

UK DEAFNESS WORKING PARTY UPDATE 2013

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1. Introduction

Noise induced hearing loss (NIHL) was an issue in the late 1980s as claim notifications increased around the time of the 1989 Noise at Work Regulations. There was a section in the GIRO paper "Disease and Employers' Liability Insurance" (Arterton et al)¹ presented in 1994 on NIHL claims. After this time, however, the claim notification frequency reduced each year and this drew limited further actuarial comment.

Over the last few years it was perceived that the claims notification experience had started to increase rapidly again. A working party was formed to assess whether this was the case and what might be driving this change. The specific objectives of the working party are as follows:

- Help improve the actuary's ability to set reserves for NIHL claims.
- Facilitate a market wide data collection exercise to understand the current trends that the Insurance Market is facing in relation to NIHL claims.
- Develop relationships with relevant parties e.g. Health and Safety Executive (HSE), claims handlers, solicitors etc. or any other party that are relevant to the compensation process, to assist understanding and / or gather additional data items available to help understand the recent experience.

This paper sets out the working party's findings and the issues the actuary should consider thus meeting the main objective of improving the actuary's ability to reserve for these claims. This paper is intended to be a source of reference and useful touch point for the experienced reserving actuary, and it is also intended as a useful guide to provide background information for those who want to learn about NIHL claims.

The working party has not attempted to estimate what the future Insurance Market cost of NIHL might be. At present the working party feels that there is too much uncertainty surrounding NIHL claims for such projections to be of help to the practitioner. The working party believe that more value will be given in highlighting the issues, and discussing the things that the reserving actuary should consider when projecting the reserves required for these claims.

There have been many papers written in respect of asbestos-related claims that have proved useful to the reserving actuary, not least having all relevant information and references in one place. To this extent, this paper aims to be the equivalent compendium for NIHL claims.

This paper presents the results of a survey of aggregated NIHL claim numbers and costs for a large proportion of the UK Insurance Market. The working party defines the UK Insurance Market as all direct (including London Market) insurers, Lloyd's syndicates and captive insurance regardless of whether the entities are currently solvent or insolvent. It does not include central Government, nor local authorities except to the extent they are covered by commercial insurance.

2. Executive Summary

The first major publication on the link between noise at work and noise induced hearing loss claims (NIHL) was some 50 years ago. Since that time a significant amount of legal regulations and case law has led to measures aimed at reducing the risk, determining liability and setting appropriate claim levels.

Recent Insurance Market claim notifications for NIHL have been rising rapidly. This is due to a mixture of the impact of a recessionary period, influence of claims management companies and claimant solicitor activity as well as legislation and process changes. This has led to a larger than usual level of uncertainty for the reserving actuary responsible for projecting reserves required in relation to NIHL claims.

Section 3 of this paper provides the relevant background for NIHL claims. It discusses how the ear works, the dynamics of NIHL claims and the key pieces of legislation.

Section 4 of the paper summarises the relationships the working party has established with various parties. The Health and Safety Executive (HSE) has conducted a large body of research over the last 40 years. This section summarises the key papers from an actuarial perspective.

Section 5 gives the background of the claims process for NIHL and looks at the more recent legislation and process changes in more depth. The understanding of the claims process and recent changes is important from an actuarial perspective.

Section 6 sets out the information obtained from the survey and Insurance Market data collections conducted. In this section the key drivers in respect of the recent experience are observed and discussed.

Section 7 outlines and discusses the reserving methods that can be used and why actuarial judgement is the most important factor for reserving NIHL claims.

Section 8 outlines and discusses all the issues that the reserving actuary needs to consider when projecting reserves for NIHL claims and therefore will help the actuarial judgement that is required.

No conclusions have been reached in respect of the overall market impact of NIHL claims. The range of estimates would be so vast as to make them fairly uninformative. We believe that it is much more useful to help the actuary make the many judgements that are required during these turbulent times. The working party will continue to monitor the emerging claims experience and develop model frameworks in the future.

3. Background

This section covers the basics of what we mean by NIHL, how the ear works and can be damaged, as well as a history and overview of the relevant legislation in respect of NIHL claims. This section is intended to be a useful summary for those not familiar with NIHL claims and a source of reference for those that are.

3.1 What are Noise Induced Hearing Loss (NIHL) and Industrial Deafness?

Noise induced hearing loss (NIHL) is a common condition that is caused by exposure to high intensity sound. Industrial Deafness is noise induced hearing loss which is associated with occupational exposure to noise. Throughout this paper we tend to use the phrases “noise induced hearing loss” and “industrial deafness” interchangeably. Clearly there will be instances of noise induced hearing loss occurring outside of an occupational setting, but with regard to the insurance industry, and in particular employers’ liability cover, the majority of, if not all, the cases of noise induced hearing loss we are concerned with will be cases of industrial deafness.

As described below, the ear is a complex mechanism which changes sound waves in the air into electrical signals, which are then transmitted to the brain. Normally we are exposed to sound waves at safe levels which do not affect our hearing, but exposure to very loud sounds, particularly over long periods of time, can damage our hearing.

3.2 How the ear works

To understand how noise induced hearing loss can occur, it is first worth giving a basic description of the ear and how it works.

- Sound waves, vibrations in the air, enter the outer-ear, or pinna, and are concentrated into a narrow passageway, the ear canal, which leads to the eardrum.
- The sound waves cause the eardrum to vibrate. These vibrations are passed into the three bones of the middle-ear, the malleus, incus and stapes, where the vibrations are amplified and passed to the inner-ear, the cochlea.
- The cochlea is filled with fluid, and contains a membrane covered in tiny hair cells called stereocilia. The vibrations in the fluid inside the cochlea cause the hair cells to ripple, which creates an electrical signal.
- The auditory nerve carries this electrical signal to the brain, where it is interpreted as the “sounds” we recognise.

3.2.1 Measuring sound

The decibel (dB) is the unit measurement of sound intensity or acoustic power. It is based on a logarithmic scale. Every increase of 3dB is equivalent to doubling the noise intensity. Thus 93dB is twice the sound level of 90dB and 96dB would be four times the sound intensity.

Typical noise levels are

- 10 dB - rustle of leaf
- 20 dB - normal hearing threshold
- 30 dB - whisper
- 40 dB - residential area at night
- 50 dB - normal speech at 1 meter
- 60 dB - busy office
- 70 dB - loud radio at home
- 80 dB - street traffic
- 90 dB - weaving mill or heavy vehicle

100 dB - circular saw or sheet metal shop
110 dB - rock drill
120 dB - propeller engine
130 dB - pneumatic riveting
140 dB - jet engine at 25 meters

Some notes on notation

dB(A) refers to a measurement of sound intensity across a range of frequencies, averaged with what is known as an A-weighting. A-weighting is applied to sound level measurements to attempt to account for the relative loudness perceived by the human ear. The human ear is less sensitive to low audio frequencies, so these frequencies are given less weight when taking a dB(A) measurement.

B, C, D and Z frequency ratings also exist. The C weighting is used when measuring peak sound intensity levels. The Z or zero weighting is a flat weighting, while the B and D weightings have fallen into disuse.

dB(A) Lep d, refers to the measurement of sound intensity across the equivalent of an 8 hour working day, using the A frequency weighting. For example, an employee working for 8 hours in a noise level of 75 dB(A) will have a noise exposure of 75 dB(A) Lep d. However, if the time spent is less than 8 hours the noise exposure will be less than 75 dB(A) Lep d, and if the time is longer than eight hours the noise exposure will be more than 75 dB(A) Lep d.

3.2.2 Damage to the ear

The cochlea, or inner-ear, can be permanently damaged by a one-off exposure to excessive sound pressure, caused by an explosion for example. This form of NIHL is called an acoustic trauma.

Industrial Deafness is more commonly associated with gradually developing hearing loss. This is caused by prolonged exposure to excessive sound levels over time. Overstimulation of the stereochilia, the hair cells in the inner ear, leads to the formation of free radicals known as reactive oxygen species, leading to oxidative cell death.

The ear can be exposed for short periods to noise in excess of 120 dB without permanent harm, although exposures at this level would cause discomfort and possibly pain. However, exposure to levels as low as 85 dB over a long period of time can cause permanent damage. Exposure to loud noise can cause a period of auditory fatigue, or temporary loss of hearing. After sufficient recovery time, which will depend on the individual and the severity of the exposure, normal hearing will return. However, if sufficient recovery time is not allowed, the effects can become permanent, giving NIHL.


There are many occupations in industries such as agriculture, mining, construction, manufacturing, utilities and transportation, where if not properly managed, repeated exposure to high levels of noise can lead to Industrial Deafness. The damage is observed to often affect a person's hearing in the higher frequencies, in the range 3 kHz – 6 kHz, most typically around 4 kHz. Since these frequencies are not important in understanding speech, people often do not notice NIHL in its early stages. Before the risk of NIHL was more widely communicated to workers, people may have even believed themselves to be "getting used to the noise". In fact they were becoming less aware of noise not because they were "used to it", but because they were no longer hearing as much noise due to the effects of hearing loss.

As people age, the stereochilia begin to die off naturally, resulting in hearing loss known as presbycusis. NIHL claims do not tend to arise until later on in life when the symptoms are recognised, possibly linked to the onset of presbycusis, and links to occupational exposure are considered. An employee may not feel comfortable pursuing a NIHL claim against their current employer. We believe it is usually not until the employee is retired or has been made redundant that they make a claim. Claims management companies, who until recently have been paid referral fees by claimant solicitors prepared to take on NIHL cases, likely target the older demographic, and unions often publicise the possibility of NIHL to their retired members. All these are reasons why NIHL claims tend not to arise until later on in life and exhibit a considerable latency period.

3.3 A Short History Lesson

Since Industrial Deafness was recognised as a medical condition resulting from loud noise in the workplace 50 years ago, a body of legislation has been gradually enforced to mitigate the effects of this, with an approximate timeline as follows:

Figure 1 – History



1963: 'Noise and the Worker' published. Later determined as "date of knowledge"
1974: Health and Safety Regulations
1980: Limitation Act
1984: Iron Trades Agreement
1989: Noise at Work Regulations
1990: Introduction of Conditional Fee Agreements
1992: Personal Protective Equipment at Work Regulations
1996: Woolf Reforms – Pre Action Protocols
2005: Noise at Work Regulations
2010: Employers' Liability Tracing Office
2010: Jackson Review / LASPO Act
2011: Baker -v- Quantum Clothing
2013: Claims Portal expanded to include Employers' Liability claims

1. In 1963, The Ministry of Labour published "Noise and the Worker". This introduced to employers, the concept that excessive noise in the workplace could lead to hearing loss. The publication suggested measures for employers to take to identify and lower the risk, such as reducing noise levels and providing ear protection.

The 1984 case, Thompson -v- Smith Ship Repairers produced a landmark ruling. The judge found that, from the publication date of "Noise and the Worker", employers should have been aware of the risk of loud noise at work. This effectively set the industry date of knowledge in NIHL cases to 1963, meaning that exposure from 1963 onwards may be attributable to negligence of the employer, but also meaning that exposure prior to this date would not normally be compensated.

2. A number of Acts in 1974 required employers to take practicable measures to protect employees (Health and Safety at Work Act; Woodworking Machines Regulations; Agriculture (Tractor Cabs) Regulations).
3. In 1980, the Limitation Act was introduced which specified a limitation period of 3 years for personal injury claims. This means that for personal injury claims, such as NIHL, the claimant must issue their claim within 3 years of becoming aware that their condition is significant and attributable to their employer(s), or risk having their claim denied on the grounds of limitation.
4. A number of test cases in Newcastle in the early 1980s led to an agreement in 1984 known as the Iron Trades agreement. This and other key developments are covered in more detail below in section 3.4.
5. The Noise at Work Regulations 1989 determined the varying measures employers need to take to protect workers, according to noise levels. See section 3.4,
6. A series of Acts and Regulations between 1990 and 2000 led to the introduction of Conditional Fee Agreements (CFAs). See section 3.4.
7. The Personal Protective Equipment at Work Regulations 1992 places a duty on employers to provide suitable protective equipment to employees who may be exposed to a risk to their health and safety while at work.
8. The Pre Action Protocols were recommended by Lord Woolf in his Access to Justice Report of July 1996: These require insurers to provide evidence in support of a denial of liability.
9. The Noise at Work Regulations 2005 built further on the 1989 regulations. See section 3.4.
10. The Employers' Liability Tracing Office (ELTO) was formed in 2010, replacing a previously voluntary tracing scheme, to help those who have suffered injury or disease in the workplace identify the relevant EL insurer quickly and efficiently. All new and renewed EL policies from April 2011, as well as policies issued prior to April 2011 but relating to new claim notifications, and all policy records from the previous tracing scheme, are entered onto a central database managed by ELTO to facilitate traces.
11. The Jackson Review, 2010 identified ways to reduce legal costs and remove unnecessary litigation. The main recommendations included:
 - Ensuring legal fees are proportionate to the nature and complexity of the case.
 - Banning the recoverability of success fees while increasing general damages for personal injuries by 10%.
 - Widening the admissibility of damage-based agreements ('contingency fees') where fees are based on the damages awarded. These differ from the 'no-win no-fee' CFAs with fees based on the lawyer's base cost.
 - Banning payment of referral fees for passing on details of injured parties.
 - Introducing "qualified one-way cost shifting" to protect unsuccessful claimants from having to pay a winning defendant's fees.
 - Introducing fixed costs for certain types of personal injury cases.

The Legal Aid, Sentencing and Punishment of Offenders Act 2010-12 (LASPO) came into effect in April 2013. This implemented some of the Jackson Review recommendations:

- Success fees are no longer recoverable for most types of claim.
- Personal injury referral fees are banned for regulated companies.
- Damage based agreements have been implemented with solicitor's fees capped at 25% of claimant damages.

Aspects of LASPO are explored further in sections 4 and 5.

Other recommendations from the Jackson review, expected to be implemented through means other than LASPO, include:

- A responsibility on defendants to accept reasonable Part 36 offers by claimants.
- Qualified one-way cost shifting

Simmons -v- Castle 2012. This ruling defines claims subject to a 10% increase in general damages as appropriate only for those not submitted under a CFA. This is intended to balance the shift from success fees to damage based agreements.

12. Baker -v- Quantum Clothing 2011. The decision determined that a typical employer with “average” knowledge would not have been aware of the dangers of exposure below 90dB(A) Lep d prior to the publication of the 1989 Noise at Work regulations. But it was determined that in this case some employers had a “greater than average” knowledge of the risks of exposure below 90dB(A) Lep d prior to 1990. It was found for some of the employers in this case that liability should attach for exposure down to 85dB(A) Lep d from 1985.
13. Effective 31 July 2013, the Ministry of Justice (MOJ) claims portal was expanded to include Employers Liability and Public Liability claims in England and Wales. Claims with incidence dates on or after 31 July 2013 must be submitted into the portal. This is covered in more detail in section 4.

3.4 Key Areas of Legislation

The following are key areas of legislation that have impacted the level of claims notifications and /or claims costs in the past, as observed later in section 5, and hence we feel that they are worthy of further discussion.

3.4.1 Iron Trades: 1984

A pre-cursor to the agreement was a group of test cases in Newcastle against, among others, Smiths Ship Repairers (North Shields) Ltd. These cases were defended by the insurer Iron Trades. Judgment was given in November 1983 by Mustill J.

Following this case, an agreement came into force on 11th January 1984, initially between the General, Municipal, Boilermakers & Allied Trades Union (GMBATU), represented by Thompsons, and Iron Trades, but this was then expanded to include other unions and insurers. There was an ancillary agreement between Lawford & Co on behalf of various print unions using similar terms. It was known as the Iron Trades agreement due to the original test case.

On making a claim, the claimant would undergo an audiogram to measure the severity of their hearing loss as compared to a baseline level of hearing. This baseline made no allowance for the natural variations in people’s hearing ability, and the vast majority of employers did not regularly carry out audiograms in order to determine more accurately the degree of loss. Compensation under the agreement was defined by a simple 2-dimensional matrix of dB loss versus age, with greater dB loss and younger claimants attracting higher pay-outs.

The agreement provided for less than the normal common law level of damages with a fixed level of claimant solicitor costs (£350 plus VAT and disbursements). However, no discount was provided for pre 1963 exposure and the statute of limitation period was usually not applied.

The agreement dominated the claims settlement environment for deafness claims from the mid 1980’s and through most of the 1990’s. The majority of the market were signatories to the agreement and those that were not signatories tended to follow the terms it set out.

The agreement diminished in application through the 1990s, since claimant solicitor firms were increasingly less prepared to take the settlements under the agreement. There were a number of reasons for this. The scale damages were no longer considered to be realistic and there were

fewer cases with limitation arguments or with pre-1963 exposure, reducing the attractiveness of the agreement to claimants and their solicitors.

The agreement formally ended on 31 December 1998. The final year was a run-off year and no new claims were accepted after 1997.

3.4.2 The Noise at Work Regulations: 1989 / 2005

The Noise at Work Regulations 1989 defines employers' duties into the following action levels by noise exposure band:

- Daily exposure less than 85dB(A) Lep d – general duty on employer to reduce risk.
- 1st Action level 85dB(A) to 90dB(A) Lep d
 - o General duty on employer to reduce risk
 - o Noise surveys to be undertaken and records maintained
 - o Provide information, instruction and training about risks to hearing
 - o Hearing protection to be provided, maintained and repaired
 - o Machine manufacturers to provide information on the noise level
- 2nd Action Level > 90dB(A) Lep d – all of the above and
 - o The employer must reduce the noise levels as far as possible by engineering means
 - o Display signs requiring hearing protection to be worn
 - o Enforce the wearing of hearing protection.

The Noise at Work Regulations 2005 built further on the 1989 regulations:

- The levels at which each of the three actions were required to be undertaken was reduced by 5dB (e.g. 1st action level now at 80dB(A)).
- A maximum noise level (Exposure Limit Value) of 87dB(A) was imposed. This was the maximum noise levels were permitted to reach, taking into account the effect of hearing protection.
- Specific requirements on health surveillance and hearing testing.

3.4.3 Conditional Fee Agreements (CFAs): 1990 - 2000

Conditional Fee Agreements (CFAs) were introduced by Section 58 of the Courts and Legal Services Act 1990. The purpose was to ensure that with the withdrawal of Legal Aid from victims of personal injury the financial risk would be funded by the legal profession as opposed to the tax payer.

The Conditional Fee Agreements Order 1995 allowed solicitors to act on a conditional fee basis. But success fees and After the Event (ATE) insurance could not be recovered from the losing party. The Law Society gave guidance that the success fee had to be paid by the claimant and should be no more than 25% of their damages recovered. Since then however there have been a number of changes to the CFA regulations.

