK asbestos claims. This should help those responsible for estimating liabilities in relation to UK asbestos claims to understand the main issues and assist them in making the related judgements. It will also help the reader to understand the uncertainties that underlie the projected number of UK population deaths due to mesothelioma.

The paper should therefore be considered as work in progress. An update will follow in due course to include an estimate of the future liabilities in relation to UK asbestos-related claims for the UK insurance market once the HSE have published their revised projections and taking into account all the issues raised within this paper.

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CONTENTS

Section

1. Introduction

1.1. Background

Following the paper in 2004, the Asbestos Working Party reformed in early 2007 as it appeared that the close correspondence between the number of UK mesothelioma deaths and insurance claims that was highlighted in the 2004 paper was breaking down.

This was investigated during 2007 and proved to be the case as outlined at the GIRO 2007 workshop presentation.

Following GIRO 2007, the working party set the following objectives:

- Facilitate a more detailed per claim data collection exercise to enhance the understanding of the current trends identified.
- Review the previous working party industry projections and update where appropriate in light of the current trends identified.
- Develop the relationship with the HSE, in particular make available a refresh of the HSE population mesothelioma death data, and discuss with the HSE the potential for additional data items available to help develop trend analysis and projections.
- Develop relationships with all relevant parties in respect of the compensation process for asbestos-related claims.
- Review of other interesting asbestos-related developments:
  - Impact of various wordings used.
  - Development of PL claims.
  - Reinsurance implications.
  - Recent medical research.
- Produce a summary paper of developments and implications, aiming for GIRO 2008.

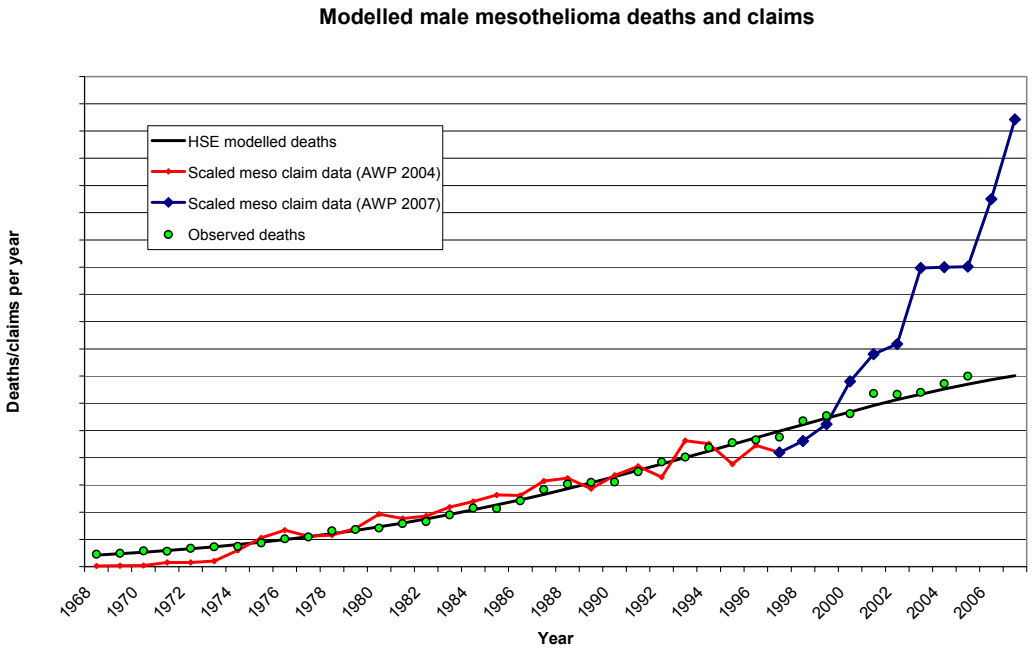
In discussing the various issues with the HSE, it became clear that the HSE were in the process of revising their future population estimates of deaths in Great Britain due to mesothelioma. It also became clear that this revision would not be available in time for the working party to use the revised population projection in updating the insurance industry projections for asbestos-related claims. Further, in April 2008, Professor Julian Peto presented at the University of Melbourne highlighting his recent research that would be fully published later and briefly indicating the potential future number of population deaths due to mesothelioma could be significantly different from the current HSE projections. We therefore consider that revising the insurance industry estimates prior to updates from the HSE and Professor Peto could be misleading.

Most of the other objectives have been achieved, and this paper has been written to communicate the findings of the work undertaken. This should help those responsible for estimating liabilities in relation to UK asbestos claims to understand the main issues and assist them in making the related judgements. It will also help the reader to understand the uncertainties that underlie the projected number of UK population deaths due to mesothelioma.

The paper is work in progress. The trends and key issues have been discussed, and the important things to be aware of and consider when estimating asbestos claims liabilities have been highlighted. The paper will be updated with insurance industry estimates when the work by the HSE and Professor Peto has been completed.

1.2. Executive Summary

Since the Asbestos Working Party paper in 2004, the insurance market mesothelioma claims experience has been significantly worse than expected. This is illustrated by the graph below:



This graph was presented at GIRO 2007, and highlights how the claims experience has deviated from the previously close correlation to deaths, the number of insurance claims are now significantly above the level of population mesothelioma deaths.

Over the last year, the working party has investigated the factors that might have influenced this trend, by considering the following five theories:

1. Increase in propensity to sue
2. More claims per death
   - Claims being shared more between insurers
3. Insurers exposure different from UK exposure
   - Take up of EL cover by companies (compulsory since 1972)
   - Moving from nationalised industries to private firms
4. Speed-up and backlog of claims
   - Claims being identified faster
   - Catch-up from claims on hold due to legal cases
5. HSE model is under-estimating deaths

The working party has concluded that the main driver is the rise in the proportion of mesothelioma sufferers who are making insurance claims. In the 2004 paper it was estimated that around one third of mesothelioma sufferers were making insurance claims. The asbestos working party has obtained claimant level data that gives a more reliable estimate of this proportion and has shown that this proportion has risen from 36% in 2003 to 56% in 2007. This represents an increase of over a 50% and is the main reason for the increase in insurance claim notifications. The analysis behind these figures is contained in Section 5.4.

The working party believe that the other theories above have either a neutral or a small impact and are they discussed more fully in Section 5.3.3.

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 one 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 been in the news headlines often. The legal cases relating to pleural plaques and mesothelioma are discussed fully in Section 3.

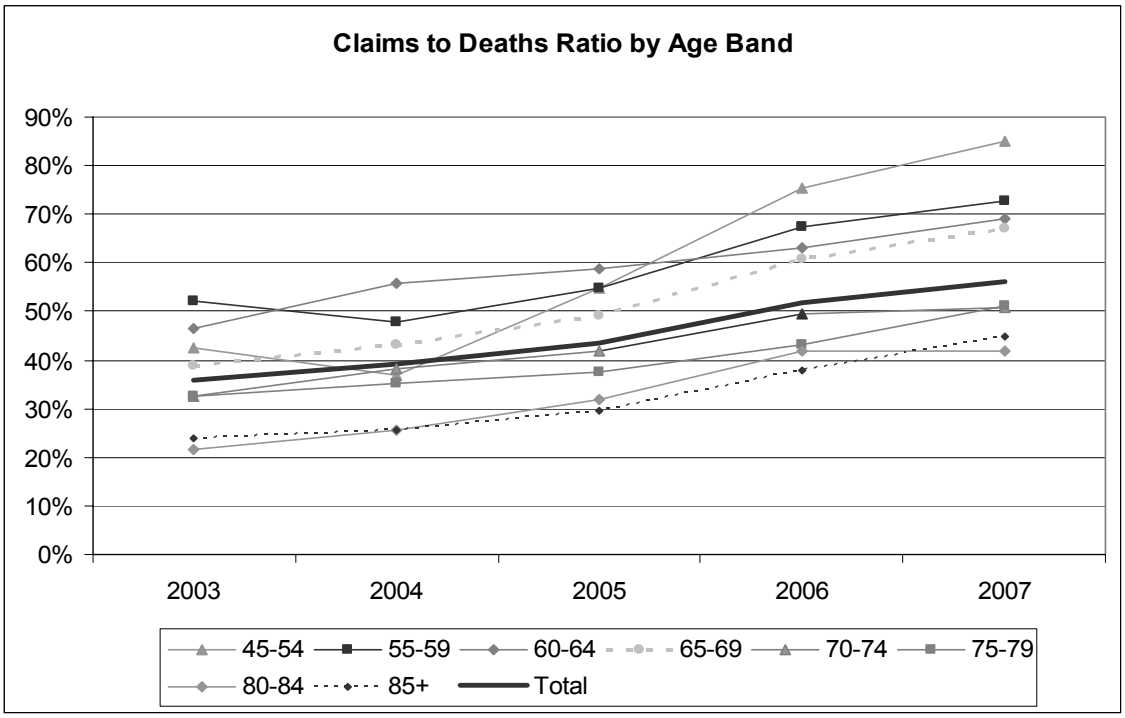
- As awareness has improved it appears that there is a potential increase in the number of claims made retrospectively (i.e. by relatives after the sufferer has died) even where the death certificate did not state the cause of death to be mesothelioma.

- 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 distance 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. We understand 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. More pre-death diagnoses are increasing the likelihood of successful claims against former employers and / or their insurers.

The above factors are discussed in more detail in Section 4.

The proportion of mesothelioma suffers that make an insurance claim varies by age. The older the mesothelioma sufferer is the less likely it is that a claim will be made. We have measured the rough proportion of mesothelioma deaths that result in an insurance claim by age band. This is illustrated in the following graph:



There is an upper limit to the proportion of mesothelioma sufferers that will make an insurance claim. This is less than 100% due to a number of reasons, most notably that there will be sufferers that can only claim against the Government bodies. We believe that the younger age bands are therefore either at or close to this maximum level. A key assumption that needs to be made when projecting future mesothelioma insurance claims is what will happen to the claims to deaths ratio in the future. The possible scenarios are:

- They stay constant by age band in the future (and therefore reduce overall).
- They increase by age band but stay constant overall.
- They continue to increase towards the maximum and therefore increase overall.
- They increase and then level off by age band which could imply an increase and then reduction at the total level.

In forming a view on the future levels, it is necessary to consider all the influences that have been highlighted above and are discussed in Section 4.

There is a larger amount of uncertainty in the future population deaths due to mesothelioma than normal at this current time. The Office of National Statistics has produced, earlier this year, a revised projection of national population figures. New research presented by Professor Peto at Melbourne University in April 2008 has revealed trends that are inconsistent with the work that underlies the HSE 2003 model of future UK population deaths due to mesothelioma. Professor Peto is currently in the process of publishing his recent research. The HSE have also reported that they are reviewing their methodology and intend to revise their projections of future UK population deaths. The working party considers that publishing updates based on the original models when these studies are expected to be revised in the near future could be misleading.

In the absence of a revised model we would anticipate that companies will continue to use the 2003 HSE model for mesothelioma deaths, adjusting it for their individual characteristics such as exposure. We would expect actuaries to have an appreciation of and to articulate the potential for the model to over or under project future mesothelioma deaths, particularly in the light of the uncertainties around the model at the current time. We have highlighted in Section 6 some of the key uncertainties that each actuary will need to take into account within their own projections.

The working party intends to update the UK insurance market asbestos-related future claims liability when the HSE and Professor Peto have published their revised estimates and research.

We have also highlighted in the paper the main issues from a reinsurance perspective in Section 7, and provided an update from the US asbestos experience in Section 8.

1.3. Thanks

A number of people have helped the working party members produce this paper. These include Jon Collins, Professor Peto, Andrew Darnton and Mike Klaiber. 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 also 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 co-ordinating the 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.

A specific thank you is made to the Chairman's secretary, Debbie Try for the effort in pulling together the document from the many sources.

2. A Look Back at the 2004 Asbestos Working Party Paper

This paper builds on the original UK asbestos working party paper: "UK Asbestos – The Definitive Guide" which was published at GIRO in 2004. Therefore it is useful to have an understanding of the estimates and assumptions made in the 2004 paper. The original 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. 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 then derived assumptions for the number of future claims for diseases other than mesothelioma and for the average claim sizes for all disease types. Based on these assumptions the working party derived their estimates for the future cost of asbestos claims to the UK insurance industry. A high level summary of the derivation of these estimates is provided in the sub-sections below.

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

- Background information about what asbestos is and the diseases it can cause.
- A brief history of asbestos usage in the UK and the associated development of UK asbestos-related health and safety legislation.
- A summary of the various insurance-related protocols for apportioning liability in asbestos cases that existed up to the time of writing the paper.
- Details of the worldwide use of asbestos and the regulations in place around the world, including a summary of the then current compensation position around Western Europe.
- A summary of the previous projections of UK mesothelioma deaths and the data available on asbestos claims.
- The results of the working party's survey of the UK insurance industry.
- Lessons from the asbestos litigation in the US.

2.1. Previous 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 1 : 2004 summary of undiscounted 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

Table 2 : 2004 summary of discounted projections

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 3 : 2004 summary of key parameters

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%

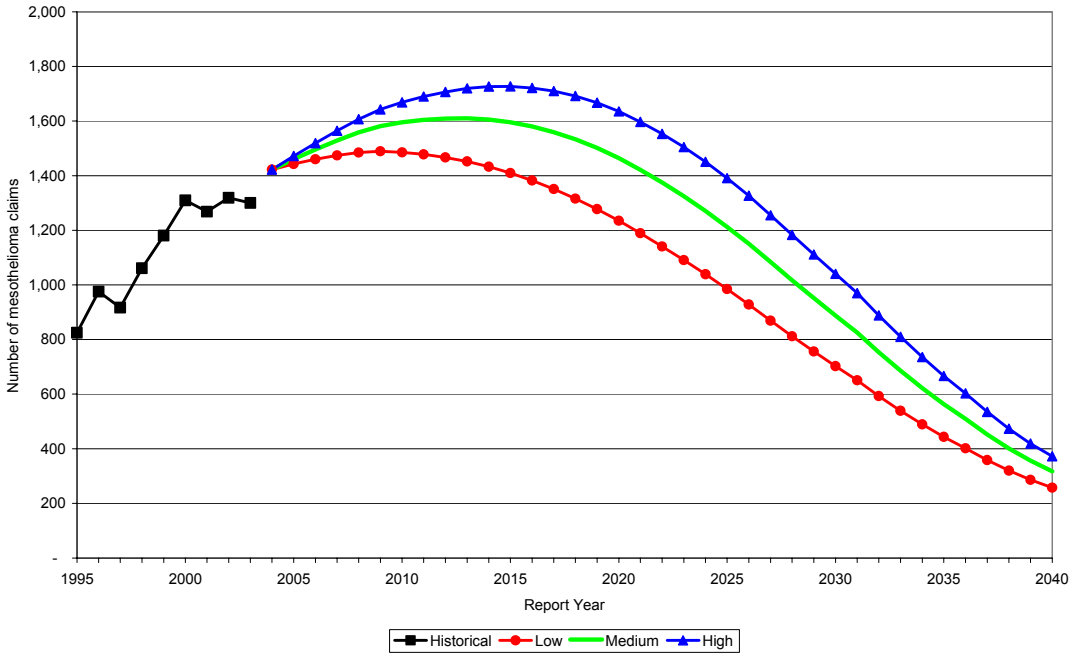
We will discuss each of these assumptions in more detail below.

2.1.1. 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 following graph 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 1 : 2004 projected number of Mesothelioma deaths



The low and high estimates were based on the 2003 HSE projections of the future number of deaths mesothelioma, 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.

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.

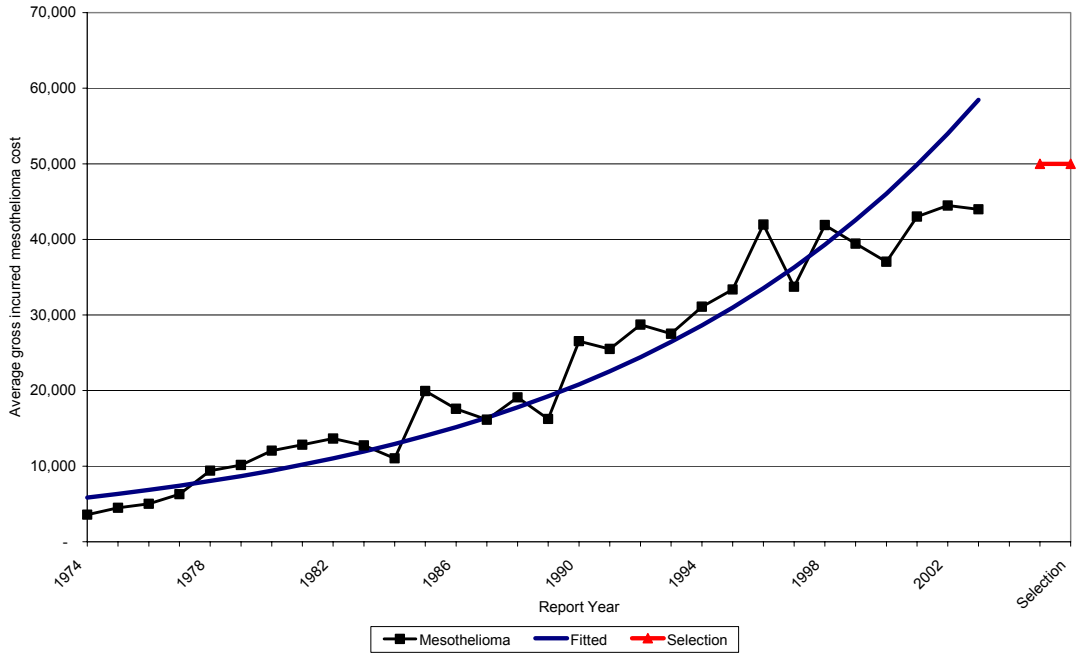
Table 4 : 2004 summary of key assumptions

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

2.1.2. 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 2 : 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.

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 will become older (with lower compensation amounts for loss of earning or future care). This is discussed in more detail in the next section.

2.1.3. Inflation for mesothelioma claims

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

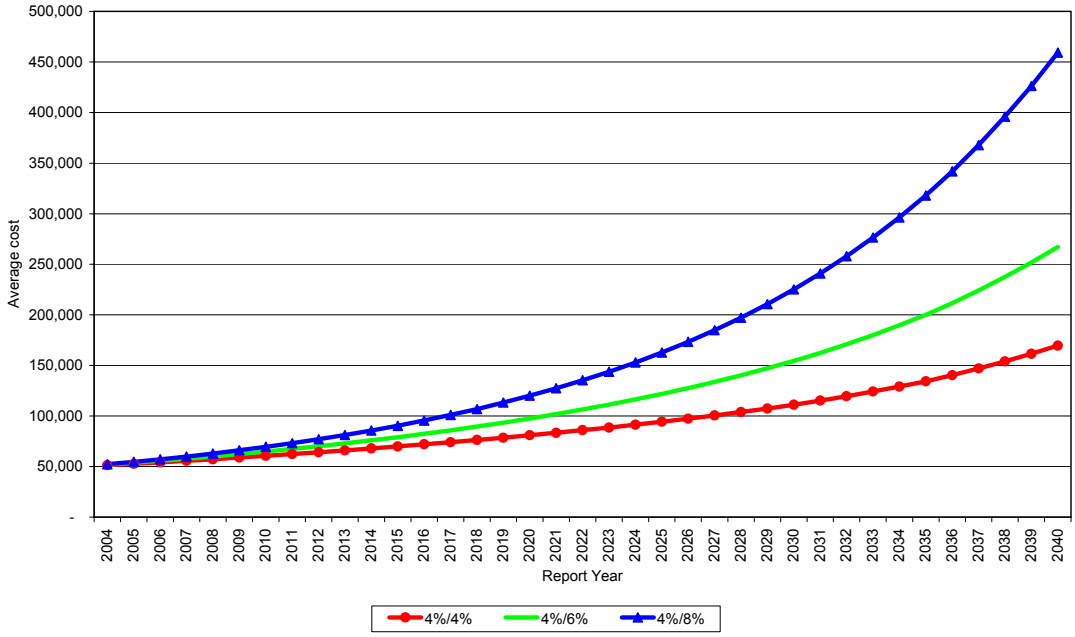
- A fixed cost component.
- An age-related component.

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.
- 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.

Figure 3 : 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.

2.1.4. 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).
- 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.

Table 5 : 2004 assumptions re nil claims and legal expenses

Disease type	AWP04 selected ACPC (includes nils)	Proportion of claims settled at nil cost	AWP04 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	AWP04 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 6 : 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. A one page summary of the medium-medium AWP 2004 projections for each disease type considered is shown in Appendix A.

2.2. 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 7 : 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

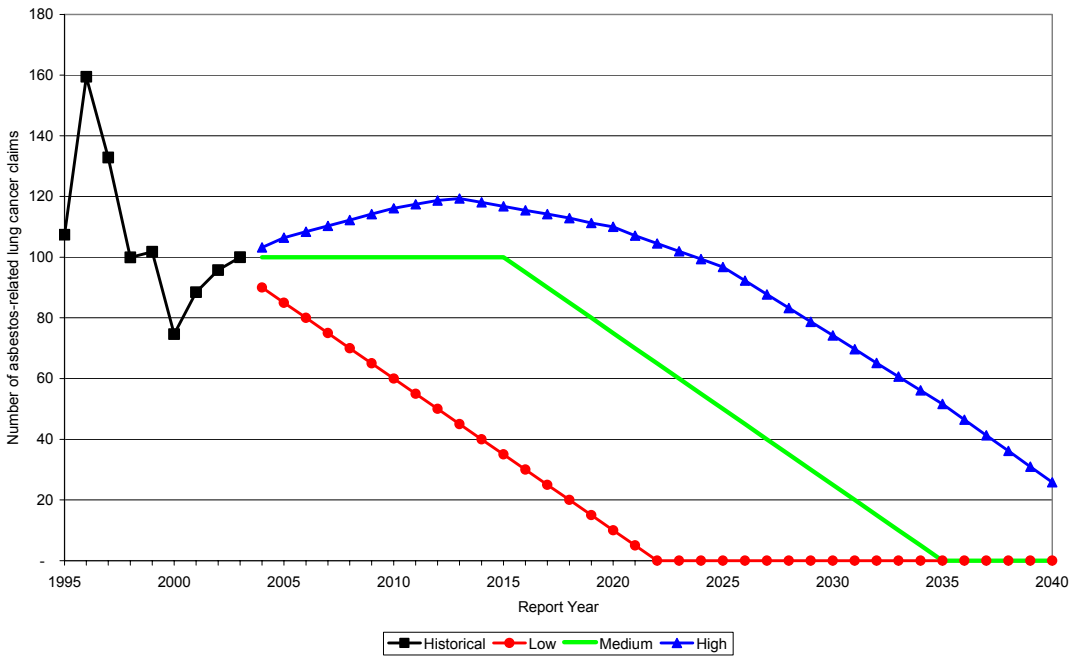
Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)

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

2.2.1. 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 4 : 2004 projected number of lung cancer claims



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.

2.3. 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 8 : 2004 asbestosis estimates

Undiscounted

Projection of numbers	Inflation Low	Medium	High
Low	£448.7m	£545.1m	£672.8m
Medium	£568.1m	£712.9m	£912.3m
High	£823.4m	£1,087.3m	£1,471.0m

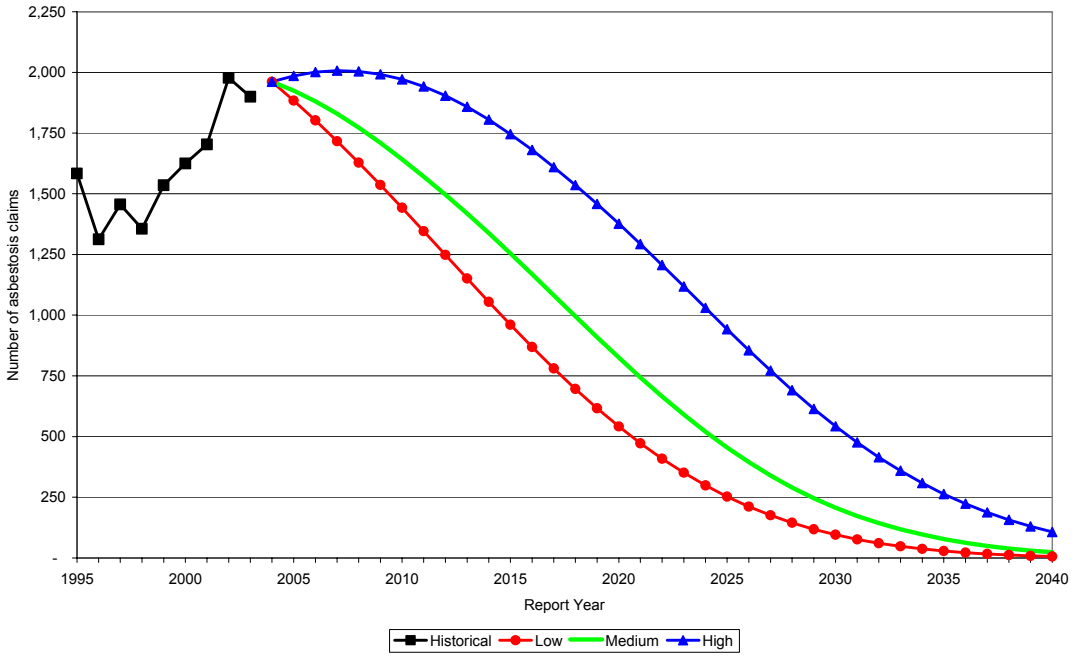
Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)

Projection of numbers	Inflation Low	Medium	High
Low	£312.2m	£364.3m	£429.8m
Medium	£371.3m	£443.0m	£536.2m
High	£486.6m	£601.9m	£759.1m

2.3.1. 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 5 : 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 asbestos 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.

2.4. 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 9 : 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

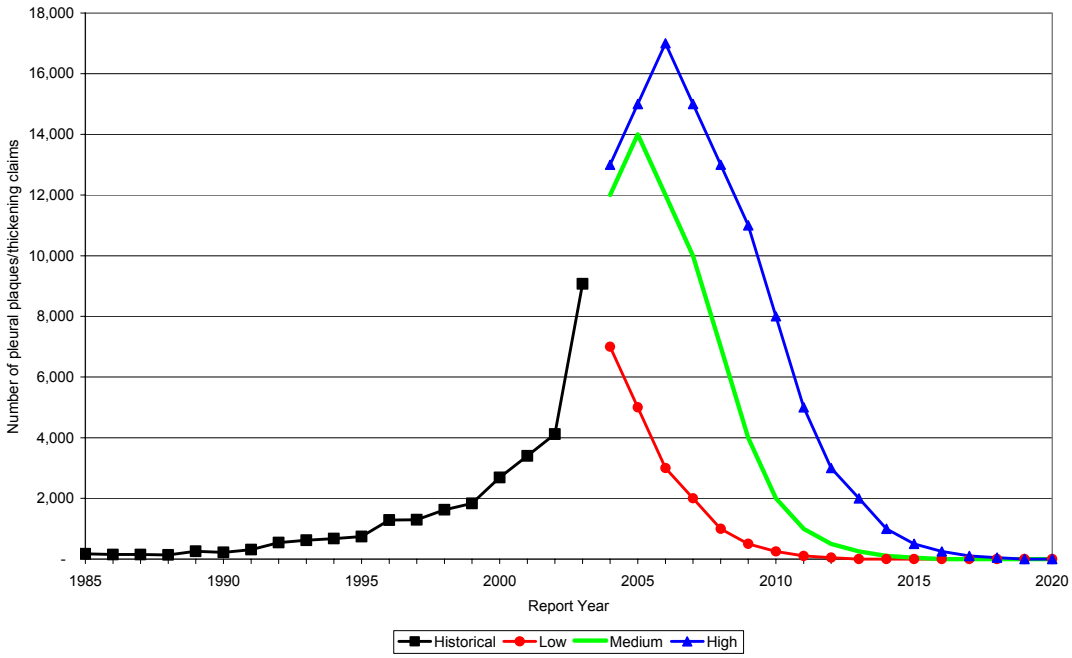
Discounted at 5% (roughly the yield on ten year gilts at the time of the paper)

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

2.4.1. 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 6 : 2004 projected number of pleural plaques / thickening claims



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 was whether or not insurers were about to see a large increase in claims as was seen in the US, or would the pleural plaques test cases nip the issue in the bud and see claims drop right off, both in number and cost.

2.5. Summary of Previous Assumptions for Non-Mesothelioma Claims

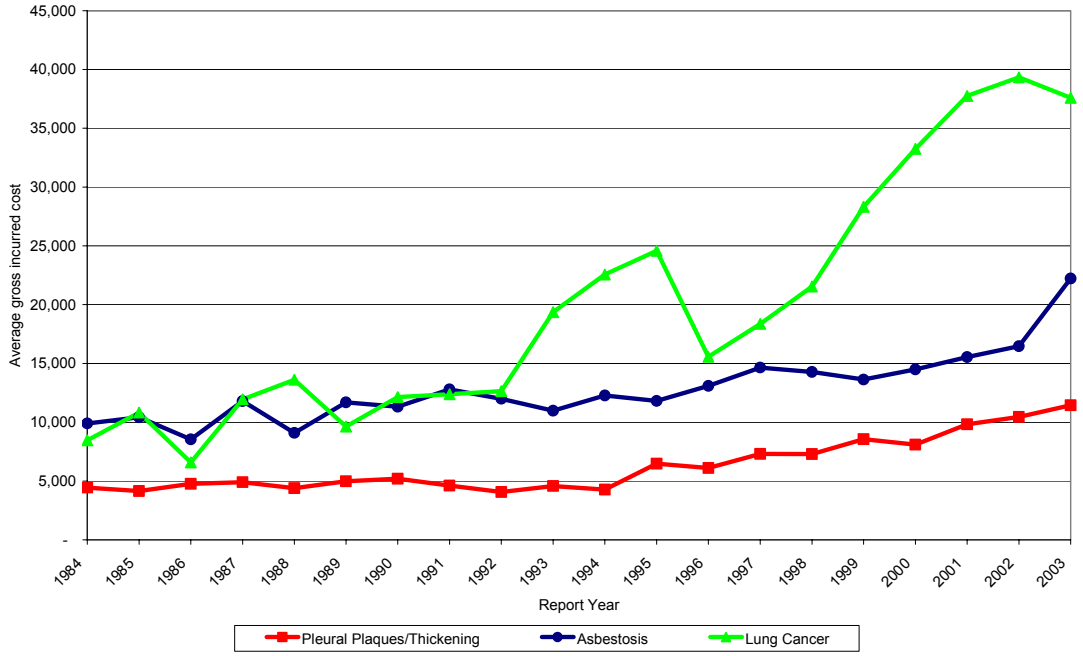
The table below details the key selections made in the previous working party's non-mesothelioma estimates.

Table 10 : 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 7 : 2004 non-mesothelioma average cost costs



The working party used the same low medium and high inflation assumptions for lung cancer claims, as they derived for mesothelioma claims; see Section 2.1.4 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.

- 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 claims over the last decade.

3. Legal Developments - Key Litigation / Legislation 2005-2008[1]

3.1. Pleural Plaques

3.1.1. High Court and Court of Appeal

The key group of cases here are:

Rothwell -v- Chemical & Insulating Ltd; Topping -v- Benchtown Ltd; Johnston -v- NEI Combustion Ltd ;Mears -v- RG Carter Ltd; Grieves -v- FT Everard Ltd; Hindson -v- Pipe House Wharf (Swansea) Ltd

These cases all involve the recoverability of damages for asymptomatic pleural plaques and / or the level of damages for such a condition, and were brought together for the purposes of an appeal to the Court of Appeal on these issues. *Rothwell* was the lead case at the Court of Appeal stage, but following the House of Lords decision, the group of cases tend to be referred to as *Johnston -v- NEI Combustion Ltd*, and associated cases.

At the High Court (first instance) hearing the single Judge decided (in February 2005) that damages were recoverable for asymptomatic pleural plaques but that the level of damages for pain and suffering due should be lower than had typically been the case. He felt that an amount of not more than £4,000 was reasonable for cases settled on a "provisional damages" basis. This figure was lower than amounts usually awarded in earlier cases, adjusted for inflation (circa £5,000 to £7,000). He also felt that a figure between £6,000 and £7,000 was reasonable for most cases settled on a "full and final" basis. This figure was lower than that previously seen, which had varied from around £12,000 to around £22,000.

The Court of Appeal heard these cases in November 2005 and delivered judgement in January 2006. By a majority view (2 to 1) the Court of Appeal determined that asymptomatic pleural plaques did not give rise to entitlement to an award for damages even if it was clear that negligent asbestos exposure had taken place. They also decided that this remained true even when the claimant involved (in this case Mr Grieves) had not only the anxiety of whether a further condition would develop from their symptom-less pleural plaques but had a recognised free-standing psychiatric condition in relation to that anxiety.

The dissenting Judge disagreed with the decision on non-recoverability for pleural plaques and also had some clear statements to make on the general level of award of damages that she felt should be made were the decision shown to be wrong at a later date. She felt that the amount of general damages for pain and suffering should be higher than that given at first instance in the case of both provisional damages settlement and full and final settlement. For Provisional settlement she suggested a bracket of between £4,000 and £6,000 with the "usual" award being around £5,000. For full and final settlement she felt that in the case of Grieves she had enough evidence to comment and awarded £12,500 but in the case of Hindson she did not have sufficient evidence.

This is significant because the two Judges, which included the Lord Chief Justice, who decided that pleural plaques were not recoverable, did say they agreed with her levels of suggested damages if pleural plaques were to be recoverable. Thus the defendants "lost" arguments for lower levels of award in pleural plaques cases should the condition be deemed recoverable.

[1] The information for this section is taken from a number of sources including Edwards Angell Palmer & Dodge LLP

3.1.2. House of Lords Ruling

This decision was subject of an appeal to the House of Lords which was heard during the summer of 2007 with the judgement being announced on 17 October 2007. In a strong judgement the House of Lords unanimously upheld the judgement of the Court of Appeal, dismissing all claims for asymptomatic pleural plaques whether or not accompanied by psychiatric conditions. All five Law Lords set out arguments based on established legal principles and declined to take into account the wider policy arguments adopted by the Court of Appeal.

Lord Hoffman, who gave the leading speech, stated that proof of damage is an essential element in claims for negligence and that neither the pleural plaques themselves, nor the risk of future illness, nor anxiety about the possibility of that risk materialising, amount to actionable damage.

The House of Lords had very much in mind that except in exceptional cases, pleural plaques would never cause any symptoms, did not increase the susceptibility of the claimants to other diseases or shorten their life expectancy.