The Access to Justice Act 1999 paved the way for most, if not all of the success fee, to be recoverable from the losing opponent.

The new CFA Regulations 2000 made the following additional liabilities recoverable:

- CFA & success fees were recoverable from the losing opponent
- Third Party "Litigation Funding Agreements" – where another party agrees to pay for legal services on behalf of the litigant and the litigant agrees to pay costs to that funder in specified circumstances
- Commercial ATE were recoverable

- Recovery of an insurance premium equivalent where a Membership organisation, such as a trade union, has undertaken to cover the risk of a “member” against incurring liabilities for costs against an opponent.

The CFA (that provided for a success fee) had to comply with the following:

- The agreement had to be in writing
- The success fee had to be specified
- The success fee could not be more than 100%
- The agreement had to follow rules prescribed by the Lord Chancellor

Further changes impacting CFAs in 2013 are discussed in section 5.2.2 which looks in more detail at the recommendations of the Jackson review, and the changes currently being implemented.

The impact of the new CFA Regulations 2000 post the demise of the Iron Trades Agreement on the average cost of a NIHL claim to the Insurance Market can be seen in Figure 16 Section 6.4.

4. Relationships With Other Parties

In putting together this report we have considered the other parties who may be involved in work that may be of use to us. These parties are as follows:

The Health and Safety Executive (HSE);

The Compensation Recovery Unit (CRU);

Law Firms

We describe the function of each party below, along with the results of any relevant work they have conducted and any collaboration we have had with them.

4.1 Health and Safety Executive

The Health and Safety Executive (HSE) is the national independent watchdog for work-related health, safety and illness.

The HSE is an independent regulator and acts in the public interest to reduce work-related death and serious injury across Great Britain's workplaces. The HSE's aims are to protect the health, safety and welfare of people at work, and to safeguard others, mainly members of the public, who may be exposed to risks from the way work is carried out.

The HSE's statutory functions include proposing new or updated laws and standards, conducting research, providing information and advice, and making adequate arrangements for the enforcement of health and safety law in relation to specified work activities.

The HSE monitors the number of individuals who claim Industrial Injuries Disablement Benefit ("IIDB") due to industrial deafness but does not collect data on industrial deafness more widely than this. IIDB is a benefit administered through the Department for Work and Pensions and, in the case of deafness, is available to those who worked in certain specified industries or jobs for at least 10 years. Data on deafness-related IIDB claimants shows the number of claimants reducing over the last 10 years with new claimants in 2011 numbering 150. This would appear to be at odds with the trend in claims made to insurers over the same period where claims have risen to around 36,000 in 2011. The criteria for claiming IIDB is quite strict with claimants having to demonstrate a certain level of impairment but also, most importantly, having to claim within 5 years of the end of their exposure to noise at work. The majority of claims to insurers arise from earlier periods of exposure and therefore the number of sufferers claiming IIDB is small compared with the number of claims notified to insurers.

The HSE has produced a number of research reports that are useful for an actuary involved in reserving NIHL claims to consider. We summarise below in detail the three reports we consider most useful and highlight others for completeness.

4.1.1 HSE Regulatory Impact Assessment of the Noise at Work Regulations 2005²

In 2005 the HSE conducted a regulatory impact assessment of the costs and benefits to society likely to result from the Control of Noise at Work Regulations 2005 (as mentioned in section 3.4.2, the 2005 regulations reduced the level where the employer is required to provide hearing protection from 85 dB(A) Lep d to 80 dB(A) Lep d, and the level at which the employer is required to enforce the wearing of hearing protection from 90dB(A) Lep d to 85dB(A) Lep d). In its analysis the HSE considers the number of people exposed to varying levels of noise at work, and the likely reduction in harm resulting from implementing various aspects of the regulations in various ways. We have summarised below the aspects of the impact assessment that we consider of most interest to an actuary considering NIHL claims.

4.1.1.1 Risk assessment and exposure estimates

The HSE states that the risk of hearing damage from prolonged exposure to noise exists at levels of noise exposure above 85 dB(A), with some residual risk down to 82 dB(A), and significantly increased damage above 90 dB(A). The HSE estimates that over 1.1 million people were exposed to noise levels above 85 dB(A) in 2005, with 170,000 (15%) individuals suffering deafness, tinnitus or other ear conditions as a result. The breakdown of individuals into different noise exposure bands is given in table 1 below.

Table 1 - Number of workers exposed to different levels of noise at work, estimated at 2005

Noise level in dB(A)	80-85	85-90	90-95	95-100	100-110	>110
Number of workers exposed	1,097,000	696,800	273,000	124,000	37,100	4,200

Note that the numbers in table 1 are based on HSE figures from 1995 adjusted for changes in employment patterns between 1995 and 2005. Note that there is a similar impact assessment report for the 1989 noise at work regulations entitled "HSE Contract Research Report no. 116/1996 – The costs and benefits of the noise at work regulations 1989"³. This is also a useful report but is not commented on further here.

4.1.1.2 Prevalence of hearing protection

The numbers presented in table 1 are estimates of the number of employees exposed to various levels of noise at work without regard for the wearing of hearing protection. In practice, prior to 2005 many workers would have been provided with hearing protection which may have reduced their actual exposure.

The Institute for Employment Studies ("IES") estimated that in 1995 86% of establishments which had employees exposed to noise levels above 85 dB(A) were providing those employees with some form of hearing protection. Based on this figure, and its belief in improving awareness of the risk of damage to hearing, the HSE has assumed that 90% of workers exposed above 90 dB(A) and 75% of workers exposed between 85 dB(A) and 90 dB(A) were wearing hearing protection. In the cases where hearing protection was worn, the HSE assumed that the employee's noise exposure was reduced by one noise band. The resulting figures adjusted for hearing protection are shown in table 2.

Table 2 – Number of workers exposed to different levels of noise at work, adjusted for assumed use of hearing protection, estimated at 2005

Noise level in dB(A)	80-85	85-90	90-95	95-100	100-110	>110
Number of workers exposed	1,619,600	419,900	138,900	45,790	7,490	420

4.1.1.3 Assumption of future exposure

In order to estimate the benefit to society of the introduction of the 2005 regulations, the HSE estimated the resulting reduction in exposure that would likely result from their implementation. In doing so, the following assumptions were made:

- 15% of workers exposed above 85 dB(A) will have their exposure reduced by either two or three noise bands;

- 30% of workers exposed between 80 and 85 dB(A) will take up wearing hearing protection;
- 25% of workers exposed between 85 and 90 dB(A) who are not currently wearing hearing protection will begin to do so;
- 10% of workers exposed above 90 dB(A) who are not currently wearing hearing protection will begin to do so; and
- Hearing protection will move wearers down to 87 dB(A) (a requirement of the regulation), or down one band if they are already below 87 dB(A).

Applying these adjustments to the unadjusted exposed data (table 1) the HSE assumed that the numbers of workers exposed to different levels of noise would be as shown in table 3.

Table 3 – Estimated number of workers exposed to different levels of noise at work after the implementation of the Control of Noise at Work Regulations 2005

Noise level in dB(A)	80-85	85-90	90-95	95-100	100-110	>110
Workers exposed – 2-band reduction	1,224,316	343,663	117,997	38,595	6,303	353
Workers exposed – 3-band reduction	1,197,193	336,168	116,937	38,532	6,303	353

Note that these numbers are the estimated post-implementation numbers of workers exposed. We have not had any verification that these were borne out in practice.

4.1.1.4 Loss given exposure

Also of note are the HSE's assumptions regarding the degree of damage caused to exposed populations at different noise bands. The median threshold losses (in dB(A)) for various exposure level bands and over 10 and 40 year exposure periods are shown in table 4.

Table 4 – Median hearing threshold losses at various noise levels over 10 and 40 year exposure periods

Noise level in dB(A)	75-80	80-85	85-90	90-95	95-100	100-110	>110
10-year exposure	3.9	4.4	6.0	9.1	14.1	25.0	46.0
40-year exposure	15.7	16.5	18.9	23.6	31.7	50.0	>50.0

Note that the HSE consider a 30 dB hearing loss a “moderate” disability.

The impact assessment goes on to quantify the benefit of reducing hearing loss from the numbers in table 1 to those in table 3, along with other potential benefits, and the costs arising from the implementation of the regulations. While we have captured the figures and assumptions we consider most relevant to an actuary's role above, the paper contains further details which may be of use, and we would encourage readers of this report to refer to it.

4.1.2 Medical Research Council (MRC) Study: Occupational exposure to noise and hearing difficulties in Great Britain

The HSE regulatory impact assessment discussed above was based in part on work performed by the MRC Environmental Epidemiology Unit at the University of Southampton. This report published in 2001 contains an analysis of the prevalence of hearing difficulty and tinnitus in the working population, and their association with duration and intensity of exposure to noise at work. As with the HSE regulatory impact assessment we have pulled out the information we consider of most use to an actuary below, but recommend reading the paper in full if more context is required.

4.1.2.1 Study structure

The MRC study involved a large-scale randomised sample of 21,422 men and women of working age who were selected from the registers of 34 general practices across Britain. A further 993 were selected from HM Armed Services, also at random. The overall sample broadly reflected the occupational profile of the UK, with a slight overweighting to the armed services.

4.1.2.2 Key results

The MRC found that male respondents aged 35-64 years who were exposed to noise at work for 10 years or more were 3.8 times as likely to suffer severe hearing difficulty and 2.6 times more likely to suffer from tinnitus than those with no noise exposure. The study extrapolated results to the general population, implying estimates of 153,000 men and 26,000 women aged 35-64 suffering from severe hearing difficulties attributable to noise exposure at work and 266,000 men and 84,000 women having attributable persistent tinnitus.

The study found variation in hearing difficulty prevalence by industry. In particular construction workers showed a prevalence of moderate or worse hearing difficulty of 11.5%, compared to 5% for all occupations, and that of severe hearing difficulty of 5%, compared with 1.9%.

4.1.2.3 Exposure duration

The study found that among respondents approximately 33% of men and 11% of women had worked in a noisy environment for a year or longer, and that 16% of men and 3% of women reported more than 10 years exposure.

4.1.2.4 Prevalence by occupation

Prevalence rates by occupation (using the HSE classification scheme) were also calculated, and the top 10 occupations by prevalence rate are shown in table 5 below.

Table 5 – Empirical prevalence rates of hearing difficulty in various occupations

Occupation group	Moderate or worse hearing difficulty	Severe hearing difficulty only
Other transport & machinery operatives	16.3%	2.4%
Construction	11.5%	5.0%
Material moving & storing	10.7%	5.4%
Repetitive assembly and inspection	10.5%	2.6%
Metal processing	8.9%	2.7%
Other processing	6.6%	2.6%
Electrical processing	4.9%	2.0%
Managerial	4.2%	1.7%
Clerical	3.8%	2.7%
Selling	3.1%	1.0%
All occupations	5.0%	1.9%

4.1.3 RR669: Epidemiological evidence for the effectiveness of the noise at work regulations.⁴

The paper sets out the results of a review of a group of people working in the manufacturing industry over a period of time and attempts to determine the effectiveness of compliance with the noise at work regulations in reducing NIHL.

The paper states that a lifetime of daily exposure to 80 dB(A) carries little risk of hearing damage in all but the most susceptible individuals.

The exposed group considered were split into two sub groups: those with high compliance and those with lower compliance. There were also a number of control (non-exposed) groups considered.

A rating scheme for compliance was developed for the study. Surveys of compliance with the regulations showed a range of scores on this rating scheme from a little below 50% to 100%. Common shortcomings were identified as noise surveys that did not allow individual noise exposures to be estimated, insufficient awareness raising and re-training to ensure employees continue to recognise the risks of noise and protect themselves properly and lack of clear quality assurance practices and plans for continuous improvement.

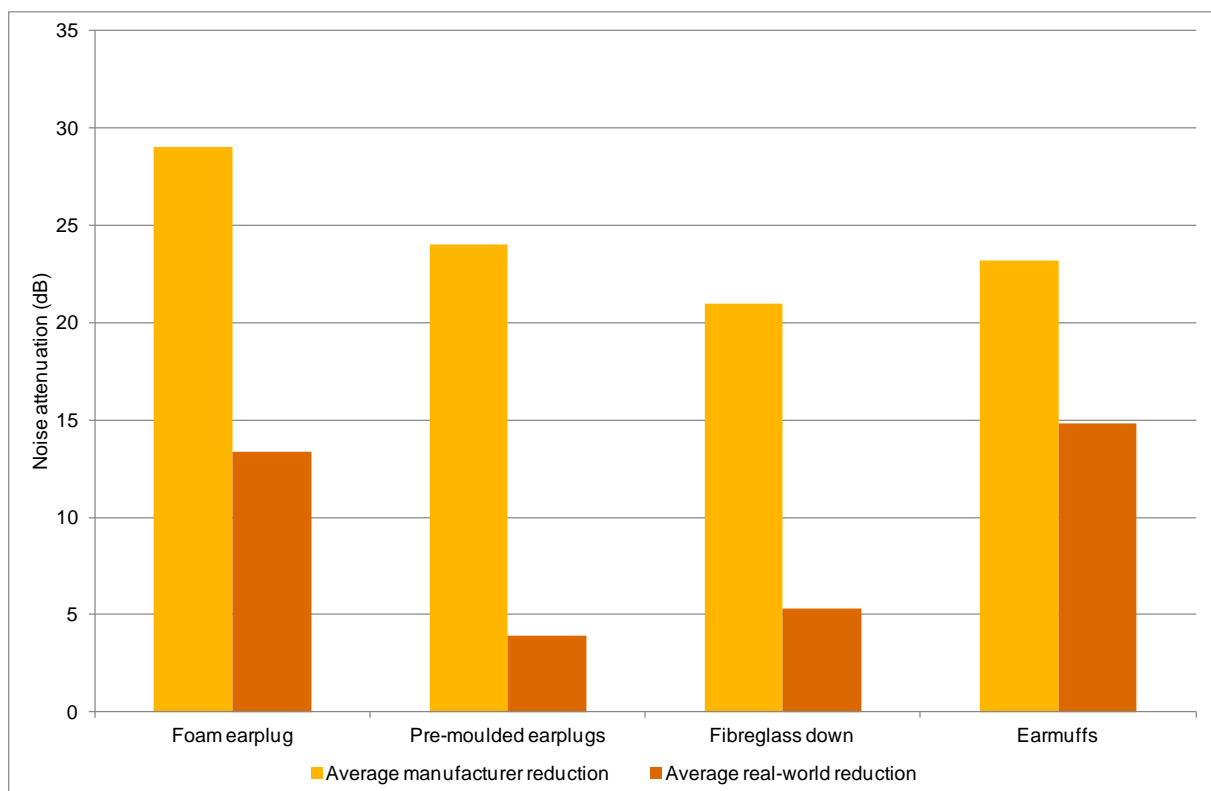
The study assessed the measurable hearing loss over 3 years in the different groups (high-compliance, low-compliance and control). In the low-compliance group, the estimated daily levels to which participants were exposed was 85-94 dB(A), with an average of approximately 88-89 dB(A).

The main findings of the study were a lack of significant differences in auditory function between the risk groups. This indicates that even the relatively high-risk group were not showing significant changes in auditory function compared to non-exposed controls – even those companies with lower levels of compliance were still protecting their employees enough to reduce detectable hearing loss over 3 years to that of the control group. Nor were there significantly different changes between the relatively low- and high-risk groups.

The paper advocates for noise reduction using three potential measures. First, reducing noise wherever practicable; a reduction to 80 dB(A) should be sufficient to conserve hearing in all but the most susceptible individuals. Second, that sources of noise should be isolated from personnel, by enclosing them or placing barriers in noise transmission paths. Third, as a last resort, personal hearing protection should be provided to reduce the sound energy reaching the ears of those who are unavoidably exposed.

In the case where hearing protection is used, the paper outlined a finding of particular note: the real-world reduction of noise provided by most hearing protectors is significantly less than the protection data supplied by manufacturers. The graph below shows the problem clearly.

Figure 2 – Real world noise attenuation



In all cases the protection experienced in the real world is significantly less than that advertised by manufacturers, thus potentially increasing exposure levels beyond those assumed by employers. The paper draws two conclusions here:

1. That the degree of protection actually experienced by some employees may be quite low. This problem is potentially particularly bad for those wearing pre-moulded earplugs or fibreglass down, which arises from poorly fitting these types of protectors; and

2. That instruction in the fitting and use of hearing-protectors is of paramount importance. It is not sufficient simply to supply hearing protection.

Additionally, when hearing protection is worn, it is important that it is worn throughout the full period when levels of noise are high. The risk to hearing is governed by the total sound energy reaching the ear during the whole day, and effective attenuation is reduced rapidly if hearing protection is not worn for even a small part of the day.

The most interesting conclusions of the report are summarised as follows:

1. For the levels of noise in the study undertaken (85-94 dB(A)) the measures in place at the various companies were sufficient to avoid detectable noise-induced changes in auditory function over the approximately 3-year study period, despite variations in the level of compliance with regulations.
2. Compliance with regulation could be improved by more individualised risk assessments, ongoing training and raising of awareness, and the implementation of quality assurance processes. Clear identification of an individual responsible for hearing conservation is fundamental to this.
3. Audiometry as practiced in industry is not sensitive enough to identify NIHL. Changes in hearing thresholds in the region of 15 dB are required before any confidence can be placed on the detected changes for any individual.
4. While longitudinal studies are difficult to implement and may suffer from participant attrition, they are the only way to show hearing-loss directly; studies over longer periods of time (10-20 years) are necessary to fully understand the impact of differing levels of regulatory compliance on the hearing of exposed individuals.

4.1.4 RR517: Measurement of noise levels that staff are exposed to at live music events⁵.

This paper, published in 2006, outlined a study and results produced by Capita Symonds Ltd (CS) on the impact on the live music industry of the proposed changes to the noise at work regulations.

Overall findings were as follows:

1. Daily personal exposure $L_{eq,d}$ ranged from 80 dB(A) to 104 dB(A)
2. Measured $L_{C,peak}$ values ranged from 122 dB(C) to 146 dB(C). (Note, for peak sound pressure level measurements regulators specify measurements to be made using the C frequency weighting.)
3. Generally the use of hearing protection and noise control was inadequate

Several recommendations were made by the report:

1. Make all front house areas and side of stage areas designated hearing protection zones (mark accordingly and exclude all non-essential staff).
2. All people in designated hearing protection zones to wear hearing protection at all times.
3. Immediate steps to educate workers on the likelihood of hearing damage and NIHL.
4. Speakers should be positioned to minimise noise exposure, where possible above head height.
5. Consideration of imposing a maximum concert level ($L_{eq,15\text{ min}}$ measured at the mixer position) and further research on hearing protection. Note, L_{eq} is an equivalent

continuous sound level, and denotes an average sound intensity level over a defined period.

A questionnaire sent out to local authorities with music venues in their jurisdiction suggested that there is little to no enforcement of the current noise at work regulations at live music events.

We also reviewed the following HSE papers which detail the study of noise emissions in specific circumstances, but do merit further mention here;

RR604: Noise emission data for hand-held concrete breakers.⁶

RR618: Noise emissions and exposure from mobile woodchippers.⁷

RR651: Noise exposure from simulated roadside collection of recyclable glass - Follow-up measurements.⁸

4.2 Compensation Recovery Unit

The Compensation Recovery Unit (CRU) is part of the Department for Work and Pensions, and is tasked with recovering benefits or lump-sum payments made to individuals for accident, injury or disease where compensation has been awarded for the same incident.

There is a legal duty for insurers and solicitors to inform CRU whenever a claim is made for personal injury compensation, however, in the context of deafness claims this obligation exists only for claims that contain an element of tinnitus. We have considered the possibility of working with CRU, however as tinnitus is only involved in a small proportion of current industrial deafness claims, the data collected by CRU in respect of deafness is likely to be significantly less comprehensive than the data collected by the working party.

4.3 Law Firms

There are two types of law firms, or solicitors, that will be involved with NIHL claims: representation will be made on behalf of the plaintiff or claimant (usually referred to as a claimant solicitor firm) as well as representation on behalf of the defendant (the employer and/or their insurers).

Over the last year we did not develop a relationship with any claimant solicitors, though this is perhaps an area to develop. It will be shown later in the paper that claimant solicitors have had an impact on the level of NIHL claims that have been observed over the last few years.

However, we did discuss emerging experience and thoughts on recent potential future trends with representatives from two defendant solicitor firms: DAC Beachcroft and Weightmans. The former firm was able to supply to us a claimant solicitor analysis based on just short of 10% of the market level of claims indicated by our survey. Such a claimant solicitor analysis would not have otherwise been possible as the working party did not feel that it was appropriate to collect such information, and also the majority of the participating insurers were not able to separately identify the claimant solicitor involved in each claim easily. Section 6 covers in more detail the data collection survey / questionnaire and interesting analyses including an analysis by claimant solicitor, on an anonymous basis, using data provided by DAC Beachcroft.

5. Claims Process

This section will look at the general claims process covering the process itself, the parties involved at each stage, settlement amounts and issues arising within the claims process.

In addition, we outline current changes in the claims environment which are expected to impact deafness claims, specifically the Legal Aid, Sentencing and Punishment of Offenders Act 2012 (LASPO) and the EL and PL claims portal.

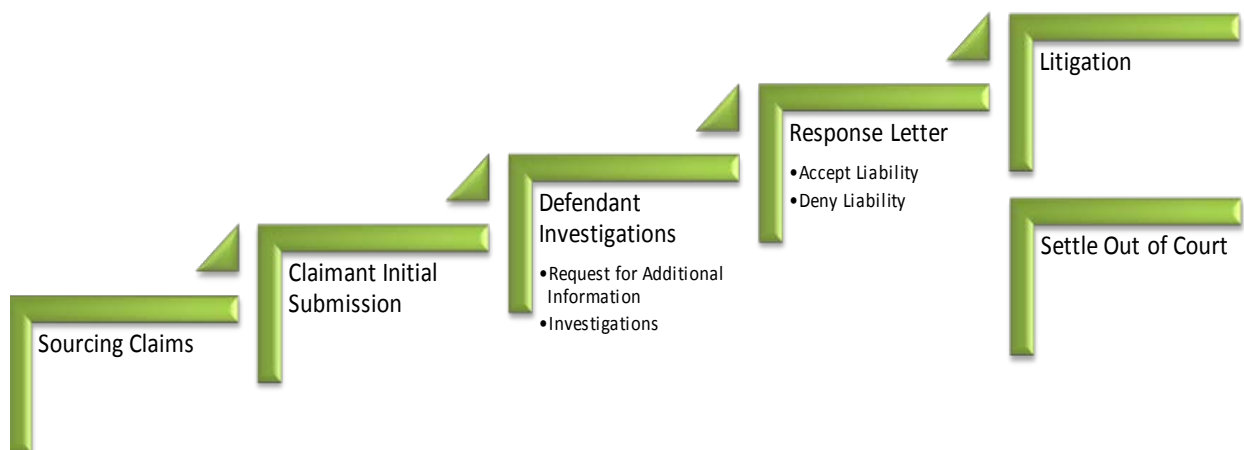
Some of the topics covered in this section are also covered in other areas of this report, specifically:

- The claims environment and links to recent trends - Section 6 Data Collection and Trends; and
- LASPO, EL/PL Portal and Claims Management Companies (CMCs) - Section 8 Key Things for an Actuary to Consider When Setting Reserves.

5.1 General Claims Process

This section gives an overview of the steps of the claims process as outlined in Figure 3 below. Note that a claim may be withdrawn from the claims process at any point by the defendant and indeed a large number of claims fall away during the early stages.

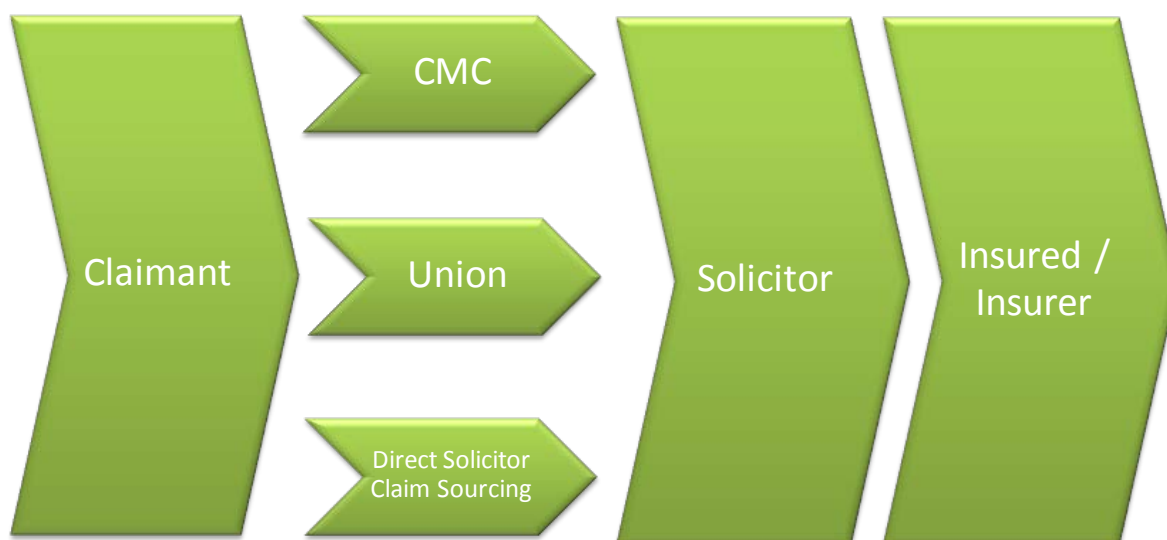
Figure 3 - Claims Process Overview



5.1.1 Sourcing of Claims

Most claims originate through the actions of Trade Unions, CMCs or Solicitors. As all claims are ultimately submitted through a solicitor it is difficult for insurance companies to ascertain the original source of each claim. However, it is suspected that historically a large portion of claims were driven by union activity, but more recently there has been a shift towards the majority of claims being sourced by CMCs, or by solicitors directly.

Figure 4 - Sources of Claims



Unions

To start with, typically a few claimants successfully pursue a claim. The unions then become aware of this and through various means (e.g. telephone calls, newsletters, newspaper adverts) reach out to the current and former work-force of the company. Those experiencing hearing loss may then be referred to a solicitor, usually one from a panel of union solicitors specific to each individual union.

The incentive for unions is two-fold. They are protecting their members, and they may also receive referral fees from solicitors providing an additional financial incentive.

Claims Management Companies (CMCs)

As discussed further in Section 6 Data Collection and Trends, there appears to be a strong correlation between the increasing number of CMCs and the increase in deafness claims since 2007. CMCs source their claims through various avenues including direct email, internet, television, radio, newspapers and by both telephone and door to door visits. Some insurers believe the main method of contact seems to be through text messages.

In the past deafness claims would typically come from industries such as steel, mining and textiles, however the recent increase in claims numbers since 2007 appears to cover all industries, although the majority of claims will still relate to the construction and manufacturing industries.

Figure 5 – Potential Claimants Path to Solicitors



After a claim is taken on by the CMC it will be passed on to solicitors who then make a decision on whether they wish to accept the claim. How that process works will depend upon each CMC but could involve for example giving each solicitor in turn 24 to 48 hours in which to decide whether or not to take up the claim. Following acceptance of a claim and further details the solicitor will then pay the CMC a fee. In the case of NIHL claims this is thought to typically fall in the range of £650 to £950 per claim.

The above process is often carried out for a large book of potential claims where the CMC will bundle a large number of claims together before presenting them to solicitors.

Solicitors

Lastly, solicitor firms will also source claims directly, for example by placing advertisements in local or national newspapers. In recent years NIHL claims have become appealing to solicitors. The recoverability of After the Event (ATE) insurance premiums allow solicitors to reduce the potential risk of unsuccessful claims. However, the use of ATE insurance is likely to change in the future, this is discussed further in section 5.1.7.

5.1.2 Claimant's initial submission

Once a solicitor takes on a claimant, a claim is submitted via a letter of claim to a defendant or defendants. This initial letter of claim typically includes:

- Allegation of exposure
- Type of claim (i.e. NIHL and/or Tinnitus)

A claimant can also include other items such as an HMRC employment schedule and the type of equipment used, however these are not often included in the initial submission. In some cases a medical report may also be submitted, however this is relatively rare at this stage of the claims process.

5.1.3 Defendant investigations

After receiving a letter of claim the insurer has 21 days to acknowledge the claim and 3 months to process an investigation into the claim. The investigation will include:

- Validity of limitation on claim – the claimant has 3 years (limitation period) to bring a claim after the date at which the claimant is said to have known to have an actionable injury and can identify the party potentially at fault.
- Consideration of medical evidence and records.
- Assessment of the potential fault of the employer/insured.

Initial response

To aid in the defendant's investigation, the defendant will normally send out a letter requesting further information including:

- Employer/Insured specific information:
 - Claimant's work history with the insured including, location of work/department within insured's premises and dates of working in each location.
 - Full description of department worked in while with the insured.
 - Full details of the makes and models of equipment that the claimant was exposed to on a daily basis and the extent of the alleged exposure.
 - Type of employment, full-time or part time, and average hours worked per week.
 - Names of the claimants line managers/supervisors/foremen whilst working for the insured and corresponding dates.
 - Details of any complaints made regarding noise exposure during the period of employment and any response/measures taken to improve health and safety.
- Other Employers/Insureds information
 - List of other employers/insureds which the claimant is making a claim against
 - Copy of the claimant's Inland Revenue Employment Schedule
- Knowledge of hearing loss
 - When the claimant first noticed any hearing loss problems.
 - Symptoms first noticed and initial thoughts on cause.
 - Time when claimant first considered any link between having been exposed to loud noise at work and their hearing loss and what factors led them to believe there is a link. This information should reflect when the claimant first thought there was a link and not the date which expert advice was obtained.
 - Time when claimant first sought advice on the potential for making a claim for NIHL and who the advice was sought from.
 - Time when claimant was first aware that it was possible to claim compensation in respect of NIHL and the source of that knowledge.

- Time when claimant sought medical advice on their hearing loss.

Often the claimant will not be able to provide portions of the information requested and the actual detail of information available to the insurer is significantly less than outlined above.

Further Investigations

Using a claimant's response to a defendant's request for further information the defendant will form an argument around both the validity on limitation of the claim and the potential fault of the defendant employer.

In addition medical evidence is also considered in order to assess:

- Whether any hearing loss is in fact noise induced (as opposed to solely being age related)
- The level of NIHL

To assess the two points above an audiogram in conjunction with the Coles Test are used, both of which are discussed in more detail below.

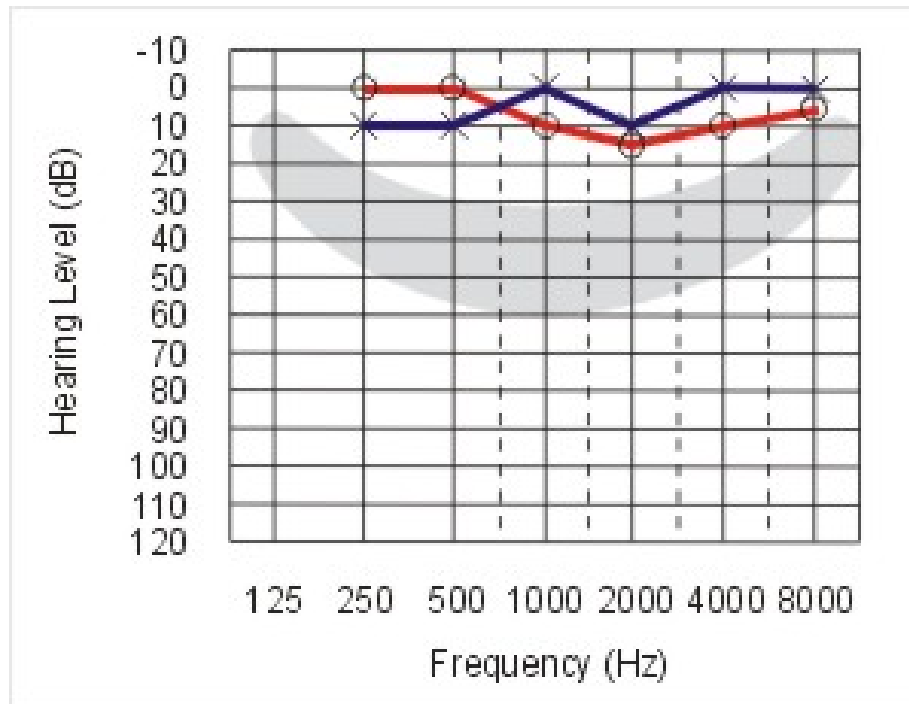
5.1.4 The Audiogram

An audiogram can be thought of as a picture of your hearing. It shows the quietest level of sound at which you can hear at a range of frequencies. It is a measure of the voluntary response to pure-tone signals relayed through headphones, the results of which are plotted on a graph called the audiogram.

The numbers along the top of an audiogram show frequencies of sound while the numbers along the side of the audiogram show the intensity of sound. Frequencies tested on an audiogram are 250, 1000, 2000, 3000, 4000, 6000 and 8000 (or 0.25 kHz, 1 kHz, 2 kHz, 3 kHz, 4 kHz, 5 kHz, 6 kHz and 8 kHz) and intensity from -10dB HL to 110 DB HL in increments of 10 dB HL, where HL stands for Hearing Level. "X"s are used to show responses for the left ear and "O"s for the right ear.

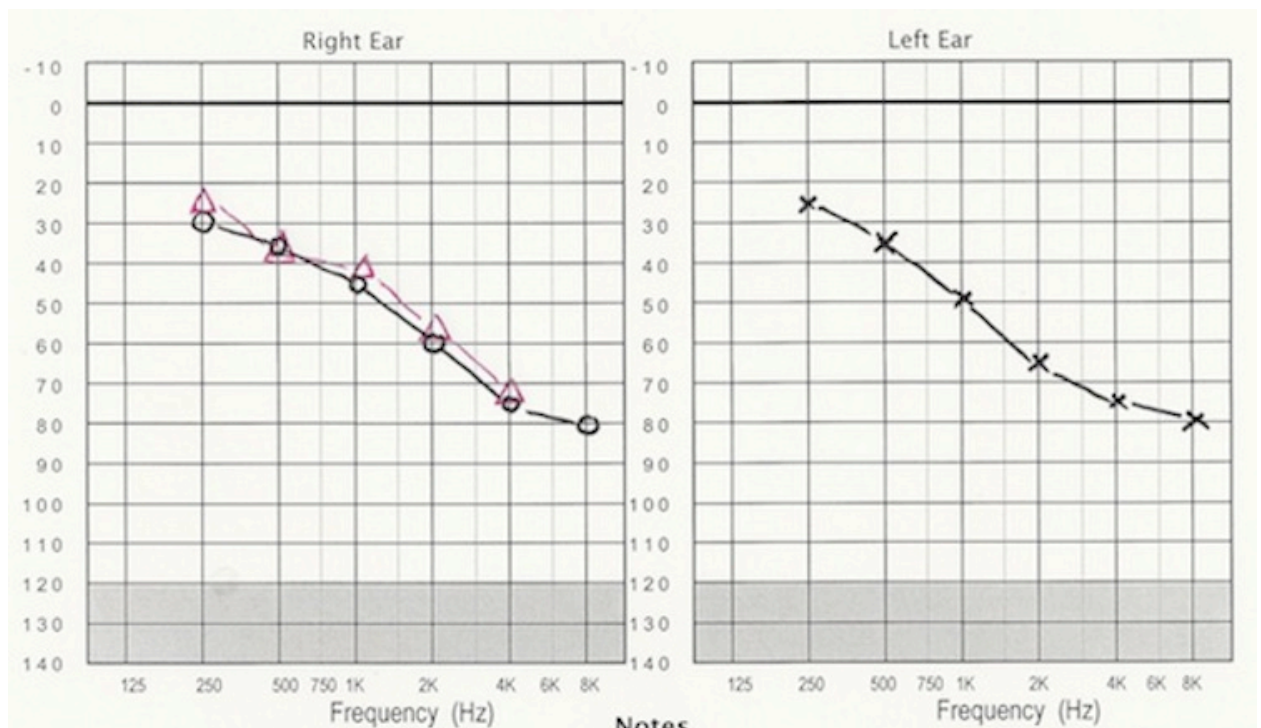
Each ear is tested in isolation with sounds at one frequency presented to the patient starting at a low intensity and increasing that intensity incrementally until the patient indicates that they are able to hear it. The tone at which this occurs is called the hearing threshold level (HTL) and the tone/frequency point is plotted on the graph and shows the lowest intensity at which that frequency can be heard by the patient. This is repeated at the specified range of frequencies to produce an audiogram.