Although all the Law Lords agreed in dismissing the appeals, Lord Scott and Lord Hope did express some regret that these claimants with genuine risks and fears should be denied a remedy. Lord Scott hinted that the claims may have succeeded if made in contract law. He stated that in each employment contract was an implied term that the employer owed a duty to provide a safe working environment. Exposing an employee to asbestos would be a breach of that implied term. It is possible that these comments may lead to claimants bringing their pleural plaques claims in contract law. In addition, these comments may lead to people who have merely been exposed to asbestos, or any other toxic substance, to bring a contract law claim for breach of an employer's implied duty to provide a safe working environment. One law firm has already started to solicit for claimants who can bring pleural plaques claims in contract law. In some cases, pleadings have been amended to include a claim for breach of contract, but present indications are that this route will not be pursued seriously.

3.1.3. Subsequent developments

Shortly after the House of Lords' ruling, the relevant Minister at Westminster confirmed that the Government had no plans to legislate to overturn the ruling. However the Scottish Government announced on 29 November 2007 that it intended to introduce a Bill to reverse the House of Lords judgement and enable those negligently exposed to asbestos and who have been diagnosed with pleural plaques to continue to be able to raise and pursue actions for damages in Scotland. It is intended that the provisions of the Bill will take effect from the date of the Judgment (i.e. 17 October 2007).

Although the judgement was restricted to pleural plaques, other indicators of significant exposure, such as asbestosis and pleural thickening, can also both be detected while symptom-less. In contrast with pleural plaques, they are usually (but not always) progressive and symptoms / impairment will occur. However, so as to reduce the risk of a narrow interpretation of any new Act giving rise to the anomaly that people with asymptomatic pleural plaques may claim because of the Bill, while people negligently exposed to asbestos who have developed symptom-less forms of other asbestos-related conditions can't, the Scottish Government intend to include provisions to cover these other asbestos-related conditions.

In the spring of 2008 the Scottish Government published a consultation paper regarding its proposed legislation to ensure the House of Lords' decision does not have any effect in Scotland. At the end of June 2008 the draft legislation was published. The Scottish Parliament committee process now considers the paper and takes written evidence until October 2008. The legislation is not now expected to come into effect before 2009, although when it does it will be retrospective back to October 2007.

Despite what Westminster said shortly after the October 2007 House of Lords' judgement in *Johnston -v- NEI International Combustion Ltd*., following a debate regarding compensation for pleural plaques in January 2008 it issued the comment "... although the Government is not willing to overturn the House of Lords' decision, it would reconsider this decision if Scotland legislated around the House of Lords' decision ..". The Union of Construction Allied Trades and Technicians (UCATT), Labour MPs and asbestos campaigners have been lobbying both the Justice Secretary and the Justice Minister in a bid to get the judgement changed.

On 9th July 2008 the Ministry of Justice issued its own consultation paper on pleural plaques with the consultation period ending on 1st October 2008. The consultation paper considers the Government's response to the above House of Lords' decision. It considers the law and medical evidence underpinning the House of Lords' decision, and indicates that independent reviews of the medical evidence have been commissioned from the Industrial Injuries Advisory Council and the Chief Medical Officer. The paper proposes that action should be taken to improve understanding of pleural plaques and in particular to provide support and reassurance to those diagnosed with pleural plaques to help allay their concerns. It also considers the issues that arise in relation to changing the law of negligence and invites views on whether this would or would not be appropriate. Finally, it invites views on the merits of establishing a 'no fault' payment scheme for individuals who have been diagnosed with pleural plaques and looks at two possible approaches. The Government acknowledges that there are genuine difficulties in respect of all the options considered in the paper, which would need to be resolved satisfactorily if they were to be taken forward. The UK Asbestos Working Party intends to provide a response to the Pleural Plaques Consultation.

Clearly the case for compensating, or not, those with pleural plaques has a long way to go. If claimants are able to pursue claims in contract law it may raise further, difficult issues as to whether Employers' Liability policies respond to such claims. The surrounding publicity may lead to a surge of pleural plaques claims that have been 'saved up' by claimant lawyers should pleural plaques become a compensatable condition again.

3.1.4. Hindson – Damages on full and final basis

In *Hindson* the issue of recoverability was not raised by the defendant and for the reasons stated above the case was re-heard as to damages. The Claimant's unrelated chronic heart disease condition was considered from the point of view of its possible impact on life expectancy and the level of damages. The Judge awarded £15,500 – reflecting a 15% risk of developing lung cancer and a 20% cumulative risk of progressive lung disease of any type associated with asbestos. No specific discount was given for the fact that Mr. Hindson was a smoker, as his overall life expectancy and therefore the risk of developing future conditions, had already been adjusted for this factor.

3.2. Mesothelioma

3.2.1. Barker v Corus

The case of *Barker -v- Corus (and other associated cases)* was brought by Government departments (the DTI) and self-funded employer Corus to test the basis of apportionment on mesothelioma cases.

The *Barker* case heard in the House of Lords determined that whilst mesothelioma was an "indivisible injury" the liability for exposure to asbestos that led to it being sustained was not. The Lords found that potential defendants were only severally liable – thus over-turning the approach determined in *Fairchild -v- Glenhaven Funeral Services Ltd.*

The practical effect of *Barker* was to say that claimants had to find all possible defendants who might have negligently caused their asbestos exposure in order to secure their full damages. On the basis of *Barker*, defendants would have been able to argue that they should only pay for their own level of contribution to the overall risk, and thus able to discount damages in respect of exposure with untraced, insolvent or uninsured employers. (Note – the legal points have been simplified significantly here.)

As a result strong lobbying pressure was put on Government to pass new primary legislation to overturn the House of Lords' decision. This was achieved by the passing of an additional clause in 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. This was in part furthered by the terms of the ABI Mesothelioma Handling Agreement introduced following *Fairchild.*

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 effect on the "pattern" of mesothelioma claims payments.

Most significantly, insurers will be unable to recover for periods of untraced exposure and / or untraced insurance coverage where there is no solvent employer. Thus Insurers are going to pick up any "gaps" in funding for the claim. The Government has laid down Regulations that mean that Insurers can pay full damages to a claimant first and then recover insolvent insurer contributions from the FSCS. Previously they could not recover from the FSCS once damages had been paid in full

3.2.2. Child Maintenance and Other Payments Act 2008

The most recent legislative changes relating to mesothelioma were introduced by way of the Child Maintenance and Other Payments Act 2008 ("CMAOPA"). This amended the terms of payments made by the Government under the Pneumoconiosis etc (Workers' Compensation) Act 1979 ("PWCA"). The major effects of the 2008 Act were:

- To remove the restriction that payments under the 1979 Act were limited to cases where there was no civil compensation claim.
- To extend payments under the 1979 Act to all mesothelioma victims, where this had previously been limited to cases of employment exposure only. This now therefore includes, for example, cases of domestic exposure and cases where the source of exposure is unknown.
- To make 1979 Act payments fully recoverable by the Government from any compensator via the Compensation Recovery Unit ("CRU") in the same way as other State benefits.

These amendments under the CMAOPA apply to mesothelioma only. In respect of other lung conditions, qualification under the 1979 Act is still restricted to cases of employment exposure.

3.2.3. Fatal Accidents Act 1976

In early 2008 the Government increased damages payable under the Fatal Accidents Act 1976 in England and Wales from £10,000 to £11,800. A campaign had been gaining momentum, but now appears to have been unsuccessful, to pressurise the Government to raise the damages in line with those in Scotland where widows / widowers can receive up to £30,000 and other family members can receive between £10,000 and £15,000 each.

In the case of *Cameron -v- Vinters Defence Systems* it was found that a payment under the Pneumoconiosis etc (Workers' Compensation) Act 1979 could be deducted from the civil damages due to be paid by a defendant. The claimant's husband had died of mesothelioma and, prior to bringing proceedings against his former employer, she had successfully made an application for payment under the 1979 Act. She then brought a claim against her husband's employer and was awarded damages. The defendant argued that the 1979 Act payment should be deducted from the damages due. In response, the widow claimed that the 1979 Act payment was a *"benefit"* under section 4 of the Fatal Accidents Act 1976 and consequently should not be deducted from the damages due to her. The Judge found that a payment of this type was not a *"benefit"* and consequently must be deducted from the damages due to the claimant. This affirmed the previous case of *Ballantine -v- Newalls Insulation Company Limited (2000)* (but see the changes now made by the Child Maintenance and Other Payments Act 2008 above).

3.2.4. Rolls Royce Industrial Power (India) Ltd -v- Cox

In November 2007, the Court of Appeal rejected the proposition that in cases of exposure to asbestos fibres resulting in mesothelioma, a specific measurement of the duration of the material exposure is required for a claim to succeed. What is required is a finding that the duration of the exposure had constituted a material increase in the risk of contracting mesothelioma. Exposure which was de minimus would be insufficient.

3.2.5. Bolton Metropolitan Borough Council -v- Municipal Mutual Insurance Ltd & Commercial Union Assurance Company Limited

This case concerned a claim for a death caused by mesothelioma covered by a public liability policy.

Gordon Green was an employee of a company under the overall control of Bolton MBC. The company carried out demolition and building works at various sites during the early 1960's. During this employment, Mr Green was exposed to asbestos fibres. In 1991 he died of mesothelioma and his widow made a claim against Bolton MBC.

Bolton MBC's public liability insurance was covered by Ocean from 1960 to 1965 and by Municipal Mutual from 1979 to 1991. Commercial Union later assumed Ocean's liabilities. Both the Municipal Mutual & Commercial Union policies were written on a similar "occurrence" basis being triggered by *"……bodily injury or illness …….**occurring** during ….. the period of insurance ……"*.

Bolton MBC claimed under their public liability policy with Municipal Mutual who declined policy indemnity on the basis that the insurer on cover during exposure should handle the claim. That, they said, was when the injury occurred. Bolton MBC then sued both Municipal Mutual and Commercial Union.

The original High Court case was heard in May 2005 with the Court of Appeal case in February 2006.

Upholding the decision at first instance, the Court of Appeal ruled that for asbestos-related mesothelioma, the injury "occurs" when the cancerous tumour turns malignant. The medical evidence was that this was within a margin of one year either side of 10 years back from the manifestation of symptoms. In Mr Green's case, his malignant tumour developed during the period 1979 – 1981. His injury therefore ***occurred*** squarely within Municipal Mutual's period of cover. Municipal Mutual Insurance Ltd was therefore held liable to indemnify Bolton MBC.

This ruling therefore did no more than reinforce established market practice and interpretation of the public liability trigger.

3.2.6. Bolton MBC and the Employers' Liability Trigger

Conventionally, employers' liability policies provide indemnity for *"…..bodily injury or disease **caused** during the period of insurance…."*, the so-called **causation** or **exposure** wording.

However, following the *Bolton MBC* decision, an insurer in run off announced that their employers' liability policies were written on the basis of injury or disease being ***sustained*** during the period of insurance. Further, they declared that ***sustained*** was synonymous with ***occurred***. As a consequence, they would forthwith interpret their employers' liability policies on the basis of the *Bolton MBC* judgment. In respect of mesothelioma claims, this meant that the employers' liability policy trigger would be 10 years, with a margin of one year either side, back from the manifestation of symptoms. This effectively meant that they were putting a short-tail, rather than having an historical long-tail, on their liabilities arising from such policies.

From that point on, the insurer refused employers' liability policy liability for mesothelioma claims where there was historical exposure, arguing that the disease had not been ***sustained*** during their period of risk. Some other insurers, also in run off, followed suit declaring that they also had employers' liability ***sustained*** wordings and were applying the *Bolton MBC* judgment.

We note that this is a position adopted exclusively by insurers who are no longer writing employers' liability business. The "on-going" insurance market has continued to interpret policies on an ***exposure*** basis.

Until the *Bolton MBC* decision all employers' liability policies - whether written on a **caused** or **sustained** basis - had been treated within the insurance market as applying in the same way; that indemnity was provided for the years of the exposure. The origin of the word **sustained** in this context derives from the early Workmen's' Compensation Acts, and was also incorporated in the Employers' Liability (Compulsory Insurance) Act 1969, which requires that *"……...every employer……..shall insure and maintain insurance……against liability for bodily injury and disease **sustained** by his employees….."*. While it may be argued that the two words are not synonymous **caused** and **sustained** have traditionally been used interchangeably.

3.2.7. The Employers' Liability Policy Trigger Litigation

Test litigation on the employer's liability trigger wording started with Municipal Mutual Insurance Ltd taking proceedings against Zurich and 10 Local Authorities who were former policyholders of Municipal Mutual and then later, Zurich (after Municipal Mutual ceased trading). Municipal Mutual seek a declaration that their ***sustained*** employers' liability wording should be interpreted in line with the *Bolton MBC* decision, and accordingly, that Zurich should indemnify as the more recent insurer on risk when the policy(ies) were triggered.

The litigation was defended, on the basis that the ***sustained*** wording means, or should be interpreted, the same as a ***causation*** wording. The defence argued that that is what insurers were selling at the time and that is what people thought they were buying; only by applying on a ***causation*** or ***exposure*** basis will there be continuity of cover and compliance with the 1969 Act.

Six cases were selected as test cases for this and related issues to be resolved, heard by Mr Justice Burton over 9 weeks commencing on 3rd June 2008. A reserved Judgment is expected later in 2008. There are claims by uncompensated mesothelioma sufferers and by solvent employers who have paid damages and seek indemnity from their former insurers. Apart from *MMI -v- Zurich*, the test cases include *Fern -v- Builders' Accident Insurance* (BAI), *Thomas Bates -v- BAI*, *Akzo Nobel -v- Excess Insurance Company Limited, AMEC -v- Excess Insurance Company Limited* and *Fleming -v- Independent Insurance.*

The test actions also include a review and challenge to the established medical evidence about when mesothelioma first occurs; whether that is at the time of the tumour (whenever that may be) or at, or shortly after exposure.

3.2.8. Asbestos and Liability Policies: An uncertain future

Whatever ruling is delivered by Mr Justice Burton, it is widely expected that his Judgment will be appealed, with final resolution delayed until 2009 and possibly later. If the ultimate decision is in favour of the *Bolton MBC* approach being applied to employers' liability policies, there will be ramifications for insurers, reinsurers and policyholders in the handling of mesothelioma claims. There may also be knock-on impacts on the approach taken towards other asbestos-related diseases. Any change to the, so-called, '10 year rule', would also influence the established handling of mesothelioma claims on public liability accounts.

4. Claims Life Cycle

4.1. Introduction

This section of the paper seeks to investigate the process by which an individual diagnosed with mesothelioma is then able to make a claim for compensation against an insurance company. The aim behind this is to investigate whether there have been significant changes in this area, that might lead to a better understanding of the trends that are observed in section 5 of the paper.

There are many different parties involved in the process, and this section has been put together by meeting and discussing the issues with relevant representatives. We are extremely grateful for the time each of these individuals gave us.

We start by outlining the various stages of the process, and then discuss each element in detail.

4.2. Overview

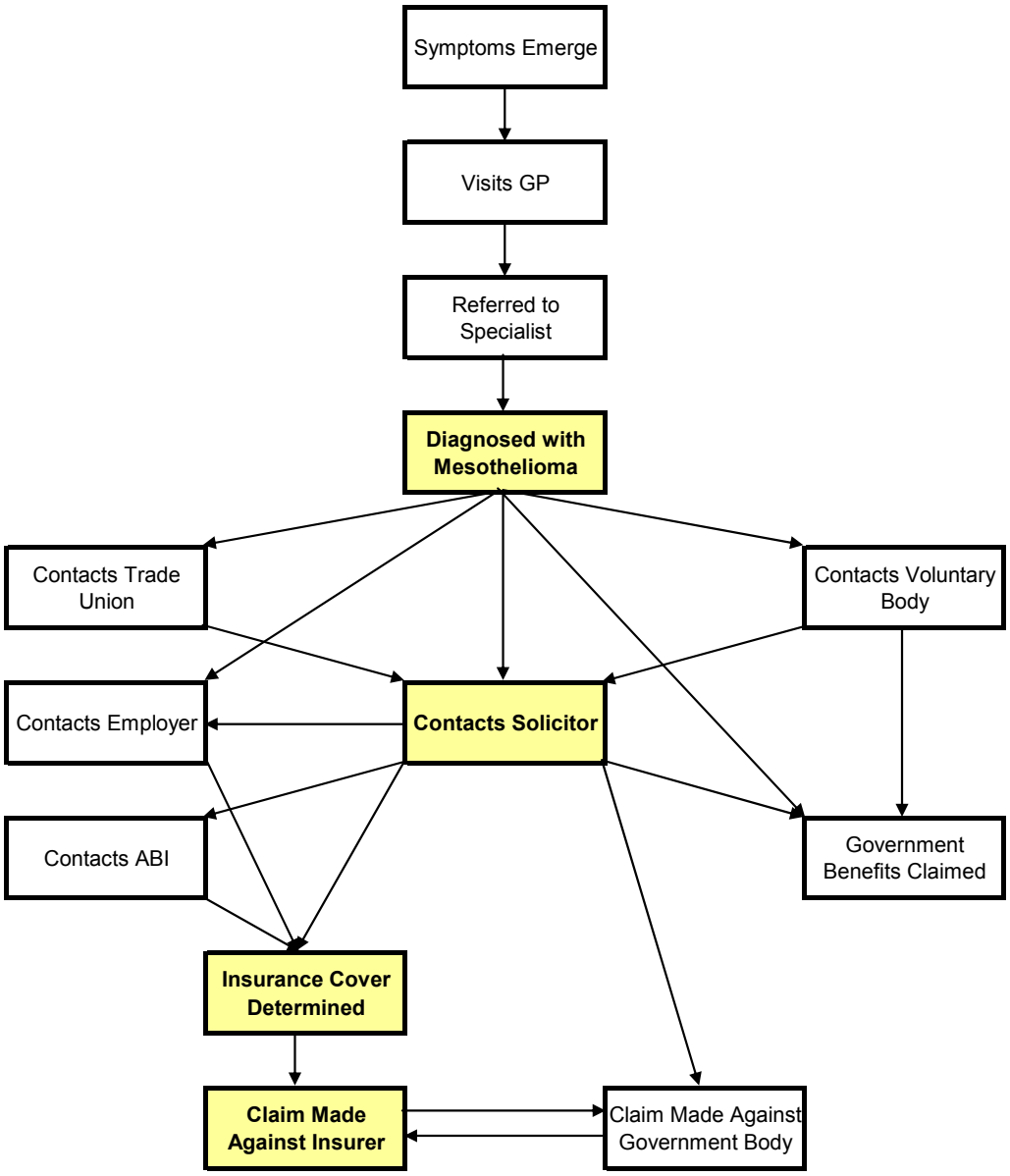
We would categorise the process into four main stages

- Development of symptoms.
- Diagnosis of mesothelioma.
- Individual becoming aware of the ability to make a compensation claim.
- Relevant employers and insurers being contacted.

The following diagram indicates the flow of a potential claim from the emergence of symptoms to notification.

We have deliberately not gone into the details of the process of claims settlement, as we feel this is an area where practices differ between insurers. What we are most concerned about is explaining the trends in claim notification to insurers, and whether there are any influences from the processes that take place before an insurer becomes aware of a potential claim.

Figure 8 : Representation of the claims lifecycle



Usually, an individual will first visit their GP when symptoms emerge. It may then take some time for a diagnosis of mesothelioma to be made by a specialist. Sometimes diagnosis does not occur until after death, or even after a death certificate has been issued (more on this in the NHS Mesothelioma Framework section below). Following diagnosis, support will usually be offered to the individual and / or family members, possibly under the NHS National Mesothelioma Framework, including being made aware of the possibility of government benefits and / or compensation.

Once a diagnosis has been made, the individual or their family members will need to become aware of their entitlement to make a claim for compensation and approach a solicitor. They may do this independently, or on the basis of advice from their trade union or a voluntary body (such as The Citizens Advice Bureau or one of the asbestos-related disease support groups). They are also likely to claim the applicable government benefits (such as Industrial Injuries Disablement Benefit ("IIDB") or a payment under the Pneumoconiosis Act (PWCA)).

Once a solicitor has been appointed, the negligent employer(s) will have to be identified. This part of the process is usually more straightforward, although of course the employer may well now be out of business. The more difficult step is in identifying the relevant insurer(s) that will ultimately pay the compensation. The employer may help in this process, there may be existing claims that have identified the relevant insurer(s) or the solicitor might investigate the matter themselves through their own sources, the ABI Tracing Code or some other means.

We now discuss each of those stages in detail.

4.3. Medical Profession

The medical profession is much more concerned with patient care than patient compensation but we were keen to understand whether there have been any changes in the incidence, presentation or diagnosis of mesothelioma in patients over the last 5 to 10 years and whether there was any difference in the information and advice that patients receive or have access to.

The most relevant information we found is from the National Mesothelioma Framework initiative within the NHS which we discuss in more detail below after a summary of the conversations that led us to this.

4.3.1. Mesothelioma diagnosis within the NHS

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.

Significant advances have been made in medical imaging over the last decade with CT scans taking x-rays from film to digital format. Just as with photos these digital images can be seen straight away and retaken immediately if not clear. They can also be zoomed, digitally enhanced and spliced together into 3D images to improve diagnosis. They can also be shared more quickly for a second opinion with less chance of being lost on route.

Whilst most radiologists would agree that these benefits refine diagnosis, they appear to be having more impact for some other asbestos-related conditions, such as pleural plaques and thickening, than for mesothelioma. For mesothelioma the image will show fluid on the lung and a separate procedure, a biopsy where some tissue is taken for analysis, is required to assess whether cancerous cells are present.

The breakthrough in mesothelioma diagnosis is in image-led biopsy where a camera or CT image can be used to identify the area from which the biopsy should be taken. Previously biopsies were performed blind with a good chance that the sample would ‘miss’ the affected area of the lung. It is only in specialist centres, however, where the skills are present to perform such techniques, hence the development of the National Mesothelioma Framework.

4.3.2. Overview of the National Mesothelioma Framework

Introduction

The purpose of this section is to investigate the potential impact of the National Mesothelioma Framework (the Framework) on the UK asbestos claims environment. We give an overview of the Framework paper and then discuss the specific areas of the Framework that could most directly impact on the claims environment. Whilst the Framework was published in February 2007, it is based on best practice that has been built up in a number of the specialist centres over the last 5 to 10 years. One of the purposes of the Framework is to continue to propagate this best practice throughout the country.

The following quote is taken from the framework document.

"It is imperative that mesothelioma patients should be diagnosed as early as possible, offered radical treatment where this is appropriate, have access to optimal palliative interventions and care and be offered appropriate information and advice on financial benefits and possible compensation

This Framework has been developed by the Department of Health on advice from members of its Lung Cancer and Mesothelioma Advisory Group and from the British Thoracic Society. It includes comments received during consultation with cancer networks, professional groups and patient groups."

Professor Mike Richards, National Cancer Director

Who is the Framework for?

The framework aims to provide Strategic Health Authorities (SHAs), cancer networks, Primary Care trusts (PCTs) and NHS Trusts in England with advice on how to organise services for mesothelioma patients in order to improve quality of care to a uniformly high level across the country. The advice is organised into four pillars:

1. Configuration of services
   - Cancer networks
   - Multi-disciplinary teams (MDTs)
2. Raising awareness (clinicians)
3. Clinical management
   - Diagnosis
   - Treatment
   - Supportive and palliative care
   - Clinical Nurse Specialists (CNS)
4. Underpinning programmes
   - Communication, information and support
   - Research and clinical trials
   - Audit and patient surveys

The framework is not formal evidence based guidance, but recommended guidance based on professional consensus about what is deemed good practice in organising mesothelioma service and caring for mesothelioma patients and their families. It is not mandatory, however the developers believe implementation should be relatively simple and largely cost neutral building on service structures already in place for lung cancer.

Reasons for the framework

The drivers for the Framework have been to improve access to specialist advice, diagnosis and support. There have been significant improvements in these areas in a number of specialist centres over the past 5 to 10 years. The aim of the Framework is to spread access to these improvements further throughout England.

In particular, the Framework states that mesothelioma is a particularly challenging condition to manage due to the following issues:

- Mesothelioma is a relatively rare condition and, in parts of the country, there are no dedicated multi-disciplinary teams (MDTs) for mesothelioma.
- Mesothelioma can be difficult to diagnose.
- Mesothelioma patients need the input of a wide range of specialists to help with management of the condition leading to difficulties in the assimilation of information and co-ordination of treatment.
- Patients often have a short life expectancy and experience complex, debilitating symptoms. Earlier detection could mean increased potential for radical therapy in some patients which could increase life expectancy.
- For those patients with more advanced disease, there may be major quality of life issues which could benefit from a range of specialist advice for example, on symptom control.
- In most cases, mesothelioma is an industrial disease which leads to complicated legal and financial information needs plus a coroner's inquest once a patient has died.
- Psychosocial issues often need to be addressed as patients and their families come to terms with the diagnosis of an incurable disease which is often industrially related.
- More research is necessary if outcomes are to be improved.
- A peak in mortality is less than 10 years away so there is a real opportunity to ensure that the NHS has done all it can to provide a high quality service for the number of patients that will be diagnosed with mesothelioma over the next few years.

Key recommendations

The Framework recommends that:

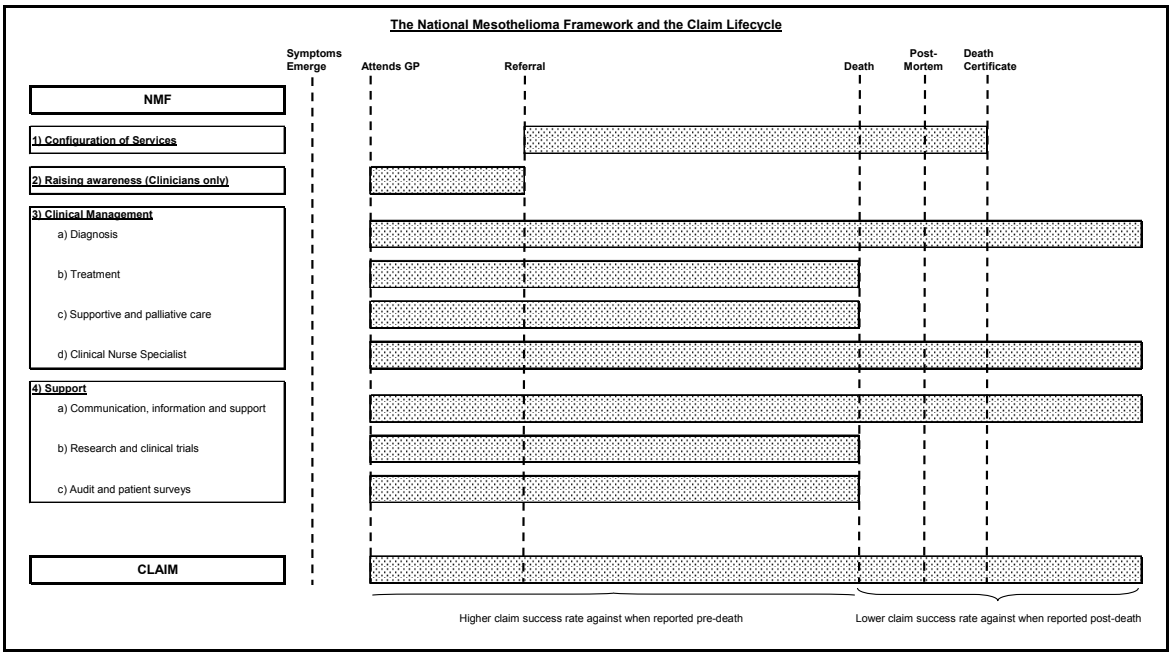
1. Mesothelioma patients should be managed by a specialist Multi-Disciplinary Team (MDT).
2. Each cancer network should have a lead clinician and lead nurse for mesothelioma.
3. There is a need to raise awareness with local clinicians in areas associated with high mesothelioma incidence.
4. Patients should have a key worker for better co-ordination of treatment and provision of information.

4.3.3. Linking the Framework to the claims environment

In this section we focus on the specific areas of the Framework that could impact on the claims environment.

In the diagram below we map the four pillars of the Framework to the claims lifecycle:

Figure 9 : The National Mesothelioma Framework mapped to the claims lifecycle



So how could the NMF impact the claims environment? To try and answer this question, we first need to define a formula for the number of claims, given the number of deaths due to mesothelioma:

Number of claims = number of deaths due to mesothelioma
x probability of diagnosis
x propensity to claim
x success rate

Claims success rates increase with pre-death diagnosis

From our discussions with the medical profession and personal injury solicitors we understand that diagnosis can occur any time from referral to after the death certificate has been issued. Hence, we have not shown diagnosis as a fixed point on the claims lifecycle above. This is key to understanding how the Framework may impact the claims environment, since we understand from our discussions with PI solicitors that the success rate of claims against former employers and their insurers increases significantly when it is made before the death of the claimant. There is a greater chance of a complete employment history being provided together with the collection of suitable witness statements which are normally required to underpin a successful claim. Therefore, success rate is a function of the pre-death diagnosis rate.

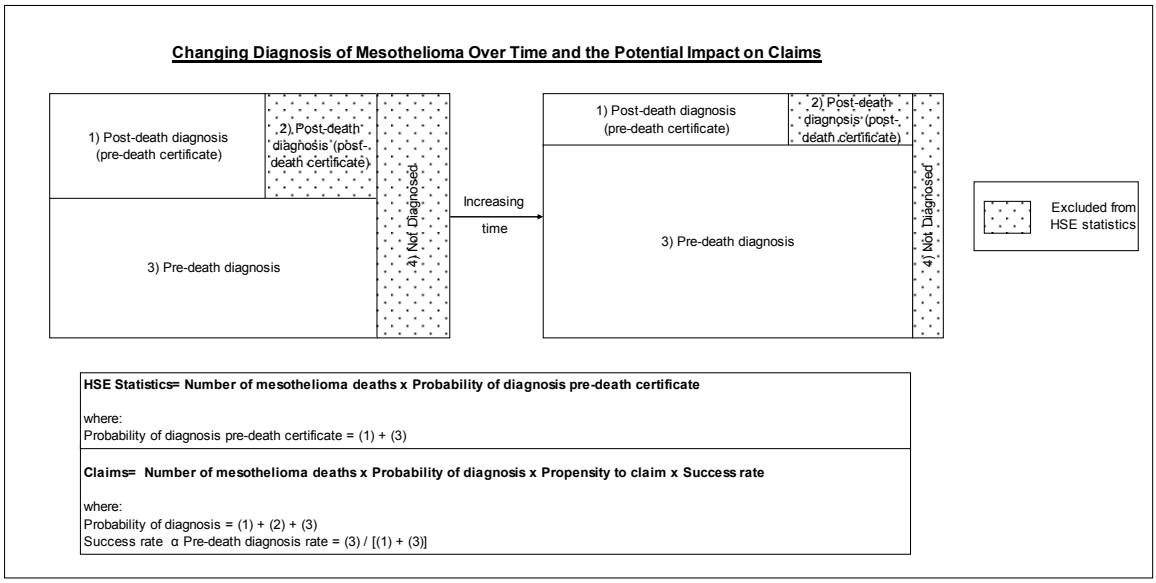
Even in some of the main specialist centres dealing with mesothelioma 5 – 10 years ago pre-death diagnosis was not as effective as it is now. For example, for one of these centres 8 years ago, only 50% of mesothelioma claims were confirmed before death; it is now 96%. This has been due to quicker access to expert advice and improved identification techniques. In other parts of the UK the pre-death diagnosis rate varies from 40% to 95%, the average being about 60%. All centres are improving currently and the Framework should speed up this process.

The increase in the proportion of claims diagnosed before death may have been a contributing factor to the increase in claims seen over the last few years. If this is the case this effect could continue as the expertise is spread and the proportion of claims diagnosed before death increases.

Medical trends in diagnosis

Given the number of deaths due to mesothelioma each year (known and unknown), we have illustrated the medical trends over time in diagnosis of mesothelioma in the diagram below:

Figure 10 : Medical trends in diagnosis



As the diagram shows in the horizontal direction as diagnosis improves and awareness grows over time, the number of undiagnosed mesothelioma deaths will reduce. In addition in the vertical direction the pre-death diagnosis rate improves over time, potentially increasing the success rate for claims.

Diagnosis post death certificate depends on awareness and is excluded from HSE statistics

Because most UK asbestos claim models are built on estimated mesothelioma deaths from HSE statistics, we have also defined the number of mesothelioma deaths recorded by the HSE given the number of actual deaths from mesothelioma in the above diagram. As for successful claims, the HSE statistics will not include those mesothelioma deaths which were never diagnosed, even after death. However, there is a sub-set of known mesothelioma deaths that may end up as a claim but will not end up in the HSE statistics. These are claims which are made by family members of a claimant who was not diagnosed with mesothelioma by the time a death certificate was issued.

These claims will be driven mainly by a general increase in awareness of asbestos-related diseases and their industrial-related causes. In this way deaths recorded by the HSE may not be the only deaths that end up as a claim. However, most modelling approaches currently assume the HSE statistics are the universe of known mesothelioma deaths that could become a claim. The extent to which this may affect these modelling approaches depends on how the proportion of these post death certificate diagnoses changes over time. Also, it is not clear whether this sub-set of claims is significant.

The Framework contributes to patient and family awareness

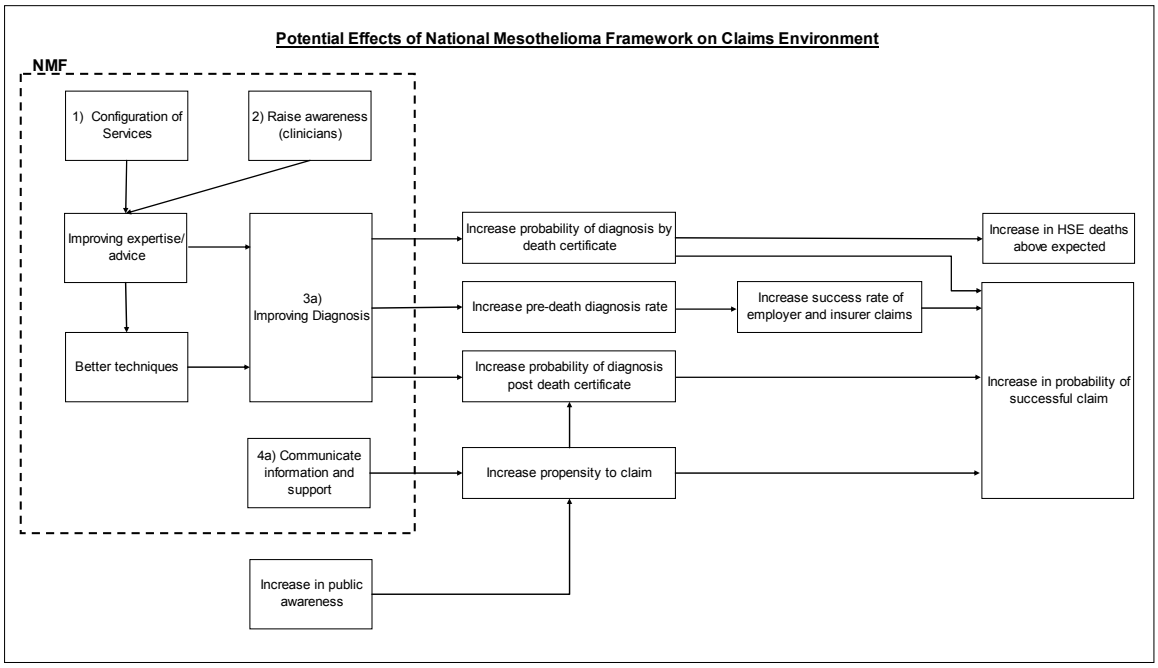
Propensity to claim is a function of the awareness of patients and their families of the potential benefits and compensation available. One of the recommendations of the Framework is to provide communication, information and support to mesothelioma patients and their families.