Figure 6 – Audiogram of normal hearing



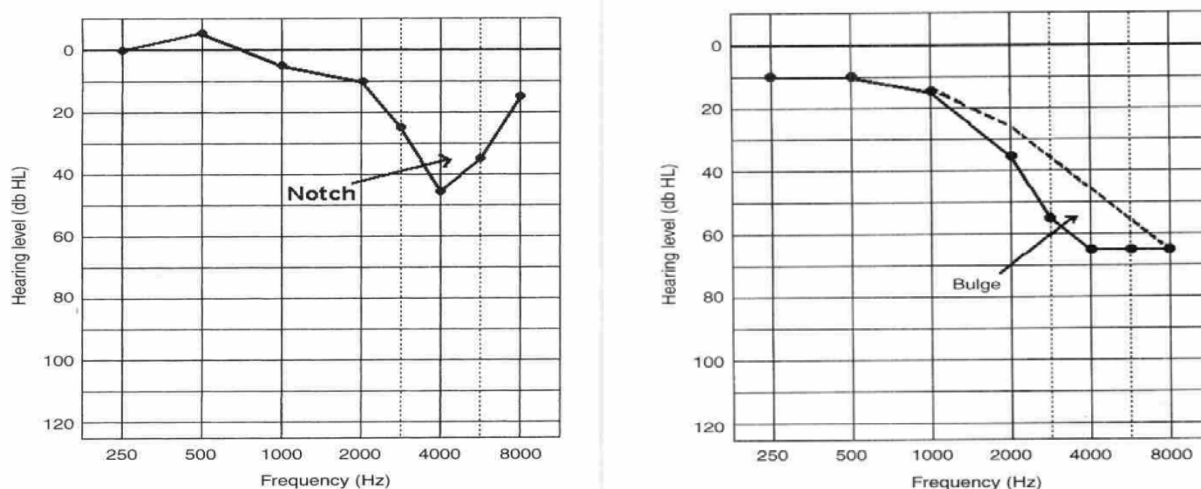
The audiogram above shows one example of normal hearing, showing no evidence of either NIHL (NIHL) or age associated hearing loss (AAHL).

Figure 7 – Audiogram showing AAHL



The audiograms above are an example of audiograms showing AAHL where a general downward trend is seen from 250Hz to 8,000 Hz.

Figure 8 – Audiogram indicating NIHL



The audiograms above are examples of audiograms indicating NIHL which are discussed further in the next section, the “Coles Test”.

5.1.5 The Coles Test

The Coles Test is now widely used in the diagnosis of NIHL with 7 out of 8 insurers indicating in the working party survey questionnaire (see Section 6) that they use it in their claims handling process and investigations into the validity of NIHL claims. This section gives a detailed overview of the Coles Test, including diagnostic requirements and modifying factors for the interested reader. If the reader is not interested in the specific detail, then you should skip directly to section 5.1.6.

In April 2000 R.R.A Coles, M.E. Lutman and J.T. Buffin published a paper entitled “Guidelines on the diagnosis of noise induced hearing loss for medicolegal purposes” and commonly referred to as the “Coles Test”. The main aim of the paper was to help aid expert medical witnesses in considering evidence for the diagnosis of NIHL using a defined set of criteria. The criteria aim to distinguish between possibility and probability, the legal criterion being more probable than not.

A first draft of the paper was released in 1998 and in that year 220 cases were piloted using it. Revisions were made in the following year and the version currently in use was published in April 2000.

The criteria are made up of three Diagnostic Requirements and four Modifying Factors. The requirements must be met, either in a combination of R1, R2(a) and R3(a) or R1, R2(b) and R3(b). An initial conclusion is based on the requirements which can then either be strengthened or weakened on the basis of the four modifying factors.

5.1.5.1 Diagnostic Requirements

The following diagram illustrates the three Diagnostic Requirements, their different levels and the relationship between them.

Figure 9 – Diagnostic Requirements



R1 – High frequency impairment

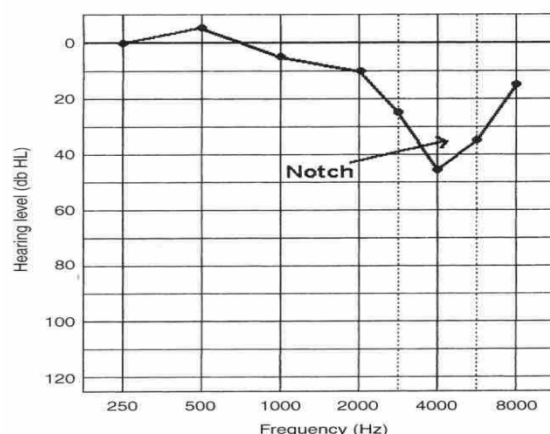
R1 requires audiometric evidence of a high frequency hearing loss. Coles defines this as:

“a single measure of the hearing threshold level (HTL) at 3, 4 or 6 kHz, after any due correction for earphone type (see Note 2), is at least 10 dB greater than the HTL at 1 kHz or 8 kHz.”

This first requirement simply means that there has to be an indication of hearing loss at higher frequencies.

The audiogram below is an example of the HTL at 4 kHz being more than 10 dB greater than 1 kHz and 8 kHz.

Figure 10 – Audiogram example of HTL



R2 - Noise exposure

Requirement two focusses on the level of noise exposure to which the potential claimant was subjected. It measures cumulative exposure which is quantified in a measure of noise immission

level (NIL) based on a measure of continuous noise exposure considered to be the equivalent of 8 hours a day at noise levels of 85 dB(A) or above.

R2(a)

Under R2(a) the lower limit of NIL required is 100 dB(A) NIL.

R2 (b)

A minority of people who are more susceptible to hearing loss could suffer substantial NIHL from cumulative exposure levels below 100 dB(A) NIL. As a result a second R2 criteria, R2(b), can be used which requires that cumulative exposure is between 90 and 99 dB(A) NIL. Claimants who meet R2(b), however, must also meet R3(b).

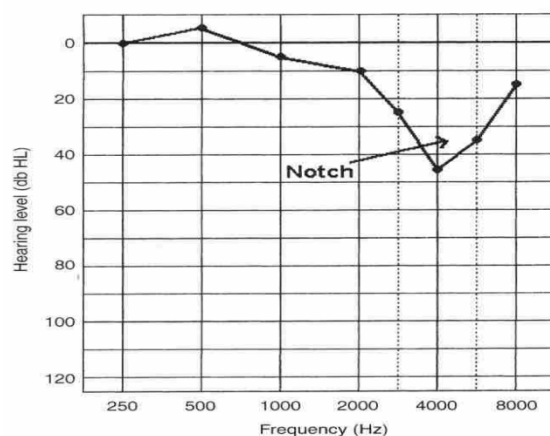
R3 – Audiometric configuration

Once R1 and R2 are met, audiometric configuration is considered. In the majority of straightforward cases of NIHL, audiometric configuration typically takes one of two distinct shapes, the “notch” or the “bulge”.

The notch

The diagram below shows an audiogram with what is typically referred to as a “notch”. Evidence of probable NIHL is characterised by a downward notch at the 3 to 6 kHz range with the notch being large enough to be identified with a reasonable degree of confidence (which is given a numerical guideline under R3(a) and R3(b)).

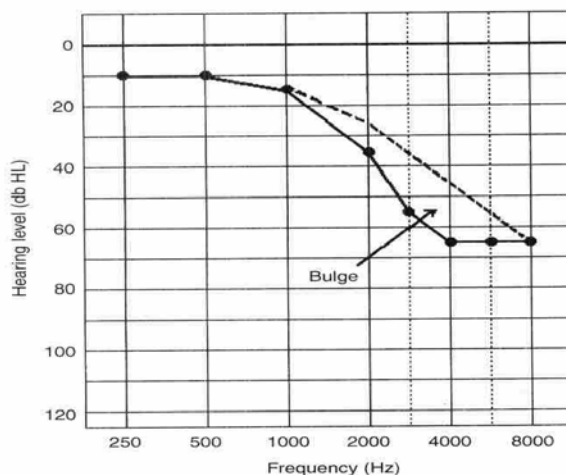
Figure 11 – Audiogram showing a notch



The bulge

When age associated hearing loss (AAHL) is also present, typically at age 50 and above, the notch is replaced by a “bulge”. The diagram below shows an audiogram with what is typically referred to as a bulge and indicated NIHL in someone who also has some AAHL.

Figure 12 – Audiogram showing a bulge



R3(a)

R3(a) is defined by the Coles Test as

“A high frequency notch in the air-conduction audiogram that is sufficiently large to be indicative of the probable presence of NIHL is where the hearing threshold level (HTL) at 3 and/or 4 and/or 6 kHz, after any due correction for earphone type, is at least 10 dB greater than at 1 or 2 kHz and at 6 or 8 kHz.”

or

“A high frequency bulge in the air-conduction audiogram that is sufficiently large to be indicative of the probable presence of NIHL is defined as follows. Such a bulge is present if the HTL at 3 and/or 4 and/or 6 kHz, after any due correction for earphone type), is at least 10 dB greater relative to the comparison values for age-related hearing loss at corresponding frequencies.”

So any dip in the audiogram at the middle range of frequency has to do so by 10 dB or more and any bulge at the middle ranges of the audiogram where AAHL is also present must differ from the relative AAHL levels by 10 dB or more.

R3(b)

R3(b) is defined as per R3(a) but the dB difference now has to be 20 dB or more under both the notch or bulge definition. This is in line with R2(b) which has a lower NIL requirement for those who are more susceptible to NIHL and tend to suffer it at greater levels.

Modifying Factors

Once R1 to R3 are met four modifying factors are considered which can either strengthen or weaken the argument for NIHL. These are discussed in turn below.

MF1 – Clinical picture

The clinical picture focusses on judgemental recall of any auditory symptoms which may have been present directly after individual instances of exposure to noise. These would include symptoms such as temporary tinnitus and/or dullness of hearing lasting for an hour or longer. Special attention is paid to whether or not these symptoms increased over time eventually becoming permanent.

Other possible causes of hearing loss are also investigated which could have contributed to the overall level of hearing loss.

MF2 – Compatibility with age and noise exposure

The loss of hearing levels are then also checked for compatibility against age, sex and total noise exposure (including non-occupational and military). Coles recommends that 'NPL Tables' (Robinson and Shipton 1977)⁹ are used for this purpose.

MF3 – Robinson's Criteria

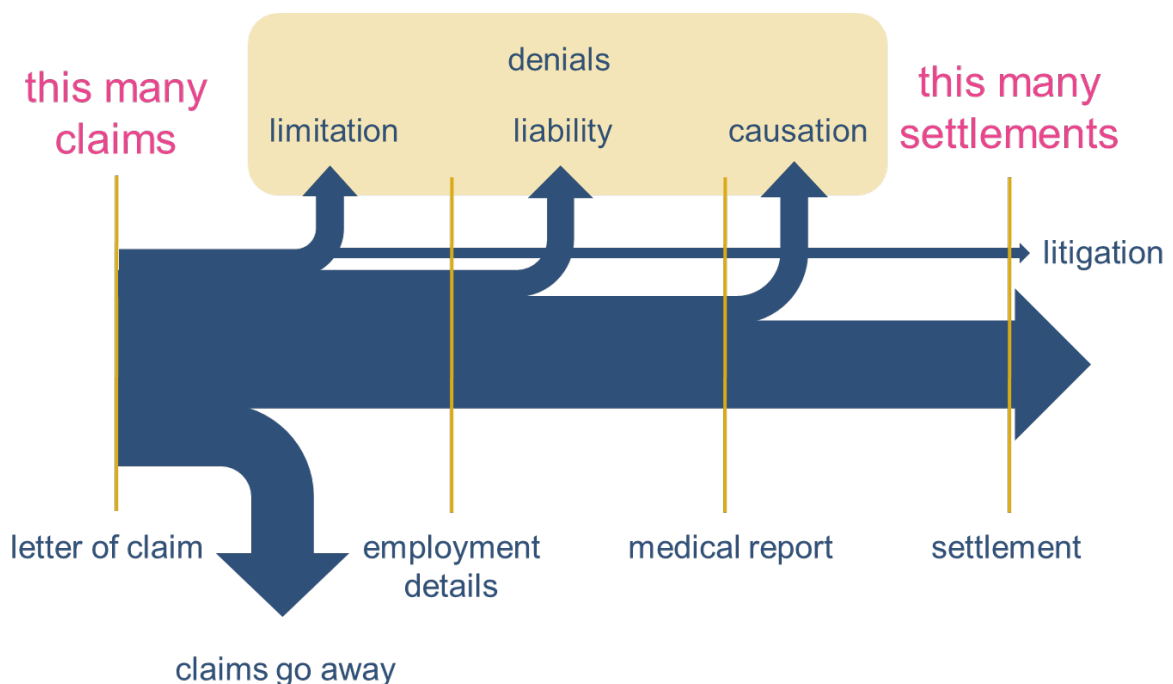
If causation is considered to be borderline, Coles then recommends comparison with Robinson's Criteria, a set of probability tests, to test other possible causation.

MF4 – Complicated cases

In complicated cases, such as those with significant differences between the left and right ear for any NIHL present, Coles recommends further investigations.

5.1.6 Settlement of a claim

Figure 13 – Settlement process



Out of court settlements

Approximately 90% to 95% of all claims settle out of court with a large portion not involving a defendant solicitor but being dealt with by the insurers' claims handler. Many claims will fall away

prior to investigations being complete with further details not being submitted or the claimant simply withdrawing the claim.

For claims which have not fallen away, once investigations are complete the defendant will issue a letter of response. This will typically include:

- Stance on limitation
- Position on fault of employer
- If admitting fault, a proposed settlement amount
- If denying fault either:
 - Denial of claim, or
 - Offer settlement without admission of fault. The defendant may choose to do this to lower the overall cost of a claim as litigation and court costs can add up to outweigh the savings from refusing to pay out a claim. However, the defendant has the right to make this offer of settlement without admitting any fault for the claim.

Settlement through court proceedings

Very few claims go to court, however if a claim is denied for any reason (for example on the grounds of causation or limitation) the matter may proceed into litigation.

In these instances, first the claimant will submit the claim and supporting documentation to the court which will issue the claim and serve the documents on the defendant's solicitors.

Following this the defendant will file and serve a defence and the court's case management litigation process will then be followed. The defendant is likely to be given the right to obtain its own medical expert. Engineering experts could be instructed to assess noise levels. Medical experts which are likely to be involved include:

- Ear Nose and Throat (ENT) doctors
- Audiologist/Hearing aid dispensers

Typically, the medical experts from either party will discuss the medical evidence and produce a list of points on which they agree and disagree. Following on from this list, a Schedule of Loss will be compiled by the claimant and a Counter Schedule of Loss by the defendant broken down by damages as follows:

- Pain & suffering
- Cost of medical attention and equipment required (i.e. hearing aids)

Loss of income may also be included as a head of damage however this is rare in the case of NIHL claims.

Settlement amounts

As discussed further in "Section 6 Data Collection and Trends", settlement amounts are thought to be in the range of £12,500 to £15,000.

The majority of claims involve mild cases where settlement amounts for damages average £2,000 to £3,000. In contrast to the relatively low cost of damages, solicitor bills average £14,000 to

£15,000 and settle for around £9,000 to £10,000 (a 33% discount) and account for approximately 70 to 75% of the total claim costs for mild cases. For severe cases involving young defendants, severe hearing loss or tinnitus claims can reach up to £32,500.

Guidelines on damage awards are issued every two years by the Judicial College with the most recent edition published in 2012 (JSB Guidelines 11th Edition). The JSB Guidelines provide a framework for the assessment of damages in personal injury cases. Updated damage amounts in each new edition are set to reflect inflation since the last edition as well as any court decisions on quantum. Table 6 below summarises NIHL general damage awards as outlined in the JSB Guideline 11th Edition¹⁰.

Table 6 – JSB Guidelines NIHL General Damages

Quantum	Lower	Upper
a) Severe tinnitus and hearing loss	£21,250	£32,500
b) Moderate tinnitus and hearing loss or moderate to severe tinnitus or hearing loss alone	£10,600	£21,250
c) Mild tinnitus with some hearing loss	£9,000	£10,600
d) Slight tinnitus and hearing loss	£5,300	£9,000
e) Slight tinnitus or hearing loss	Up to £5,000	

Some defendant solicitors are of the opinion that historically general damages for NIHL claims may have been undervalued. This is difficult to ascertain as there is little information readily available on the proportion of claims involving tinnitus. The potential impact of changes in damage awards resulting from the reforms implemented under LASPO and the 10% increase in general damages from *Simmons vs Castle* are not yet known. The possible settlement amounts post LASPO are discussed further in “Section 8 Key Things for an Actuary to Consider When Setting Reserves”.

When a settlement is offered the actual settlement value is not argued in many cases. Most of the time, arguments focus on the presentation of the solicitor’s fees, which insurers will not be aware of until claims are settled. This may change following LASPO and other reforms.

5.1.7 Challenges during the claims process

While medical evidence has moved to being more scientific, in some instances there is still some uncertainty around the true level of NIHL. Examples of potential issues with medical reports submitted include:

- Issue of mass examinations with many performed in one day.
- Potentially exaggerated levels of deafness cited.

Many defendants have begun to implement and commission a Coles Test for NIHL which has resulted in lower cost associated with medical evidence and a clearer measure of NIHL.

In most cases, the last insurer on risk will act for the defendants. In the case of recent exposure this is the most natural procession as the last insurer may be the employer's current insurer and is likely to have a large time on risk.

When exposure was many years in the past, the last insurer may have a small share and choose not to defend a claim. Insurers with a large share of the claim can step in, however unless they have a share large enough to warrant making this extra effort, the claim may not be defended.

5.2 The Jackson Review and Implementation

5.2.1 The Jackson Review

In 2010 Lord Justice Jackson published the 'Proposals for reform of civil litigation funding and costs in England and Wales', known as the "Jackson Review"¹¹. This paper was a review of the rules and principles governing the costs of civil litigation and subsequent recommendations to promote access to justice at proportionate costs. The principles outlined in the paper are a reform of the civil justice system which addresses the situation of spiralling legal costs, perceived unnecessary litigation and 'no win no fee' structures which ultimately drive up legal costs.

Lord Justice Jackson's recommendations included:

- Ensuring the level of legal fees are proportionate to the nature and complexity of the case in question;
- Transferring the payment of the lawyers' success fee from the defendant to the claimant by banning the recoverability of success fees while increasing the general damages awarded in personal injury cases by 10%;
- Making damages-based agreements (also known as contingency fees) admissible in civil litigation, rather than restricting them to non-contentious business. Contingency fees differ from the current 'no win no fee' conditional fee arrangements in that lawyer remuneration is based on the damages awarded to the client rather than on the lawyer's base cost. This should give claimants other alternatives for funding their claim and should incentivise lawyers to reduce their own costs or, potentially, incentivise them to seek higher damage awards for their clients;
- Banning payment of referral fees for the details of injured claimants;
- Implementing "qualified one-way cost shifting" to protect claimants on an unsuccessful claim from having to pay a winning defendant's fees. This would reduce the financial risk of litigation for claimants, reduce the need for 'After The Event' insurance (which protects a party against the risk of having to pay their opponent's costs and their own disbursements if they lose) and thereby spare claimants from paying irrecoverable insurance premiums;
- Introducing fixed costs for certain types of personal injury claims;
- Encouraging parties to make and accept reasonable offers by ensuring costs are proportionate and increasing the costs recoverable by people who settle cases without lawyers; and
- Recommendations for implementation of a Cost Council to review existing fixed and hourly solicitor costs.

5.2.2 Legal Aid, Sentencing and Punishment of Offenders Act & the “Jackson Review”

On 1 May 2012 the ‘Legal Aid, Sentencing and Punishment of Offenders Act 2010-12’ (“LASPO”)¹² received Royal Assent and is now an Act of Parliament (law). It subsequently came into effect on 1 April 2013. Within the bill the following components of the Jackson Review have been implemented:

- Conditional Fee Agreements (“CFA” or success fees) and After the Event (ATE) premium are no longer recoverable with an exception in the case of mesothelioma claims for which implementation is pending the results of a review on the impact of these measures upon those who contract this disease;
- Referral fees for Personal Injury claims are banned for companies regulated by the Financial Services Authority (FSA), Solicitors Regulatory Authority (SRA), the Bar Council and the claims management company regulator. Compliance with this regulation is the responsibility of the SRA; and
- Damages based agreements have been implemented with solicitors’ fees now capped at 25% of claimant damages.

There are some concerns over the drafting of the referral fee ban as it omits credit hire organisations and other businesses including garages, body shops and rescue firms which are also known to utilise referral fees. It is believed that these omissions may leave the door open in future for alternative business structures which could circumvent the ban.

5.2.3 Non LASPO Implementations of the “Jackson Review”

Several recommendations from the Jackson Review will be implemented outside of LASPO through various other avenues and bodies such as the Civil Procedure Rules (CPR), court rulings (Simmons vs Castle), the Ministry of Justice (MOJ) and the Civil Justice Council (CJC).

Civil Procedure Rules

Requirements which are currently or will in future be implemented through the CPR include:

- A responsibility on the defendants to accept reasonable Part 36 offers to settle by claimants;
- Qualified one way cost shifting whereby unsuccessful claimants will not have to pay the defendant’s costs unless they have acted unreasonably or fraudulently or the claim has been struck out; and
- Rules and requirements around cost management and budgeting are currently being piloted and the CPR will be introducing these at a later date not yet set.

Simmons vs Castle

To balance the shift in solicitors’ success fees to be awarded as a percentage of claimant’s damage awards Lord Jackson recommended an increase of 10% to all general damages. On 26 July 2012 the Court of Appeal handed down its ruling on Simmons vs Castle and increased general damages by 10% with effect from 1 April 2013.

The insurance industry, however, subsequently voiced its unhappiness with this ruling as it would include a 10% increase to general damages on all claims filed prior to 1 April 2013 but settled on or after this date. This would mean that claims reported prior to the effective date of LASPO could still include referral fees, CFAs and ATE premium, as well as the 10% increase to general damages.

The Court of Appeal subsequently re-opened its decision and on 10 October 2012 amended the ruling to apply only to claims which fall within section 44(6) of LASPO, offering a statutory definition of those entitled to recover success fees and not entitled to the 10% uplift. Put simply, the 10% uplift applies only to claims which are not submitted under a CFA.

Ministry of Justice

The Ministry of Justice are in the process of implementing several other recommendations including:

- Expansion of the claim Portal to include Employer's Liability and Public Liability claims (discussed further in the following section);
- A review of the Guideline Hourly Rates (GHR) for claims outside of the MOJ Portal. Effective from January 2013 a review of the GHR is the responsibility of the Civil Justice Council (CJC), previously the responsibility of the Advisory Committee on Civil Costs (ACCC) which has now been disbanded. This is one instance where Lord Justice Jackson's recommendation, that a Cost Council be formed, has not been implemented exactly as intended; and
- A review of the fixed costs applicable in the EL and PL Portal (as well as the Road Traffic Accident (RTA) Portal). Fixed costs remained the responsibility of the Lord Chancellor to review in the first instance, however there may be instances where the Lord Chancellor and the Justice committee solicit the advice of the CJC.

5.3 Employer's Liability Claims Portal

Effective 31 July 2013, the Ministry of Justice (MOJ) claims portal was expanded to include Employers Liability and Public Liability claims in England and Wales. Employers Liability and Public Liability claims with incidence dates on or after 31 July 2013 must be submitted into the portal with the following application:

- Accident claims – The key date is the cause of action (or "incident date")
- Disease claims - The key date is the date of the letter of notification

The overall aim of the portal is to provide quicker, simpler and cheaper access to compensation and includes both fixed timetables and fixed costs to help reduce disputes and frivolous litigation.

5.3.1 Process overview

The portal includes a three stage process and covers claims which are valued between £1,000 and £25,000. A general overview of the process is as follows:

Stage 1 Notification

- Claimant submits a Claims Notification Form (CNF) which the defendant must acknowledge within one business day.
- The defendant then has 30 days (EL) or 40 day (PL) to accept or deny liability.

Stage 2 Valuation

- If liability is accepted and once a medical report is received, a Stage 2 settlement pack is submitted by the claimant to the defendant including
 - Schedule of special damages

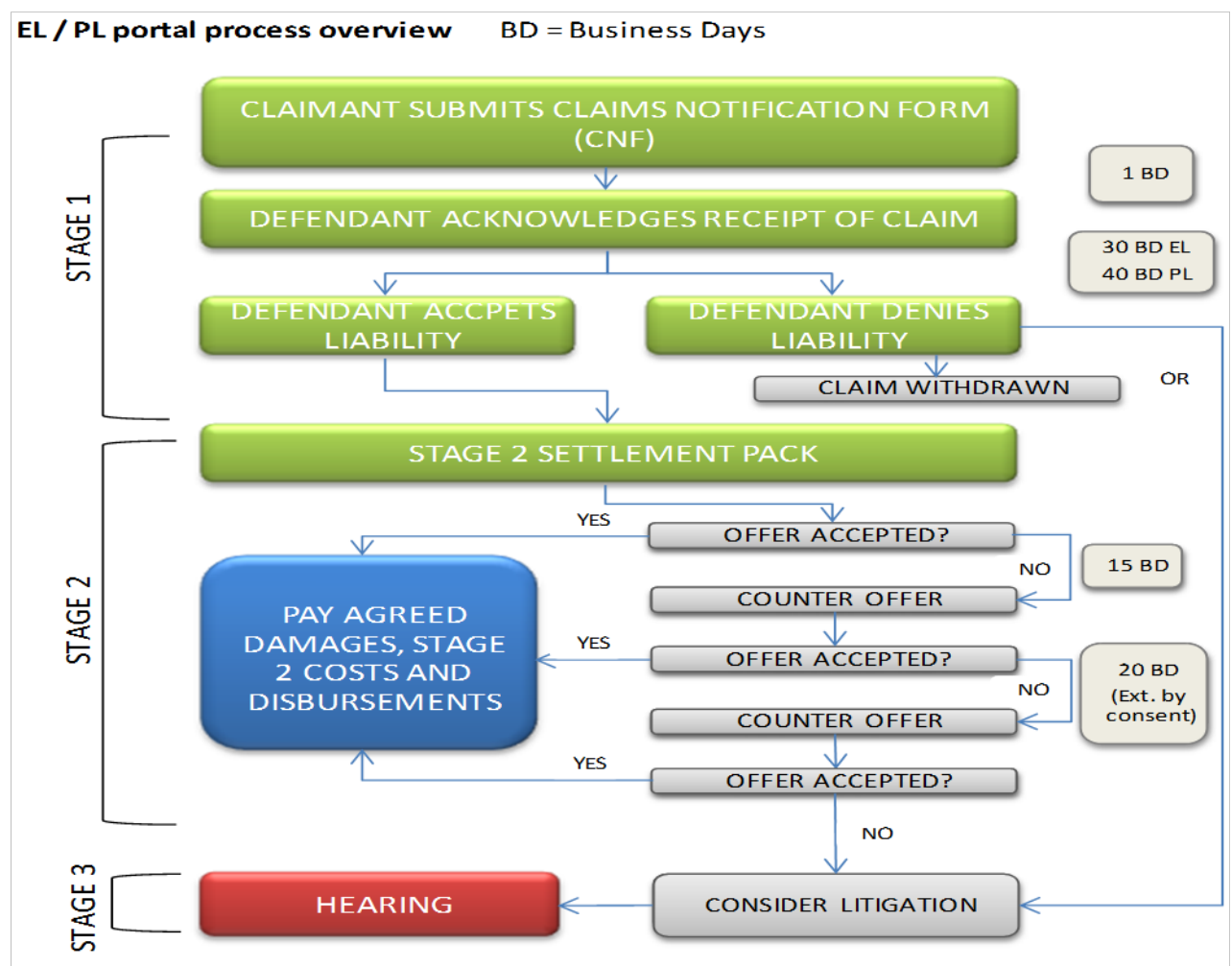
- Relevant medical records and photographs
- Offer of settlement
- The defendant then has 15 business days to either accept the offer or submit a counter offer to the defendant.
 - If the offer is accepted the defendant pays the agreed damages and Stage 2 costs and disbursements (including specialist advice costs if the claim is above £10,000 and justified).
 - If the offer is rejected a counter offer must be submitted.
- The period of negotiation (offers and counter offers) can be extended to 20 business days by mutual consent).

Stage 3 Hearing

If an agreement cannot be reached during Stage 2 the claim can go to litigation.

The following diagram is a simplified illustration of the portal claims process.

Figure 14 – Portal claims process



5.3.2 Fixed recoverable costs within the portal

The following table outlines the Fixed Recoverable Costs within the portal.

Table 7 – Fixed Recoverable Costs within the portal

	Claims between £1,000 and £10,000			Claims between £10,000 and £25,000		
	Stage 1	Stage 2	Total	Stage 1	Stage 2	Total
Costs	£300	£600	£900	£300	£1,300	£1,600

If a claim falls out of the portal it is subject to Fixed Recoverable Costs as outlined in the table below.

Table 8 – Fixed Recoverable Costs if claim falls out of the portal

Claim Value	Pre issue			Issued			Trial			
	Case settles before issue			Post issue	Post Allocation	Post Listing	Advocacy Fee			
	£1k to £5k	£5k to £10k	£10k to £25k	All values			Up to £3k	£3k to £10k	£10k to £15k	£15k to £25k
EL	£950 + 17.5% of damages	£1,855 + 12.5% of damages over £5K	£2,500 + 10% of damages over £10K	£2,630 + 20% of damages	£3,350 + 25% of damages	£4,280 + 30% of damages	£485	£690	£1,035	£1,650
PL	£950 + 17.5% of damages	£1,855 + 10% of damages over £5K	£2,370 + 10% of damages over £10K	£2,450 + 17.5% of damages	£3,065 + 22.5% of damages	£3,790 + 27.5% of damages	£485	£690	£1,035	£1,650

5.3.3 Additional rules and exclusions

There are several areas of exclusions and rules on applicability. Those which may be most applicable to industrial disease claims, such as deafness, are listed below:

- Fixed recoverable costs are only in relation to a claimant who has a legal representative, thus a claims management company cannot recover portal costs. However, a claimant in person may use the portal.
- If a claimant reasonably believes that a claim is valued between £1,000 and £25,000 but it subsequently becomes apparent that the claim is worth below £1,000 Stage 1 and possibly Stage 2 costs may still be recoverable where relevant.
- If a claimant does not accept a reasonable Part 36 offer they can be deemed to ultimately pay the defendant's standard costs for the full sum.
- If a claim is deemed to have unreasonably exited the portal the claimant will be awarded no more than the fixed costs.

- Where a claimant lives or works in London (as specified by the area set out in Practice Direction 45) and instructs a legal representative who practices in London, a 12.5% uplift is applied to all recoverable costs.

The following are specific areas directly relating to the treatment of industrial disease claims:

- The key date for entry into the portal is the date of the letter of notification. Therefore any claim letter dated 31 July 2013 onward should be entered into the EL PL claims portal.
- Mesothelioma claims are excluded from the portal.
- Any disease claim where more than one defendant is named the claim automatically falls out of the claims portal.
- Any disease claim which falls out of the portal will go straight to open costs for both sides (i.e. Fixed Recoverable Costs and Qualified One Way Cost shifting no longer applies)

Under the criteria outlined above for the claims portal NIHL claims should almost always fall within the damage award range of between £1,000 and £25,000 for submission to the portal. However, as the majority of NIHL claims are multi-defendant this would leave a large number of claims to be dealt with outside of the portal and on a time and cost basis.

6. Data Collection and Trends

6.1. Introduction

The UK Deafness Working Party was formed to look into the emerging experience of deafness claims on Employers' Liability policies written in the UK. It is perceived that there has been an increase in the frequency of the deafness claims in the last few years. The main aim of the UK Deafness Working Party is to understand the current trends that the Insurance Market is facing in relation to deafness claims and to understand the drivers behind these trends. This will then help the actuary improve their understanding of the key trends and improve the reserve projections that are made for these claims in the future.

We asked companies (active or insolvent) whether they would be prepared to share their deafness claim data with us. Fourteen 'entities' responded with data and/or answers to the questionnaire (Note that separate entity data may come from the same company where entities have now merged). **Their help is very much appreciated and has contributed to what we hope is a very useful exercise.**

6.2. What data collection and questionnaire process was adopted

The UK Deafness Working Party created an Insurance Market data survey and questionnaire that will help observe the recent trends experienced by the Insurance Market as a whole in the past.

This process involved four separate exercises:

- 1) **Questionnaire:** this list of questions (as set out in Appendix A) was sent to insurance entities and replies were gathered around the end of August 2012.
- 2) **Yearly Summary Data:** This spreadsheet (as set out in Appendix B) shows aggregated claim numbers and financial information by notification year and settlement year, 1980 to 2012. This exercise was undertaken twice based on Q2 2012 data and again based on Q4 2012 data.
- 3) **Per Claim Data:** This spreadsheet (as set out in Appendix C) is not aggregated and keeps records for individual claims from notification year 2003 to 2012. This data was collected as at Q4 2012.
- 4) **Monthly Summary Data:** This spreadsheet (as set out in Appendix D) shows aggregated claim number notifications for the 18 month period January 2013 to June 2013.

Note that for all four data collection exercises the insurance entity data was sent to Dawn McIntosh at the Institute and Faculty of Actuaries in order to keep the responses anonymous. The individual entity data is only held at the Institute and Faculty of Actuaries where the data was aggregated together. The UK Deafness Working Party only has access to this aggregated data. **We are very grateful to Dawn McIntosh for her help in this process.**

6.3. Questionnaire results

A copy of the questionnaire and accompanying e-mail is shown in Appendix A. In the rest of this section we will go through each of the questions that we asked.

Exposure data

- 1) Are you able to identify the claimant start and end exposure dates to which the claim relates?

Only one entity said "Yes" with four entities saying "No". Three entities said that they had some information on this.

- 2) Are you able to identify the relevant insurance start and end exposure dates to which the claim relates?

Three entities said "Yes" with two entities saying "No". Three entities said that they had some but incomplete information on this.

- 3) Would you be prepared to share claims data split by exposure period on an anonymous basis?

Five entities said "Yes" with three entities saying the data would not be available.

- 4) Do you try to obtain policy exposure data, such as turnover, number of employees, proportion at risk of noise in the work place? If so, please supply general approach.

For one entity turnover and number of employees is collected. For two other entities if there is an issue with the insured exposure may be investigated. Five entities replied "No".

- 5) Do you classify policies or claims into trade groupings?

Six entities said "Yes" with two entities saying "No".

Claims data

- 6) Do you have available a split of claims between indemnity and costs? If yes would you be prepared to share this data on an anonymous basis?

Six entities said "Yes" with two entities saying "No". Most saying "Yes" could share the data.

- 7) Do you have available a split of claims between lead and follow i.e. claims that are handled by your company (lead) compared to claims that are handled by other companies and your company just pays its share of the claims cost (follow)? If yes would you be prepared to share this data on an anonymous basis?

Two entities said "Yes" with six entities saying "No".

- 8) What is your current estimate of how many claims that are notified in a particular year finally settle at zero cost and have no allocated expenses?

Six entities provided an estimate ranging from 4% to 70%.

- 9) Do you observe a sizable proportion of claims that settle at zero indemnity, but with allocated costs only? If so what is your estimate for this as a proportion of the total notified claims in a particular year?

One entity stated this was negligible around 1%-2%, and another stated around 80% of claims settle with own legal costs only. Six other entities said they did not have this information.

Reserving Methodology

- 10) Do you use a reserving method involving separate projection of future claim numbers and average claim cost? If No, please skip the remainder of this section.

Seven entities said "Yes" with one entity saying "No".

- 11) Do you project future claim numbers by curve fitting, by exposure projection for major insureds, or by other methods (please specify)?

Six responses. Three use curve fitting, two mention decay approach and one uses chain ladder.

- 12) What do you consider to be a typical average claims cost (excluding nil claims?)

Answers vary from £2,000 to £7,000.

- 13) Are these the full claimant cost or is the claimant's share (contributory negligence) and company's share (if more than one insurer or uninsured period) implicit in the averages?

Most state this represents the entity's share of claim.

- 14) If these shares are implicit, do you know what the full average costs are?

One estimate at around £12,500 and another at £15,000. Five entities did not have an answer.

- 15) What is your estimate of how the average claims cost (in Q11 or Q13) is split between indemnity payments and the cost element (e.g. solicitors costs, success fee, ATE premium etc)?

One estimate at around one third indemnity, two thirds costs. Another at 40% indemnity with 60% costs. Other entities did not have this split available.

- 16) What do you consider as a reasonable estimate of the average annual inflation rate for a deafness claim?

Responses in the range 3% to 6%.

Other non-benchmark methods

- 17) What other non-benchmark methods do you use to reserve for UK deafness, and how do these operate?

One response, "Firstly a view on the current year notifications is formed. Future years are then projected based on a decay factor. Future average claim cost (allowing for inflation) is then multiplied by the projected notifications to give the total cost of future claims". Other entities do not use other methods.

- 18) What methods would you like to use if you had the data?

Responses included:

- a) An exposure based method where a maximum notification for each exposure year can be derived and a propensity to claim ratio can be used to allow for economic and other factors.
- b) Exposure specific projections, taking into account whether policies are based on the exposure period or cover these on a report year basis. Impact from different industries, dependent on typical health and safety standard and noise levels. Size of entities exposed – do larger insureds typically have better (or worse) health and safety?
- c) Believe that better understanding of the drivers (unions, solicitors, claims farming) is the key, rather than there being a lack of data.
- d) A more sophisticated version of a numbers x average cost approach which considered: our entity specific exposure to deafness claims, changes in the claims and legal environment, changes in propensity to claim over time, changing trends in latency times, separate projections for the costs/damages element of the claim.
- e) Decay factor. Monitoring of deafness claims by region and trade to get a view of propensity and exposure.