The key areas of the Framework that may impact on the claims environment

In the next diagram we highlight the four areas of the Framework that lead to improving diagnosis and support for patients and their families and that have the potential to affect most immediately and directly the claims environment and HSE statistics as discussed above.

Other areas of the Framework may also affect the claims environment over time, for example increase in use of radical surgery / treatments, expensive new drugs as part of clinical trials etc may result in increased costs of care that may be passed onto employers / the insurance industry.

Figure 11 : Potential effects of the Framework on the claims environment



4.3.4. Conclusion

The priority of the medical profession is to improve diagnosis and patient care. The National Mesothelioma Framework aims to improve the access of mesothelioma patients to appropriate specialist treatment and advice to help manage the condition.

It is likely that faster diagnosis and better access to information has led to more claims being made in the past and could continue to do so as patient access to the best level of service is improved.

4.4. Legal Profession

The following is a summary of our discussions with personal injury ("PI") solicitors:

- They have seen an increase in the number of people with mesothelioma looking to make a claim over the last five years. They have also seen an increase in women claiming for mesothelioma.

- As well as the increase in the number of people with mesothelioma looking to make a claim, they have also noticed an increase in the number of living mesothelioma claimants. They highlighted that a living claimant allows them to get a witness statement which can be a key component in making a successful claim.

- They have noticed a slight increase in the number of cases from non-traditional asbestos-related occupations such as nurses and teachers.

- The majority of their work is on a conditional fee agreement ("CFA") basis.

- Based on their own share of the market of mesothelioma claims, some questioned the number of recorded mesothelioma deaths. They also told us that not all death certificates state mesothelioma as the cause of death for cases that they represent; although they could not quantify this amount.

- They did not have a 100% success rate in finding a responsible party to make a claim against for each mesothelioma sufferer.

- The ABI database has improved in that it now updates requesters on how their query is processing, but they do not feel that it has significantly increased the success rate in finding a responsible party (such as insurance companies). Anecdotally their comments implied:

    - They feel that the ABI database is used a last resort and that finding a responsible party mainly comes from their own experience and internal knowledge.

    - It is rare that they find a responsible party from the ABI database.

    - They submit numerous requests on the same claims, as they have found that it takes several requests to get a positive result.

- Some commented that claims handling has improved, with insurance companies generally admitting liability at the start of the process. Others stated that they saw no change in the process. Some commented that the process is still too long; with litigation sometimes needed to get a response and that some claims handling staff do not have enough experience to treat claims efficiently.

- Some noted that a number of new personal injury firms do not have sufficient experience to handle some claims and therefore are not finding a responsible party against which to make a claim. When these claims are subsequently taken on by more established firms, responsible parties are often then found.

- Generally our discussions with PI solicitors confirm the claims experience we have seen in the data we have collected.

Below we will discuss in more detail some of the issues raised above on success rates, the increase in living mesothelioma claimants and death certificates.

4.4.1. Success rates and living mesothelioma claimants

It is interesting that no solicitor has a 100% success rate in finding a responsible party. If this were to increase it could led to an increase in claims against the insurance industry. None of the solicitors we spoke to could quantify their success rate but they did state that it had improved over that last five years.

We have seen an increase in the number requests to the ABI database over the last two years, as shown in Section 4.6.1, which could help explain the increase in PI solicitors' success rates. However, from our discussions, they did not believe that this was the case.

Instead, they believe a more important factor to be the increase in the number of living mesothelioma claimants. A living claimant allows the solicitor to get a witness statement from the mesothelioma claimant that will detail where and when they worked together with the type of work they did and how they may have been exposed to asbestos. Such a witness statement should contribute to a higher claim success rate. We discuss the reasons for the increase in living mesothelioma claimants in more detail in Section 4.3.

4.4.2. Death certificates

Some solicitors commented that not all mesothelioma claims will have a death certificate stating mesothelioma as the cause of death. This happens when the person dies and doctor misdiagnoses the cause of death. Later a relative remembers that they may have been exposed to asbestos and the x-rays are re-examined and mesothelioma is diagnosed as the cause of death, however the death certificate is not changed. The solicitors we spoke to could not quantify how many mesothelioma claims this effects. The HSE model does have a parameter to allow for misdiagnosis and it currently assumes that approximately 99% of all mesothelioma deaths are correctly diagnosed.

So, anecdotally this 99% may be too high although data to support a revision is not readily available. Conversely, however, future increases in earlier diagnoses mean that more people should be correctly diagnosed before death and therefore have the correct cause on their death certificates.

4.5. 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. This is particularly the case for the provision and dissemination of information regarding a condition and its management, as well as support networks to connect with others with similar experience.

Mesothelioma, is a rare condition and generally fatal within 18 months of diagnosis, although some procedures are available which can manage symptoms and pro-long life expectancy. As such, there are few organisations geared-up to focus on mesothelioma. A review of the National Directory of Voluntary Organisations yields no entries for charitable or voluntary bodies focusing 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 no matter the distance. 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. In particular Cancer Research UK and the British Lung Foundation post information and links relevant to asbestos-related conditions including mesothelioma.

More focused services like Mesothelioma UK, supported by Macmillan Cancer Support and led by a consultant nurse, aim to provide impartial up-to-date information for patients diagnosed with mesothelioma and their carers. Smaller organisations based on tragic individual stories are also working hard to increase access to information, funding for research and sharing of experience. Appropriately, most of these services include information about claiming compensation from both the government benefits that are available and the possibility of an employment related claim.

The provision of such web-based information services has increased over the last 8 to 10 years as access to the internet amongst the UK population has also increased. The increase in information is also seen in the activity of the claimant solicitors and the objectives of the Mesothelioma Framework discussed in other sections. The wider availability of and access to information must be considered a factor in the overall propensity to make a claim. This effect stems not just from a better understanding of how to proceed, but also a greater awareness that it is an appropriate path taken by others with some success.

4.6. Insurance Industry

This section covers the insurance industry involvement in the process of making an asbestos claim.

4.6.1. ABI Enquiries

It can be a problem for the claimant / claimant solicitor to identify the employer (and their insurer) that exposed the claimant to asbestos. The long period of time since exposure does not help the memory of the claimant in identifying clearly the past employer where asbestos exposure took place. Even if the name(s) of the employer(s) or potential name(s) of the employer(s) is known, in many cases, the employer is no longer in existence. It then becomes a problem of finding the employer's insurer(s) at the time of exposure.

A Code of Practice for tracing employers' liability insurance policies exists to enable claimants to identify their former employer's employers' liability insurer(s) if the claimant's former employer is insolvent or untraceable and they want to make a claim for personal injury, including disease, against them. Under the Code of Practice, the insurers agree to safeguard existing employers' liability (EL) policy records and search their records effectively for enquirers.

The existence of this Code of Practice makes the process of finding the claimant's former employer's insurer easier. The process is a simple one. Where the name of the employer is known, but the employer's insurer is not, the claimant's solicitor can ask the entire insurance industry (the majority of EL insurers are signatories of the Code, this list can be found in Appendix B) through the ABI to investigate their records and identify if they, during the specified period of employment, have provided insurance coverage to the named employer.

The Code of Practice was established by the insurance industry in 1999, in agreement with Government, to help find a solution to the problem of claimants suffering from long-tail diseases not being able to find an insurer to claim against. To support this commitment, the ABI set up a free enquiry system – the EL tracing service. The tracing service initially worked as follows:

- Claimant solicitor writes a letter to the ABI with details of employer
- The ABI collates enquiries together and sends a total set of enquiries to the insurance market once a month.
- Insurance market has 20 days to research their records and respond to the ABI as to whether they have found coverage.

The process has remained the same since 1999, but its efficiency has improved with the use of technology.

In 2002, the process began using e-mail rather than physical mail, and the list of cases was e-mailed to signatories once a month, and for mesothelioma cases every week.

In 2005, an on-line enquiry form was created on the ABI website for the claimant solicitor to fill in directly. These enquiries are then automatically e-mailed to the insurance market, and responses are made on-line.

The ABI has undertaken a series of reforms to the tracing code over the last two years to make it more user friendly and to ensure it traces all available records. These initiatives are summarised as follows:

- Introducing a fast track system for mesothelioma enquiries in 2007.
- Introducing a clearer enquiry form with drop down lists for disease and industry which makes it easier for enquirers and helps to prevent duplicate or incorrect enquiries.
- Publishing an online guide for claimants setting out how to use the Tracing code.
- Introducing an ABI telephone helpline to deal with queries and support new users.
- Introducing an internal matching facility to the Tracing Code - new searches are now cross-checked against a list of all previous successful searches to identify matches and avoid a new search being undertaken.
- Extension of the electronic tracing system to other signatories of the Code of Practice (non ABI members) so that they receive the regular electronic list of new searches directly from the ABI and can respond on the ABI website.

The reforms enacted over the past two years mean that mesothelioma related enquires can be identified from March 2007. However, an insurer represented on the working party has recorded those enquiries that appeared to be related to mesothelioma since 2003. These figures are shown in the table below, together with the official 2007 figure (grossed up to a full year based on 9 months of data). It must be said that pre 2007 the figures are only indicative and have not been validated by the ABI, therefore the trends over time may be distorted.

Table 11 : Mesothelioma ABI Enquiries April 2007 to December 2007

Year	Total All Enquiries	Meso Related	% meso related
2003	6,865	437	6.4%
2004	7,925	498	6.3%
2005	8,690	536	6.2%
2006	7,753	854	11.0%
2007	10,337	1,396	13.5%

It is relevant to note the comments made by the plaintiff's solicitors that we have spoken to. As described in section 4.4 on the legal profession, the larger plaintiffs' solicitors firms have indicated that they do not place much reliance on the ABI enquiries system but prefer to trust to their own records in the first instance. They have also indicated that the process is slow and so they do sometimes put in multiple enquiries. This is an area where making the process easier may well have increased the number of enquiries.

The total level of enquiries has continued to rise since mid-2006. It is likely, that a combination of factors is behind the increase. It could be argued that due to the level of recent publicity in terms of the various legal cases (not least Fairchild, Barker and the pleural plaques test case) and the changes in the NHS National Mesothelioma Framework discussed in section 4.3, that claimant awareness and therefore desire for compensation has increased over the last few years. Further, the ease of making an enquiry may have facilitated a more active search for claimants by solicitors. Alternatively the easier process may encourage enquiries where they were not made in the past, or even duplicate enquiries.

A change in the first two factors would have the effect of giving rise to more claims. This is particularly true for mesothelioma claims and has specific relevance when considering the number of mesothelioma suffers who make a claim against their former employers. It was noted in section 2.1.5 that in 2004 it was estimated that around one third of mesothelioma victims made a claim against the insurance market. The claims to deaths ratio is an important consideration in the future projection of mesothelioma claims and is considered further in Sections 5 and 6 of the paper.

4.6.2. ABI Enquiries and New Insurance Coverage

It is likely that the ABI enquiries will mainly relate to claims against the insurance market from previously unknown employers i.e. new coverage.

As enquiries are by employer, a number of enquiries can be made for each claimant. Therefore the number of ABI enquiries should correspond in some way to the number of insurance claim notifications.

Over the last 9 months of 2007, there were 1,047 mesothelioma related enquiries from claimant solicitors. The table below gives further detail on these enquiries.[2]

Table 12: ABI Enquiries

Enquiries	Successful traces	Success rate per enquiry	Potential claimants	Successful potential claimants	Success rate by potential claimant
1047	368	35%	660	302	46%

The following should be noted:

- A proportion of the enquiries will go untraced, and so will not actually become an insurance claim.
- Not all mesothelioma enquiries may actually be mesothelioma enquiries; mesothelioma enquiries are fast tracked in the sense that lists are sent out each week, so some enquiries are alleged that they are mesothelioma even though they probably relate to other diseases. This may also be a factor in the increasing proportion of mesothelioma related enquiries.
- Claims are invariably made at different times and hence may relate to deaths in a different year to that of the ABI enquiry.

It is interesting to note that in the ABI report, of the 1,047 enquiries reviewed by the ABI, these related to 660 claimants. This represents an insurance claims to claimant ratio of 1.6, which is slightly lower than that estimated by the working party using survey data and claimant estimates from the Compensation Recovery Unit (see Section 5.3.4).

4.6.3. Compensation Recovery Unit (CRU)

The Compensation Recovery Unit ("CRU") works with insurance companies, solicitors and Department of Work and Pensions ("DWP") customers, to recover:

- Amounts of social security benefits paid as a result of an accident, injury or disease, where a compensation payment has been made. This is known as the Compensation Recovery Scheme.
- Costs incurred by NHS hospitals for treatment of injuries from road traffic accidents. This is known as Recovery of NHS Charges.

[2] ABI report for November 2006 – December 2007: Code of Practice for Tracing Employers' Liability Insurance Policies

When an insurer is notified of a claim, a standard form including some key information (D.O.B., NI number, other claim details if known) is completed. This has to be completed within 14 days - this does not mean an acceptance of liability. When the insurer is ready to settle the claim, a further certificate is completed, at which time the extent of recoverable benefits / NHS charges will be known with certainty.

Each insurer does not necessarily need to notify the CRU. If there are many insurers on risk for a particular claim it is possible that only one insurer notifies the CRU. If it is known that the CRU has already been notified for a particular claim, then it is unlikely that the insurer will notify the CRU again.

The compensator is allowed to reduce compensation given for loss of earnings if the claimant has received a benefit to meet the same need. The main relevant benefits for an asbestos claim are:

- Disability Working Allowance
- Incapacity Benefit
- Income Support
- Industrial Injuries Disablement Benefit
- Invalidity Pension
- Invalidity Allowance

The relevant benefits that can be used to reduce compensation for cost of care are:

- Attendance Allowance
- Disability Living Allowance (care component)
- Industrial Injuries Disablement Benefit increase for Constant Attendance Allowance or Exceptionally Severe Disablement Allowance.

The CRU will therefore be informed of all disease related claims giving rise to compensation, whether from the insurance industry or the Government. The CRU will also have a record if compensation is not paid. It is possible for the CRU to identify disease types separately due to the different benefits paid. Given that benefits are paid to the claimant, the CRU will be able to derive the number of claimants making compensation claims. The working party has been able to obtain summary data in relation to mesothelioma claims from the CRU. This has helped us to understand the true relationship between the numbers of claims and deaths ("claims to deaths ratio"), and has also enabled the working party to cross reference to the insurance market data collected and gain an indication of the overall % of the insurance market that the working party's survey covered. These considerations are set out in Sections 5 and 6.

4.7. Government

The UK Government (including Local Authorities) may receive claims from or be liable for any of its employees that contract an asbestos-related disease after being exposed to asbestos in the course of their work.

4.7.1. Government as Compensator

Principally the Government's involvement stems from nationalised industries such as British Shipbuilders (under the Aircraft and Shipbuilding Industries Act 1977), the British Railways Board, etc. The UK Government is also likely to be susceptible to claims from within Government organisations such as the Ministry of Defence ("MoD") and National Dock Labour Board whilst Local Authorities may have liabilities from schools, council houses and employees who have worked in council buildings with uncontained asbestos.

In contrast to private sector organisations (including insurers), UK Government's asbestos-related liabilities are often not shared with other responsible parties because many Government employees will have spent their entire working lives working in the public sector.

Claims are therefore handled within the department where the liabilities originate as these departments have the detailed knowledge of the work performed and the workforce employed. As a result of this, it is difficult to estimate the total share of asbestos-related liabilities taken by the UK Government. Furthermore, we are unaware of any publicly available published study which details the Government's asbestos-related liabilities.

4.7.2. Government Benefits

The Government will also be contributing to the Industrial Injuries Scheme (which includes the Industrial Injuries Disablement Benefit ("IIDB") through the Department for Work and Pensions ("DWP").

Full details of the IIDB can be found on the DWP web site at www.dwp.gov.uk. This gives the following information about the benefit:

What is it?

The DWP pay Industrial Injuries Disablement Benefit (IIDB) to people who have become disabled because of an accident at work or a disease caused by their job. It is paid whether or not people are now working. IIDB can also be claimed by and paid to people of state pension age in addition to those of working age.

Eligibility
This scheme does not cover people who were self-employed at the time of the accident or the onset of the disease. Claimants must normally have had the accident or got the disease in Great Britain.

What are the benefit rates?
The amount of benefit depends on how serious the disability is. A medical examination may be required and a doctor will advise on how serious the disablement is and how long it is likely to last.

Table 13 : Disablement Benefit - current weekly rate

Disablement	Over 18, or under 18 with dependants	Under 18 with no dependants
100%	£136.80	£80.85
90%	£123.12	£75.47
80%	£109.44	£67.08
70%	£95.76	£58.70
60%	£82.08	£50.31
50%	£68.40	£41.93
40%	£54.72	£33.54
30%	£41.04	£25.16
20%	£27.36	£16.77

4.7.3. Mesothelioma and IIDB

In 2002-2003 a concern was expressed by the Industrial Injury Advisory Council that take-up among those suffering from mesothelioma was too low. This lead to a re design of the claim form in 2002 to make identification and processing of mesothelioma claims easier. One impact of this re design has been to significantly improve the quality of data regarding mesothelioma claims.

Since those suffering from mesothelioma typically have very limited life expectancy, there are some nuances of the claim decision making process which accelerate the payment of IIDB to those suffering mesothelioma:

- Claim verification is usually by specialists, and is usually submitted with the application for benefit
- Where there are questions about precise quantum of disablement, the benefit is paid at 100%
- Mesothelioma claims are specifically tagged as such and decisions are fast tracked through the decision making process for benefit payment
- Often, verification of employment is easy as the decision makers maintain a database indexed by national insurance number.
- Where medical evidence is available and sufficient employment history has been established, further fact finding is often relatively limited, and has become less onerous in recent years.

The introduction of these changes to the decision making process and the revision to the claim form, may be on contributing factor to the IIDB claim trends discussed in Section 5. The impact may be both through improving the coding of claims as well as speeding up the decision making process.

4.7.4. Other Stakeholders and IIDB

The Industrial Injury Advisory Council is consulted on various matters including the provision of benefits and IIDB. It has representatives of employers (e.g. the CBI), employees (e.g. Trade Unions) and specialists from the medical and legal professions. This formally represents the interests of a number of stakeholders in benefit provision

There are also links between those deciding on the provision of IIDB and charitable mesothelioma support groups. These support groups often assist claimants with collecting and compiling the necessary documentation for a claim to proceed as quickly as possible. As such, they have been consulted regarding the design of the IIDB claims form, and the claim form now reflects changes suggested by one of the support groups.

Finally, where lawyers are pursuing a claim against employers, they may aid claimants with their application for IIDB.

4.8. Conclusion

From the information contained in the above sections we conclude that there are a number of influences on the mesothelioma claims experience that the insurance market has experienced over the last few years. Each of these factors should be considered when estimating the number of deaths due to mesothelioma that may become claims to the insurance market in the future. The past experience of the number of deaths that have become insurance claims is outlined in Section 5.3.4.

5. Key Observations from the Data

5.1. Data Collection Process

One of the key aims of the working party was to collect insurance company claims data to enable analysis of the trends and features in the data for recent years as was carried out by the previous working party.

There were two main data sets collected, a summary data set which related to aggregate data similar to that collected previously (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).

12 companies participated in the aggregate data collection exercise, and 8 companies participated in the detailed data collection exercise. We are extremely grateful for all the companies' assistance.

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

Copies of the templates for the summary and detailed data collection exercises are included in Appendix C and D for reference. Note that although most of the items requested had enough data for some credible analysis, a couple of items only generated 1 or 2 responses. In particular, we were not able to get an adequate response on the split of claims by legal expenses and indemnity, nor were we able to get adequate responses on the average share of claims met by individual insurers.

The per claim mesothelioma data was provided as at 30 September 2007. The summary data was provided typically as at 30 June 2007 although some participants could only produce data sets as at earlier dates.

Some companies were not able to provide data for the entire range of years which made some of the analysis of the trends difficult. We attempted to adjust for this by either considering only companies who had provided consistent data, or in some cases grossing-up data to allow for companies that had not provided a specific year of data.

The following section discusses the observed trends in claims by disease type. They 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. Subsequent sections then discuss mesothelioma in more detail including observations from the per claim data.

5.2. Survey Data Results

Mesothelioma claims represent the most significant element of the projected future cost of asbestos-related claims. As such we collected both summary data and individual claim data for this disease type. We only collected summary data for non-mesothelioma claims.

We collected data on the following disease types:

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

Note that some participants were not able to (or historically were unable to) split their asbestos-related claims by disease type. This left a material number of claims in the "unknown-asbestos" category. We highlight that this, and similar restrictions in data recording across companies, increases the level of uncertainty around any analysis of the trends and subsequent projections.

Nevertheless, since the previous data collection exercise the situation has definitely improved and the majority of companies were able to identify their asbestos-related claims by disease type. We understand from the survey participants that, in general, the recording of claim data is more reliable and consistent for settlements from 2003 (mesothelioma) and 2004 (non-mesothelioma) onwards.

Within each of the following sections we have included a chart showing the summary data collected for that disease type. These show the average cost per claim based on insurance claim settlements in each calendar year, and excluding nil claim notifications. The claim number statistics are on a notification year basis and will include insurance claims that ultimately settle at zero. The 2007 year figures are based on part year data (typically to 30 June 2007) which has been scaled-up. The one exception to this is mesothelioma claim notification numbers. Given the importance of this statistic we also collected an update from each participant in the per claim data collection after the year end of how many mesothelioma claims they received during 2007.

Section 5.4 includes graphs showing the average incurred cost per claim on a notification year basis and also the settlement pattern of mesothelioma claims as indicated by the summary survey data. Further information collected as part of the summary survey can be found in Appendix E including the numbers used in the charts included in this section below.

Highlights from the per claim data collection are shown in section 5.5. Further information collected as part of the per claim mesothelioma survey can be found in Appendix F.

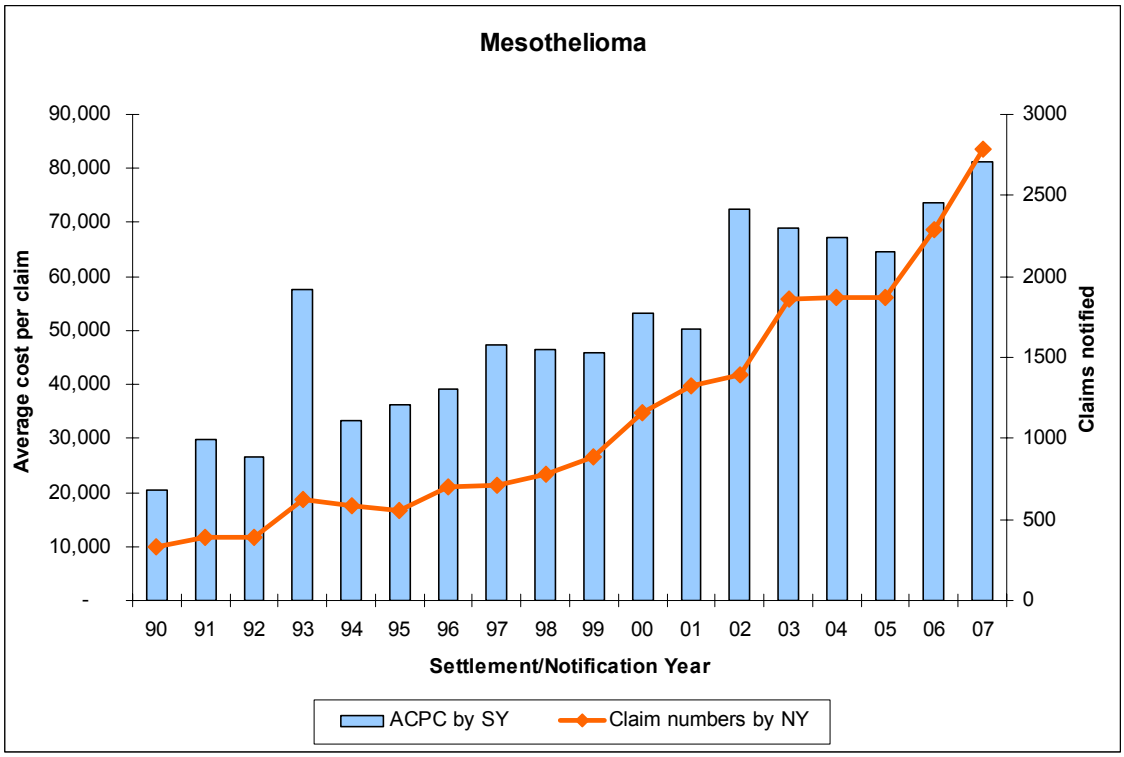
5.2.1. Mesothelioma

Mesothelioma claim numbers have approximately doubled since 2002. This is well in excess of the number anticipated by the last working party and has significant implications for the projection of future claims. Only the high level survey results are shown here. More detailed information along with discussion around possible reasons for this increase is discussed in depth below in section 5.3 and 5.4.

The claims numbers for mesothelioma have been grossed up to provide an estimate of the whole insurance market allowing for those companies that have not participated. The average cost per claim is based only on the survey data collected. Mesothelioma is the only disease type for which we have grossed up the numbers to 100% of the market. The other disease type results reflect data for survey participants only. From the survey data collected we removed four participants who were unable to supply consistent data. By analysing the data for the years where these four companies were able to supply consistent data, we estimated that an uplift factor of 12.5% to the consistent dataset was required. We have estimated that the survey participants account for around 80% of the market so a further 25% has been added to scale the mesothelioma figures to 100% market levels.

Average costs have increased at an average rate of c.6-7% per annum since 1990 with lower increases since 2003 of around c 4-5%. Current average settlement costs are around the £65k -£80k range per insurance claim.

Figure 12 : Mesothelioma average costs and claims notified



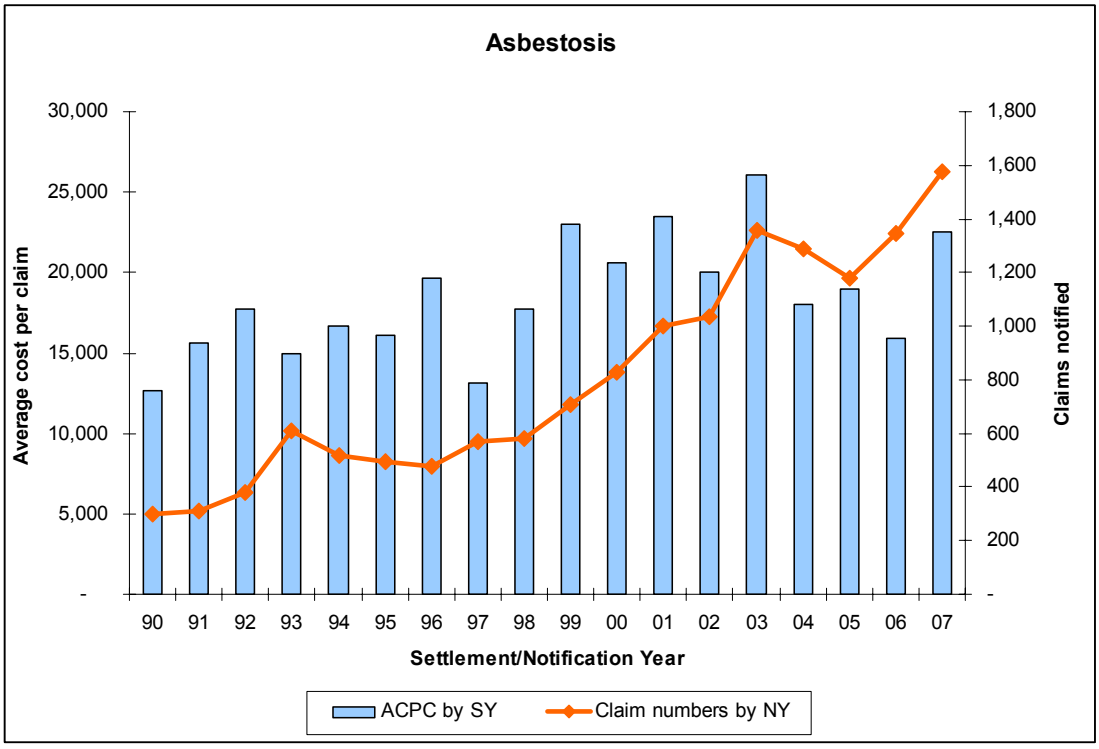
5.2.2. Asbestosis

There was discussion in the last working party that the "peak" for asbestosis-related claims may have already been reached and we should expect claims to reduce in number in the near future.

The evidence available to the current working party is that the annual increase in notifications had not peaked but does appear to have been slowing since 2003. In 2003 the number of notifications was roughly the same as the number of mesothelioma claims, but they have not increased since in the way claims for mesothelioma have. This may well be due to the underlying incidence rate of asbestosis being stable. Perhaps not surprising as the number of individuals working extensively with asbestos and therefore susceptible to asbestosis, would have reduced much more quickly than the number of individuals with more secondary exposure in the construction or maintenance industry who may still contract mesothelioma.

Average costs have increased only very gradually, at an average rate of c.2-3% per annum since 1990 with little increase shown in more recent years. Current average settlement costs are in the range £20k-£25k per insurance claim.

Figure 13 : Asbestosis average costs and claims notified

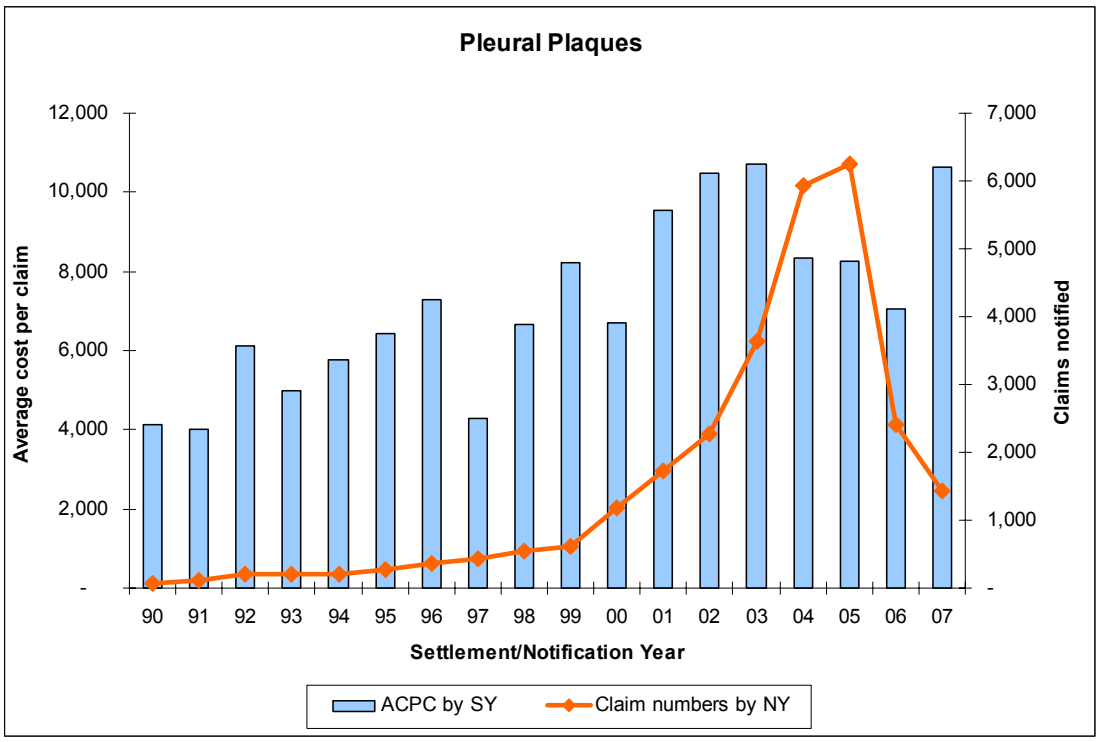


5.2.3. Pleural Plaques

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 as insurers ceased paying claims.

We make no further comment on pleural plaques here, as they are currently a non-compensatable disease. See section 3.1 for details of the legal situation.

Figure 14 : Pleural plaques: average costs and claims notified



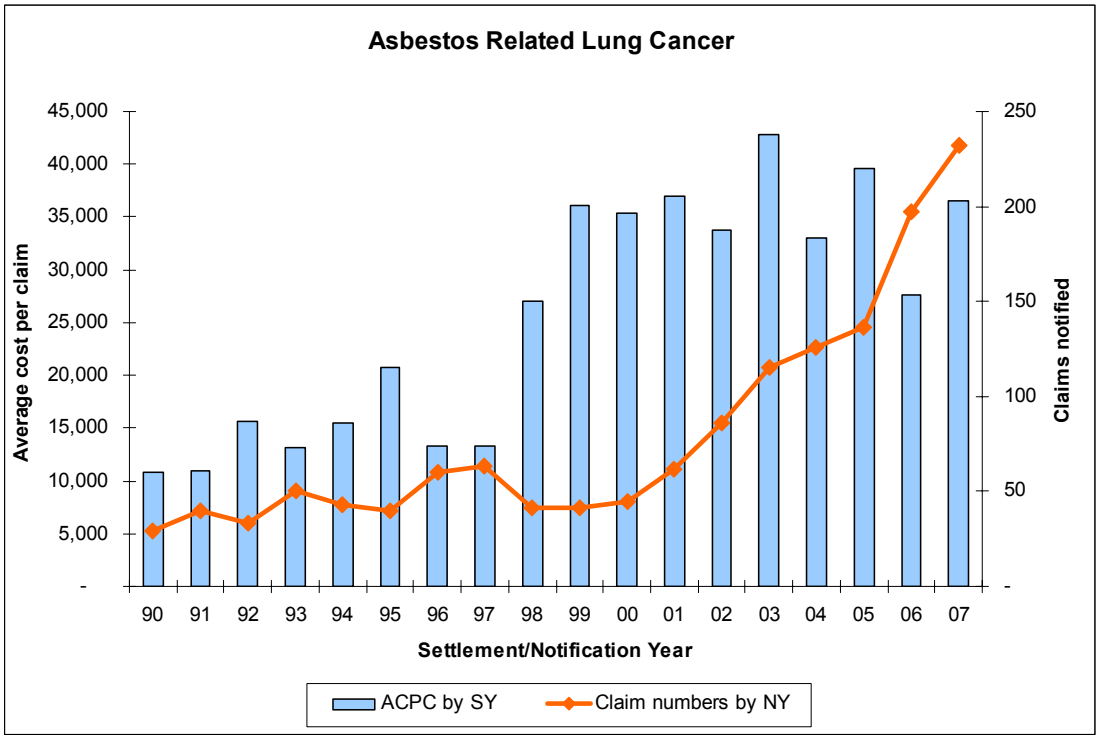
5.2.4. Asbestos-related Lung Cancer

Historically, lung cancer claims have been at a very low level. Some of this does appear to be related to poor data capture, but even allowing for this the numbers are small. Since 2003 however, there has been an upturn in notifications, doubling from around 100 to 200 per annum. Levels are still around 10% of those for mesothelioma however, and average costs are somewhat lower.