Benchmarks

- 19) Do you use benchmarks or multipliers as a check against your reserve estimates or not at all?

Three entities use benchmarks or multipliers, five entities do not.

20) Which benchmarks or multipliers do you use?

Comments on:

- a) Other disease types such as hand-arm-vibration syndrome,
- b) Deafness multipliers for other disease accounts which our entity has a share in,
- c) Comparisons with implied survival ratios calculated from external reviews of our reserves,
- d) Compare to external consultancy reviews (frequency curve, inflation and average costs),
- e) Use some multipliers (IBNR:OS ratio).

21) From where do you get the benchmark values?

Comments on:

- a) External actuaries,
- b) For average claim costs you could compare to the latest JSB (Judicial Studies Board) recommendations,
- c) Other disease types.

22) What do you believe is an appropriate 3 year survival ratio (total reserves @ valuation date / average annual payments 3 years prior to valuation date) for UK deafness claims?

Most comments in the range 11 to 15.

Claims Handling

23) Do you use the Coles test?

Seven entities said "Yes" with one entity saying "No".

24) If the answer is yes to Q23, how long have you used it?

Four entities within the last couple of years, one from 2009, one from 2007 and one from 2001.

25) Do you outsource claims handling for deafness claims?

Two entities said "Yes" with six entities saying "No".

26) Have you observed trends relating to claimant solicitors e.g. have you observed the number of claimant solicitors notifying claims to have increased / decreased, become more widespread etc. Please comment.

Comments generally agree increase in claimant solicitors.

- a) Claims team have observed the number of solicitors notifying claims to have increased in recent years.
- b) Increased claims frequency from claims farming in general. Seen some increases from specific insureds, but would need to do additional analysis to know whether it's specific solicitors more widespread.
- c) Generally the same firms behind the majority of claims, but have been coming across a firm that has not been seen before about once or twice a month.
- d) Yes, increased numbers of claimant solicitors – those that have come from nowhere to produce large numbers of claims and many small/'high street' outfits generating occasional claims in low numbers.
- e) Difficult to measure however, appears to have been a slight increase in the number of solicitors now dealing with Disease claims but the vast majority of cases are intimated through the usual firms.
- f) We have observed groups of claims coming in for specific insureds as a result of newspapers articles.
- g) We have observed the number of claimant solicitors to have increased, from what was predominantly trade union solicitors previously.

Past and Future developments

27) What do you consider to be the main impact that has influenced claims experience in the last 10 years?

Comments include,

- a) Claims management companies,
- b) Evidential difficulties,
- c) Ease to commoditise,
- d) Claims farming from solicitors driving up levels in claims frequency,
- e) Increased costs (e.g. CFA/ATE, success fee, claims handling etc),
- f) Union activity/backing,
- g) Claimant solicitors advertising nationally (newspapers, mailshots, free hearing tests),
- h) Greater public awareness/willingness to claim,
- i) Suspicion is that too many insurers have paid too many claims too easily encouraging and funding claimant solicitors pursuit of increasing numbers of claims, of decreasing merit.
- j) Notts deafness cases, even if ultimately unsuccessful, helped set a train in motion,
- k) ELCOP/ELTO. Easier tracing from whom to claim,
- l) Noise at Work Regs 1989 have extended scope of potential claimants.

28) What do you consider to be the main influences on claims experience in the next 5 years?

Comments include,

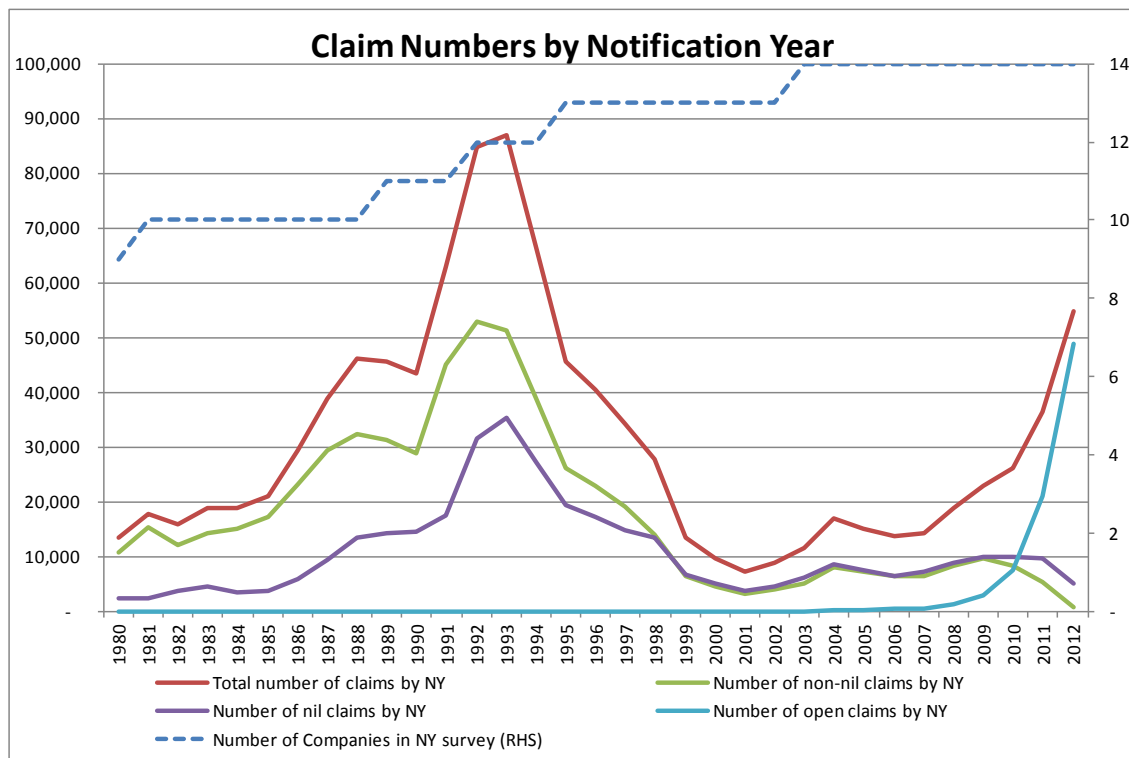
- a) Justice Jackson reforms including LASPO – indemnity and cost impact,
- b) ELTO,
- c) Greater claims farming/marketing strategy, TV, paper and radio adverts targeted in specific areas of the country i.e. NIHL marketing focused in manufacturing areas,
- d) Recession or economic climate,
- e) Frequency impact, e.g. reduced levels of claims farming?
- f) Making the claim – wider tolerance in accepting a claim given level of hearing loss?
- g) Weaker unionisation leading to possible reduction?
- h) Defendants/insurers being better equipped at defending on causation (Coles) due to better knowledge & understanding,
- i) Further improvements in the diagnosis of actual noise induced hearing loss improving the repudiation rate.

6.4. Summary Data as at Q4 2012

Fourteen entities were able to provide some summary data. Nine entities were able to provide summary data going back to notification year 1980. The number of entities providing data by notification increased from nine in 1980, until all 14 provided data in notification year 2003.

Overall number of claims notified each year

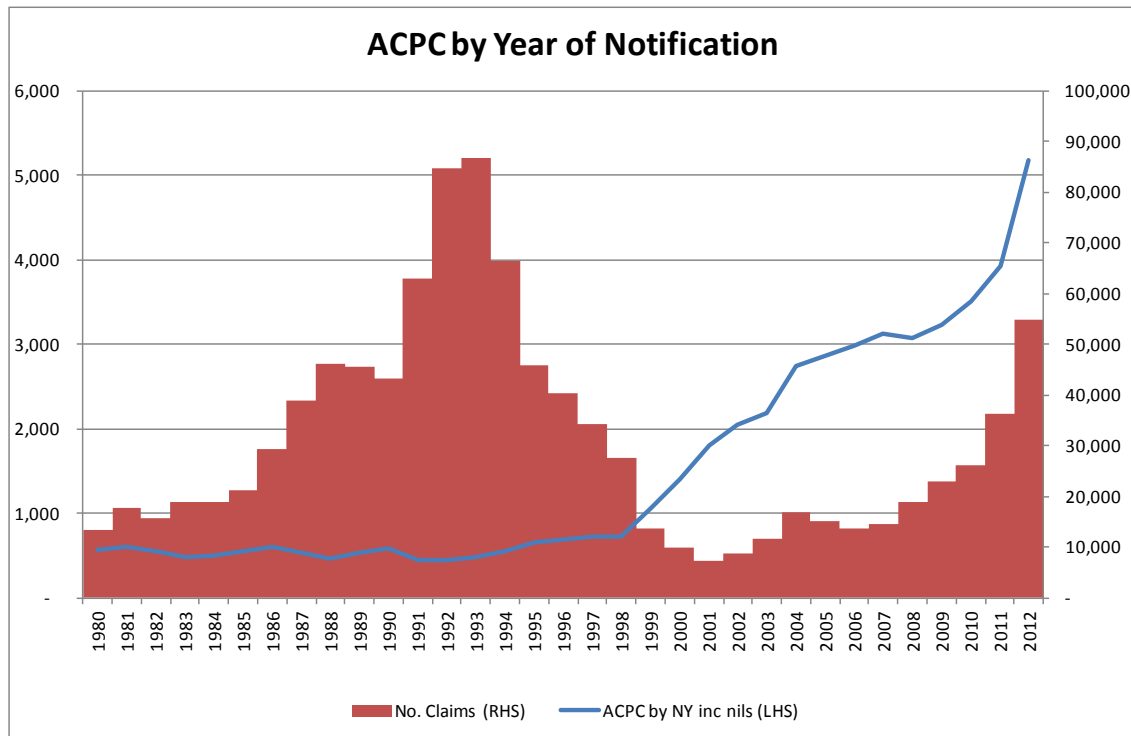
Figure 15 - The results of claim numbers by notification year



A number of observations based on the graph are:

- The number of notified deafness claims increased until they peaked in 1992-1993 at around 85,000 claims per year (data from 12 entities).
- The number of notified deafness claims then decreased steeply to a low of around 7,500 claims in 2001.
- Since 2001, the number of notified deafness claims has increased with around 55,000 claim notifications in 2012 (data from 14 entities).
- From 1980 to 1998, the number of non-nil claims as a proportion of total notifications has reduced until in 1998 where a 50%/50% split between non-nil and nil claim notifications was reached.
- From 1998 to 2009 there has been a consistent 50%/50% split of notified claims between non-nil and nil claims.
- From 2010 to 2012 the split of notified claims between non-nil and nil claims is uncertain due to open claims yet to settle.

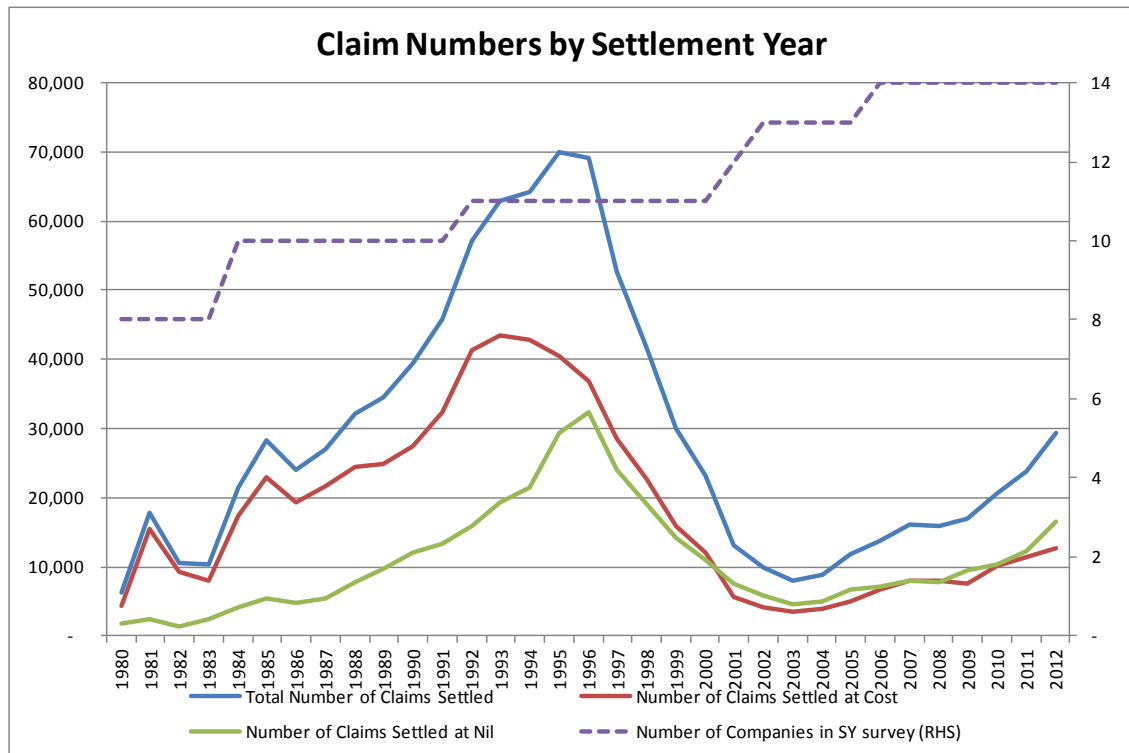
Figure 16 - The results of ACPC by notification year



A number of observations based on the graph are:

- The ACPC is the average cost per notification and not per claimant. A claimant may have a claim against multiple insurers.
- The average cost per claim including nil claims remained relatively stable for the 19 year period 1980 to 1998 in the range £450 to £750. This relatively stable inflationary period is possibly due to Iron Trades Scheme (see Section 2).
- Since 1999, the ACPC including nils has been increasing around £250 per year.
- The ACPC trend by notification year for the last 2-3 years should be analysed with caution. The last few years will include a large proportion of open claims and so will not yet fully show the effect of claims being closed for nil.

Figure 17 - The results of the number of claims settled by year

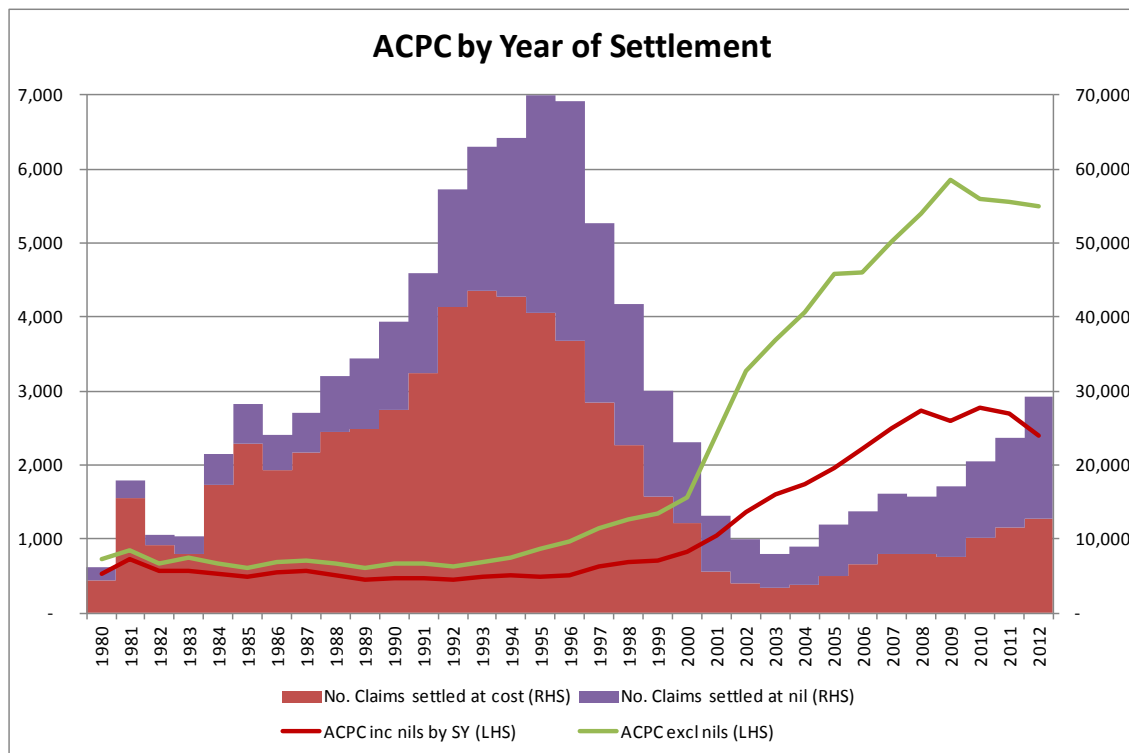


This shows a trend consistent with the notification year data:

- The number of settled notified deafness claims increased until they peaked in 1995-1996 at around 70,000 claims per year (data from 11 entities).
- The number of settled deafness claims then decreased steeply to a low of around 8,000 claims in 2003.
- Since 2003, the number of settled deafness claims has increased with around 29,000 claim notifications in 2012 (data from 14 entities).
- From 1980 to 1996, the number of non-nil claims as a proportion of total settled has reduced until in 1996 where an approximate 50%/50% split between non-nil and nil settled claims was reached. This is potentially also linked to the Iron Trades Scheme where less claims were denied due to exposure pre 1963.
- From 1996 to 2011 there has been a consistent 50%/50% split of notified claims between non-nil and nil claims.
- 2012 may show the first signs of the number of nil settled claims exceeding the non-nil settled claim numbers.