Lung cancer is an area of great uncertainty for the insurance industry. It is possible that there are many more lung cancer cases with an asbestos-link where no claim is currently made because of the difficulties in proving asbestos was the cause.

Average insurance claim costs in the data appear to have increased sharply from £15k-£20k to £35k- £40k around 1998-2000, and since then have been fairly stable.

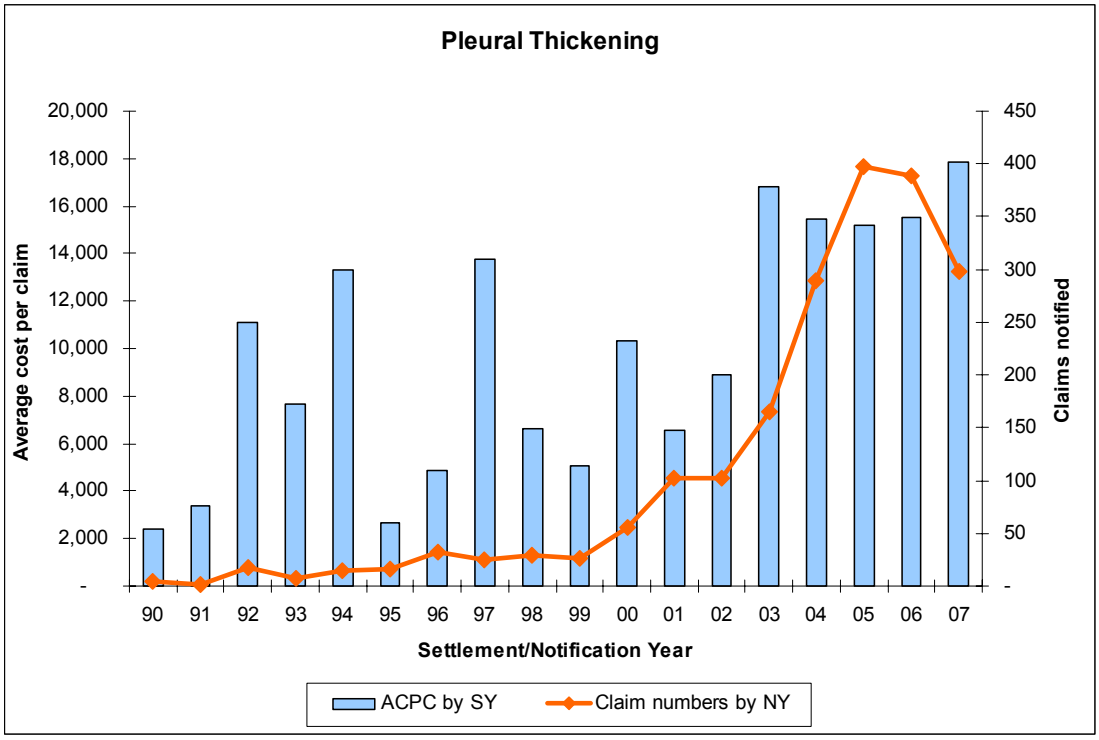
Figure 15 : Lung cancer average costs and claims notified



5.2.5. Pleural Thickening

The number of pleural thickening claims has increased substantially since 2002 but remains at a relatively low level of 300 to 400 claims per annum. Average costs have increased at a rate of around 8% per annum over the period covered by the data but closer to 4% for the last 5 years. They currently sit in the range of £15k-£20k per insurance claim.

Figure 16 : Pleural thickening average costs and claims notified



5.2.6. Claim amounts by Disease Type

The chart below shows how insurers' incurred claims break down between the disease types and notification year. These figures are clearly dominated by mesothelioma claims. It should be noted that once again we have scaled the mesothelioma figures so that they represent 100% of the market. The non-mesothelioma figures remain as they were in the raw data as data constraints made any revisions unreliable.

The pleural plaques claims form the bulk of the remaining incurred losses although this data predates the House of Lords ruling so assume that this disease is compensable. The total incurred loss amount shown here for the 2003-2007 notification years is £168m. Of this, £120m is in respect of case estimates for claims that may or may not ultimately be payable. We have estimated the number of pleural plaques claimants represented by these case estimates to be around 12,000. This is based on our survey data after allowing for multiple claims per claimant. Further pleural plaques claimants will exist outside of those observed by the insurance market, such as those resulting in Government related claims.

Asbestosis claims are a major part of the remaining incurred although the amount in respect of asbestos-related lung cancer claims has been increasing materially over the last few years.

Charts showing these claim amounts split between paid and outstanding losses follow the incurred chart.

Figure 17 : Claims incurred by disease type

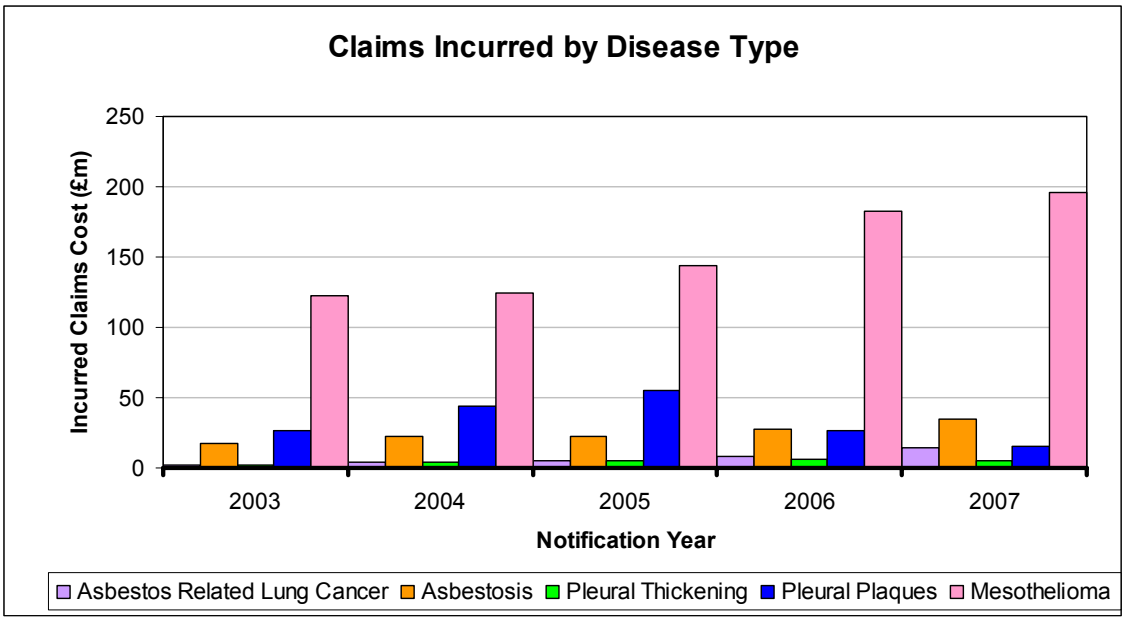


Figure 18 : Claims paid by disease type

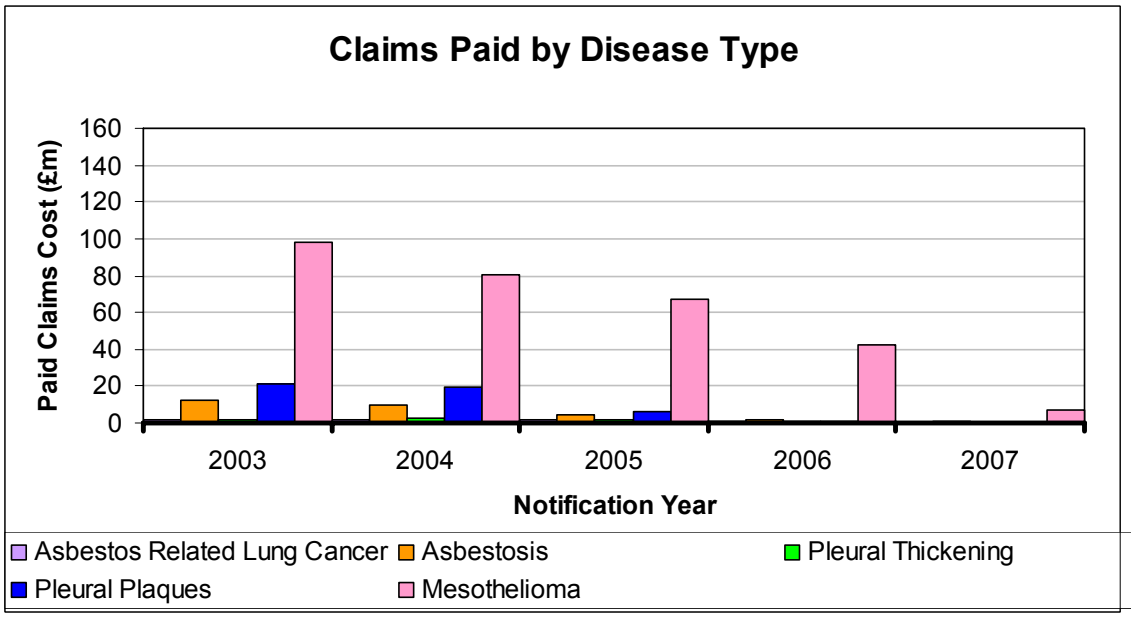
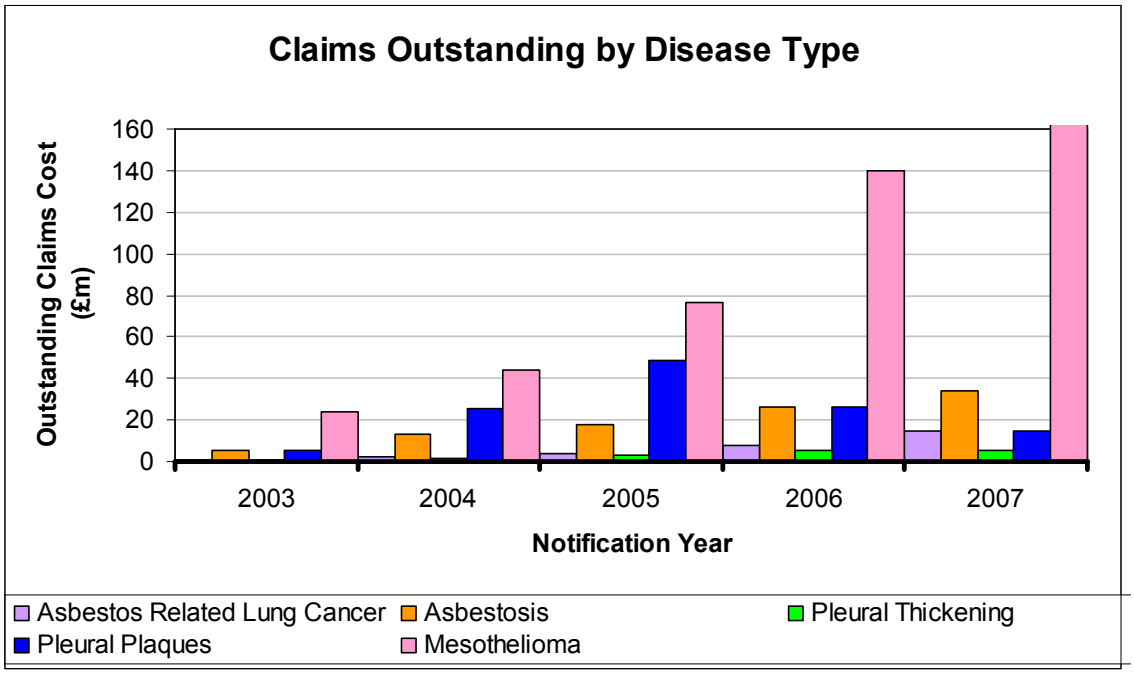


Figure 19 : Claims outstanding by disease type



The gross incurred losses in respect of indemnity and costs are shown in the table below. These figures are shown by notification period and include those produced by the last Asbestos Working Party (AWP) for comparison. Please note that the figures produced by the last AWP are based on claims notified and an estimate of the average cost figures. They are estimates of the 100% insurance market numbers.

Table 14 : Gross incurred losses in respect of indemnity and costs

Gross incurred losses in respect of indemnity and costs			
Mesothelioma claims (100% mkt)	**Notifications Pre 1990**	**Notifications 1990-2003**	**Notifications 2004-2007**
2007 AWP data		£587.1m	£646.2m
2004 AWP data	£89.1m	£533.9m	
2004 AWP projection			£323.8m

The incurred losses on mesothelioma claims are broadly consistent over 1990 to 2003, the period covered by both surveys; the difference is most likely to be due to the 2003 notification year being different to that extrapolated from the data collected in the first survey, and the development of the average cost of claims . Actual incurred losses notified between 2004 and 2007 are significantly higher than the 2004 AWP projections. The figure of £323.8m is the expected ultimate cost of claims notified in the period. It closely approximates the expected incurred cost assuming that incurred costs per claim develop quickly towards their ultimate position.

5.3. Mesothelioma Data Trends Since the 2004 AWP Paper

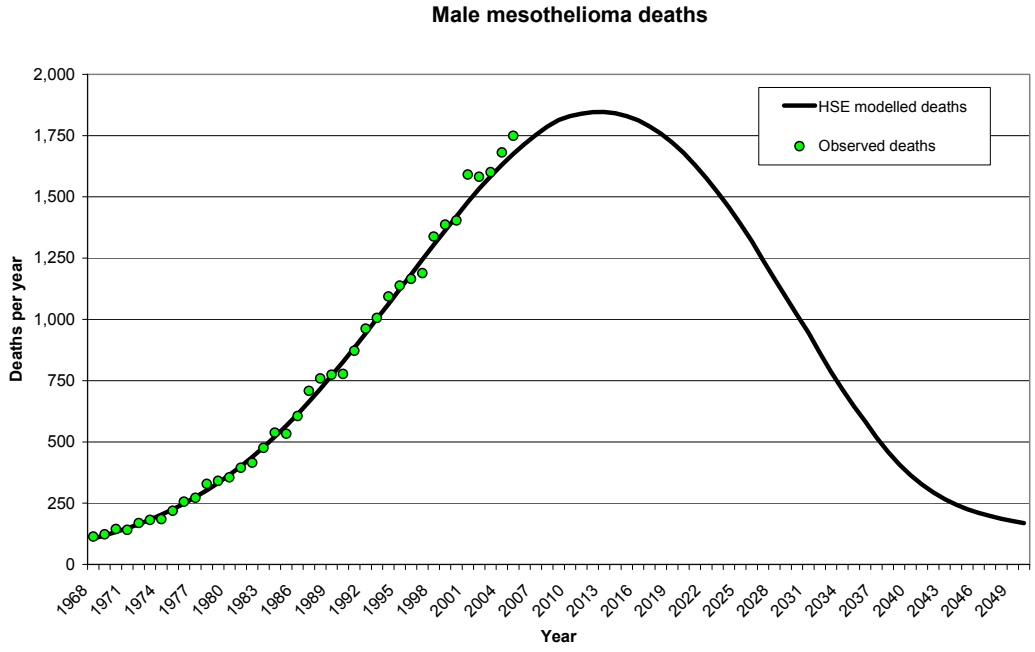
This section discusses in more detail the trends observed in mesothelioma claims. We first consider below the projections produced by the last working party which puts into context the recent developments.

The previous Asbestos Working Party (AWP) projections were based around the 2003 Health and Safety Executive (HSE) mesothelioma deaths model. This is set out in the paper "Mesothelioma mortality in Great Britain: estimating the future burden" found on the HSE website (www.HSE.gov.uk) and is also described in the 2004 AWP paper "UK Asbestos – The Definitive Guide". The model estimates the number of future male deaths from mesothelioma expected to occur in Great Britain.

5.3.1. The 2003 HSE Mesothelioma deaths model

The graph below shows observed deaths up to 2005 compared to the predicted deaths from the 2003 HSE model.

Figure 20 : Male mesothelioma deaths



As can be seen above, the model predicted the number of deaths that would occur due to mesothelioma over the next fifty years, it suggested that the rate at which the number of deaths would increase would slow until around 2013 at which point it would begin to decrease. It estimates that the peak number of deaths will be around 1,850 per annum.

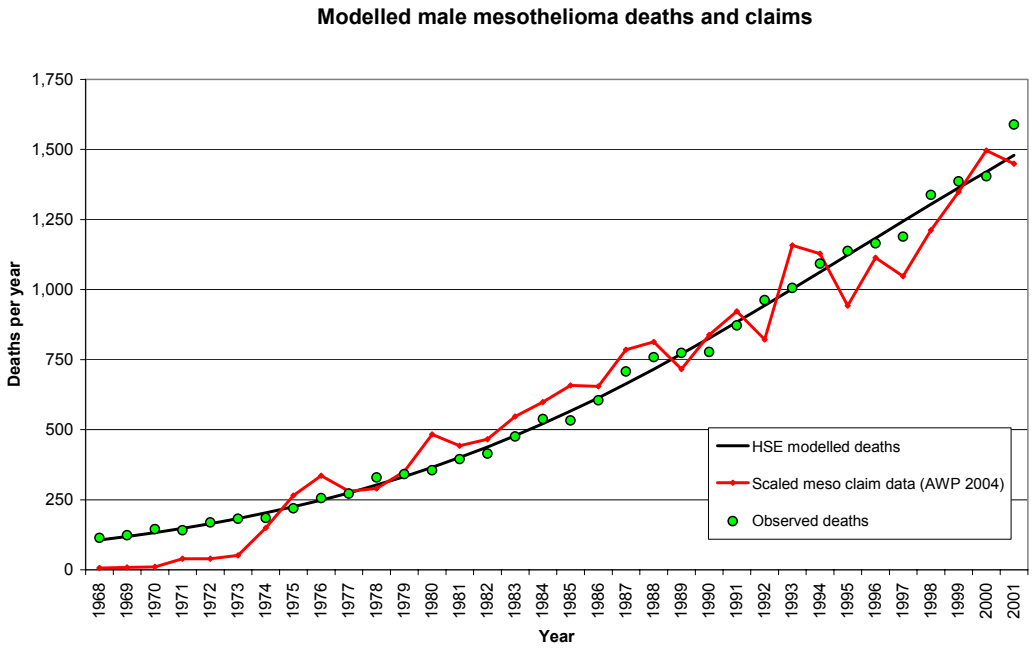
At the time this model was parameterised the HSE had observed deaths up to 2003. Since then the HSE have observed 1,681 deaths in 2004 and 1,749 in 2005 which are marginally higher than those predicted by the model.

5.3.2. 2004 AWP claim number projections

In 2004 the AWP collected data from across the insurance industry and compared the HSE's model with the number of mesothelioma insurance claims made. The number of claims could not be directly compared to the number of deaths since there would have been many people who would not have made a claim. Differences would also occur due to claimants making multiple claims through different insurers. The AWP took these factors into consideration and adjusted the survey data to give "scaled claims" which could then be directly compared with the number of deaths and the HSE (non-clearance) model figures. The survey claims were adjusted by multiplying by 1.14 to minimise the sum of the square of the differences between the claim data and the HSE modelled data.

The adjusted "scaled claims" data is represented by the jagged line on the graph below and clearly the trend follows the HSE modelled trend to 2001. As the trends showed a good likeness the HSE projections were used as a base for the AWP future claim estimates.

Figure 21 : Modified male mesothelioma deaths and claims to 2001

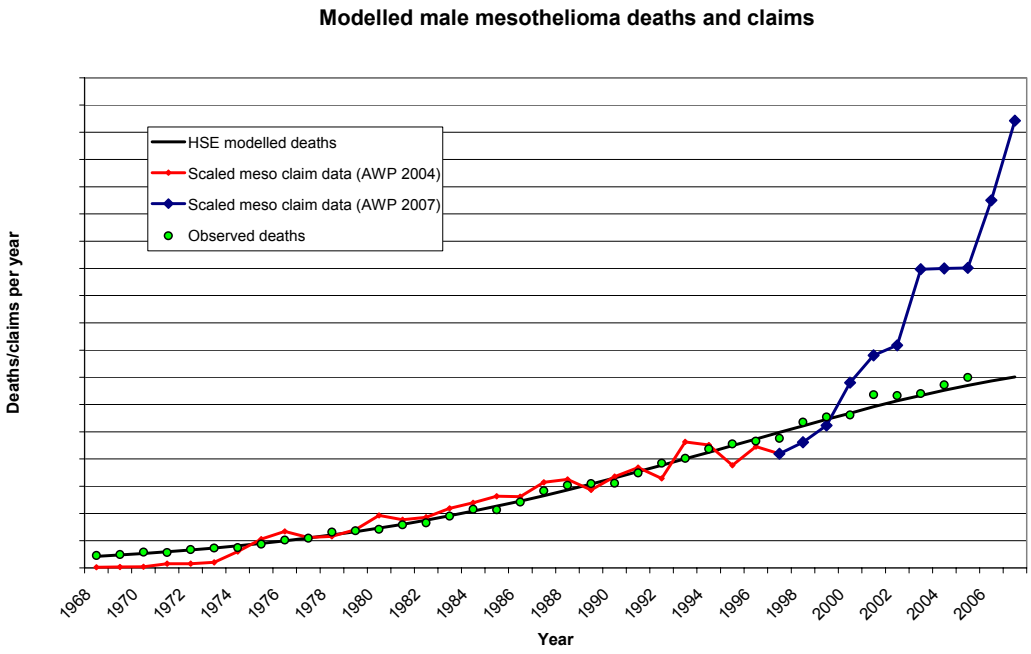


There was uncertainty within the results of these projections. The HSE (non-clearance) model used to project future claims depends on many different variables. Particular areas of uncertainty noted in the last AWP report included; the lack of data in the over 80's age group and the proportion of sufferers claiming. The curve predicted by the model is very dependent on the over 80's, a group for which there is little data due to the low number of mesothelioma deaths in this age band to date. In addition, based on the data collected by the AWP it was estimated that only about a third of sufferers were making insurance claims and the future claim estimates were sensitive to any change in that proportion.

5.3.3. Developments since 2004

The data collected by the 2007 AWP presented on a similar basis shows that recent mesothelioma claim numbers have been significantly higher than expected. The graph below shows the 2007 claim number data plotted against the HSE projected trend and the 2004 data set. The 2004 data set is only shown to 1997. The 2007 data set has been scaled so that it matches the 2004 data set at the 1997 notification year point.

Figure 22 : Modified male mesothelioma deaths and claims to 2007



So why has the trend in the number of insurance claims deviated so far from its projected course? There are a number of potential explanations:

1. Each sufferer is making claims to more insurance companies
2. Higher insurance coverage during more recent exposures
3. A reduction in claim notification / processing delays
4. An increasing propensity to sue
5. HSE model is under-estimating recent deaths

1. More claims per sufferer?

We are unable to verify how many claims each sufferer makes on average. The data protection act prohibits us from collecting claim information that would enable us to identify the individual involved. It is therefore not possible to check for duplicate claims made to different insurance companies.

However, the average claim data discussed in section 5.2.1 shows an increasing trend in average cost per claim which is in line with that expected due to claim inflation. If the number of insurance claims per sufferer had increased we would expect to see a falling trend. Instead, based on typical, current settlement amounts, the average claim size is consistent with around 2.0 claims per sufferer. This was also the level estimated for mesothelioma claims per sufferer in the 2004 AWP data set, though a 2.5 figure was used in the projection (see section 2.1.5).

The level of claims to claimants can also be checked using the data obtained from the CRU. These calculations are detailed later in this section 5.3.4. This also suggests that over the last few years the level of claims to claimants has been around the 2 level.

It would appear that something else is causing the changing trend in mesothelioma claim numbers.

2. Higher insurance coverage during more recent exposures?

The insurance industry's exposure to UK asbestos has undoubtedly been increasing over time. Employer's Liability (EL) cover became compulsory in 1972 and many nationalised industries have now been privatised. The insured proportion of mesothelioma deaths as reported by the HSE may well have been increasing through time. However, such an increase is likely to be a more gradual progression rather than the significant increase that we have seen over the last few years. The number of employer / insurer enquiries has increased significantly over the last few years as has been set out in section 4.6.3.

3. A reduction in claim notification / processing delays?

Claims may now be identified and settled faster than has previously been the case. This could then result in a claim surge which would subside in the future as the speed of settlement stabilised at the faster rate. There has been an increase in the level of employer / insurer enquiries (section 4.6.3). This may be the result of changing claimant solicitor behaviour. We understand that the proportion of mesothelioma cases diagnosed before death is increasing and if claimant solicitors are identifying more mesothelioma sufferers earlier then the number of notifications to insurers would increase. There may also be an impact on claimant compensation as it is more likely that these suffers will be alive on settlement; the cost of a claim is generally less if the clamant is alive at the time of settlement.

Alternatively, there may have been a backlog of claims, possibly due to claims being on hold pending a result in legal test cases. Any catch-up in such cases would also cause a surge of claims that would subsequently subside. It is thought that this is unlikely to be the case for mesothelioma, but may have been part of the explanation of the first surge post 2003 due to Fairchild.

4. An increasing propensity to sue?

The 2004 working party assumed that approximately one third of mesothelioma deaths converted into an insurance claim. A fundamental principle of the working parties use of the population model to predict future insurance claims was that this relationship would remain constant. So is this proportion changing?

We believe it is. In fact we believe it is the single biggest factor influencing the changes in experience that we have witnessed over the last few years. We have performed some analysis based on alternative data sources that supports our conclusions. The next section examines the relationship between deaths and insurance claims and the analyses performed in more detail.

5. HSE model is under-estimating recent deaths?

As the AWP projections were based on the HSE model for mesothelioma deaths any under or over estimation by the HSE will have a direct impact on the AWP projections. However, that does not explain the difference observed to date between the actual and expected insurance claim numbers. The actual deaths recorded by the HSE over the same period are only slightly higher than those predicted by the HSE model.

5.4. The Mesothelioma Claims to Deaths Ratio

Our investigations have indicated that the single factor having the greatest impact on the higher than expected claims experience over the last few years has been the number of deaths that translate into insurance claims. Sometimes referred to as the 'Propensity to Sue' we prefer the phrase 'claims to deaths ratio' as it encompasses more than just the willingness for the individual to make claim.

So how is the relationship between insurance claims and mesothelioma deaths changing? We have made use of three main sources of data in forming our conclusions.

- The Industrial Injuries Disablement Benefit (IIDB).
- The Compensation Recovery Unit (CRU).
- Our own per claimant level survey data.

This section goes through the analysis of, and comparisons between, each of these data sources in forming a view on the relationship between insurance claims and population deaths.

5.4.1. The Industrial Injuries Disablement Benefit (IIDB)

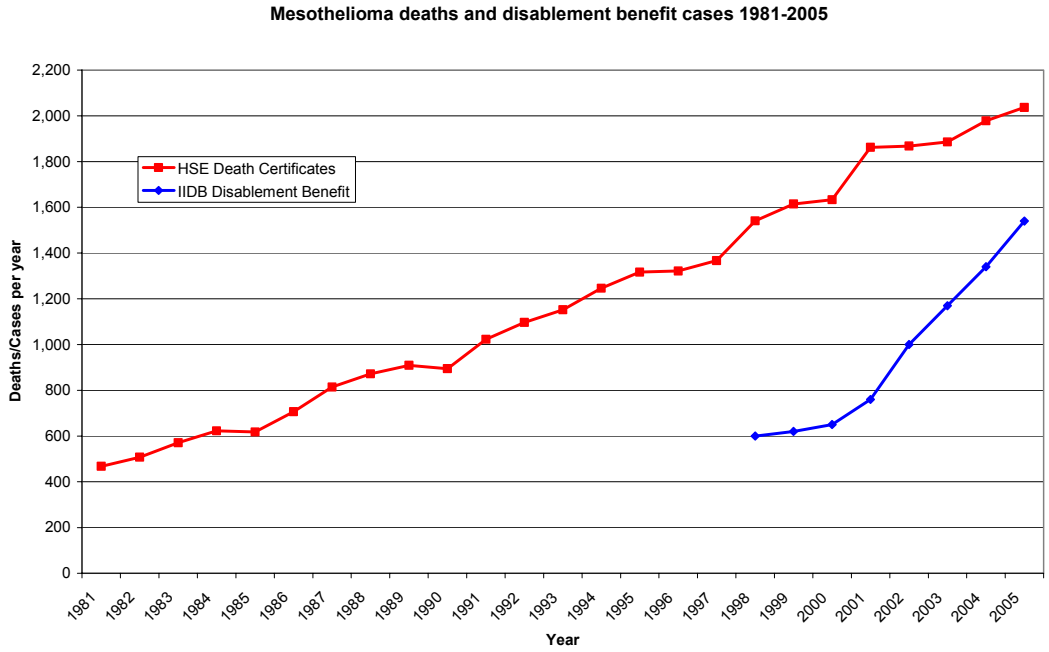
The Industrial Injuries Disablement Benefit is explained fully in section 4.7. It is paid by the Department for Work and Pensions (DWP) and is available to people who are disabled because of an industrial accident or prescribed industrial disease. Mesothelioma is one such prescribed industrial disease and the DWP provide information on claim numbers.

Broadly, any mesothelioma sufferer who has been employed at some stage is entitled to the benefit and any individual making a claim against a former employer will almost certainly be directed to this benefit by their solicitor.

A key advantage of this data is that each claimant will appear only once (unlike our survey data where multiple claims arise in respect of each sufferer). In addition, the fact that the benefit is available to almost all sufferers means that we can compare IIDB claimants to HSE death statistics to give an indication of the proportion of sufferers claiming benefits in respect of their illness. It should be noted that where mesothelioma is diagnosed after death then that individual will not have had the opportunity to claim the IIDB benefit. This means that dividing the number of IIDB claims by the number of mesothelioma deaths will result in a ratio which is lower than the true underlying propensity to claim the IIDB benefit. It also means that some of the increase in claims observed may be due to the increase in the proportion of mesothelioma cases diagnosed before death.

The following chart compares data from the IIDB and the HSE by year of claim / death. The unfortunately low life expectancy of mesothelioma sufferers means that the two data sets are broadly comparable by year.

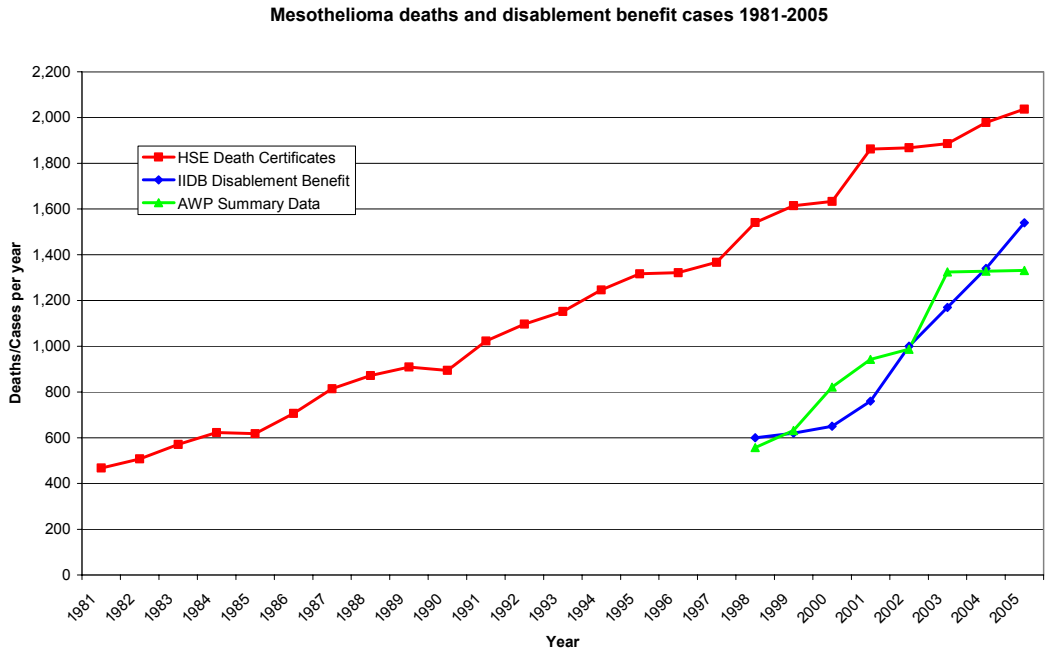
Figure 23 : Mesothelioma deaths and disablement benefit cases 1981 – 2005



As we can see, the number of people claiming IIDB compared to the number of deaths has increased over recent years. This suggests an increasing propensity to claim the benefit entitlement. However, as noted above, where mesothelioma is not diagnosed until after death then that individual will not have had the opportunity to claim the IIDB benefit. Therefore, part of this narrowing of the gap could be due to an increase in the proportion of mesothelioma cases diagnosed prior to death.

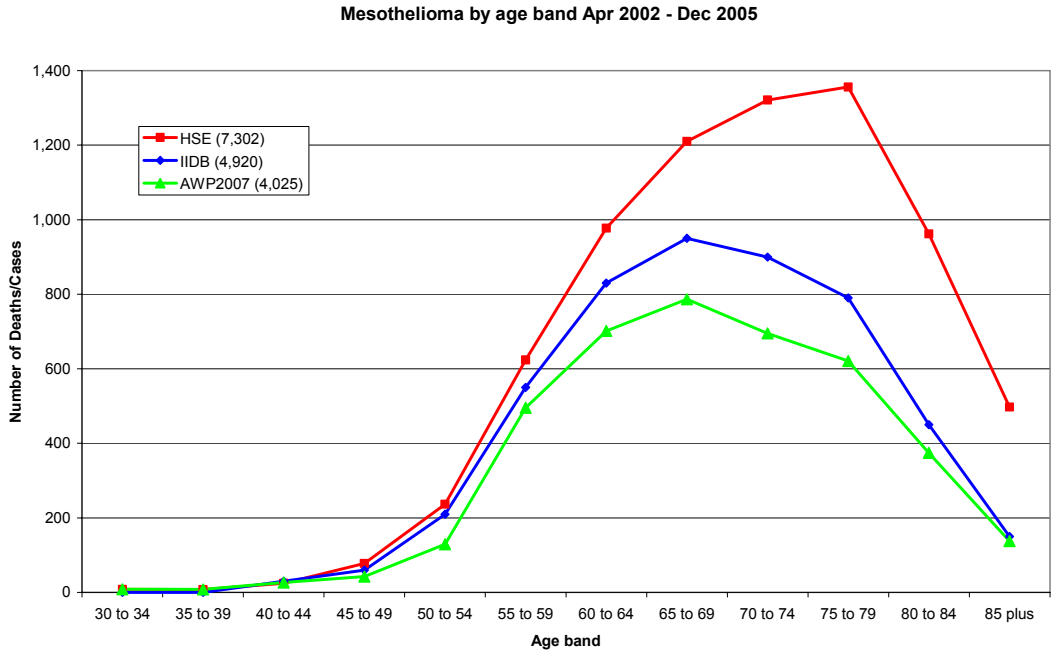
The following chart repeats that above but superimposes the claim notifications from our survey data. The survey data includes duplicate claims which we are unable to identify. Each IIDB claim will be from separate individuals. Despite this, the two claim sets are similar in scale so no rescaling has been required in order to compare their trends. There is a great deal of similarity between the trends of insurance and IIDB claim numbers.