Average cost per claim (ACPC) settled each year

Figure 18 - The results of ACPC by settlement year



This shows a trend consistent with the notification year data:

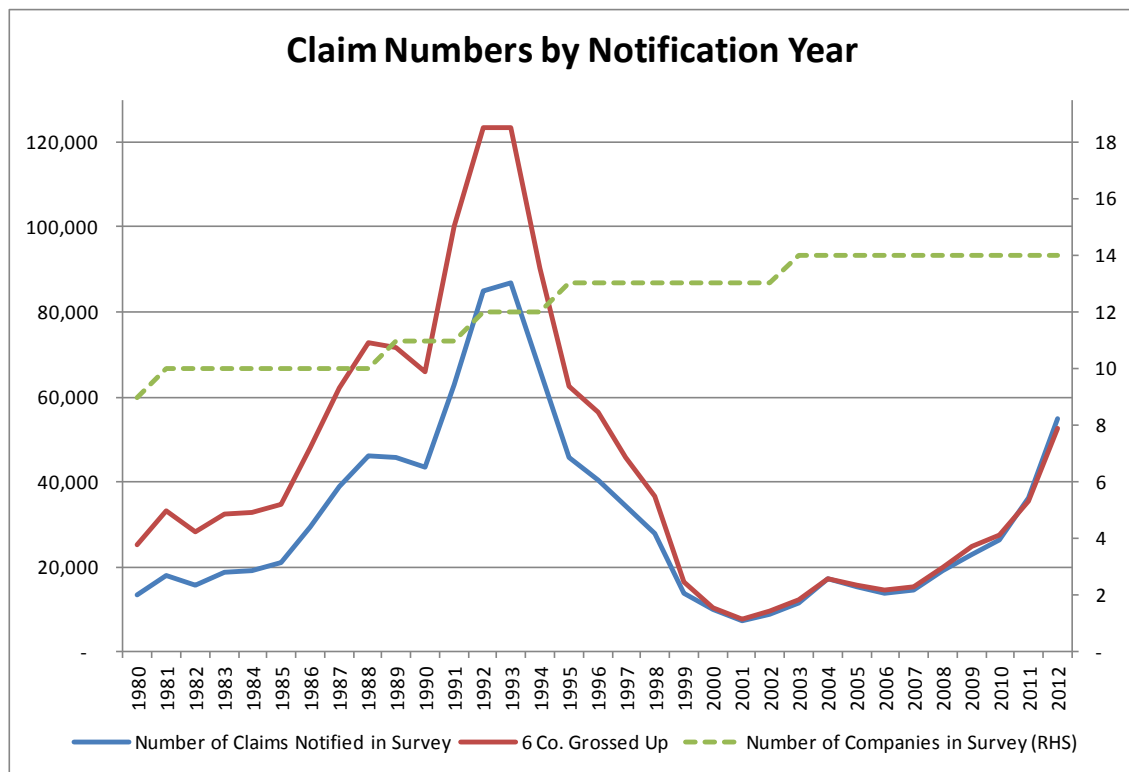
- The ACPC is the average cost per notification and not per claimant. A claimant may have a claim against multiple insurers.
- Generally the average cost excluding nil claims remained in the range £600 to £750 for years 1980 to 1994.
- From around 1994 the ACPC excluding nil claims started to creep up until it reached around £1,600 in the year 2000.
- From 2000, the ACPC excluding nils has been increasing sharply reaching an ACPC of £5,900 in 2009. This is probably linked to the recoverability of success fees and ATE premiums.
- Since 2009, the ACPC excluding nils appears to have stabilised around £5,500.
- The ACPC including nils trend will be impacted by the numbers of claims that settle at nil.

Grossing up notifications for entities unable to provide data in earlier years.

The previous graphs did not adjust for the varying number of contributing entities across notification and settlement years. Below we make adjustments to “gross up” for incomplete data.

6 entities were able to provide reliable deafness claims data from 1980 to 2012 for both claim notifications and claim settlements. By grossing up the claim notifications for these 6 entities in the period 2003 to 2012 to correspond to the full 14 entity summary data we can estimate a full 14 entity claim notification in the period 1980 to 2012. This assumes that each entity has a consistent share of the UK Deafness claim market.

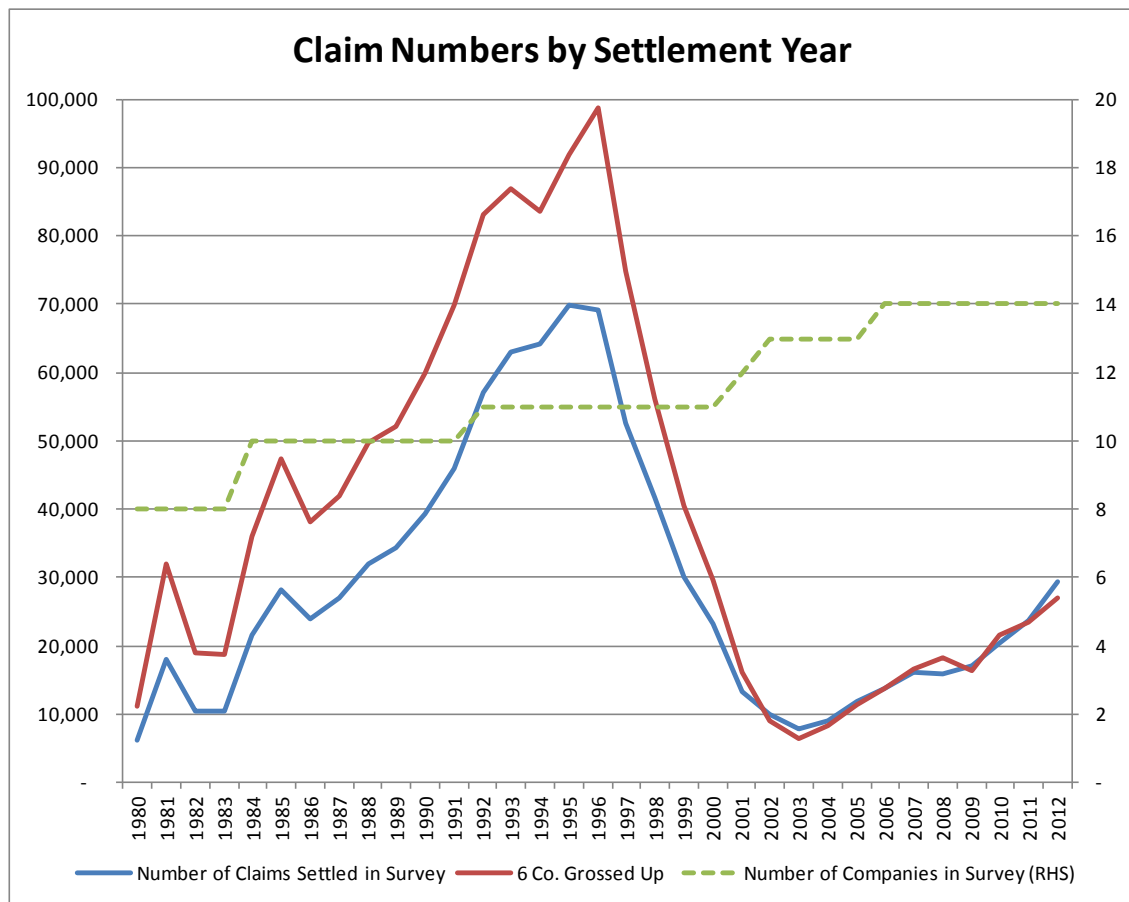
Figure 19 – Grossed up claim numbers by notification year



The claim numbers by notification year from the 6 entities was grossed up by 187% in order to minimise the sum of the squared differences between the 14 entity claim numbers for years 2003 to 2012.

6 entities were able to provide reliable deafness claims data from 1980 to 2012 for both claim notifications and claim settlements. By grossing up the claim settlements for these 6 entities in the period 2006 to 2012 to correspond to the full 14 entity summary data we can estimate a full 14 entity claim settlement in the period 1980 to 2012. This assumes that each entity has a consistent share of the UK Deafness claim market.

Figure 20 – Grossed up claim numbers by settlement year



The claim numbers by settlement year from the 6 entities was grossed up by 179% in order to minimise the sum of the squared differences between the 14 entity claim numbers for years 2006 to 2012.

6.5. Per Claim Data as at Q4 2012

In addition to the summary data, entities were asked to provide individual deafness claim data for the ten notification years 2003 to 2012. There was a good response and the Per Claim Data was provided covering 97% (both by claim numbers, and reported claim amount) of the Summary Data as at Q4 2012.

Table 9 - For each deafness claim the following data was requested:

Field	Example
Notification Date	31/03/2006
Paid - Damages	£4,000.00
Paid - Expenses	£8,000.00
Total Paid	£12,000.00
Current Outstanding	£1,000.00
Year of Settlement	2009
Year of Birth	1945
Exposure Year	1983
Sex	M

Completeness of per claim data

In total, information on 223,533 individual deafness claims notified between 2003 and 2012 was provided. Not all entities were able to provide all the data requested, the following table shows how many individual claims included information on each field.

Table 10 – Per claim data

Per Claim Data							
Notification Year	No. Claims	Paid - Damages	Paid - Expenses	Total Paid	Outstanding	Reported	ACPC
2003	11,295	2,664,052	4,742,593	24,045,079	260,719	24,305,798	2,152
2004	16,615	4,637,743	8,987,545	44,806,578	636,195	45,442,773	2,735
2005	14,870	2,905,739	7,800,215	40,024,210	630,666	40,654,877	2,734
2006	13,251	3,192,777	8,780,627	38,107,673	1,071,087	39,178,760	2,957
2007	13,848	3,519,754	9,728,512	41,413,919	2,235,239	43,649,159	3,152
2008	18,171	4,089,142	12,225,191	51,718,144	4,368,906	56,087,050	3,087
2009	22,077	4,666,533	14,044,954	59,042,500	12,524,455	71,566,955	3,242
2010	25,277	5,127,460	13,951,827	55,751,082	32,925,214	88,676,296	3,508
2011	35,111	3,576,876	8,813,540	39,845,751	98,680,822	138,526,573	3,945
2012	53,018	526,583	1,198,275	13,341,460	263,743,864	277,085,324	5,226
Grand Total	223,533	34,906,659	90,273,279	408,096,396	417,077,168	825,173,564	3,692
		31% of Total Paid					
Settlement Year	151,495 67.8%			347,520,405 85.2%	60,262,072 14.4%	407,782,477 49.4%	2,692 72.9%
YOB	127,813 57.2%			270,804,726 66.4%	258,139,454 61.9%	528,944,180 64.1%	4,138 112.1%
Exposure	113,240 50.7%			208,709,092 51.1%	154,553,875 37.1%	363,262,966 44.0%	3,208 86.9%
Sex	85,060 38.1%			182,305,929 44.7%	126,500,928 30.3%	308,806,857 37.4%	3,630 98.3%

A split of paid claims between damages and expenses was only available for 31% of claims by value. The sum of paid damages £34.9 million plus the sum of paid expenses £90.3 million (total £125.2 million) is therefore much less than the total paid claims of £408.1 million. However, the data from those entities that were able to provide a split of paid claims indicate that around 72% of amounts paid are made up of expenses with only 28% in respect of damages.

Comparing the per claim data to the summary data discussed in section 6.4 shows a good response. In respect of claim numbers, paid claim amounts and reported claim amounts the per claim data/summary data coverage is 97%.

Table 11 – Claim numbers, paid claims amounts and reported claim amounts

Notification Year	No. Claims			Paid Claims £s			Reported Claims £s		
	Summary Data	Per Claim Data	%age	Summary Data	Per Claim Data	%age	Summary Data	Per Claim Data	%age
2003	11,631	11,295	97%	25,182,020	24,045,079	95%	25,443,848	24,305,798	96%
2004	17,019	16,615	98%	46,107,362	44,806,578	97%	46,766,036	45,442,773	97%
2005	15,292	14,870	97%	43,138,807	40,024,210	93%	43,776,569	40,654,877	93%
2006	13,687	13,251	97%	39,876,606	38,107,673	96%	40,959,969	39,178,760	96%
2007	14,445	13,848	96%	42,881,702	41,413,919	97%	45,169,901	43,649,159	97%
2008	18,990	18,171	96%	53,731,371	51,718,144	96%	58,374,590	56,087,050	96%
2009	22,898	22,077	96%	61,036,310	59,042,500	97%	73,890,589	71,566,955	97%
2010	26,171	25,277	97%	57,332,161	55,751,082	97%	91,801,424	88,676,296	97%
2011	36,354	35,111	97%	40,369,152	39,845,751	99%	143,056,113	138,526,573	97%
2012	54,887	53,018	97%	9,676,919	13,341,460	138%	284,243,173	277,085,324	97%
Total	231,374	223,533	97%	419,332,408	408,096,396	97%	853,482,212	825,173,564	97%

Year of Settlement

Of the 223,533 individual claims provided in the per claim exercise, 151,495 claims (68%) were able to provide the year of settlement.

Year of Birth

Of the 223,533 individual claims provided in the per claim exercise, 127,813 claims (57%) were able to provide the year of birth.

Exposure Year

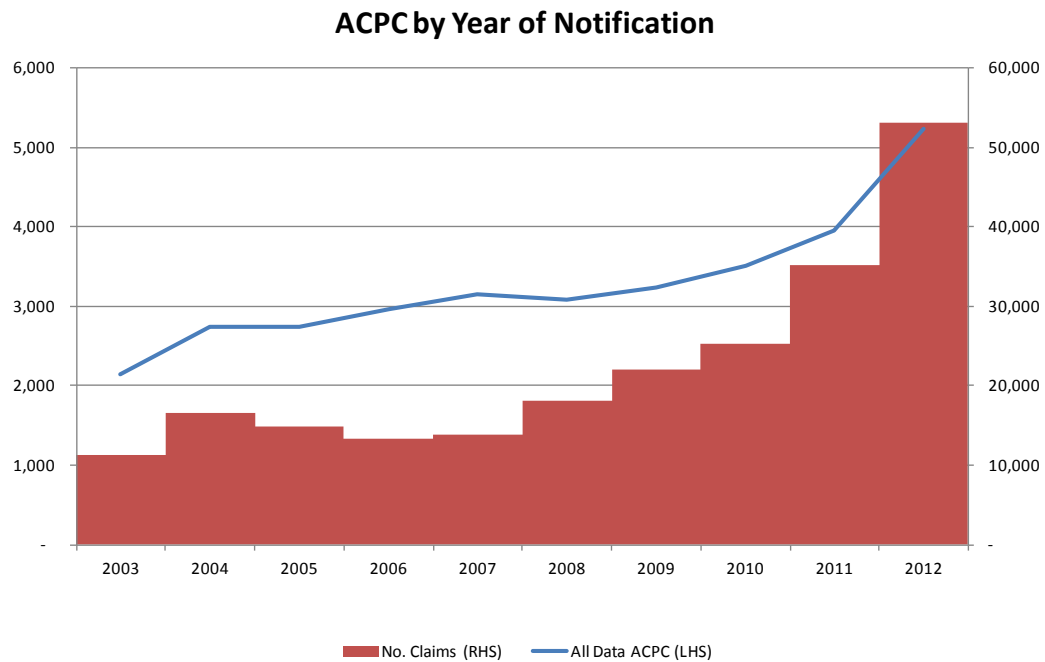
Of the 223,533 individual claims provided in the per claim exercise, 113,240 claims (51%) were able to provide the year of birth.

Sex; Male / Female

Of the 223,533 individual claims provided in the per claim exercise, only 85,060 claims (38%) were able to provide the sex of the claimant.

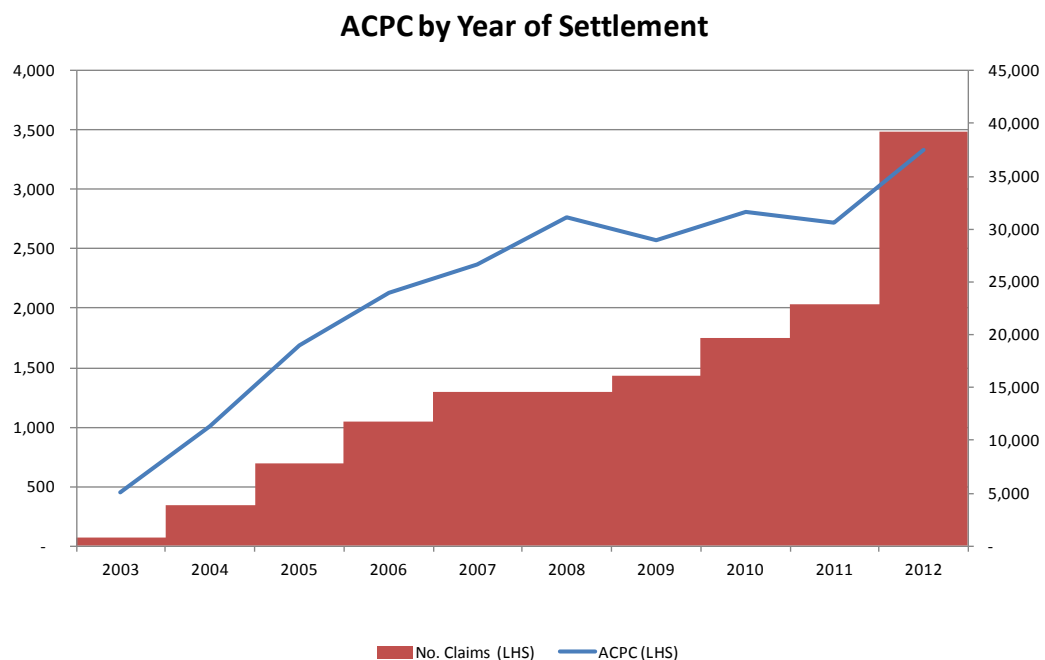
Average cost per claim (ACPC) notified each year

Figure 21 - The results of ACPC by notification year from the Per Claim data



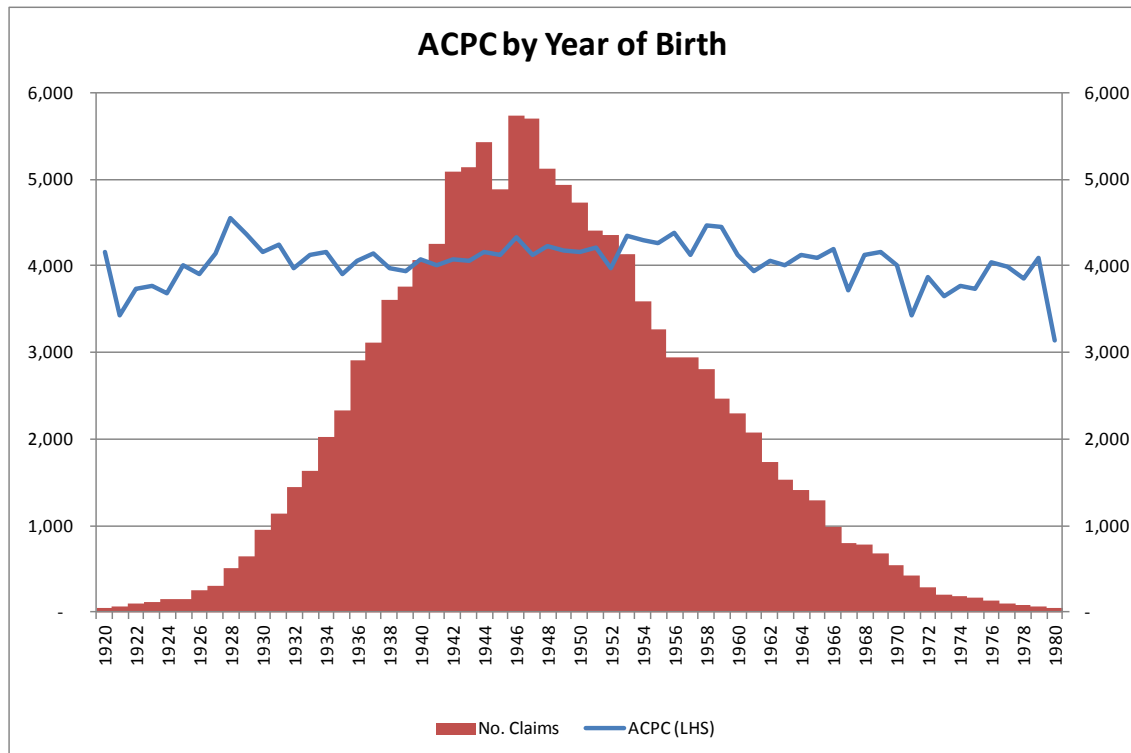
Average cost per claim (ACPC) settled each year