Figure 24 : Mesothelioma deaths, IIDB and AWP survey data claims 1981 – 2005



Plotting these same three statistics by age band gives an idea of how the propensity to claim benefit changes with age. The chart below shows, by age band, HSE deaths, IIDB claims and survey data on insurance claims during the period April 2002 to December 2005.

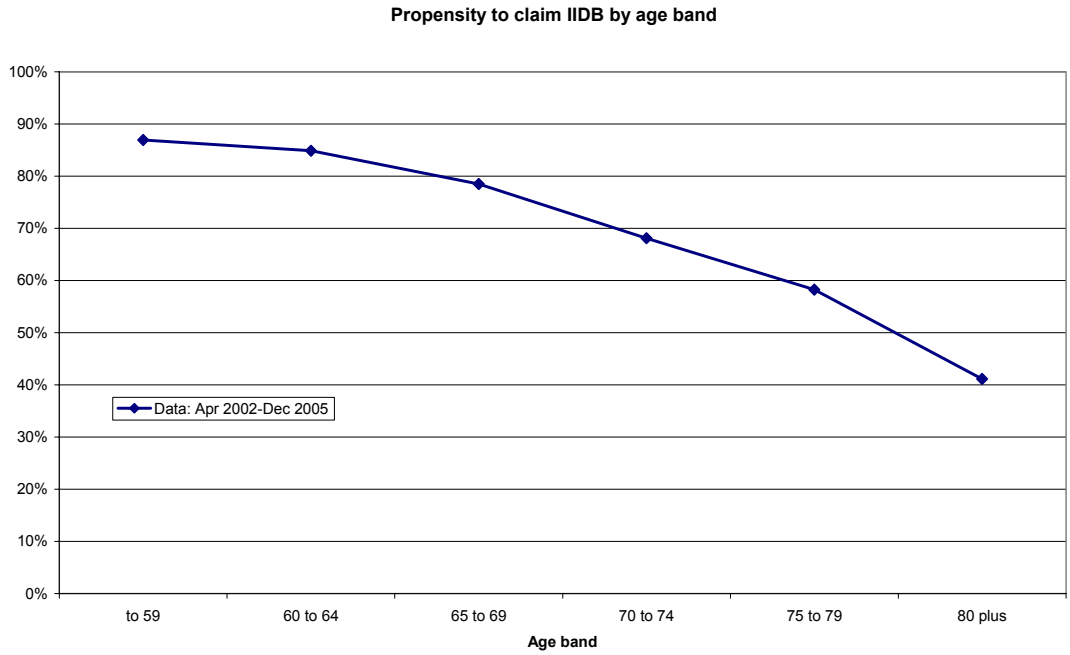
Figure 25 : Mesothelioma by age band Apr 2002 – Dec 2005



As we move through the age bands we see the gap between the IIDB claims and the HSE deaths increase suggesting that older sufferers are less likely to claim benefit entitlement. The proportion of IIDB claims to HSE deaths is shown in the following chart.

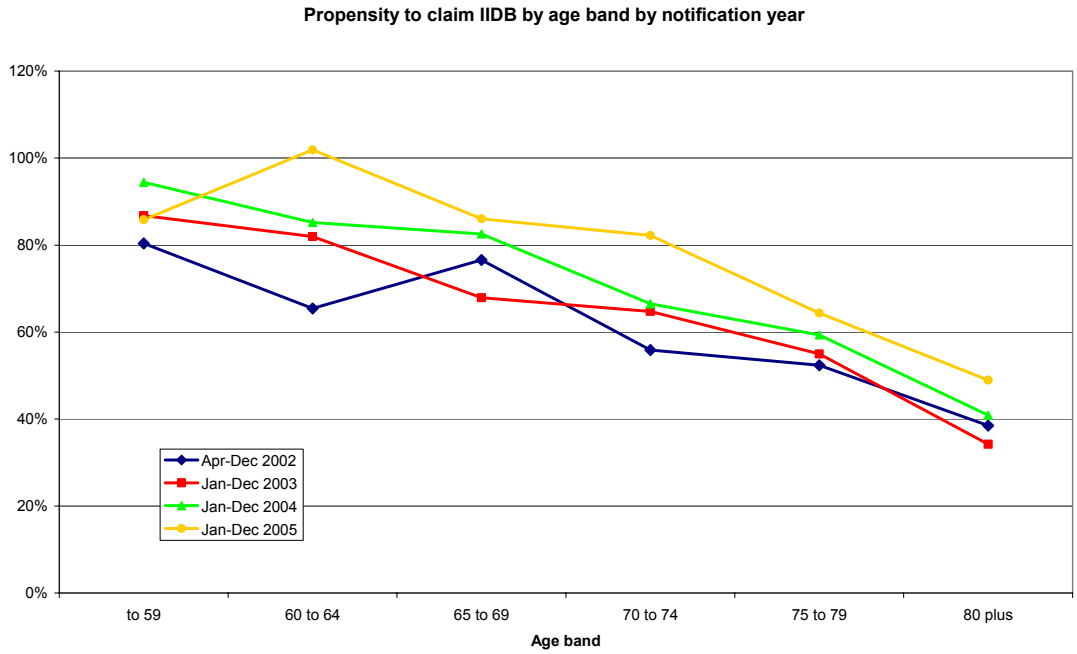
Almost 90% of sufferers under the age of 60 claim IIDB, whereas only around 40% of sufferers over the age of 80 claim the benefit.

Figure 26 : Propensity to claim IIDB by age band



The following chart again considers the propensity to claim but shows it separately by each calendar year from 2002 to 2005. Broadly we see the propensity to claim the benefit increasing over time in each age band.

Figure 27 : Propensity to claim IIDB by age band and notification year



One of the problems with the IIDB analysis is that it will include claimants that do not actually make an insurance claim. It will also include claims not related to non insurance market e.g. Government claims. An alternative source of data that does not have these drawbacks has been obtained from the Compensation Recovery Unit (CRU). This data has also been analysed and this analysis is discussed below.

5.4.2. Compensation Recovery Unit (CRU)

Section 4.6.3 outlines the background of the Compensation Recovery Unit (CRU). The data obtained from the CRU supports claimant level analysis. The analysis identifies those mesothelioma claimants in the following categories:

- Those that do not obtain any compensation.
- Those claimants that relate to the Government.
- Those claimants that therefore relate to the insurance industry.

We have been able to cross-reference the data to that collected in our market survey, and this has given us confidence in our assumption as to the percentage of the insurance market (in terms of asbestos-related liabilities) covered by our survey.

The data received from the CRU was both on a claimant (one record for each claimant) and a claim (many records for one claimant) basis. Our analysis has been performed with the claimant level data and enables the number of claims per claimant to be investigated, as well as the percent of claims covered by the survey data and the change in claims to death by age band.

A summary of the overall data is given in the following table.

Table 15 : CRU numbers of claimants

Number of Claimants	Financial Year (April – March)						
Claim Status	**2002 – 2003**	**2003 – 2004**	**2004 - 2005**	**2005 - 2006**	**2006 - 2007**	**2007 - 2008**	**Total**
Claim is not yet settled	13	42	112	206	529	1,018	1,920
Claim is settled	587	732	715	764	716	353	3,867
Claim is withdrawn / unsuccessful	73	71	80	89	67	23	403
Total	**673**	**845**	**907**	**1,059**	**1,312**	**1,394**	**6,190**

Firstly, from this data we can determine a withdrawal rate as follows:

	2002 - 2003	**2003 - 2004**	**2004 – 2005**	**2005 - 2006**	**2006 - 2007**	**2007 - 2008**
Withdrawal Rate	10.8%	8.4%	8.8%	8.4%	5.1%	1.6%

Not all of the claims have fully settled yet, however, the 2002-2003 and 2003-2004 years are nearly complete. From this data we have estimated an ultimate withdrawal rate of 9.25%, based on an average of the nearly complete years.

Claims withdraw for a number of reasons:

- The claimant dies and has no relatives to continue the claim, or the relatives no longer want to pursue the claim.
- The claimant is unsuccessful at making the claim, e.g. the employer / insurer the claim is originally made against is not found liable for the claim.
- Misdiagnosis - the original diagnosis was mesothelioma, but the actual disease the compensation was paid for was a different disease (e.g. lung cancer).

The claimants in the CRU data will relate to compensation paid by both the insurance industry and the Government. We want to estimate the proportion of claimants that relate to only the insurance industry.

The CRU has supplied a breakdown of claimants that relate only to Government related compensators e.g. Ministry of Defence, DTI, Transport, local authorities. From this data it appears that around 20% of claimants relate to the Government, though the actual % could lie in the range of 15% to 25%. Further work needs to be done with the CRU to get a more precise percentage and to make sure that the definition of "Government" is consistent with the data collected by the working party.

The withdrawal rate and the percentage relating to the Government can be applied to the above data to derive an estimate of the number of claimants that relate to the insurance industry. This is shown in the table below:

Table 16 : Insurance market related numbers of claimants excluding withdrawn claims

Financial Year	2002 - 2003	2003 - 2004	2004 - 2005	2005 – 2006	2006 - 2007	2007 – 2008
Total Claimants excluding Withdrawn and Government	480	613	658	769	953	1,012

This data is based on a government financial year (April to March), whereas our survey data is on a calendar year. The data has been converted into a calendar year basis by using a 70% / 30% split (this was chosen rather than a 75% / 25% split as it was noted that the claims have been increasing and it is thought that a larger proportion would fall into the period Jan-Mar).

Table 17 : Calendar year insurance market claimants excluding withdrawn claims

Calendar Year	2003	2004	2005	2006	2007
Total Claimants excluding withdrawn and Government	573	645	736	897	994

The claimant calendar year data can then be compared to the survey mesothelioma claims data, excluding nil claims. The latter will need to be adjusted to gross-up to the whole insurance market. Based on the number of participants in the survey, and the estimate made by the 2004 working party, we continue to believe that the survey respondents represent around 80% of the insurance market. The main insurers with asbestos exposure are included in the survey, but there are a number of smaller insurers and captives that have not participated. An 80% estimate does not seem unreasonable. This assumption can be tested to an extent using this data. It has been discussed elsewhere, and also measured and commented on in the 2004 working party paper, that the claims to claimant ratio is around 2.0. Using an 80% coverage assumption, the total mesothelioma claims excluding nil claims by calendar year, and claims to claimant ratio is estimated as follows:

Table 18 : CRU Claims per claimant ratio

Calendar Year	2003	2004	2005	2006	2007	Total
Total Claimants excluding withdrawn and Government	573	645	736	897	994	3,846
Total Mesothelioma Insurance Claims excluding Nil	1,383	1,387	1,390	1,702	2,071	7,933
Claims to Claimant Ratio	2.4	2.2	1.9	1.9	2.1	2.1

The analysis corroborates the 2.0 claims to claimant ratio. If the survey only covers 70% of the market then the total claims to claimant ratio would be 2.4, and if a 90% figure is used then the total claims to claimant ratio would be 1.8. The assumption of 2.0 is therefore also consistent with 80% coverage.

A breakdown of the claimant data into age group has also been provided by the CRU. This is useful as it will enable us to calculate the claims to deaths ratio by age band. The breakdown by calendar year and age group using the assumptions outlined above, and assuming that these are consistent across age groups gives the following age group breakdown by age band:

Table 19 : Insurance industry claimants by calendar year

Insurance Industry Claimants	Calendar Year				
Age Group	**2003**	**2004**	**2005**	**2006**	**2007**
<45	5	5	2	2	4
45-54	29	22	29	35	35
55-59	72	64	70	80	74
60-64	94	114	120	131	147
65-69	108	124	142	176	193
70-74	103	124	140	171	181
75-79	95	108	121	146	181
80-84	47	60	79	108	115
85+	20	23	32	48	65
Total	**573**	**645**	**736**	**897**	**994**

This can then be compared to the actual (for 2003-2005) / projected (for 2006-2007) male deaths by age group over the same period:

Table 20 : Mesothelioma deaths by age group and calendar year

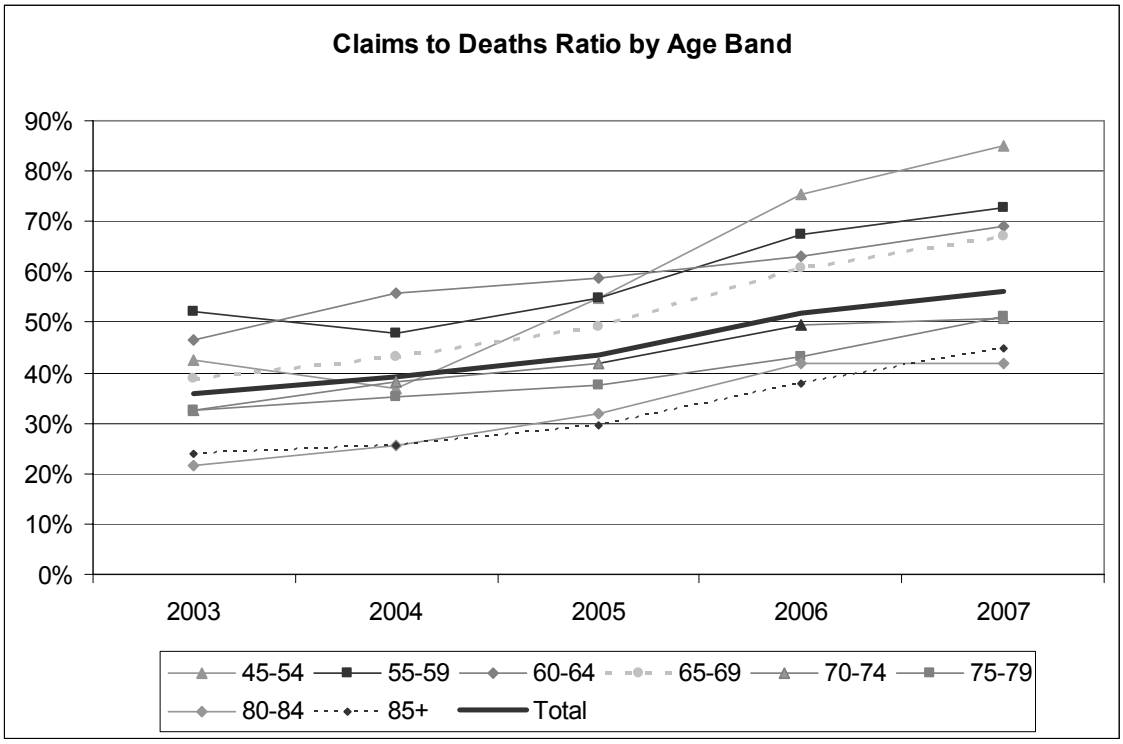
Male Mesothelioma Deaths	Calendar Year				
Age Group	**2003**	**2004**	**2005**	**2006**	**2007**
<45	7	6	5	5	4
45-54	69	60	53	46	41
55-59	138	134	127	118	102
60-64	202	203	204	207	213
65-69	279	286	290	289	287
70-74	316	326	336	346	356
75-79	293	308	323	339	354
80-84	215	236	247	259	273
85+	84	91	109	127	145
Total	**1,603**	**1,651**	**1,695**	**1,737**	**1,774**

Combining the above two tables gives the following claimants to deaths ratio by age group and calendar year:

Table 21 : Claimants per death ratio by age and calendar year

Claimants to Deaths Ratio	Calendar Year				
Age Group	**2003**	**2004**	**2005**	**2006**	**2007**
<45	72%	84%	34%	48%	109%
45-54	43%	37%	55%	76%	85%
55-59	52%	48%	55%	67%	73%
60-64	47%	56%	59%	63%	69%
65-69	39%	43%	49%	61%	67%
70-74	33%	38%	42%	49%	51%
75-79	33%	35%	38%	43%	51%
80-84	22%	26%	32%	42%	42%
85+	24%	26%	30%	38%	45%
Total	**36%**	**39%**	**43%**	**52%**	**56%**

Figure 28 : Claimants per death ratio by age and calendar year



This shows the trend that the claimants to deaths ratio has increased, particularly over the last three years. It also shows that the ratio varies by age group, with a lower ratio for the older ages. This is consistent with the picture from the DWP data. Given that it is based purely on insurance industry claimants, it is considered the most relevant data to use. Thoughts on how to use this data within a future projection of mesothelioma insurance claims are provided in Section 6.

The following should be noted about the above analysis:

- There is an assumption that the withdrawal rate is the same across age group. This is unlikely to be the case. It could be argued that the older the claimant is the more likely that they are to withdraw their claim.
- The claims data will include both male and female claimants, whereas the deaths are only male. However, from the detailed data we collected, female claimants represent less than 5% of the total.
- The deaths will relate to just Great Britain, the claims can include claims from Northern Ireland.
- There is not a direct correspondence in the numerator and denominator as a mesothelioma death will not necessarily be a claim in the year of death, therefore there will be distortions in the ratio where data is sparse e.g. at the young ages. However it is believed that the correspondence is reasonable to give a good indication of the trends.

A further check on the data would be to look at how the claims to claimant ratio changes by age band. It is believed that this ratio should be the same across age bands. The estimate would be distorted by age band in this analysis if the withdrawal rate was markedly different by age. For example, if the withdrawal rate was actually higher for older ages, then the number of claimants (excluding withdrawals) in the higher age groups would be over estimated. The (lower) actual number of claimants would give rise to a lower level of insurance claims and hence the claimant to claims ratio would be over-estimated.

Using the survey data, the total insurance notifications excluding nil claims can be broken down by age group and calendar year as follows:

Table 22 : Insurance notifications by age and calendar year

Insurance Mesothelioma Claims (excluding nil claims)	Calendar Year				
Age Group	**2003**	**2004**	**2005**	**2006**	**2007**
<45	6	22	12	10	4
45-54	68	50	52	74	73
55-59	184	135	154	152	167
60-64	244	252	208	274	302
65-69	264	270	281	348	457
70-74	257	261	215	312	514
75-79	196	218	239	258	273
80-84	121	139	152	197	236
85+	43	39	75	76	45
Total	**1,383**	**1,387**	**1,390**	**1,702**	**2,071**

This then gives the following claims to claimant ratio by age band and calendar year:

Table 23 : Claims per claimant ratio by age and calendar year

Claimant to Claims Ratio	Calendar Year				
Age Group	**2003**	**2004**	**2005**	**2006**	**2007**
<45	1.29	4.43	6.74	4.62	0.92
45-54	2.31	2.24	1.82	2.13	2.12
55-59	2.55	2.11	2.21	1.91	2.26
60-64	2.60	2.21	1.73	2.09	2.06
65-69	2.45	2.18	1.98	1.98	2.37
70-74	2.50	2.10	1.53	1.82	2.84
75-79	2.06	2.02	1.97	1.76	1.51
80-84	2.59	2.31	1.93	1.82	2.06
85+	2.14	1.66	2.33	1.58	0.69
Total	**2.41**	**2.15**	**1.89**	**1.90**	**2.08**

It is comforting that the ratio does not vary that much by age group.

5.4.3. Comparison between CRU data and IIDB data

This section brings together the two external data sources discussed above and compares them at the claimant level to investigate changes in the ratio of CRU to IIDB claimants over time and for different age groups.

The data received from the CRU was both on a claimant (one record for each claimant) and a claims (many records for one claimant) basis. The data received from the DWP was at a claimant only level. Both data sets are in respect of claimants claiming benefits for mesothelioma only.

A summary of the overall data is as follows:

Table 24 : CRU / IIDB comparison

	Calendar Year			
	2003	**2004**	**2005**	**2006**
CRU total claimants excluding withdrawn and Government	573	645	736	897
CRU total claimants excluding withdrawn	717	806	920	1,122
IIDB total claimants	1,170	1,350	1,540	1,460
Ratio CRU to IIDB	61%	60%	60%	77%

There are more IIDB claimants than CRU claimants. It is possible for a mesothelioma sufferer to claim IIDB benefit but not claim against the employer that exposed the mesothelioma sufferer. A possible reason for this is that the IIDB benefit is a ‘no fault’ benefit and the claimant only needs to prove that he has mesothelioma and was not self-employed at the time of the accident or the onset of the disease. It may indicate, however, that there is still scope for more mesothelioma sufferers to consider seeking compensation from their employer.

It is possible for a CRU claimant not to have claimed IIDB benefit if one of the other social security benefits is being reclaimed or costs incurred by NHS hospitals.

Over the three calendar years 2003 to 2005 the ratio of CRU claimants to IIDB claimants was fairly stable at around 60%. In the 2006 calendar year the number of CRU claimants has continued to increase but the number of IIBD claimants has decreased for the first time resulting in a substantial increase in the ratio of CRU to IIDB claimants.

The fall in IIDB claimants in 2006 warrants further investigation as this goes against the trend in mesothelioma deaths.

A breakdown of the claimant data into age band has also been given by the CRU and the DWP.

The CRU breakdown by calendar year by age group using assumptions consistent with section 5.3.4 gives the following age group breakdown by age band:

Table 25 : CRU Claimants

CRU Insurance & Government Claimants	Calendar Year			
Age Group	**2003**	**2004**	**2005**	**2006**
<45	3	6	2	3
45-54	38	29	33	42
55-59	86	77	86	103
60-64	122	145	152	165
65-69	134	157	179	217
70-74	131	158	176	213
75-79	121	131	153	183
80-84	57	74	99	137
85+	25	30	38	58
Total	**717**	**806**	**920**	**1,122**

This can be compared to the IIDB data by calendar year and age:

Table 26 : IIDB Claimants

IIDB Claimants	Calendar Year			
Age Group	**2003**	**2004**	**2005**	**2006**
<45	10	10	10	0
45-54	70	70	70	70
55-59	150	140	150	140
60-64	200	230	270	220
65-69	220	270	290	320
70-74	200	240	300	260
75-79	200	220	240	240
80-84	100	140	150	150
85+	30	30	60	50
Total	**1,180**	**1,350**	**1,540**	**1,450**

Note that the IIDB data can only be provided rounded to the nearest 10 claimants so the data may show small reconciliation differences.

Combining the above two tables gives the following CRU claimant to IIDB claimant ratio by age group:

Table 27 : CRU to IIDB claimants ratio

CRU to IIDB Claimants	Calendar Year			
Age Group	**2003**	**2004**	**2005**	**2006**
<54	52%	43%	45%	64%
55-59	58%	55%	57%	73%
60-64	61%	63%	56%	75%
65-69	61%	58%	62%	68%
70-74	66%	66%	59%	82%
75-79	61%	60%	64%	76%
80+	63%	61%	65%	98%
Total	61%	60%	60%	77%

The ratio of CRU claimants to IIDB claimants by age band is fairly stable but may indicate that there are slightly fewer CRU claimants compared to IIDB claimants at the youngest ages.

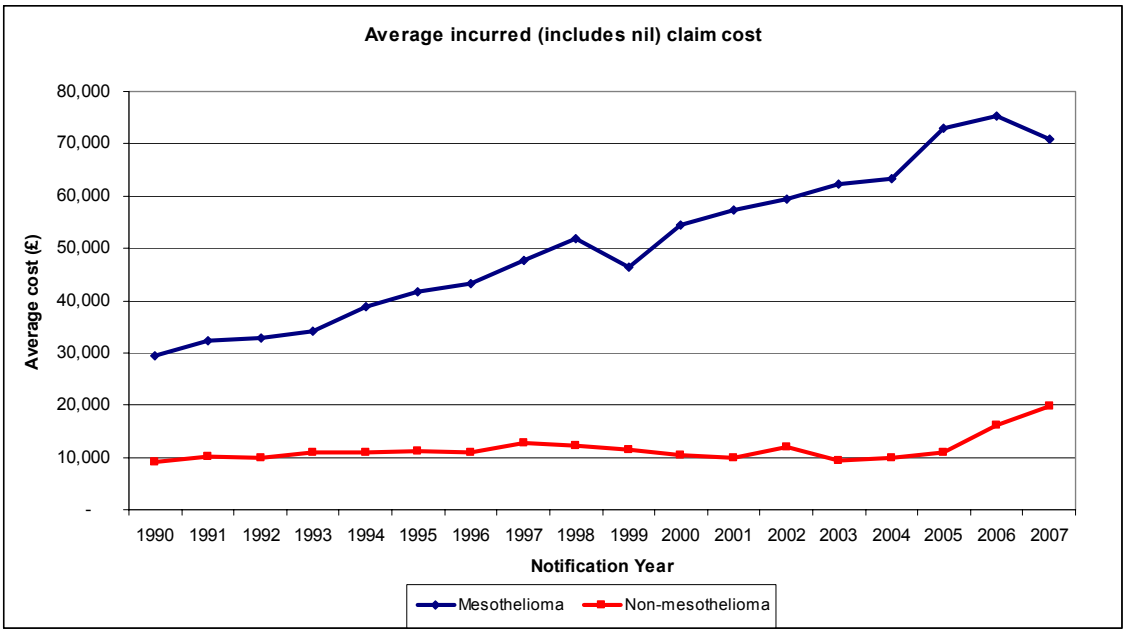
5.5. Survey Data Trends

This section highlights further findings from the survey data collated both at a summary and per claim level for mesothelioma.

5.5.1. Summary Survey - Average Cost Per Claim Trend

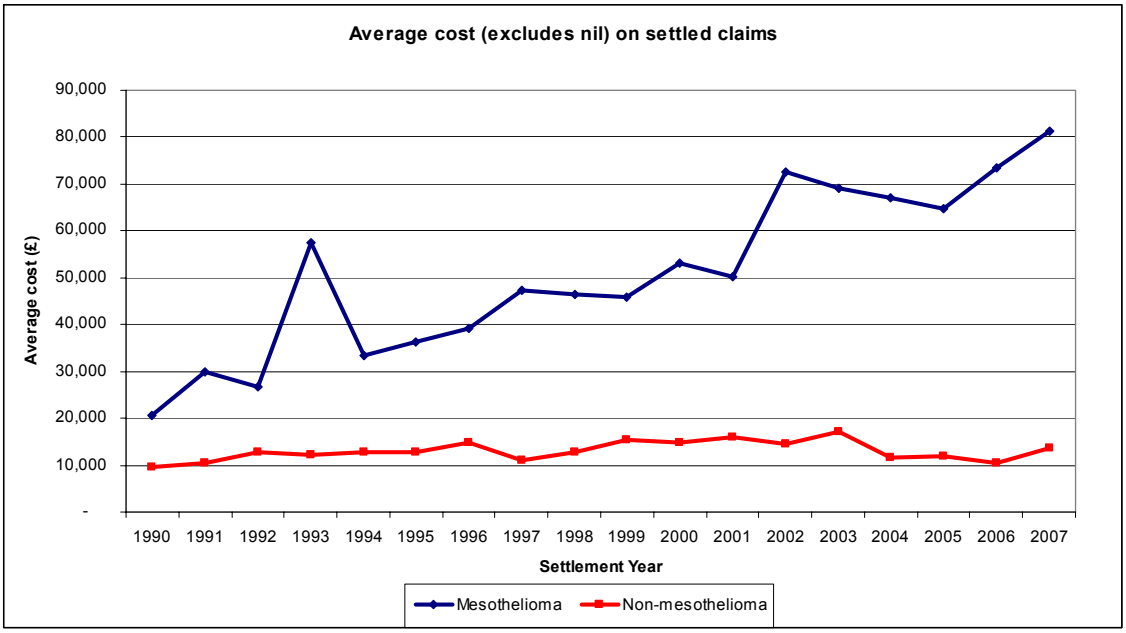
Section 5.2 above included trends in average costs on settled claims. The graph below shows the trend in the average incurred cost of claims by notification year. The survey participants' recording of claim data is more reliable and consistent for notifications from 2003 (mesothelioma) and 2004 (non-mesothelioma) onwards. Average mesothelioma incurred amounts have increased from £57.3k in 2000 to £73.5k in 2007, equivalent to an annual increase of around 3.6%.

Figure 29 : Average incurred claim cost (includes nil)



The graph below shows the trend in the average cost of settled claims (excluding nil) by settlement year. Average mesothelioma settlements have increased from £53.2k in 2000 to £81.3k in 2007, equivalent to an annual increase of around 6.2%.

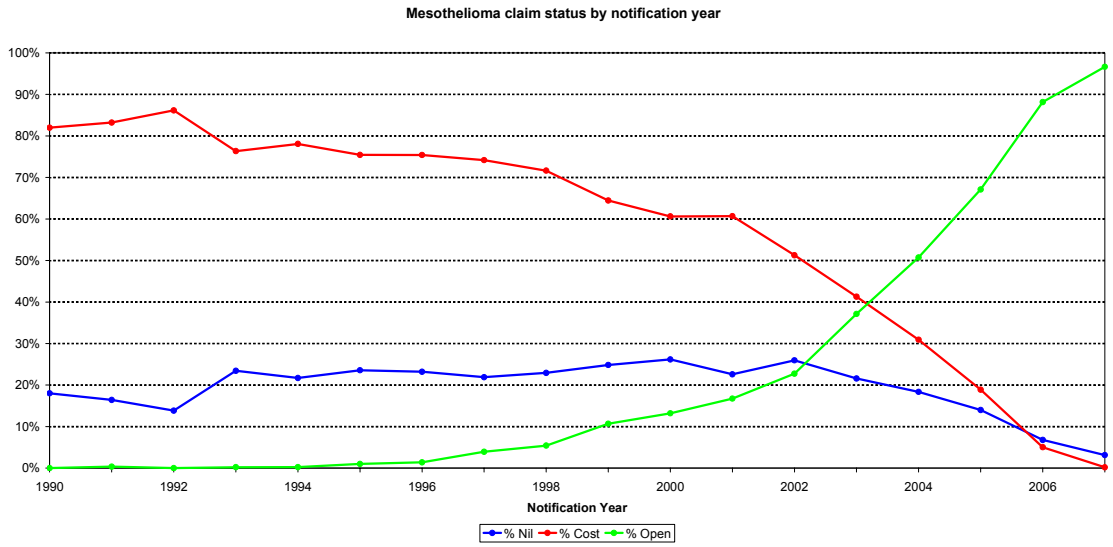
Figure 30 : Average cost of settled claim (excludes nil)



5.5.2. Summary Survey - Settlement pattern

The chart below shows the claims status of mesothelioma claims for each notification year in our recent summary survey data. The proportion settled at no cost remains fairly stable at around 20-30% and as expected these claims are settling earlier on average than those settled at cost.

Figure 31 : Mesothelioma claim status by notification year

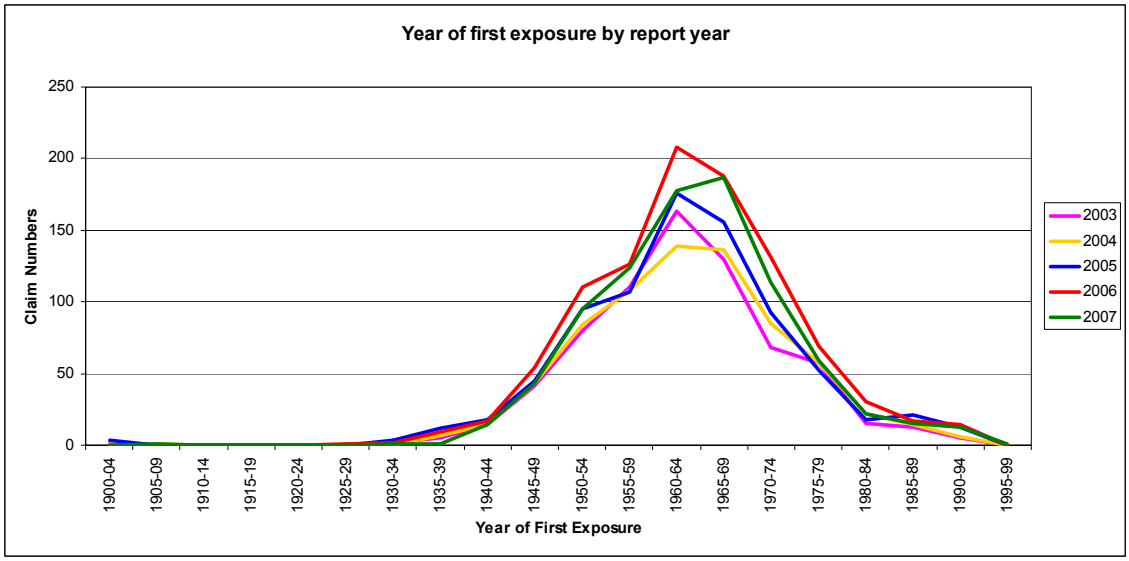


5.5.3. Per Claim Survey Data Highlights

As part of the per claim mesothelioma data collection we obtained information on the date of the first exposure and the age of mesothelioma claimants. Graphs displaying this data are shown below. Also below is a table providing the proportion of claims by trade and a table displaying the number of new claims by trade. Further information collected as part of the per claim mesothelioma survey can be found in Appendix F.

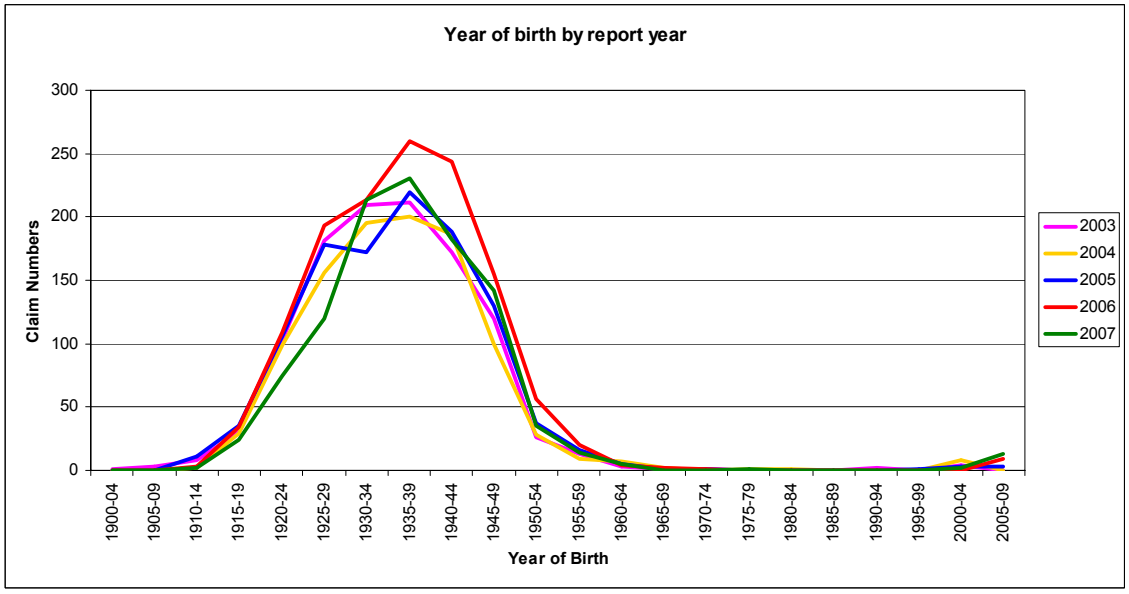
The graph below shows the year of first exposure of each claimant split by the year in which the claim is reported. This shows the peak exposure years for claims are currently from 1960-1969, with significant numbers from 1945-1959 and 1970-1979. Over time, the proportion of claims from earlier periods is dropping and the proportion from 1970 onwards increasing.

Figure 32 : Year of first exposure by report year



The graph below shows the date of birth of each claimant split by the year in which the claim is reported.

Figure 33 : Year of birth by report year



The table below shows how incurred mesothelioma claim amounts are split between trades. This is shown separately for each notification year from 2003 to 2007 and in total for these 5 years combined. The trade codes used are summary codes and the full mapping used can be found in Appendix D.

Table 28 : Claim Notifications by Trade Type

	Trade Code											
Year reported	Carpenter	Construction	Electrician	Fitter	Maintenance	Manufacturing	Marine	Miscellaneous	Plumbing	Transport	(blank)	Grand Total
2003	2%	11%	6%	1%	6%	17%	21%	17%	1%	3%	15%	100%
2004	1%	9%	5%	1%	5%	17%	17%	24%	1%	2%	17%	100%
2005	2%	11%	5%	2%	5%	19%	16%	20%	2%	2%	17%	100%
2006	2%	15%	4%	1%	6%	17%	14%	20%	1%	4%	17%	100%
2007	1%	13%	5%	1%	4%	18%	14%	19%	1%	3%	20%	100%
Grand Total	2%	12%	5%	1%	5%	18%	16%	20%	1%	3%	17%	100%

We also collected data showing the percentage of claims that arose from new insureds each year. This is shown in the table below and we see that for most reporting years new insureds account for around 30% of the claims made by number. This varies materially by trade with Marine occupations, for example, seeing far fewer new insureds.

Table 29 : The percentage of claims arising from new insureds by trade and reporting year

Report year	Miscellaneous	Manufacturing	Marine	Blank	Construction	Maintenance
2004	30.6%	39.7%	6.3%	42.1%	27.6%	41.7%
2005	30.7%	38.7%	9.7%	39.6%	31.5%	39.3%
2006	33.4%	25.7%	5.7%	35.4%	30.0%	50.0%
2007	31.9%	31.5%	2.4%	46.3%	26.7%	47.7%

Report year	Electrician	Transport	Fitter	Carpenter	Plumbing	Grand Total
2004	38.7%	36.4%	50.0%	38.5%	53.3%	**30.9%**
2005	38.5%	17.4%	46.2%	54.5%	55.0%	**32.1%**
2006	40.0%	20.4%	13.0%	44.0%	52.2%	**29.3%**
2007	28.1%	20.5%	33.3%	27.8%	33.3%	**30.9%**

Appendix F includes further analyses on the mesothelioma per claim data including:

- Proportion of claim amounts by report year and trade
- Number of claims by year if first exposure and report year
- Average age of claimant at date of notification by trade

6. Things to Consider

6.1. Introduction

As discussed in the summary the working party is unable to meet its main objective of updating the estimate made in 2004 of the future liabilities to the UK insurance industry in relation to UK asbestos-related claims at this point in time.

Rather than undertake independent epidemiological research, the original 2004 paper took as its foundation the HSE study “The expected burden of mesothelioma mortality in Great Britain from 2002 to 2050” (2005). It built onto this estimates of the relationship between mesothelioma deaths and insurance claims, together with estimates of then current average cost and inflation in future average costs. The intention for the 2008 paper has been the same, to build on up-to-date published estimates of mesothelioma deaths.

However, given that the HSE is currently updating its own model and Professor Julian Peto, who was a joint signatory of the original Lancet study “Continuing increase in mesothelioma mortality in Great Britain” (1995) is also in the process of preparing significant research in the area for publication, the working party considers that publishing updates based on the original models when these studies are expected to be published in the near future could be misleading.

Instead the paper has provided a detailed discussion of the main issues that have an immediate impact on future liabilities in relation to UK asbestos claims. This section asks some of the questions that might be considered in forming a view on asbestos liabilities and summarises the factors involved. References are provided to the sections in which these are discussed at greater length.

6.2. Population Deaths

This section details the uncertainty surrounding the current population projection models and assumptions used for mesothelioma deaths in the UK. The aim of this section is to allow any actuary to understand the relevant uncertainty and the impact this may have on the ultimate cost of mesothelioma claims.

What the HSE is doing

HSE is currently carrying out a project to update projections of future mesothelioma deaths in Great Britain. This work not only involves reconstruction of the current model in a more flexible computer environment in order to allow more efficient fitting to the latest death data and fuller exploration of the model's adequacy, but will explore alternative models based on different assumptions. The work should therefore provide valuable insights into the validity of assumptions underlying these models leading to improved projections and a better understanding of their associated uncertainties and limitations.

A fundamental assumption in the current model is that the effect of successive small increments in exposure is additive: risks at successive time intervals from each small component of an individual's exposure can be summed. However, if the effect of earlier and later exposures is more than additive, for example, the current model will tend to under predict future deaths. One candidate for an alternative model is to express mesothelioma risk in terms of a power of the duration for which fibres are present in the lung.

This work is currently scheduled to be completed by May 2009.

6.2.1. Mesothelioma claim numbers

As discussed in section 2.1, the 2004 working party estimates used the HSE mesothelioma deaths model to project the future number of mesothelioma claims.

The 2003 HSE model is based on the assumption that following a brief exposure to asbestos, mesothelioma risk increases in proportion to a power of time probably in the range 2 to 3 – a relationship that seems to be consistent with data from a number of epidemiological studies – and that this can be applied at the population level by summing the effect of small increments of exposure over time. However, since there is also evidence that asbestos is eventually cleared from the lungs and that mesothelioma risk is unlikely to continue to rise indefinitely with time since exposure, the model also incorporates a term for the lung clearance half life.

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

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

Given that the HSE are still in the process of enhancing and re-calibrating their mesothelioma model for new data, together with the comments made by Professor Peto in his recent presentation, there is a greater than normal amount of uncertainty in respect to the future level of deaths due to mesothelioma. The uncertainty about the model is the short term possibility that the recommended model may change within a year, with a potential implication in respect to recommended reserves. This uncertainty is on top of the ever-present reality that the actual liability from mesothelioma may differ significantly from projections in the longer term.

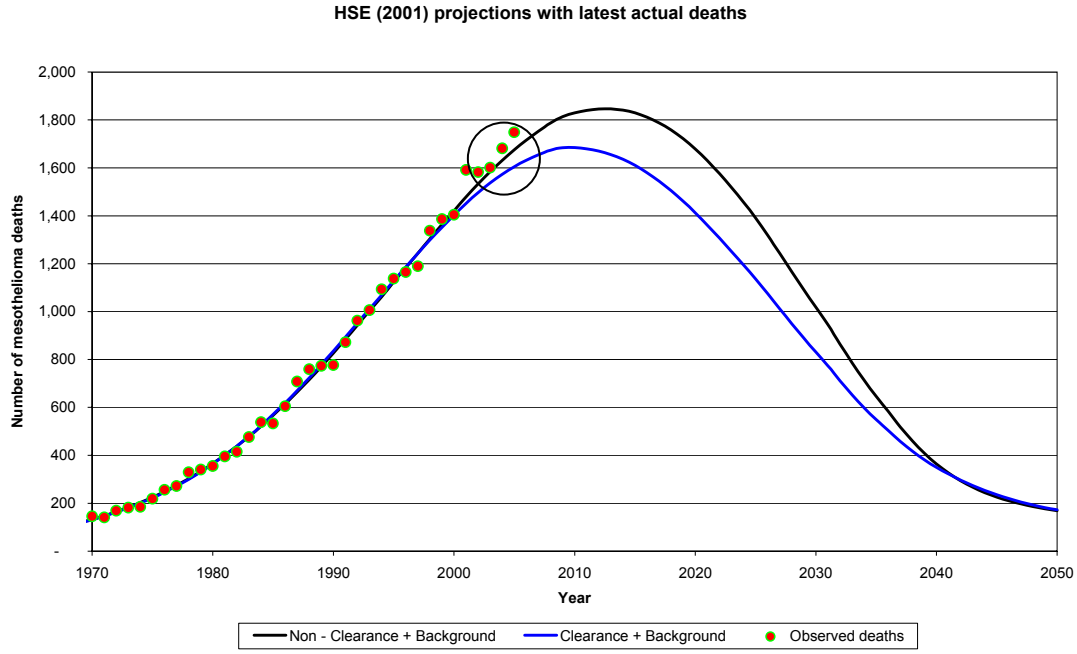
In the absence of a revised model we would anticipate that companies will continue to use the 2003 HSE model, adjusting it for their individual characteristics such as exposure. We would expect actuaries to have an appreciation of and to articulate the potential for the model to over or under project future mesothelioma deaths in particularly in the light of the uncertainties around the model at the current time. We have highlighted, below, some of the key uncertainties that each actuary will need to take into account within their own projections.

Half-life and k

As highlighted in the previous working party paper, one of the key parameters is the power relationship, k, between time since exposure to asbestos and the development of mesothelioma and the half-life, the number of years for asbestos clearance 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 HSE developed two model versions, one assuming (effectively) no clearance of asbestos from the lungs (fixing the half-life to 1,000 years) leading to an estimate of k = 2.6. The other version assumed that asbestos was cleared from the lungs with a half-life of 15 years - a value suggested from the modelling of mortality of the Wittenoom workforce[3] - leading to an estimate of k = 4.1. There was little to choose between these models on the basis of the goodness of fit to observed deaths to 2001. However, the non-clearance model was preferred on the basis that the implied underlying population exposure profile more closely matched empirical data on asbestos imports, and this was used to estimate the future number of mesothelioma deaths. The two results are shown below together with the latest actual mesothelioma deaths in Great Britain.

Figure 34 : HSE 2001 projections against actual deaths to 2005



Although, there is empirical evidence about clearance half-lives of different kinds of asbestos and the power of time since exposure model has been fitted in a variety of studies there is no clear-cut "answer" to exactly what "k" and the half-life should be when applying the HSE model at the population level. However, based on the more recent mesothelioma deaths it would suggest that the clearance model is underestimating the number of deaths. It is important to remember that the HSE have not calibrated their estimates for a half-life and k factor with the more recent mesothelioma deaths (2002 and post), which may change their view of these parameters and hence which model is a better fit.

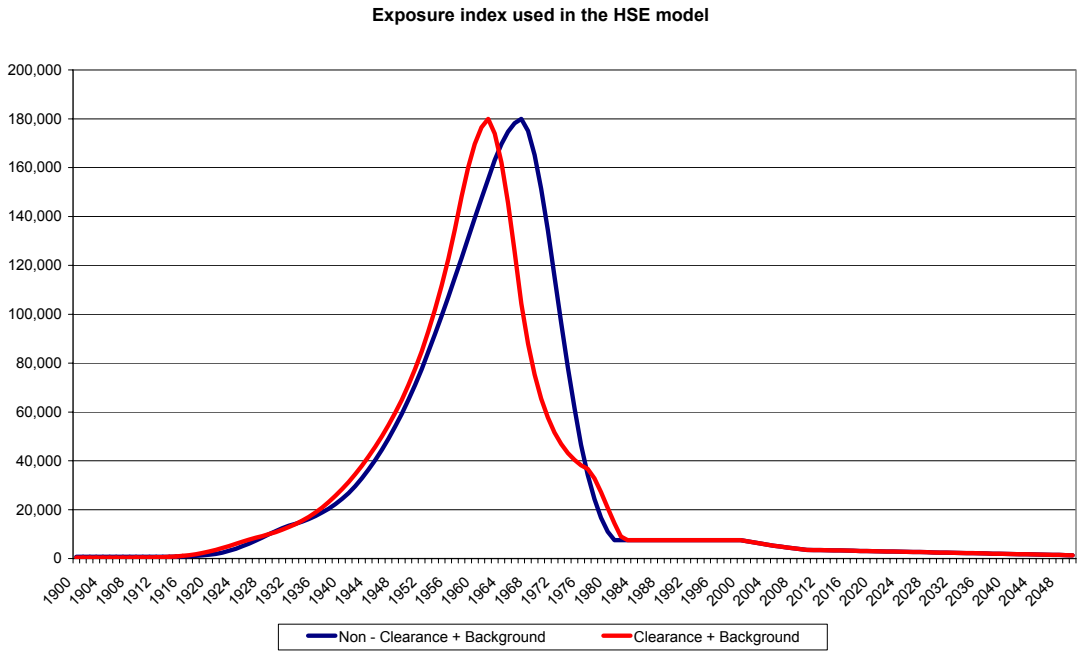
Mortality to 2001 tells us nothing about exposures beyond about 1980 because of latency. Although the timing and level of the peak annual mesothelioma mortality is not sensitive to exposures after this time (given that the model implies that exposures reduced rapidly after the 1960s and that they almost certainly remained much lower since 1980), longer range predictions do depend on more recent exposures. The HSE predictions for deaths to 2050 included an assumed exposure profile post 1980, which is referred to above as "background". This was based on calculations about plausible levels of more recent and future exposures derived for the impact assessment for the Control of Asbestos at Work Regulations (2002). Without these assumed exposure, the future deaths post 2020 would be slightly less.

[3] Prediction of mesothelioma, lung cancer, and asbestosis in former Wittenoom asbestos workers (Berry, 1991)

Exposure

In the HSE model, observed numbers of deaths to 2001 and the assumed relationship for risk in relation to time from each increment of exposure is used to construct the past population exposure profile, via a series of factors defining the relative potential for exposure at different ages. This exposure index 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. The graph below details the two exposure indices used in the clearance and non-clearance versions of the HSE model.

Figure 35 : Exposure index used in the HSE model



Obviously, like "k" and the half-life there is no clear-cut "answer" to exactly what the exposure for Great Britain should be. At an overall level the annual asbestos imports are a good proxy of the exposure to asbestos that the workforce experienced and the HSE's exposure is a good approximation to those imports. However, if the peak of exposure is later or exposure does not fall as fast past the peak as the HSE have estimated, the number of future mesothelioma deaths would increase. The converse is also true.

In addition to this the exposure of the insurance industry may not be the same as that of Great Britain. The insurance industry's exposure to asbestos stems primarily from employers' liability policies. Employers' liability became compulsory in Great Britain in 1972 (1975 in Northern Ireland). Prior to 1972 not all companies that used asbestos may have had employers' liability, which would reduce the total number of mesothelioma claims to the insurance industry. Understandably each insurance company will have different exposure periods and levels depending on when and with whom they underwrote their policies.

There has also been a recent theory of Professor J Peto[4] that brown (amosite) asbestos is the cause of more mesothelioma deaths due to the way it was used. This has been in part based on his work with the HSE looking at the lungs of mesothelioma sufferers, where many were found to contain brown and not blue asbestos fibres.

[4] Asbestos-related cancer deaths – the past, present and future - Melbourne April 22nd 2008

Peto states that brown asbestos was heavily used in construction including asbestos insulation boards. These boards and other brown asbestos products would have been cutup on site, producing more fibres for individuals to breathe in, thereby making brown asbestos more widespread.

Peto compares the exposure and deaths in the UK and US to illustrate his point, stating that US imported blue (crocidilite) asbestos long after UK ceased, whereas the US ceased importing amosite earlier than the UK (and used much less per head of population). The level of mesothelioma deaths in the US has started to level out whereas in the UK deaths have continued to increase (and the US mesothelioma death-rate around age 60 is now one fifth of the UK rate). Based on this assumption Peto has initially estimated that the peak of mesothelioma deaths in the UK is five years later than the current HSE projections and approximately 20% higher.

Note in the above graph the exposure index continues post 1990 at a low level. This may not reflect the insurance industry's exposure to asbestos, particularly in respect of employers' liability policies. The majority of exposure post 1990 will be due to asbestos removal from the work place or from residential buildings. Therefore a large proportion of mesothelioma deaths that result from these exposures may well be considered "background" or environmental and / or would be more likely to attach to Public Liability insurance coverages. It is recommended that consideration is made to the actual exposures relevant to the insurance company concerned and appropriate adjustments are made to the projections if this is considered necessary.

Population

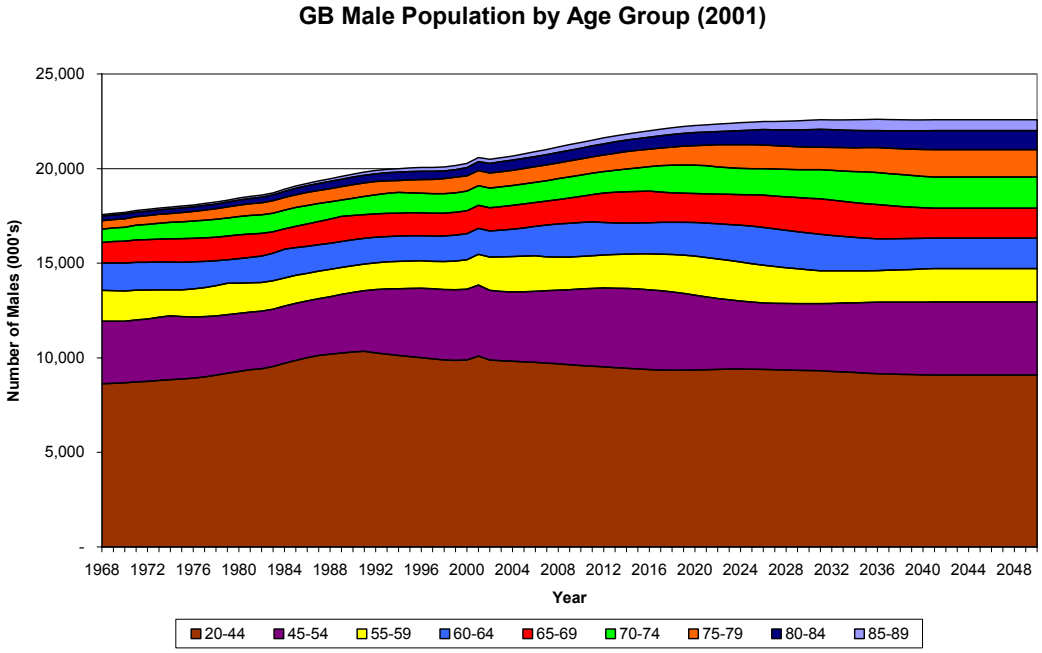
The HSE model uses Great British population estimates to project the number of mesothelioma deaths. There is uncertainty surrounding the following key areas of the population estimates used within the HSE model:

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

Improving longevity

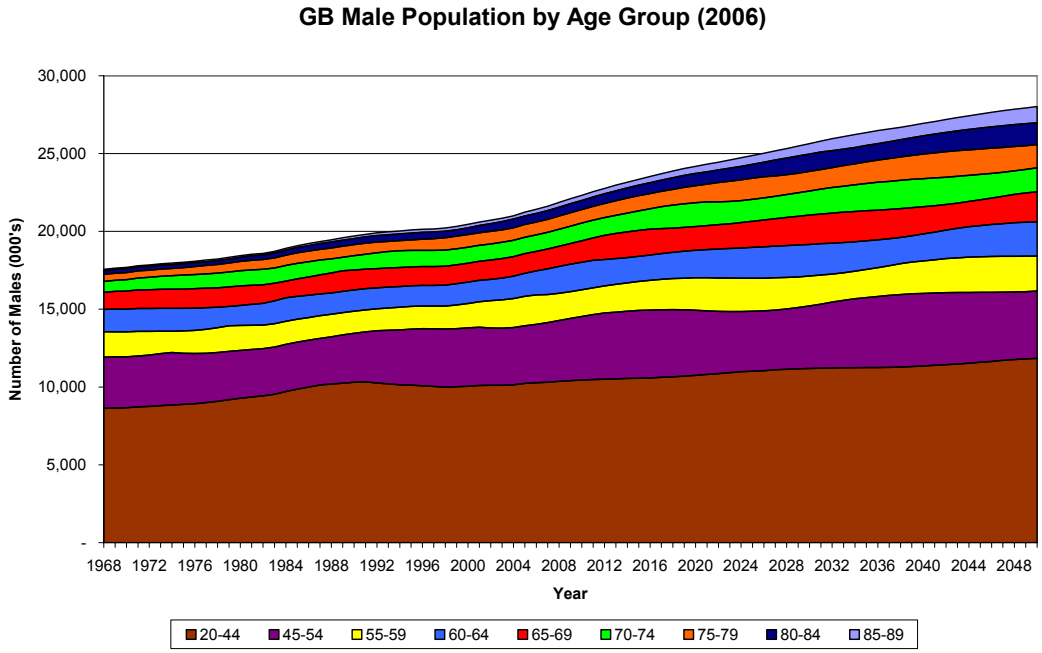
The HSE model was parameterised using the 2001 Great British estimated population statistics for males aged 20 to 89 from 1968 to 2050 provided by the Office for National Statistics. The following graph details the age distribution of the Great British population currently used in the HSE model.

Figure 36 : GB male population by age group (2001)



The Office for National Statistics has revised their population estimates as at mid-2006[5]. These new population estimates, shown below, take into account improving longevity and more recent data on immigration and emigration indicating increased population numbers.

Figure 37 : GB male population by age group (2006)



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

These new estimates which have increased the population in future have an impact on the projected number of deaths. Because the exposure to asbestos assumption within the HSE model dramatically reduces from 1970, the majority of the future mesothelioma deaths estimated by the model occur in the future 70+ age group.

With the new population data the numbers in these age bands have increased on average by 12%, if you used the new population estimates in the model you would have a higher number of future deaths because of the increase in people aged 70+ in the future. It should be noted, however, that the HSE have not yet calibrated the model to the new population estimates and so it is difficult to draw conclusions at this stage.

Immigration and emigration

There is also the effect of immigration and emigration on the population estimate which in turn affects the number of mesothelioma deaths predicted by the model. Immigration could artificially increase the number of mesothelioma deaths predicted by the HSE model as immigration could increase the population in the future at old age ranges. Even if immigrants had been exposed to asbestos outside of Great Britain, they should not be able to make a claim on Great British employers' liability policies. Therefore immigration could artificially overstate the projected number of future claims for Great British employers' liability policies.

Emigration, on the other hand, could artificially decrease the number of mesothelioma deaths predicted by the HSE model as emigrants could have been exposed to asbestos in the past. 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 then make a claim on UK employers' liability policies. Therefore emigration has the potential to artificially decrease the projected number of future claims.

It could be said that the effects of immigration and emigration will cancel each other out, however without understanding the proportions of people exposed to asbestos and the ages of people entering / leaving Great Britain the effects are difficult to quantify.

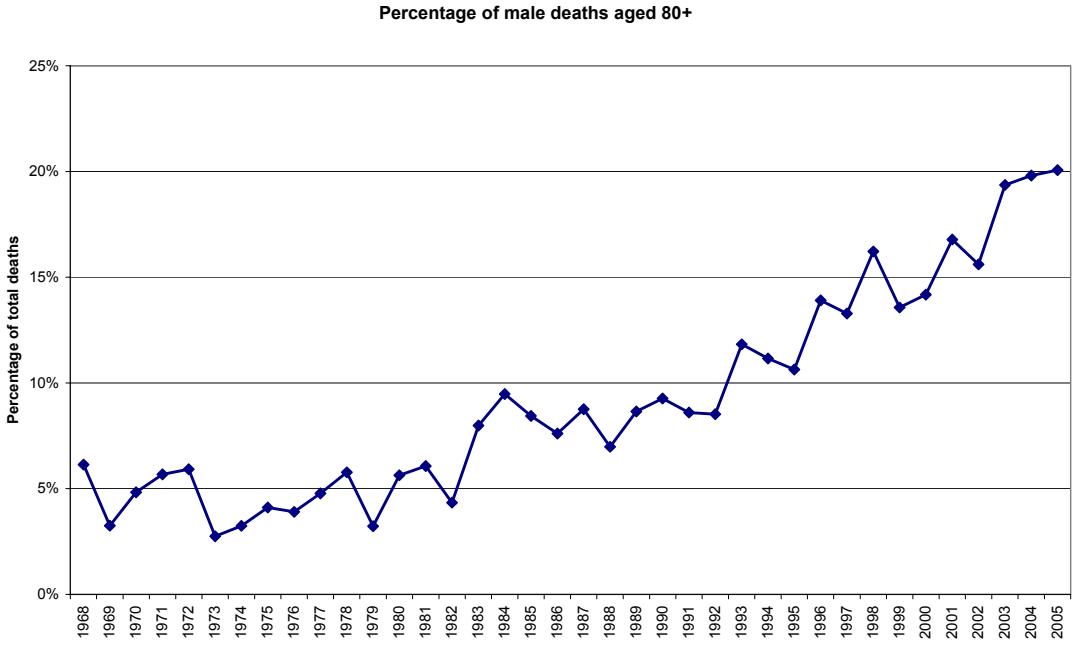
Deaths over the age of 80

As stated previously the HSE 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.

In the future the HSE model predicts that 70% of claims will come from the 80+ age band and the proportion of actual male mesothelioma deaths from the 80+ age band has increased from approximately 9% in 1990 to 20% in 2005, as shown in the graph below. Part of this increase could be due to more accurate recording and diagnosis of mesothelioma in older people as discussed in section 4.3.

It is relevant to note, however, that deaths at these older ages are significantly affected by the clearance rate assumed. That is the rate at which the body expels asbestos fibres that have been inhaled and lodged in the lungs. The 2003 HSE model uses a non-clearance model because it fitted the data better but, if a clearance model is considered more appropriate the deaths predicted at older ages may reduce.

Figure 38 : Percentage of male deaths aged 80+



As stated in the 2004 working party paper, the particular uncertainty over the number of deaths in the 80+ category could work two ways. On the one hand, should k hold for ever 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 claims above the levels predicted by the model. Conversely, if the continuing appropriateness of “k” in the HSE model proves to be an overstatement at older, 80+ ages, the future number of mesothelioma deaths could be far lower than predicted.

As deaths at older ages become an increasingly dominant part of the future projections, the model could become increasingly inaccurate as you go forward. This could be exacerbated if revised population projections imply even larger numbers of people in older age groups than previously assumed.

With the revised population estimates detailing a greater number of people aged 80+, the number of mesothelioma deaths predicted amongst 90+ year olds by the HSE model could be significant if it was adjusted to account for ages over 89. However, insurance claims from 80-89 and 90+ year olds are subject to more uncertainty, given the propensity of individuals at this age to make a claim as discussed in section 5.3.4 and discussed further in the next section.

6.3. Mesothelioma Claims to Deaths Ratio

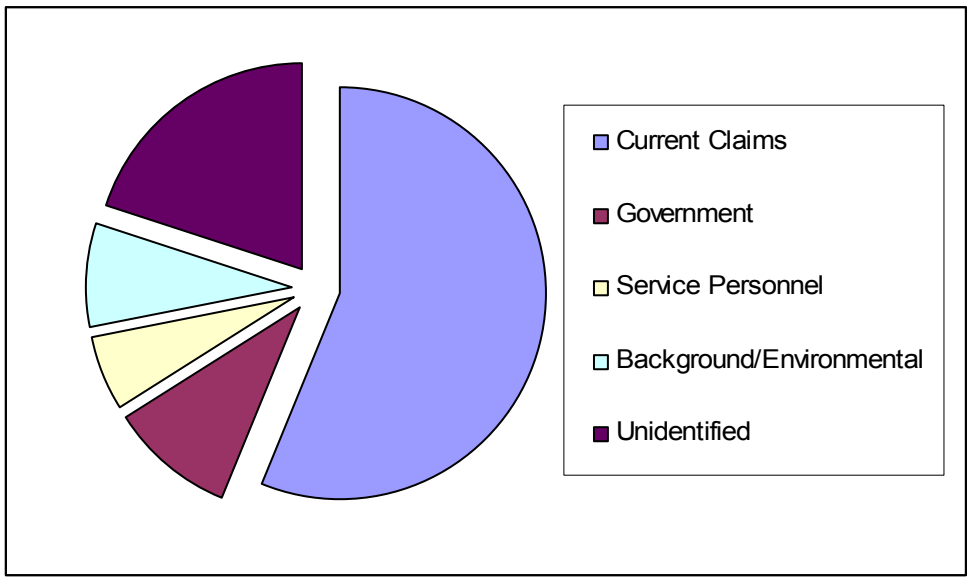
One of the main reasons for the reconstitution of the asbestos working party in 2007 was that the close correspondence between the number of UK mesothelioma deaths and insurance claims as reported in 2004 was, anecdotally, breaking down. The 2007 working party confirmed that the number of claims was increasing faster than the number of deaths and postulated a number of possible reasons for this divergence. These are discussed in section 5.3.3.

Of the five presented, the reason that has gained greatest credibility with the working party is that a higher proportion of mesothelioma sufferers (or their dependents) are making claims. Data that the working party has collected from the CRU and IIDB (set out in section 5.4) makes a powerful argument for this. From the CRU data we have estimated that 36% of sufferers made claims against the insurance market in 2003 and 56% of sufferers made claims against the insurance market in 2007.

Section 4 of this paper discusses the claim process, and changes in recent years in that process, in some detail. Changes to the ABI tracing code and insurer initiatives have clearly made it easier to identify insurance coverage and earlier diagnosis, especially before death, makes it easier to bring a claim for compensation. We have not, however, attempted to measure the impact of these changes on the number of insurance claims.

A couple of issues are worthy of note. The CRU data gives an insight not only into insurance claims, but also into claims lodged against Government departments. Alongside this the ABI has collected information on the numbers of ex-service personnel making claims. Finally the HSE has indicated that it may be building an allowance in its revised model for an increased number of cases from background and environmental sources. As yet we have insufficient evidence to give firm figures in these areas. However, the following pie chart gives a reasonable guide of their likely relative magnitudes.

Figure 39 : Market split of claims



'Unidentified' cases, that cannot as yet be assigned to any of the 'known' categories still form a significant proportion of the total, but, if we had been able to put this chart together at the time of the previous working party paper, this proportion would have been much closer to half of all cases. It's also worth noting that, if a proportion of these lead to claims in the future, then these claims would be, as they are now, spread between insurers and Government.

A final observation on the ratio between mesothelioma claims and deaths is the table of age related ratios in section 5.3.4. This shows that the ratio is strongly linked to age. Ratios for sufferers under 65 are already over 70% and, given that Government and background cases will also affect these ages; it is possible that these ratios are already nearing the likely maximum.

Ratios for older sufferers are much lower. If the ratios increase in the future then the majority of the increase will come from older sufferers. Taking this further, an increase in the proportionate number of older claimants in the future would, given the lower average settlement amount at higher ages, lead to a smaller increase in the projected aggregate cost. Moreover, the previous working party model implicitly allows for some increase in claims ratios for each age band. This is because the overall claims ratio is assumed fixed, but with an aging claimant population, the ratio *for each age band* will need to increase to achieve a constant aggregate ratio going forward.

In forming a view it is therefore necessary to consider:

- The extent to which recent increases in the claim to deaths ratio are due to process change or whether there are longer term trends at work.
- If the latter, the extent to which these may apply in the future and what the maximum potential is.
- The extent to which any future increase may exceed that already built implicitly into projections of an aging claimant population.
- The impact on cost given that claims from an increasingly ageing population will be proportionately smaller.

Therefore the key assumptions to make are whether the claims to deaths ratio will:

- Stay constant by age band in the future (and therefore reduce overall).
- Increase by age band but stay constant overall.
- Continue to increase towards the maximum and therefore increase overall.
- Increase and then level off by age band which could imply an increase and then reduction at the total level.

There are a number of reasons why each of the above scenarios could happen.

6.4. Mesothelioma Average Cost Model

The mesothelioma average cost model presented in the 2004 working party paper had two components:

- A ‘lost years’ element representing loss of wage / salary / pension due to reduced life expectancy.
- A ‘fixed’ element including all other indemnity costs and own / third party legal costs.

The first of these (calculated as multiplicand – wage / salary / pension – multiplied by multiplier – Ogden factor for age and life expectancy) is clearly age related. The second was treated as being an essentially fixed amount independent of all factors except that it would inflate over time.

The true picture is more complex. Mesothelioma claims typically include most or all of the following elements.

Lost years

Estimated loss of future income, calculated as above, and taking into account significant conditions (such as heart disease) likely to affect future life expectancy. Calculations for living and deceased claimants are typically on slightly different bases.

Loss of past income

Typically income lost since the date that when the claimant became unable to work.

Pain and suffering

A tabular amount providing compensation dependent on the term and severity of the condition.

CRU recoveries

Recoveries by Government of part or all of the CRU payments

Cost of care

Care costs associated with caring for the mesothelioma sufferer prior to death.

Other fixed costs

Bereavement and funeral costs and incidental amounts such as travel costs and accrued interest.

Legal costs

Third party legal costs and own legal costs.

Most of these elements (with the exception of own legal costs) will be incurred at a 100% level, with the amounts being shared between identified employers (and their insurers) on a pro-rata basis.

In general, analysis will be conducted at the insurer share level. However, if data is available at the 100% level then any trends due to changes in insurer share over time can be disaggregated from underlying changes in the cost of each component.

Whilst it's possible to form a credible view of aggregate costs using the original average cost model, a more detailed analysis at the level of the components above can give much greater insight. The working party are currently working on updating the average cost per claim model and will be using this to estimate the UK insurance market cost of UK asbestos-related claims.

It is worth noting that our initial findings are that more of the "fixed" element of the cost has an age related element than was previously thought to be the case. This will have an impact on the potential future inflation and is discussed further in the next section.

Further, there will be a difference in the average claims cost depending on whether the claimant is living at the time of the claim. If the claimant is deceased there will include additional heads of claim (e.g. funeral and bereavement costs), and generally the average compensation will be greater for a claimant that has already died. Therefore, if the proportion of claimants that are alive at the time of the claim changes in the future then this will have an impact on the average cost of claims in the future.

6.5. Mesothelioma Claim Inflation

Given the extreme latency associated with mesothelioma, claims may be expected to persist for decades. Claim inflation therefore becomes a major factor. The 2004 paper identified two separate inflation drivers:

- Wage inflation affecting the 'lost years' claim component.
- Court inflation affecting the fixed component.

The paper recommended that selections should be carefully considered, and the assumptions made are summarised in section 2.1.4.

Clearly the inflation factors used will need to take actual experience into account alongside more general considerations of medium and long term economic and judicial trends. It is also worth giving thought to which element of a mesothelioma claim is subject to which inflation rate. For example, the court ward inflation on general damages will depend on the rate of increase of the amounts published in the JSB Guidelines. The compensation amounts in these guidelines are linked to the Retail Price Index (RPI). Further, the cost of care component, which can sometimes form a material part of a mesothelioma claim, was implicitly included in the fixed cost component in the original model. Under this heading, the cost of care amount would be treated as inflating with general court awards whereas wage inflation might be more appropriate.

One further implicit factor is the effect of the ageing claimant population. On average, claims from older sufferers will have a lower average value than claims from younger sufferers. As the claimant population increases, the average cost going forward will be depressed, offsetting somewhat the effect of the genuine inflation factors. In crude terms the effect of this, in the original model was to offset inflation by as much as 1% per annum overall.

However, analysis of a sample of claims may indicate a stronger relationship between age and average claim value than the original model implied. For example, several elements of the fixed cost, including legal spend, may be lower at higher ages. In addition, the average pension amount may be lower at higher ages leading to a lower multiplicand in the lost years calculation. Analysis in this area may therefore lead to a further depressing effect on net claims inflation than was implied by the original model. This is currently being investigated by the working party. The intention is to develop the previous average cost model to give a better insight into the future change in the average cost per claim and the impact on the average cost due to the ageing of the claimant.

6.6. Non-Mesothelioma Claims

6.6.1. Pleural Plaques

The asbestos working party survey indicates that the number of pleural plaque insurance claims have steadily increased each notification year until the peak in 2005. In November 2005 the Court of Appeal heard the *Rothwell v Chemical & Insulating Co Ltd* and the co-joined cases. The resulting Court of Appeal judgement on 26 January 2006 held that pleural plaques were not compensatable. Pleural plaque insurance claims have remained not compensatable since this date, with the House of Lords on 17 October 2007 agreeing with this judgement. The fall in notified pleural plaque insurance claims in the working party survey in calendar years 2006 and 2007 can be explained to a great extent by these legal developments.

The Ministry of Justice estimated in the consultation paper CP14/08 published on 9 July 2008 that the cost of changing the law so that compensation can be claimed as was the case before the Court of Appeal decision could be in the range of £3.7 billion to £28.6 billion. The reader is referred to CP14/08 for the assumptions behind these estimates. The key assumption behind this range is the number of people potentially exposed to asbestos and the number of these that would be expected to have pleural plaques. The working party will be considering these assumptions in order to estimate an insurance industry market cost should pleural plaques become compensatable in the future.

Indeed, the key uncertainty for future pleural plaque insurance claims relate to whether they remain non-compensatable. The Scottish Executive on 29 November 2007 announced that it intends to legislate to make pleural plaques compensatable under the civil law in Scotland. The Government are currently consulting on the issue.

6.6.2. Asbestos-related Lung Cancer

The asbestos working party survey indicates that the number of lung cancer insurance claims have steadily increased from notification year 2000 with larger increases in 2006 and 2007.

Asbestos has been recognised as an important risk factor for lung cancer for many years. However, the HSE comments that although lung cancer death statistics for Great Britain are readily available, the number of deaths attributable to asbestos cannot be determined directly. Unlike mesothelioma which is a signature disease for asbestos exposure, lung cancer can be caused by a number of agents, most importantly, tobacco smoke. Lung cancers resulting from asbestos exposure are clinically indistinguishable from those caused by other agents.

Asbestos-related lung cancer claims are currently around 10% of those for mesothelioma, but the HSE estimate that there are around as many asbestos-related lung cancer deaths in Great Britain annually as there are mesothelioma deaths. It is widely accepted that tobacco smoke interacts with asbestos in the causation of lung cancer. This means that the risk of lung cancer for a smoker exposed to asbestos is greater than the sum of the individual effects due to smoking and due to asbestos. Thus going forward the HSE states that the ratio of lung cancers to mesotheliomas is likely to fall, because mesotheliomas will increasingly be generated by low exposure levels of asbestos that are less likely to cause lung cancer and because smoking levels have fallen since the 1960s.

The level of reporting of asbestos-related lung cancer insurance claims compared to deaths is a key uncertainty that leaves the potential for further increases in the level of asbestos-related lung cancer insurance claims.

6.6.3. Other Non Mesothelioma Diseases

There have been no major key developments since last working party in any other non-mesothelioma diseases.

6.7. Conclusion

Section 6 of this report highlights the main issues to consider in respect of estimating future UK asbestos insurance liabilities that have come to light since the last Institute of Actuaries UK Asbestos Working Party report in 2004.

These issues show how difficult it is to accurately estimate UK asbestos-related insurance reserves. In respect of mesothelioma claims, these ‘things to consider’ highlight the uncertainty in estimating future mesothelioma deaths in the UK and the uncertainty in how these deaths will be converted into insurance claims.

7. UK Asbestos – Reinsurance Issues

7.1. Coverage and Relationship with Direct Claims

7.1.1. Reinsurance Coverage

The two types of reinsurance coverage (proportional and non proportional Excess of Loss ("XL")) will have very different features. Essentially, the coverage types are:

- **Proportional treaties** will have very similar issues and experience to the underlying direct book. When projecting proportional books, the main issue is ensuring that the analysis reflects the actual exposure of the treaty, which may be far more concentrated (particularly as regards years of exposure) than a more widespread direct book.

- **XL treaties** will have issues that depend on their limit and excess point and year of inception. Typical direct mesothelioma claims are around £75k. The impact on XL treaties is critically dependant upon the size of the excess point and the basis on which the insured is attempting to recover form their reinsurer(s), this is discussed in more detail later. One issue to be aware of in particular is that a high layer treaty may have seen no losses to date but still be exposed to losses.

XL treaties written in the 1960's or earlier tended to have relatively low excess points, these typically increased significantly in the 1970's, at the same time indexation clauses became commonplace. As a result the majority of recoveries on XL treaties tend to relate to the 1960's (or earlier), where the effect of the excess and limit points has been substantially eroded over time by inflation, to the point where a layer originally intended to only protect against extreme losses may now be impacted by most mesothelioma claims. This is discussed further in the section on "Gearing".

7.1.2. Projection of Claims

Ideally, the projection of a reinsurance book will be taken directly from a projection of the underlying direct claims which will then be passed through the reinsurance treaties. However, in practice the data is rarely available for this kind of analysis. Reinsurance data is considered below; in short, it is not uncommon for reinsurers to not even know which contracts are exposed to asbestos losses, let alone undertake this kind of analysis.

A common alternative method of establishing reinsurance reserves is to use a direct claims projection as a benchmark (either the actual underlying direct claims or a more generic industry benchmark) and rebase it to known reinsurance claims to date. Clearly, there are some key problems with this approach, particularly surrounding lags between direct and reinsurance claims, the gearing effect that excess points have on average claims and the exposure of the reinsurance treaty compared with the direct book being used as a benchmark. These are discussed below.

7.1.3. Lags

When using direct analysis to project reinsurance claims, it is important to consider the time lag that will exist between the underlying direct claims that are driving the reinsurance claims and the manifestation of those reinsurance claims.

From the time that the direct claim has been reported, there will need to be time for:

- Identification of the reinsurance treaty – when direct losses start coming in, the insurer may not immediately realise that they have appropriate coverage.

- Reporting of that loss to the reinsurer – since there are often choices available to the reinsured concerning how they attempt to recover from their programme, the reinsured may choose strategically to delay such choices.

7.1.4. Gearing

For XL treaties, only losses that are potentially large enough to breach the retention will be reported. This will have two effects:

- Over time, inflation will cause more direct losses to exceed this excess point. As such, the number of reported losses can be expected to have an inflationary factor compared with the underlying (lagged) direct losses.

- The average reinsurance loss in a year will change over time in a way that may not have an immediately obvious relationship with the average direct loss.

For example, if the average direct claims (as allocated to a particular year) is twice the excess point, then a 10% increase in all direct claims will increase average reinsurance claims by about 20% (subject to the limit).

However, if the excess point is higher than the average claim size then initially claims hitting the XL treaty will only be the abnormally high ones, meaning that the average reinsurance claim may be very high. A few years inflation on direct losses, however, may mean that the direct losses more regularly hit the programme – possibly only just hit it – with the result that the average reinsurance claim may actually be a lot lower than it was initially.

This said, XL treaties generally had an indexation clause that will act to restrict this gearing effect. If the indexation clause is sufficient, it may be that it is removed entirely. However, if this clause is based on an index that is less than the actual claims inflation, the gearing effect will still be apparent, albeit at a reduced rate (or vice-versa).

Allowing for the realistic consequences of this gearing effect may prove to be a very challenging aspect of a reinsurance projection that relies on adapting an underlying direct projection.

7.1.5. Exposure Differences

In any projection of asbestos losses, it is vital to ensure that losses are only projected pertaining to the period in which the company is exposed. This may be particularly difficult for reinsurance programmes where the underlying direct claims form a wider exposure period than the reinsurance coverage allows for. In such circumstances, some way must be found to allocate the direct claims into reinsurance exposure periods to ensure like-for-like comparison.

As discussed below, the triggers for direct and reinsurance policies may be different, which further complicates such an analysis.

7.2. Data

7.2.1. Claims Data

The claims data received by a reinsurer will depend on the nature of the underlying reinsurance contract. Typically, this will fall into the following types:

Proportional contracts

In these contracts, it may be that the reinsurer sees original filings. Contractual provisions dictate what has to be provided and there could be rights to inspect. However, it is also possible that they will just see a total claimed reinsured amount with little detail.

XL contracts with low excess points

Assuming that the reinsured presents claims on a per claimant basis (as is the norm), in these cases the claims seen by the reinsurer represent individual original filings. It is likely that they will only see claims large enough to breach the retentions. Although the reinsurer is entitled to an each and every loss presentation, the reinsurer may well agree to actually just see bordereau claiming bulk amounts with no indication of the underlying losses. For the proportional contracts, the reinsurer is also likely to just see a bulk claim.

For the UK to date, reinsurance liability in asbestos has tended to be for XL recoveries the 60's and to proportional treaties for the 70's onwards.

7.2.2. Policy Data

It is not unusual for the reinsurance policy information to be of incredibly poor quality. The policies are typically of an age where no electronic records are available. There are examples of inwards reinsurance datasets in which the fact of a policy's existence is the only recorded item – no information even about whether the protection is for property or liability cover – and there may be large numbers of such policies.

Clearly, the quality of the information will dictate the analysis that may be performed on it. Where there is a dataset with no records of excesses, limits or even type of coverage, there is a limit to the value of anything more than a basic analysis.

7.3. Aggregations and Allocation Issues

7.3.1. Aggregation

Most reinsurance recoveries in respect of UK EL asbestos claims are made against reinsurance programmes that are specific to the EL book. UK EL policies were essentially all on a per claim wording with no aggregate limit, indeed from 1970 onwards this was required by legislation. The reinsurance treaties will nearly always follow this, with no ability to aggregate claims.

It is understood that some reinsureds claim to have non-standard protections that allow them to aggregate claims for the purposes of reinsurance recoveries, for example per factory, per policyholder, or for all asbestos claims. Such instances are not believed to be common and are likely to be disputed by the reinsurer.

The above situation differs significantly from the US, where the majority of the claims have been product liability claims against manufacturers and suppliers. These are normally aggregable because the original policy is written on an aggregate basis (i.e. with an annual product limit).

7.3.2. Presentation

The other key issue surrounding reinsurance concerns how even a single inwards claim where the exposure spans multiple years of account (including, possibly, multiple reinsurers and types of reinsurance contract) should be presented to the reinsurance programme.
Where the original claim has impacted multiple years, there are, in theory, various approaches that could be taken:

- The reinsured could pro-rata the original claim across the affected years. Where the pro-ration approach is taken, the reinsurer could correspondingly pro-rata the limits and / or excesses across the affected years or attempt to maintain the full excesses and limits in each year. This is discussed further in Section 8.3.2.1.

- For claims that are considered to be "indivisible" (mesothelioma and cancer claims) the reinsured could attempt to "spike" the whole claim through one single year, this could be the first year of exposure of an individual, the last year, or the reinsured could argue that they can chose any year in the exposed period (allowing them to maximise reinsurance recoveries by picking the most advantageous year). Reinsurers vociferously reject attempts to spike by reinsureds; the significant difference in view is likely to remain until there is a test case to resolve it.

7.3.3. ACOD

In 1983-1984, the Accident Circle met to clarify the previous confusion that had arisen in trying to apply policy wordings designed for slip and trip accidents to latent disease claims. They introduced an Occupational Diseases series of wordings for reinsurers to choose between and apply to all reinsurance that covered occupational diseases (the "Accident Circle Occupational Disease" or "ACOD" clauses). These were:

ACOD/A

Simply, any one claim by any one employee = one event

ACOD/B

Any one claim by any one employee = one event

If the original liability is established on an exposure basis then the claim paid by any one period of reinsurance is reduced in proportion to total length of exposure

If the legal liability is not established on an exposure basis then the date of loss occurrence is the date legal liability is established

ACOD/C

The loss occurrence is the date that the original insured was advised of the claim after diagnosis by a doctor.

The type that tended to be adopted for contracts that would subsequently be affected by asbestos was ACOD/B. In effect, this wording said:

- Claims relating to occupational diseases are not allowed to be aggregated at all.
- Multiple-year claims should be pro-rated across all years that are affected
- Excesses and limits should be also be pro-rated across all affected years.

This means that asbestos claims relating to post-1983 contracts have clarity regarding their treatment. Claims relating to pre-1983 contracts, however, tend to leave all these issues in the air. In particular, there are two schools of thought surrounding ACOD/B:

- ACOD/B was a clarification of existing practice. As such, pre-1983 contracts should be treated exactly the same as post-1983 contracts.
- ACOD/B was brought in to replace existing practice. As such, any or all of these issues are open to different interpretations from pre-1983 contacts.

The impact of accepting or not accepting the ACOD/B wording is immense. Aggregation would allow for reinsurance claims in layers that would otherwise never be hit. On the other hand, spreading limits may mean that lower layers have far less exposure. The balance of whether the ACOD/B wording helps or hinders the reinsured and reinsurer is therefore dependent on the nature of the specific contract and claims under consideration.

This issue is complicated by the existence of other occupational disease claims on insureds' books. It may be that one interpretation of ACOD/B as it applies to pre-1983 claims allows for maximum recoveries on the asbestos claims but minimises the recoveries on the industrial deafness claims, for example.

Because of the uncertainties for insurers surrounding even what their best interpretation is, the issue surrounding ACOD/B and pre-1983 contracts has gone publicly untested to date (and any compromise deals have remained confidential) and so this remains a key uncertainty for all parties.

7.3.4. Triggers

The issues surrounding triggers for direct claims (the mechanism that causes the loss under an insurance or reinsurance policy to be fixed to a particular policy period) are highlighted in Section 3.2. However, in respect of reinsurance contract wordings, it is not always clear that the reinsurance trigger will correspond with the insurance trigger. This means that the same asbestos claim can relate to different contract years as it passes through the insurer → reinsurer chain, meaning that insurance claim models may be inappropriate for reinsurers.

In particular, depending upon the outcome of the current test cases, triggers can be very different for employer's liability and public liability insurance. It may be, however, that these are both covered by the same reinsurance policy with the same reinsurance trigger. This means that some interpretation may be required as to how claims flow through the reinsurance.

7.3.5. Other "Type of Claim" Issues

Historically, most UK asbestos claims have been employer's liability claims. However, we are now increasingly seeing public liability claims. Aside from the trigger issues mentioned above, this shift of claim type has a number of implications for reinsurers.

Firstly, non-bodily injury third party exposure could potentially be more expensive than bodily injury exposure. With changes in Health and Safety legislation, the cost of removing, decontaminating and cleaning up asbestos is increasing all the time. For example:

- Silverhill Primary School in Mickleover, Derbyshire, was closed for eight weeks in 2004 during a £750,000 clean-up operation after asbestos fibres were discovered. The asbestos contamination happened during work to replace windows. The glazing company, head teacher and Derby City Council were all prosecuted.

- Great Yarmouth egg carton manufacturer Omni-pac was fined £50,000 in February 2006 for breaches of the HSWA 1974 committed in 2003 as a result of damaged and poorly maintained asbestos insulation on top of dryers used to produce the papier-mâché egg cartons. The company was forced to cease production and make all staff redundant.

Therefore, any negligent third party property contamination could end up being more expensive than bodily injury claims. This is then more likely to involve reinsurers. If a claim includes bodily injury too, the effect is multiplied.

The examples quoted result from accidents in 2003 and 2004 when the excess for a company might be £5-10m. However if the claim was for faulty insulation in 1966, say, when the plant was built, the claim might be applied to a much lower excess (£50k, for example). In such circumstances, the potential loss to the reinsurer could be substantial.

Secondly, the other implication for reinsurers about PL vs. EL claims is that there are various clauses that apply to employer's liability claims that would not necessarily apply to public liability claims. For example, an "any one claimant" clause that protects the reinsurer from aggregating employer's liability claims does not so obviously apply in public liability cases.

7.3.6. Divisible and Indivisible Claims

Personal injuries have traditionally been divided into two categories: divisible and indivisible. A divisible injury is a condition that can have more than one contributory factor whilst an indivisible injury is an "all or nothing" condition where it is not possible to attribute different parts of the damage to different causes.

Claims for divisible injuries are allocated in proportion to the responsibility for the injury. Conversely, a defendant's liability for an indivisible injury is joint and several for its entirety. A claimant can recover for all the effects of the condition from any defendant who caused it. That defendant must then recover a contribution from any other negligent party.

This distinction is of particular practical importance where one or more of the defendants no longer exists, cannot be traced, is uninsured, or otherwise is unable to satisfy a judgment, as is often the case in asbestos claims. In the case of an indivisible injury, the remaining solvent defendants will have to bear the liability of the ones that are no longer able to pay. In the case of a divisible injury, however, the shortfall will result in reduced compensation for the claimant.

It is these issues that the Fairchild and Barker cases, discussed in Section 3.2 of this report, dealt with in some detail. The upshot is that mesothelioma, being an indivisible claim, can be claimed for against any one party that can be shown to have been negligent and that party is then liable for the whole claim.

This is also of vital importance to insurers and reinsurers – insurers because if they cover the negligent party, they are potentially liable for the whole claim and reinsurers because they in turn cover the insurer that has been left with this claim.

8. US Asbestos Update 2004-2008

Whilst this paper is very much focused on the UK asbestos environment it is always relevant to keep track of developments in the US in case they are more widely applicable. The latest developments are summarised here.

Trends in claims filings

More than 90% of the US asbestos claims filings to date have been non-malignant claims. Claims have centred on a small number of states considered as 'plaintiff friendly' jurisdictions. For example, 85% of Asbestos claims filed during 2001-2003 related to just a handful of states, including most notably Mississippi, Texas, and Ohio[6].

In the last few years, some states have started to take action against this rising tide of asbestos claims, particularly the non-malignant claims, that have often been made by claimants who have neither lived in that state, nor been exposed to asbestos in that state. These so called tort reforms have focused on several areas:

Changes to Medical Criteria[7]

Among the most important recent tort reforms are the "medical criteria" bills, which have been enacted in several states, including most of the states with the highest historical claim filings.

These bills require plaintiffs with non-malignant conditions to provide evidence of impairment that meets strict criteria. They often require those with malignancies to meet medical evidence standards as well in order to have an actionable claim.

Elimination of Joint and Several Liability[8]

In recent years there has been an increasing number of restrictions on, or elimination of, joint and several liability. Currently there are 36 states – roughly 70 percent of U.S. jurisdictions – that have either eliminated or modified joint and several liability. Claims from these states represent a substantial portion of overall asbestos claims.

With joint and several liability in effect, solvent defendants may have been obligated to pay a larger share of indemnity costs as other defendants filed for bankruptcy protection. These changes can be expected to reduce the share of the liability attributable to bankrupt defendants that would be assumed by the companies remaining in the tort system.

Judge Jack Ruling[9]

In June 2005 Judge Jack found that 65% of silica plaintiffs had previously been asbestos plaintiffs. This was despite the chance of having both asbestos and silicosis being compared by Judge Jack as akin to a 'golfer's hole in one'. It was also suggested that certain doctors had signed off the medical screenings for cases that they had never seen. Many claims, including all 30,000 pending silica claims in Ohio, were thrown out on the basis that they had been fraudulently diagnosed with silicosis and both lawyers and physicians were criticised as 'manufacturing' the claims for 'monetary purposes'.

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[6] See Manville filings data http://www.mantrust.org/

[7] http://www.antihubris.com/resources/asbestos/asbestos5.php

[8] http://files.ali-aba.org/thumbs/datastorage/skoobesruoc/pdf/CM038_chapter_10_thumb.pdf

[9] http://www.arentfox.com/pdf_notReady/asbestos_bankruptcy_report1.pdf

On the back of Judge Jack's findings, US Congress began an investigation into several doctors, screeners and lawyers. Furthermore, some defendant lawyers have begun to encourage their clients to perform internal audits of all pending claims, including Asbestos claims, since the doctors and lawyers are often the same individuals. Defendant lawyers have also begun to encourage their clients not to pay out on any claims supported by evidence from one of a list of about 15 specified doctors. Several trusts, including Manville and Eagle Pitcher, have refused to accept diagnoses issued by the physicians at issue.

Venue reform[10]

So-called 'litigation tourists' have historically filed claims in forums with which they have had little or no connection. In certain states, there is now a requirement to prove residence or exposure within the state where the claim is brought.

Inactive Dockets[11]

In some states, claims from unimpaired individuals are now being retained in 'inactive dockets' until the claimant actually develops an asbestos-related disease, removing a large number of claims from the courts and enabling resources to be directed to the more legitimate malignant claims.

Class Actions[12]

Historically many disparate claims have been bundled together for trial, putting together both the impaired and unimpaired claimants into class actions and forcing defendants to settle due to a lack of opportunity to defend each claim on a case by case basis. There have been reforms in some states so that these class actions are now only permitted if all parties consent.

Developments such as those discussed above are part of a general increase in the scrutiny applied to claims that has led to the dismissal of many claims and the clearing of non-malignant inventories. These reforms are succeeding to control the number and cost of asbestos claims, and the ratio of non-malignant to malignant claims has fallen dramatically. It is interesting to contrast the situation in the US with regard to non-malignant claims against the current discussions in the UK on pleural plaques.

Faced with an increasingly strict legislative environment, however, US lawyers may seek alternative routes for filing claims. Furthermore, with the proportion of malignant claims increasing, US lawyers are likely to focus on obtaining higher payouts for malignant claims with a corresponding increase in overall settlement values.

Chapter 11 Bankruptcies[13,14]

More than 60 companies involved in the manufacture of Asbestos and Asbestos-containing products have been bankrupted due to Asbestos claims and more and more companies have been targeted and brought within the net of Asbestos litigation.

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[10] http://files.ali-aba.org/thumbs/datastorage/skoobesruoc/pdf/CM038_chapter_10_thumb.pdf

[11] http://www.shb.com/FileUploads/elephantinemass_725.pdf

[12] http://www.actuary.org/pdf/casualty/mono_dec01asbestos.pdf

[13] Where Are They Now, Part Three: A Continuing History Of The Companies That Have Sought Bankruptcy Protection Due To Asbestos Claims (Mealeys)

[14] Where Are They Now, Part Four: A Continuing History Of The Companies That Have Sought Bankruptcy Protection Due To Asbestos Claims (Mealeys)

In 2007, the Superior Court of New Jersey ruled that the pre-packaged bankruptcy plan submitted by Congoleum in order to settle asbestos claims was not enforceable against insurers. The court found that the plan was unreasonable and that, under the terms of the plan, insurance obligations were not triggered because it was not shown that Congoleum was "legally obligated to pay" the claimants who would receive payments. This demise of the pre-packaged bankruptcy is evidence that even a decision to enter Chapter 11 does not give a company complete control of its own destiny including its insurance asset.

The number of bankruptcies of the traditional asbestos defendants has also led to an increased focus on more peripheral asbestos defendants in less traditional industries, such as aviation manufacturers.

Fuller Austin[15]

In 2006 the California Court of Appeal reversed a ruling holding that liability insurers of an asbestos assured had immediate obligations to perform in full once a trust was established through section 524(g) of the bankruptcy code that concurrently extinguished the liability of the policyholder vis-a-vis the asbestos claimant creditors.

The overturned ruling had suggested that insurance companies should pay anticipated liabilities upfront when a bankruptcy trust is established based on the assured's projected claim portfolio. This was particularly important for excess insurers, as they would have lost significant investment income on liabilities that would not have fallen due for many years, if at all.

Premises claims[16]

Whilst asbestos-related bodily injury and property damage case law is relatively clear for asbestos products claims, some US attorneys have attempted to create a new class of insured without products exposure by filing premises claims. These claims relate to third party sub-contractors and members of the public who were exposed to asbestos in buildings in which they worked who are now attempting to pursue the owners, tenants and management agents of the buildings for damages.

The number of premises type claims has increased in response to the number of traditional asbestos defendants filing for bankruptcy. Such claims would fall under Combined General Liability cover, and there is some debate as to how these claims would aggregate in order to be applied to the insurance coverage. Typically, however, such claims are not aggregated and therefore primary insurers bear a large proportion of the total cost.

[15] Fuller-Austin Insulation Co. v. Highlands Ins. Co

[16] http://www.insurancejournal.com/magazines/southcentral/2001/08/20/features/18545.htm

9. Appendices

Appendix A: 2004 Asbestos Working Party Projections

Appendix B: Signatories of the Employers' Liability Code of Practice

Appendix C: Summary Survey Data Collection Note

Appendix D: Per Claim Mesothelioma Survey Data Collection Note

Appendix E: Summary Survey – Further Data

Appendix F: Per Claim Mesothelioma Survey – Further Data

Appendix G: Data behind Section 5 charts

A: 2004 Asbestos Working Party Projections

- **Mesothelioma projections**
- **Lung Cancer projections**
- **Asbestosis projections**
- **Pleural Plaques/Thickening projections**

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**

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**

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**

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**

B: Signatories of the Employer's Liability Code of Practice

Appendix B: Signatories of the Employer's Liability Code of Practice

Company / Syndicate / Organisation	EL accounts	Member organisation
Financial Services Compensation Scheme (FSCS)	N/A	
Resolute Management Systems Ltd	All LMA Syndicates pre-1992	LMA
Abacus Syndicates Ltd		LMA
ACE – INA	Cigna	ABI
Aegis Managing Agency		
AIG Europe	New Hampshire	ABI
Alleghany Underwriting Ltd		LMA
Allianz	Allianz, Cornhill, AGF, Church&General, Assurances Generales de France, British Reserve Ins	ABI
Amlin Underwriting Ltd		LMA
Ansvar		ABI
Argenta Syndicate Management		LMA
Aspen Insurance Holdings	Aspen	ABI
Assicurazioni Generali		ABI
Aviva	NU, CGU, Hibernian, London & Edinburgh	ABI
AXA	AXA, AXA Corporate Solutions, AXA Liabilities Managers, GRE, Guardian, Royal Exchange, Provincial, Legal & General, Caledonian, Essex & Suffolk, Motor Union	ABI
Beaufort Insurance		LMA
Brit Insurance Holdings	Brit	ABI, LMA
Builders Accident Insurance (BAI) Claims	Builders Accident, Trinity, Orion, Paramount, Cotton Trades	ARC
Canopius		LMA
Capita Insurance Services	Chester Street, Independent, All State, Iron Trades Mutual	ARC
Catlin Insurance Services		ABI
Cavell Managing Agency		LMA
Chartwell Managing Agents Ltd		LMA
Chaucer		LMA
China Insurance Holdings	China	ABI
CMGL		LMA
Congregational & General		ABI
Co-operative Insurance Society (CIS)		ABI
Creechurch (Charrington Ins)		LMA
Crowe Syndicate Management		LMA
DA Constable		LMA
Downlands Liability Management		
DP Mann Ltd		LMA
Drysdale		LMA

Duncanson & Holt Syndicate Management		LMA
Ecclesiastical		ABI
Electrical Contractors' Insurance Company (ECIC)		ABI
Equity Syndicate Management	Cox Syndicate Management	LMA
Euclidian Underwriting Ltd		LMA
Faraday Re		ABI, LMA
Fortis Insurance	Assurant Group Ltd, Bankers, Northern Star, Bishopsgate	ABI, LMA, ARC
Fuji International - Run-off (1994)		
Goshawk Syndicate Management		LMA
Groupama Insurances		ABI
Hardy (Uwtg Agencies) Ltd.		LMA
HDI Haftpflicht	International	
Heritage Managing Agency Ltd		LMA
Hiscox Insurance Co Ltd		ABI, LMA
IC Insurance Holdings		ABI
Illium Managing Agency Ltd		LMA
Image Syndicate Management	Abacus, Danish Re & Greenwich Man Agency	LMA
IntNationaleNed	OIC Run-Off Ltd	
Jago Managing Agency Limited		LMA
Jubilee Managing Agency Ltd		LMA
KGM Motor Insurance		LMA
Liberty Syndicates		LMA
Limit Underwriting Limited		LMA
Managing Agency Partners Ltd		LMA
Markel Syndicate Management		LMA
Marketform Man Agcy Ltd		LMA
Marlborough Underwriting Agency	Cathedral Underwriting.	LMA
Mitsui Sumitomo Insurance (MSI) Company (Europe)	Mitsui Fire & Marine, Sumito Marine & Fire	ABI
MU Oxford	Scottish Eagle	
Munich Re	Watkins Syndicate 457	ABI, LMA
National Farmers Union (NFU) Mutual	Avon	ABI
Newline Underwriting Man Ltd		LMA
Novae Insurance Co	SVB Syndicates	LMA
Odyssey Re (London) Ltd	Sphere Drake	
Pearl Group Ltd (PGL)	Pearl Assurance	ABI
Pro Insurance	Highlands Insurance UK, English & American, Black Sea & Baltic, Sovereign & Marine, Tokio Marien, Mitsui	ABI
Pro Syndicate Management		LMA
Prudential Assurance	Prudential	ABI
PXRE Managing Agency		LMA

QBE Insurance (Europe) Ltd	QBE, Iron Trades	ABI
Resolute Management	Commercial General Union, Northern, Oceans Marine, Indemnity Marine, London & Scottish	
Resolution PLC	Britannic Assurance, Pheonix	
Royal & Sun Alliance	Sun Alliance & London, Royal Insurance, Pheonix	ABI
Royal London Mutual Insurance Society Ltd	Royal London General, Refuge Assurance	ABI
SA Meacock & Co Ltd		LMA
Spectrum Syndicate Management		LMA
Travelers Insurance Company Ltd	St Paul Travelers	ABI, LMA
Sterling	Albion	ABI
Talbot Underwriting Limited		LMA
Towergate Partners	Folgate	ARC
Wellington Underwriting Agencies		LMA
Whittington Capital Management		LMA
Wren Syndicates Management		LMA
XL	XL	ABI
Zurich Financial Services	Zurich, Eagle Star, Irish National, Midland Assurance, Midland Employers Mutual Assurance	ABI

C: Summary Survey Data Collection Note

Appendix C: Summary Survey Data Collection Note

The asbestos working party has reformed to review the asbestos experience the UK insurance industry has experienced since the last asbestos working party report. The intention is to collect relevant data across the whole insurance market as before, and present our findings at a GIRO workshop this year with a view to a detailed report for GIRO 2008.

You have received this e-mail as you have been identified as an appropriate person to help with the data collection. The data you are able to provide us will be greatly appreciated. The more information we get, the more the relevance and use the future presentations to the Institute will be to all
of us. Hopefully a more targeted approach will also give rise to a higher response rate.

Please find attached a spreadsheet template with areas to complete in a number of sheets. Please only use the spaces we have designated for the data, and please don't move areas around; this will make collation of the data easier. There are more detailed instructions in the tab entitled "General Notes". Hopefully the data that has been asked for is readily available and hence should not be too onerous to complete. Please complete as much of the spreadsheet as possible. Please can you send us a response, even if it is not possible to complete some of the tabs.

We realise that the only way that most people will be willing to contribute to this survey is if their answers are anonymous. Peter Stirling (who is on the staff of the Institute) has kindly agreed to ensure anonymity by enabling responses to be sent directly to him at peter.stirling@actuaries.org.uk. Please send your completed spreadsheets to this address. Peter will then combine all the results and give them back to the working party. This ensures that no members of the working party will be able to identify the data for any particular company ie whatever you send will remain anonymous. In any presentation / paper we will make no mention of which companies took part, and the data sent will be deleted as soon as it is amalgamated.

Please can you respond by the 31st July 2007. We appreciate that this is a short timescale. Your assistance is valued, and we thank your very much for your help in this exercise.

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. 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".

3. Please indicate the date at which your figures have been extracted, e.g. 31 December 2006 / 30 June 2007

4. 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 Peter Taylor on the Asbestos Working Party via 01603 357444 / taylop9@norwich-union.co.uk who can help clarify what data is required.

5. Please return completed forms to Peter Stirling at the Institute of Actuaries at peter.stirling@actuaries.org.uk by **31 July 2007**. Peter will be responsible for collating the responses to provide back to the Working Party for analysis.

6. 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).

7. Please ensure any "total" columns sum to the individual components that make-up the total.

8. Many thanks for your participation!

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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the number of claims (nil and non-nil) notified to your company for each notification year, split by disease-type.

Data As At:	

NUMBER OF CLAIMS SETTLED AT NIL COST 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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the number of claims notified to your company and settled at nil-cost for each notification year, split by disease-type.

Data As At:	

NUMBER OF CLAIMS SETTLED AT COST 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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the number of claims notified to your company and settled at cost for each notification year, split by disease-type.

Data As At:	

NUMBER OF CLAIMS SETTLED AT COST 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									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the number of claims notified to your company and settled at cost for each year of claim settlement, split by disease-type.

Data As At:	

GROSS PAID AMOUNT IN RESPECT OF INDEMNITY 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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the gross paid amount in respect of indemnity on all notified claims (open or settled) each notification year, split by disease-type.
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers

Data As At:	

GROSS PAID AMOUNT IN RESPECT OF COSTS 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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the gross paid amount in respect of costs (both own and third-party) on all notified claims (open or settled) each notification year, split by disease-type.
Gross means gross of any reinsurance amounts, but net of any recoveries from any other primary insurers

Data As At:	

GROSS PAID AMOUNT IN RESPECT OF INDEMNITY & COSTS 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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
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
For any fields where pages 5) and 6) have been completed, this page should be the total of those pages.

Data As At:	

GROSS INCURRED AMOUNT IN RESPECT OF INDEMNITY & COSTS 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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the total gross incurred amount (paid + outsandings) 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

Data As At:	

GROSS PAID AMOUNT IN RESPECT OF INDEMNITY & COSTS 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									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
Total									

Notes

Please provide the total gross paid amount in respect of indemnity and costs (both own and third-party) on all ***settled claims*** *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

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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
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%

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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
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.

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**
1990									
1991									
1992									
1993									
1994									
1995									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
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

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**
1990											
1991											
1992											
1993											
1994											
1995											
1996											
1997											
1998											
1999											
2000											
2001											
2002											
2003											
2004											
2005											
2006											
2007											
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)

D: Per Claim Mesothelioma Survey Data Collection Note

Appendix D: Per Claim Survey Data Collection Note

PROCESS DOCUMENTATION FOR ASBESTOS WORKING PARTY PER CLAIM DATA COLLECTION

1. INTRODUCTION

1.1 The Institute of Actuaries performs research into General Insurance Issues and a number of working parties are formed by members of the Institute. The working parties are advertised by the Institute and are open to anyone 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 for the years 2007 to 2008. 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 Financial Services, AXA, Equitas, 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 mesothelioma claims arising due to asbestos exposure. The information collected is only for meso claims notified from 2003 onwards and relates to the following categories:

(a) Cover type (e.g. EL / PL);

(b) Trade code (as per pre-defined set of codes outlined in spreadsheet Meso Occupation Codes_mk2.xls);

(c) Insured first year indicator (year the insured first notified a meso claim, yyyy);

(d) Date reported (dd/mm/yyyy or blank if not known);

(e) Date settled (dd/mm/yyyy of blank if not known or not settled);

(f) Claimant exposure start year (yyyy or blank if not known);

(g) Date of birth year (yyyy or blank if not known);

(h) Sex (M or F or blank if not known)

(i) Total claim paid (in £s); and

(j) Total case estimate (in £s)

2.2 The data will be as at 30th September 2007

3. DATA COLLECTION PROCESS

3.1 Information provided by the working party 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.xls.

3.2 Peter Stirling will collect and amalgamate the data sent by the working party 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 the datasets on a secure PC within the Institute of Actuaries.

3.4 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.

3.5 The working party members will be able to have the results of analyses e-mailed to them by Peter Stirling.

3.6 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.

3.7 Following the completion of the research by the working party, Peter Stirling will delete all the datasets held by the Institute.

Appendix D: Per Claim Survey Data Collection Note

Template

The following fields for each meso claim notified post 31/12/2002 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.
One sheet should be completed and then e-mailed to Peter Sterling - peter.stirling.actuaries.org.uk

Cover Type	Trade Code	Insured First Year	Date Reported	Date Settled	Claimant Exposure Start Year	Year of Birth	Sex	Total Claim Paid	Total Case Estimate
EL	Carpenter	2003	31/03/2006	31/03/2007	1963	1929	M	100,000.00	100,000.00
PL	Construction	2004		31/12/9999			F		
	Electrician	2005							
	Maintenance	2006							
	Manufacturing	2007							
	Marine								
	Miscellaneous								
	Plumbing								
	Transport								
	Fitter								

Appendix D: Per Claim Survey Data Collection Note

Insured First Year - Notes on completion

This field should follow the following specification:

What is important is the year the insured first started to notify claims to the insurer.

For all claims notified in 2003, 2003 should be entered irrespective of whether information is known (not all participants will have information available)
For claims notified in 2004, 2004 should be entered for all notifications from an insured that has first started to notify claims in 2004
For claims notified in 2004, 2003 should be entered for all notifications from an insured that first started to notify claims in 2003 and prior
For claims notified in 2005, 2005 should be entered for all notifications from an insured that has first started to notify claims in 2005
For claims notified in 2005, 2004 should be entered for all notifications from an insured that has first started to notify claims in 2004
For claims notified in 2005, 2003 should be entered for all notifications from an insured that first started to notify claims in 2003 and prior
etc.

Examples

The following sets out the notification history and what the insured first indicator would be in each case:

Example A

Year	Number of claims notified	Insured First Indicator (for all claims)
2002 and prior	5	
2003	10	2003
2004	15	2003
2005	25	2003
2006	20	2003
2007	20	2003

Example B

Year	Number of claims notified	Insured First Indicator (for all claims)
2002 and prior	0	
2003	10	2003
2004	15	2003
2005	25	2003
2006	20	2003
2007	20	2003

Example C

Year	Number of claims notified	Insured First Indicator (for all claims)
2002 and prior	0	
2003	0	
2004	2	2004
2005	12	2004
2006	0	
2007	2	2004

Example D

Year	Number of claims notified	Insured First Indicator (for all claims)
2002 and prior		
2003	1	
2004	0	
2005	5	2003
2006	0	
2007	1	2003

Example E

Year	Number of claims notified	Insured First Indicator (for all claims)
2002 and prior	0	
2003	0	
2004	0	
2005	0	
2006	0	
2007	2	2007

Example F

Year	Number of claims notified	Insured First Indicator (for all claims)
2002 and prior		
2003	0	
2004	0	
2005	100	2005
2006	10	2005
2007	0	

Appendix D: Per Claim Survey Data Collection Note

Occupation Code Mapping

Industry group	Description
Miscellaneous	Accounts Clerk
Miscellaneous	All other risks
Miscellaneous	All other workaway
Miscellaneous	All others
Miscellaneous	Amusement Caterers
Miscellaneous	ANCILLARY WORKER
Miscellaneous	Animal feeding stuffs
Miscellaneous	Anneeler
Miscellaneous	APPRENTICE
Construction	APPRENTICE ENGINEER
Manufacturing	Apprentice Joiner
Construction	Architectural Metal Work
Manufacturing	Asbestos Manufacturing
Manufacturing	Asbestos Products
Construction	Asbestos Stripper or Removal
Miscellaneous	ASH ATTENDANT
Manufacturing	ASSEMBLY OPERATIVE
Manufacturing	Bakers Prod Retail ex Baking
Miscellaneous	Banks / money shops
Miscellaneous	BARRISTER & ACCOUNTANT
Manufacturing	Beater Man
Manufacturing	Belt Sander
Miscellaneous	Bingo Hall/Bowling Alley
Maintenance	Boiler Attendant
Maintenance	BOILER CLEANER
Maintenance	Boiler Fitter
Maintenance	Boiler Maint. Eng.
Manufacturing	Boiler Maker
Maintenance	Boiler Operator
Maintenance	Boiler Related Work
Maintenance	Boilerhouse Stoker
Maintenance	Boilerman
Manufacturing	Bolier / Furnace Manufacturers
Maintenance	Breweries
Construction	Brick Crusher
Construction	Bricklayer
Construction	BUILDER
Construction	Builder Jobbing/Alterations
Construction	Builder New Commercial
Construction	Builder New PDH
Construction	Builder or Construction Worker or Labourer
Construction	Builders (all other work)
Construction	Builders (clause 19(2)a)
Construction	Builders (erection of private dwelling houses only)
Construction	Building allied activities (Non-private dwelling houses)
Construction	Building industry
Miscellaneous	Burner
Transport	Car/Van/Service/Repair
Miscellaneous	Caravan/Camp Sites
Construction	Caretaker
Marine	Cargo Handler
Carpenter	Carpenter
Carpenter	Carpenter & Joiner
Carpenter	Carpenter/Joiner
Manufacturing	Carpet Manufacturers
Miscellaneous	Caster
Manufacturing	CASTING MOULDING SWITCHGEAR
Miscellaneous	Caulker
Construction	CEILING FITTER
Construction	CEILING FIXER
Construction	Ceiling/Partition Erection
Construction	Cement/Lime/Plaster
Construction	Central Heating Engineers
Manufacturing	Ceramics Industry
Miscellaneous	Charge Engineer
Miscellaneous	Chargehand
Construction	Chargehand Erector
Miscellaneous	CHEMICAL ENGINEER
Miscellaneous	Chemical Industry
Miscellaneous	Chemical works
Miscellaneous	CHEMIST
Miscellaneous	CHIEF CONVENOR
Miscellaneous	CHIEF TECHNICIAN
Construction	Civil Engineering - non spec
Construction	Civil Engineering (other than specified)
Construction	Civil Engineers
Miscellaneous	Cleaner
Miscellaneous	Cleaner-Office/Factory/Drains
Miscellaneous	CLERK
Miscellaneous	Clerk of Works
Miscellaneous	COLOUR STILLMAN
Miscellaneous	Company Director
Miscellaneous	COMPTOMETER OPERATOR
Construction	Construction Worker
Construction	Consulting Engineer
Miscellaneous	Control Engineer
Manufacturing	CONVEYOR OPERATOR
Miscellaneous	COPPERSMITH
Miscellaneous	Councils
Maintenance	Counte assistant in builder's merchants
Miscellaneous	Coverer
Maintenance	Craftsman
Construction	CRANE DRIVER

Appendix D: Per Claim Survey Data Collection Note

Occupation Code Mapping

Industry group	Description
Construction	CUTTER BOY
Maintenance	DECORATOR, FOREMAN
Transport	Delivery Driver
Construction	Demolition contractor
Construction	Demolition Worker
Construction	Design Engineer
Miscellaneous	DESIGN MANAGER
Miscellaneous	DESIGNER/DRAUGHTSMAN
Miscellaneous	DIESEL ENGINE FITTER
Miscellaneous	Director
Marine	Dock Labourer
Marine	Docker or Porter
Marine	Docks and Harbour activities
Plumbing	Domestic Plumber/Heating Eng
Construction	Double Glazing Units
Miscellaneous	Dredger Engineer
Miscellaneous	DRILLER
Transport	Driver
Miscellaneous	Dry Cleaner/Laundrette
Manufacturing	DYE HOUSE OPERATIVE
Miscellaneous	ELECT TECH ENGINEER
Electrician	Electrician
Electrician	Electrical Engineer
Electrician	Electrical Engineering
Electrician	Electrical Fitter
Electrician	Electrical goods (excl. TVs etc.)
Electrician	Electrical goods (incl. TVs etc.)
Electrician	Electrical Inspector
Electrician	ELECTRICAL PLANNER
Electrician	Electrical Wireman
Electrician	ELECTRICIAN
Electrician	Electrician
Electrician	ELECTRICIAN & FORMAN ELECTRICIAN
Electrician	ELECTRICIAN(S)
Electrician	ELECTRICIANS MATE
Miscellaneous	Electronic Eqpt non specific
Miscellaneous	ENGINEER
Construction	Engineer inc Insulation / Heating Engineer
Construction	Engineering and maintenance worker
Manufacturing	Engraver
Miscellaneous	Estimator
Miscellaneous	Ex Prodn Operative
Miscellaneous	EXPORT PACKER
Manufacturing	Fabricator
Miscellaneous	Fabrics (incl. man made fabrics and fibres)
Manufacturing	Factory operative
Manufacturing	Factory Worker
Miscellaneous	Farm Labourer
Construction	FELT FITTER
Miscellaneous	Film engineer
Miscellaneous	Film Librarian
Manufacturing	FILTER MAKER
Miscellaneous	Fire Protection Officer
Miscellaneous	FIREFIGHTER
Manufacturing	Fireplace Maker
Fitter	FITTER
Fitter	Fitter (Gas, Pipe)
Fitter	Fitter (Gas, Pipe)/Lift Engineer
Maintenance	Fitter (Maintenance)
Fitter	Fitter, Turner, Installer
Fitter	FITTER/ENGINEER
Fitter	Fitter/Labourer
Fitter	Fitter/Welder
Fitter	Fitters Mate
Miscellaneous	Flats
Miscellaneous	Flax, hemp & jute
Construction	FLOOR LAYER
Miscellaneous	Food & drink
Miscellaneous	Food Manufacturers
Miscellaneous	FOREMAN
Construction	FOREMAN ELECTRICIAN
Plumbing	Foreman Plumber
Miscellaneous	Forewoman's Assistant
Manufacturing	Foundaries / Casting Industry
Manufacturing	Foundries
Maintenance	FURNACEMAN
Construction	Furnance Wrecker
Manufacturing	Furniture Manufacturers
Manufacturing	Furniture Polisher
Miscellaneous	Ganger
Maintenance	Gas appliance repairer
Maintenance	Gas Engineer
Maintenance	Gas Fitter
Miscellaneous	General labourer
Miscellaneous	General worker
Manufacturing	GLASS BLOWER
Manufacturing	Glass Manufacturers
Manufacturing	Glass, china & ceramics
Construction	Glazier
Construction	Grinder
Miscellaneous	Grocer
Miscellaneous	Ground worker
Miscellaneous	GUNITE OPERATOR

Appendix D: Per Claim Survey Data Collection Note

Occupation Code Mapping

Industry group	Description
Maintenance	Handyman
Marine	Harbourmaster
Construction	Heating / Ventilation / Air Conditioning Engineers
Construction	HEATING ENGINEER
Construction	Heating/Cooling Machinery
Construction	Heating/Ventilating/Mechanical
Miscellaneous	Hotels within 1956 Act
Miscellaneous	HOUSEWIFE
Miscellaneous	HVAC Foreman
Miscellaneous	Improver
Maintenance	Industrial Cleaner
Maintenance	INDUSTRIAL CLEANER
Maintenance	INDUSTRIAL PAINTER
Miscellaneous	InsPECTOR/SUPERVISOR
Miscellaneous	Installation
Miscellaneous	INSTRUMENT ARTICIFER
Manufacturing	Instrument Maker
Manufacturing	INSTRUMENT MECHANIC
Manufacturing	Instrument Mechanic
Manufacturing	Instrument Technician
Construction	Insulation - non specific
Construction	Insulation Contractor
Construction	INSULATION ENGINEER
Construction	Insulation Engineer
Construction	Insulator
Miscellaneous	Insurance Clerk
Miscellaneous	Janitor
Manufacturing	JOINER
Manufacturing	Joiner/Machinist
Manufacturing	JOINERS LABOURER
Manufacturing	Joinery Goods
Manufacturing	JOINTER
Manufacturing	Laboratory Assistant
Manufacturing	Laboratory technician
Miscellaneous	LABOURER
Miscellaneous	Labourer and pot man
Miscellaneous	Labourer and Scaffolder
Miscellaneous	LAGGER
Miscellaneous	Laggers Mate
Miscellaneous	Lagging / Insulators
Miscellaneous	LAGGING ENGINEER
Miscellaneous	Laundries
Miscellaneous	Legal Exexutive
Miscellaneous	Liability Bordereau
Maintenance	Lift engineer
Miscellaneous	Line Manager
Miscellaneous	Local authorities
Transport	Lorry driver
Maintenance	Machine Maintenance
Manufacturing	Machine Operator
Manufacturing	Machine Tool Manufacturers
Manufacturing	Machine Tool Operator or Machinist
Manufacturing	Machinery manufacture
Maintenance	MAINTENANCE
Maintenance	Maintenance electrician
Maintenance	Maintenance engineer
Maintenance	MAINTENANCE FITTER
Maintenance	MAINTENANCE FOREMAN
Maintenance	Maintenance Man
Maintenance	MAINTENANCE MECHANIC
Maintenance	MAINTENANCE OPERATIVE
Maintenance	Maintenance Worker
Maintenance	Maintenance Worker or Caretaker or Handyman
Marine	Marine Engineer
Marine	Marine engineer
Marine	Marine Fitter
Marine	Marine Plumber
Maintenance	MECH/ELEC FITTER
Transport	Mechanic
Maintenance	Mechanical engineer
Maintenance	Mechanical Fitter
Maintenance	MECHANICAL FITTER
Marine	Merchant Seaman
Transport	MESSENGER/CHAUFFEUR
Manufacturing	Metal production
Manufacturing	Metal Worker
Miscellaneous	Metalwork/Goods non specific
Miscellaneous	Miller Setter Operator
Miscellaneous	Millwright
Manufacturing	Miner
Manufacturing	Mining
Manufacturing	Motor MANUFACTURER
Transport	Motor trade
Miscellaneous	Moulder
Miscellaneous	N/A
Miscellaneous	NIGHT BAKER
Miscellaneous	NOT KNOWN
Miscellaneous	Office work
Miscellaneous	Offices/Clerical
Miscellaneous	OPERATIONS ENGINEER
Miscellaneous	OPERATIVE
Miscellaneous	Operator
Miscellaneous	OPERATOR OF IMPREGNATOR PLANT

Appendix D: Per Claim Survey Data Collection Note

Occupation Code Mapping

Industry group	Description
Miscellaneous	Ops Superintendent
Miscellaneous	Other
Miscellaneous	Other Allied Trade
Miscellaneous	Other Drink Manufacturers
Miscellaneous	Other Engineering
Manufacturing	Other Manufacturing
Miscellaneous	Other Metal Based Industry
Maintenance	OVEN MAINTENANCE MAN
Miscellaneous	Packer and Presser
Manufacturing	Paint Manufacturers
Maintenance	PAINTER
Maintenance	Painter and Scaler
Maintenance	Painter/Dec-General Commercial
Maintenance	PAINTER/DECORATOR
Maintenance	Painter/Decorator-Domestic
Maintenance	Painter/Foreman
Miscellaneous	Paper
Miscellaneous	Paper Industry
Miscellaneous	Pattern Maker
Fitter	PIPE FITTER
Fitter	Pipe Fitter and Heating Inspector
Fitter	PIPE FITTERS MATE
Miscellaneous	PIPE LAGGER
Maintenance	Pipe Maintenance
Manufacturing	Pipe Manufacturers
Fitter	PIPEFITTER
Construction	Pipework Engineers
Construction	Planning Engineer
Maintenance	PLANT ATTENDANT
Maintenance	Plant Operator
Maintenance	Plant Operator/Labourer
Construction	Plasterer
Miscellaneous	Plastics
Miscellaneous	Plater
Miscellaneous	Plater's Mate
Miscellaneous	Plating Industry
Plumbing	Plumber
Plumbing	Plumber/Heating Engineer
Plumbing	PLUMBER'S MATE
Plumbing	Plumbing
Miscellaneous	Porter
Miscellaneous	Powerhouse s-visor
Miscellaneous	Press operator/Welder
Miscellaneous	Presser
Miscellaneous	PRINTER
Miscellaneous	PROCESS OPERATOR
Miscellaneous	Process Operator
Miscellaneous	PROCESS WORKER
Manufacturing	Production Manager
Miscellaneous	PRODUCTION WORKER
Miscellaneous	Progress Engineer
Miscellaneous	Project Director
Miscellaneous	Property Owner/Management
Miscellaneous	Property owners
Miscellaneous	Public/Local Authority
Manufacturing	Quarries
Transport	Railway Engineer
Miscellaneous	Refractories
Miscellaneous	Refractory Bricklayer
Miscellaneous	REFRACTORY INSTALLER
Miscellaneous	RESEARCH CHEMIST
Miscellaneous	RESEARCH SCIENTIST
Miscellaneous	Retail Shop non specific
Miscellaneous	Retailers
Miscellaneous	Retired
Construction	RETIRED BRICKLAYER
Construction	RETIRED ELECTRICIAN
Maintenance	RETIRED FITTER
Marine	RETIRED SHIPBREAKER
Miscellaneous	Rigger
Miscellaneous	RIGGER
Miscellaneous	Rigger Erector
Miscellaneous	Road and Sewer Contractors
Construction	Roofer
Construction	Roofer or Ceiling Fixer
Construction	Roofers
Construction	Roofing Foreman
Miscellaneous	Saw Mill/Timber Treatment
Miscellaneous	Saw Operator
Construction	SCAFFOLDER
Construction	Scaffolder or Steel Erector
Miscellaneous	Scrap Metal Burner
Miscellaneous	Secretary
Miscellaneous	Section Engineer
Miscellaneous	Service & Comms Eng
Maintenance	Service Engineer
Construction	Shaft sinker
Miscellaneous	Shakedown exposure
Marine	Sheet Metal Products
Marine	SHEET METAL WORKER
Marine	Sheet Metal Worker or Plater
Marine	Sheet Metal Workers
Miscellaneous	Shift Charge Engnr.

Appendix D: Per Claim Survey Data Collection Note

Occupation Code Mapping

Industry group	Description
Miscellaneous	Shift Engineer
Marine	Ship Related Work
Marine	Shipbreaking
Marine	Shipbuilders / Repairers
Marine	SHIPPING CLERK
Marine	Shipwright
Marine	Shipyards & heavy engineering
Maintenance	Shop Fitter
Maintenance	Shop Fitter/Joiner
Maintenance	Shop fitters
Miscellaneous	Shotblaster
Miscellaneous	SITE ENGINEER
Miscellaneous	Site Manager
Miscellaneous	SITE SUPERVISOR
Miscellaneous	Slinger
Miscellaneous	Spinning foreman
Miscellaneous	Spouse of Employee or Other Relative
Miscellaneous	Sprayer
Construction	Sprinkler Installer
Construction	Steel erector/FITTER
Construction	STEEL FIXER
Marine	Stevedore
Manufacturing	Stock Controller
Construction	STOKER
Construction	STOKER/LAGGER
Construction	Stonemason
Manufacturing	Store Keeper
Manufacturing	STORE MANAGER
Manufacturing	Storeman
Miscellaneous	Superintendent
Miscellaneous	Surveyor
Miscellaneous	SWITCHBOARD ATTEND.
Miscellaneous	TBA
Miscellaneous	TEACHER
Miscellaneous	TECHNICIAN
maintenance	Telephone Engineer
Manufacturing	Textile Industry
Manufacturing	Textile Spin/Weaving-Non Spec
Manufacturing	Textiles & fabrics
Construction	Thermal Engineer
Construction	THERMAL INS ENGINEER
Construction	THERMAL INSULATION ENGINEER
Maintenance	TILER
Manufacturing	Timber (with woodworking machinists)
Manufacturing	Timber (without woodworking machinists)
Miscellaneous	TINSMITH/SHEET METAL WORKER
Manufacturing	Toolmaker
Transport	Train Carriage Building
Transport	Transit Bordereau
Miscellaneous	TRENCHMAN
Construction	TUNNEL CAULKER
Construction	TUNNELLER
maintenance	Turbine Driver
maintenance	Turbine Installer
maintenance	TURBINE OPERATIVE
maintenance	Turbine Operator
Miscellaneous	TV REPAIR MAN
Manufacturing	Tyre / Rubber manufacturer
Manufacturing	Tyre Remoulder
Miscellaneous	Ultilities
Miscellaneous	Unemployed
Miscellaneous	UNIT OPERATOR
Miscellaneous	Universities
Miscellaneous	Unknown
Miscellaneous	Various
Transport	Vehicle Construction
Construction	Ventilation & Insulation work
Construction	VENTILATION ERECTOR
Miscellaneous	Wages Clerk
Miscellaneous	Warehouseman
Miscellaneous	Water boards
Miscellaneous	Water Mains Layer
Miscellaneous	Welder
Miscellaneous	Welder Fabricator
Miscellaneous	WELDER'S MATE
Miscellaneous	Wholesale Food/Drink non spec
Miscellaneous	Winder
Manufacturing	Wood machinist
Manufacturing	Woodworkers non specific
Miscellaneous	Work on Ships, Aircraft, Atomic, Petro-Chemical installations
Miscellaneous	Works study officer
Miscellaneous	xxx
Miscellaneous	Yard Man

E: Summary Survey – Further Data

- **Average age of claimant by disease type and claim notification year**

- **Split of claimants by age band for each disease type and claim notification year**

Appendix E: Summary Survey Data

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**
1990	55.4	55.2	66.3		57.0	58.7	54.6		**57.7**
1991	59.0	59.1	64.2		59.4	59.8	57.2	62.5	**59.9**
1992	60.3	59.4	64.2		59.5	59.4	56.7	70.5	**60.6**
1993	55.8	63.3	61.0		58.7	57.8	55.0		**58.7**
1994	59.2	61.3	68.3		60.7	61.9	57.5	63.0	**61.2**
1995	57.4	63.0	67.7		60.1	62.8	57.4	63.3	**61.3**
1996	59.9	64.2	67.0		62.6	60.9	61.6	61.3	**62.8**
1997	60.9	59.8	64.2		60.4	61.3	60.1	60.2	**61.6**
1998	61.0	66.9	71.4		62.3	64.6	62.5	60.8	**64.0**
1999	62.9	66.9	71.3	56.0	63.7	65.8	62.7	62.5	**64.2**
2000	61.2	62.3	65.2	60.0	65.3	67.1	65.6	62.3	**65.5**
2001	62.9	65.6	67.4	57.3	64.8	65.5	64.0	64.5	**65.2**
2002	65.2	67.1	72.5	64.0	66.0	66.6	65.2	60.8	**66.0**
2003	64.7	67.6	66.6	63.5	65.3	66.9	64.6	74.0	**65.7**
2004	64.7	67.0	67.5	64.6	65.4	66.6	65.6	77.0	**65.8**
2005	63.8	68.5	69.4	65.7	65.4	67.0	64.9		**65.7**
2006	65.1	68.9	70.4	65.3	66.1	68.2	66.7		**66.4**
2007	67.8	69.9	68.7	65.3	68.1	69.5	68.8		**68.5**
Total	64.5	67.1	67.2	65.0	65.2	67.0	65.5	62.8	**65.7**

Notes
Only seven companies provided data

Appendix E: Summary Survey Data

PERCENTAGE 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**
1990	0%	2%	2%	3%	5%	0%	1%	0%	0%	88%	**100%**
1991	1%	3%	3%	3%	3%	3%	1%	1%	0%	82%	**100%**
1992	0%	5%	2%	6%	8%	4%	3%	0%	1%	72%	**100%**
1993	1%	6%	5%	8%	12%	8%	5%	2%	0%	53%	**100%**
1994	0%	5%	10%	12%	13%	10%	7%	2%	0%	39%	**100%**
1995	1%	5%	5%	11%	16%	14%	9%	2%	2%	36%	**100%**
1996	1%	6%	7%	9%	13%	10%	6%	4%	1%	44%	**100%**
1997	1%	8%	5%	11%	10%	12%	4%	2%	2%	45%	**100%**
1998	0%	4%	6%	8%	8%	8%	6%	5%	1%	54%	**100%**
1999	1%	6%	12%	14%	13%	10%	13%	4%	2%	26%	**100%**
2000	0%	5%	9%	17%	15%	12%	11%	6%	3%	23%	**100%**
2001	0%	6%	8%	15%	15%	14%	14%	6%	3%	20%	**100%**
2002	0%	3%	10%	15%	13%	12%	13%	6%	2%	25%	**100%**
2003	0%	4%	11%	14%	15%	15%	11%	7%	3%	20%	**100%**
2004	1%	3%	7%	13%	14%	14%	11%	7%	2%	28%	**100%**
2005	1%	3%	9%	12%	16%	12%	14%	9%	4%	21%	**100%**
2006	0%	3%	7%	12%	16%	14%	12%	9%	3%	22%	**100%**
2007	0%	2%	6%	10%	15%	17%	9%	8%	1%	31%	**100%**
Total	0%	4%	8%	12%	14%	12%	10%	6%	2%	32%	**100%**

F: Per Claim Mesothelioma Survey – Further Data

- **Proportion of claim amounts by report year and trade - EL only**
- **Number of claims by year of first exposure and report year**
- **Average age at date of claim notification by trade and report year**

Appendix F: Per Claim Survey Data

Proportion of claim amounts by report year and trade - EL only

	Trade Code											
Year reported	Carpenter	Construction	Electrician	Fitter	Maintenance	Manufacturing	Marine	Miscellaneous	Plumbing	Transport	(blank)	Grand Total
2003	2%	11%	6%	1%	6%	17%	21%	17%	1%	3%	15%	100%
2004	1%	9%	5%	1%	5%	17%	17%	24%	1%	2%	17%	100%
2005	2%	11%	5%	2%	5%	19%	16%	20%	2%	2%	17%	100%
2006	2%	15%	4%	1%	6%	17%	14%	20%	1%	4%	17%	100%
2007	1%	13%	5%	1%	4%	18%	14%	19%	1%	3%	20%	100%
Grand Total	2%	12%	5%	1%	5%	18%	16%	20%	1%	3%	17%	100%

Appendix F: Per Claim Survey Data

Year of first exposure by report year - All cover types and all trades

Split of claim numbers	Year reported					
Claimant Exposure Start Year	2003	2004	2005	2006	2007	Grand Total
Average Exposure Start Year	1962	1962	1962	1963	1964	1963
1900	0%	1%	1%	0%	0%	0%
1901	0%	0%	0%	0%	0%	0%
1905	0%	0%	0%	0%	0%	0%
1928	0%	0%	0%	0%	0%	0%
1931	0%	0%	0%	0%	0%	0%
1932	0%	0%	0%	0%	0%	0%
1933	0%	0%	0%	0%	0%	0%
1934	0%	0%	0%	0%	0%	0%
1935	0%	0%	0%	0%	0%	0%
1936	0%	0%	0%	0%	0%	0%
1937	0%	0%	0%	0%	0%	0%
1938	0%	0%	1%	0%	0%	0%
1939	0%	0%	0%	0%	0%	0%
1940	0%	0%	0%	0%	0%	0%
1941	0%	1%	0%	0%	0%	0%
1942	0%	0%	1%	1%	1%	1%
1943	1%	0%	0%	1%	0%	0%
1944	1%	1%	0%	0%	0%	0%
1945	1%	1%	0%	1%	1%	1%
1946	0%	0%	1%	1%	1%	1%
1947	1%	2%	1%	1%	0%	1%
1948	2%	2%	2%	2%	1%	2%
1949	1%	1%	1%	1%	1%	1%
1950	4%	3%	3%	4%	3%	3%
1951	2%	2%	1%	1%	2%	2%
1952	2%	2%	2%	2%	2%	2%
1953	2%	2%	2%	3%	1%	2%
1954	2%	2%	2%	2%	2%	2%
1955	3%	3%	4%	2%	3%	3%
1956	4%	2%	2%	2%	4%	3%
1957	3%	3%	3%	2%	3%	3%
1958	3%	3%	2%	3%	2%	3%
1959	3%	4%	2%	2%	3%	3%
1960	4%	5%	5%	4%	4%	4%
1961	6%	4%	5%	7%	5%	5%
1962	4%	4%	3%	4%	5%	4%
1963	5%	3%	4%	4%	3%	4%
1964	5%	3%	5%	3%	4%	4%
1965	5%	5%	5%	4%	6%	5%
1966	5%	4%	4%	5%	5%	4%
1967	3%	3%	4%	4%	4%	4%
1968	2%	3%	4%	3%	3%	3%
1969	3%	3%	3%	3%	3%	3%
1970	4%	3%	3%	3%	4%	3%
1971	2%	2%	3%	3%	2%	2%
1972	2%	3%	2%	3%	4%	3%
1973	1%	3%	1%	2%	2%	2%
1974	1%	1%	1%	3%	1%	2%
1975	1%	2%	3%	2%	2%	2%
1976	2%	1%	1%	2%	1%	1%
1977	1%	1%	1%	2%	1%	1%
1978	2%	2%	1%	1%	1%	1%
1979	2%	2%	1%	1%	2%	1%
1980	0%	1%	1%	1%	1%	1%
1981	1%	1%	0%	1%	0%	0%
1982	0%	0%	1%	1%	1%	1%
1983	0%	0%	0%	0%	1%	0%
1984	0%	1%	0%	1%	0%	0%
1985	0%	0%	0%	0%	0%	0%
1986	0%	1%	1%	1%	1%	1%
1987	1%	0%	0%	0%	1%	0%
1988	0%	0%	1%	0%	0%	0%
1989	1%	1%	0%	1%	0%	0%
1990	0%	0%	0%	0%	0%	0%
1991	0%	0%	0%	0%	0%	0%
1992	0%	0%	1%	1%	0%	1%
1993	0%	0%	0%	0%	0%	0%
1994	0%	0%	0%	0%	0%	0%
1995	0%	0%	0%	0%	0%	0%
Grand Total	100%	100%	100%	100%	100%	100%

Appendix F: Per Claim Survey Data

Average age at claim by report year and trade

	Year reported					
Average age at claim	2003	2004	2005	2006	2007	2003-07
All trades	68.0	68.7	69.5	69.8	70.3	69.3
Construction	65.5	67.7	66.9	67.6	69.4	67.4
Manufacturing	68.4	69.7	69.9	70.6	71.2	70.0
Marine	72.1	71.5	72.5	72.9	73.6	72.4
Miscellaneous	65.8	68.4	68.7	69.6	69.9	68.6
Blank	67.1	66.7	69.9	70.0	68.8	68.9

G: Data behind Section 5 charts

- **Claim numbers by notification year**
- **Average cost per claim by settlement year**

Appendix G: Data behind Section 5 charts

NUMBER OF CLAIMS NOTIFIED BY NOTIFICATION YEAR					
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma (100% Market)
1990	76	297	29	4	328
1991	103	308	40	2	393
1992	199	382	33	18	387
1993	197	611	50	7	624
1994	214	515	43	15	584
1995	268	497	40	16	554
1996	353	478	60	32	698
1997	438	570	63	25	712
1998	537	583	41	29	784
1999	623	710	41	26	888
2000	1,191	830	45	55	1,156
2001	1,723	1,002	62	102	1,326
2002	2,276	1,033	86	102	1,388
2003	3,639	1,359	115	165	1,863
2004	5,943	1,288	126	290	1,868
2005	6,250	1,178	136	397	1,872
2006	2,408	1,348	197	389	2,292
2007	1,435	1,576	232	298	2,789
Total	27,873	14,565	1,439	1,972	20,505

Appendix G: Data behind Section 5 charts

GROSS ACPC IN RESPECT OF INDEMNITY & COSTS FOR SETTLED CLAIMS BY CLAIM SETTLEMENT YEAR					
Notification Year	Pleural Plaques	Asbestosis	Asbestos Related Lung Cancer	Pleural Thickening	Mesothelioma
1990	4,123	12,630	10,851	2,373	20,497
1991	4,026	15,659	10,990	3,396	29,883
1992	6,105	17,768	15,612	11,126	26,621
1993	5,004	14,944	13,078	7,682	57,506
1994	5,785	16,669	15,518	13,292	33,347
1995	6,441	16,073	20,806	2,665	36,178
1996	7,300	19,671	13,263	4,858	39,235
1997	4,286	13,177	13,365	13,739	47,264
1998	6,668	17,768	27,008	6,643	46,330
1999	8,202	22,980	36,041	5,080	45,990
2000	6,695	20,596	35,404	10,323	53,186
2001	9,548	23,466	36,967	6,535	50,273
2002	10,495	20,069	33,720	8,876	72,464
2003	10,722	26,107	42,764	16,840	68,993
2004	8,336	18,042	33,042	15,473	67,071
2005	8,270	19,011	39,656	15,170	64,702
2006	7,044	15,930	27,544	15,497	73,589
2007	10,646	22,485	36,546	17,873	81,325