Figure 22 - The results of ACPC by settlement year



Average cost per claim (ACPC) by Year of Birth

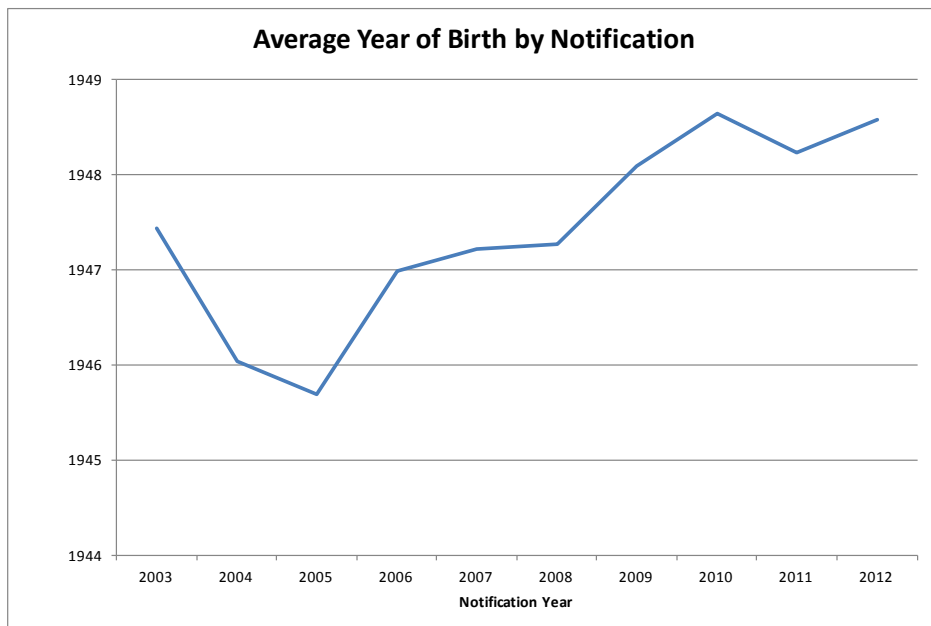
Figure 23 - The results of ACPC by Year of Birth



A number of observations based on the graph are:

- The peak year of birth for notifications since 2003 is around 5,700 claims in the year 1946.
- Most Year of Births occur in the 60 year band 1920 to 1980, with a relatively linear increase from 1925 to 1946 and decrease from 1946 to 1972.
- The ACPC appears stable around £4,000, and does not appear to be dependant on the Year of Birth.

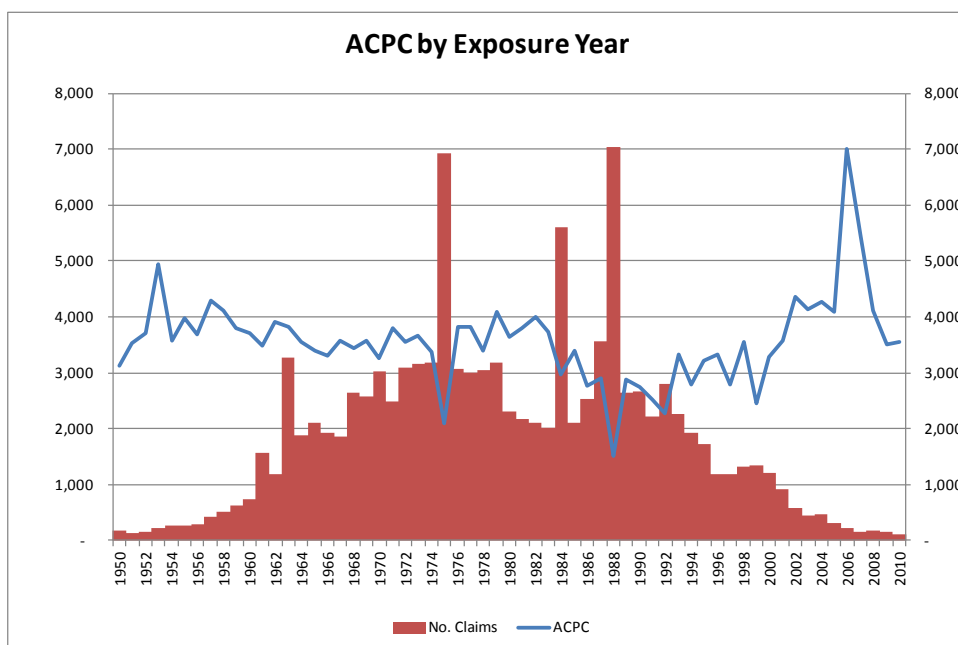
Figure 24 – Average Year of Birth by Notification



Since 2005 the average year of birth has increased at a rate of around 0.4 years per full notification year. Over the last ten years, the average year of birth has only increased by one year. This suggests that the recent notifications originate from similar year of birth cohorts and hence are likely to arise from similar periods of exposure.

Average cost per claim (ACPC) by Year of Exposure

Figure 25 - The results of ACPC by Year of Exposure



Exposure Year' was defined in the Per Claim Data guidelines as follows:

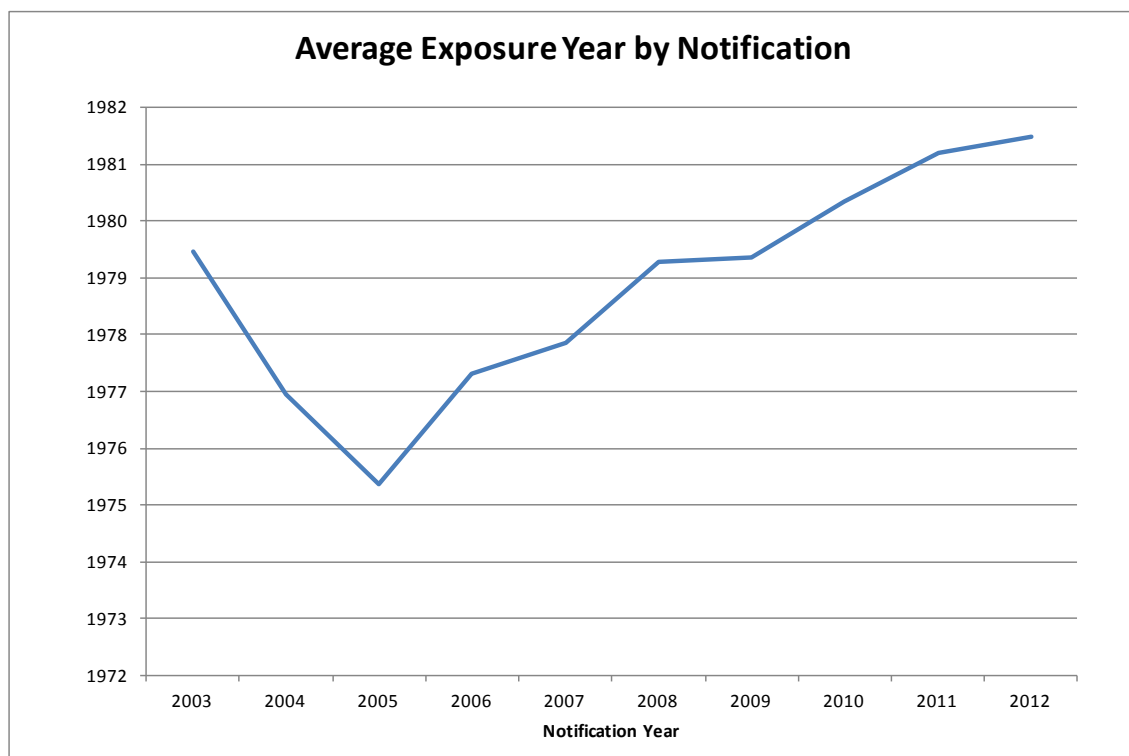
Exposure year should be calculated as follows in order of relative priority:

- If actual claimant start year of culpable exposure is available then this year should be entered
- If only policy start year within culpable period of exposure is available then this year should be entered
- If a relatively reliable policy year is available that is broadly indicative of the relevant exposure period of the claim is available then this should be entered
- Otherwise the field should be left blank.

A number of observations based on the graph are:

- The number of deafness claims appear to be spiked in a few exposure years. These years include 1963, 1975, 1984 and 1988. The spike in 1963 is believed to relate to the date of knowledge attributable to the publication of "Noise and the Worker". The other spikes are known to relate to specific insureds.
- Most Years of Exposure occur in the 60 year band 1950 to 2010.
- The ACPC is volatile with a low ACPC in the spike years 1975 and 1988. The low spike in 1975 and 1988 is believed to be due to a low average cost across a very large number of claims targeted against specific insureds.

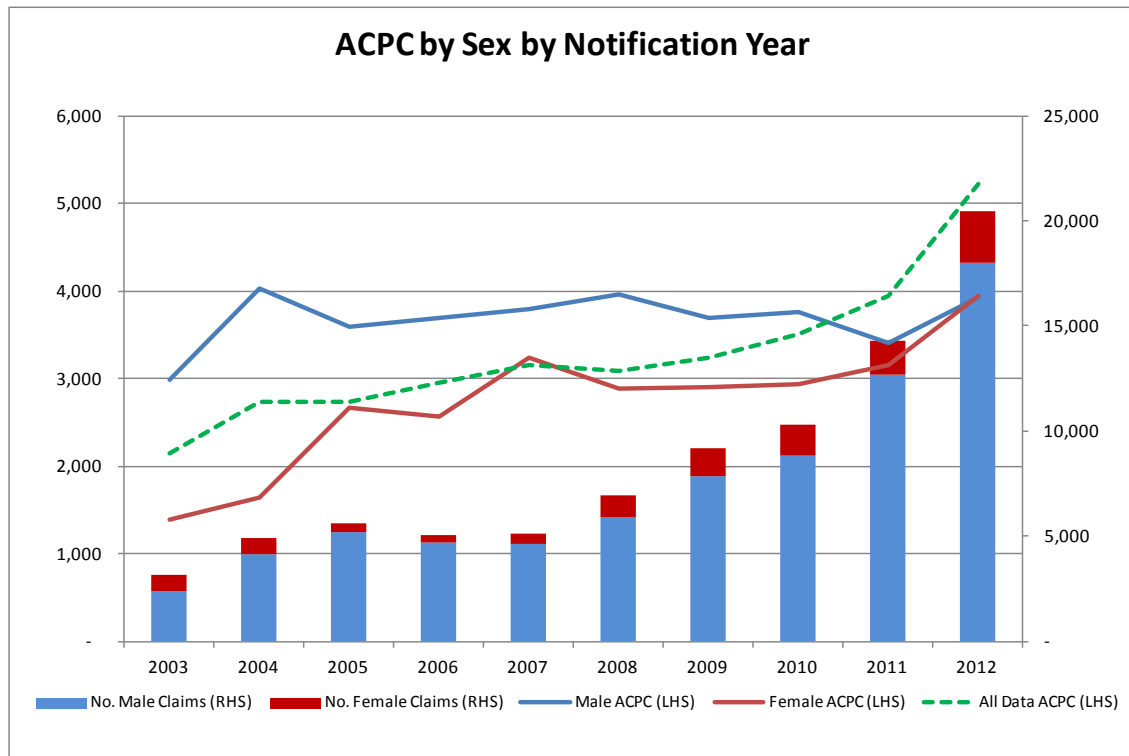
Figure 26 – Average Exposure Year by Notification



Since 2005 the average year of exposure has increased at a rate of around 0.8 years per full notification year, remaining prior to 1982 across all notification years. The most common exposure periods for recent claims continue to be pre 1990.

Average cost per claim (ACPC) by Sex

Figure 27 - The results of ACPC by Sex



A number of observations based on the graph are:

- Of the deafness claims where the sex of the claimant was reported around 13% are in respect of females. This appears to be relatively stable over the notification years 2003 to 2012.
- For earlier notification years, males appear to have a higher ACPC than females.
- For notification year 2012, the ACPC for males appears to be similar to that of females.
- Note that the ACPC in 2011 and 2012 is higher for claims with no sex field indicated.

Proportion of nil claims as a percentage of total settled claims

Of the claims in the per claim data as at Q4 2012 the following table shows the development of nil claims as a proportion of total settled claims (this only applies to claims with both notification date and year of settlement information):

Table 12 – Incremental proportion of nil claims as percentage of settled claims

Incremental proportion of nil claims as percentage of settled claims										
	Settled Year									
Notification Year	1	2	3	4	5	6	7	8	9	10
2003	81%	66%	60%	49%	33%	29%	19%	15%	48%	18%
2004	80%	62%	51%	45%	28%	39%	18%	43%	20%	
2005	80%	58%	51%	34%	47%	24%	35%	20%		
2006	78%	60%	44%	43%	28%	20%	12%			
2007	80%	63%	48%	35%	31%	16%				
2008	83%	62%	45%	32%	22%					
2009	77%	55%	39%	28%						
2010	72%	55%	39%							
2011	83%	48%								
2012	41%									

Table 13 – Cumulative proportion of nil claims as percentage of settled claims

Cumulative proportion of nil claims as percentage of settled claims										
	Settled Year									
Notification Year	1	2	3	4	5	6	7	8	9	10
2003	81%	70%	65%	61%	57%	55%	55%	54%	54%	54%
2004	80%	67%	60%	56%	52%	52%	51%	51%	51%	
2005	80%	63%	57%	52%	52%	51%	51%	51%		
2006	78%	65%	56%	53%	51%	50%	49%			
2007	80%	67%	59%	54%	52%	51%				
2008	83%	66%	57%	52%	50%					
2009	77%	60%	53%	49%						
2010	72%	60%	51%							
2011	83%	55%								
2012	41%									

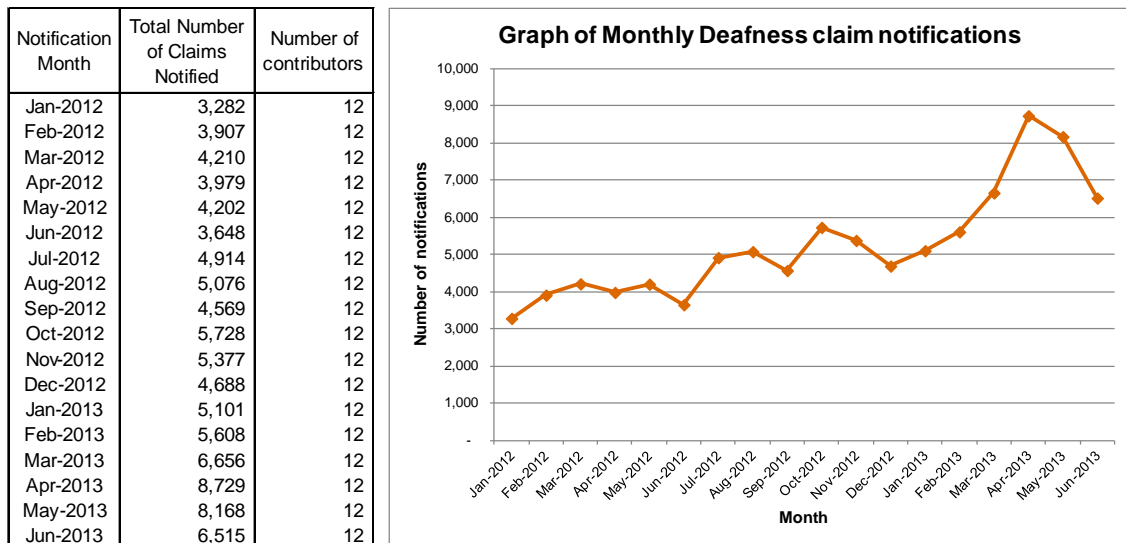
The decreasing nil rate settlement trend in the incremental table indicates that historically, nil claims are settled earlier than non-nil claims.

The cumulative nil rate table indicates that nil claims have historically been around 50% of total claims.

6.6. Monthly Summary Data

Twelve entities provided monthly claim notifications for the period January 2012 to June 2013.

Figure 28 – Monthly Deafness claim notifications



The total number of deafness claim notifications from the twelve entities for 2012 totals 53,580. This compares well to the annual summary data deafness notifications in 2012 of 54,887 (from 14 entities – see section 5.4) and 53,018 notifications in 2012 from the per claim data (see section 5.5).

The data appears to indicate that the number of deafness claim notifications may have peaked in April 2013 at 8,729 claims. Note that this coincides with the introduction of LASPO. However, there is anecdotal evidence that NIHL claim notifications have subsequently increased in July and August 2013. There remains a large level of uncertainty as to which direction monthly claims notifications will move during the rest of 2013 and indeed into the future.

6.7. Link to unemployment

It could be argued that insurance claims are more likely to be pursued during times of high unemployment or when real wages are falling. In the case of claims for industrial deafness one might expect that employees of a company are less likely to claim against their employer than those who are made redundant, especially if the level of impairment is low.

We have conducted an analysis comparing historical numbers of deafness notifications with the employment statistics produced by the Office for National Statistics, which are available back to 1972. We have in particular looked at ways in which deafness notifications and unemployment have behaved in two key periods:

1. The period from 1992 to 2000 – encompassing the high unemployment in the early nineties due to a recession; and
2. The period from 2000 to 2013 – showing the results of the introduction of CFAs in 2000 and the impact of the recent recession.

When looking at the period from 1992 to 2000 we note that deafness notifications and unemployment figures are strongly correlated, with a Pearson correlation coefficient in excess of 0.9. However, when we look at the period from 2000 to 2013 we see that the correlation weakens considerably, and is weaker still in the most recent five years. The graph below shows the number of annual deafness notifications and the unemployment rate over the period analysed, and shows the weakening of the unemployment-claim relationship.

Figure 29a – Annual number of deafness notifications compared to the unemployment rate

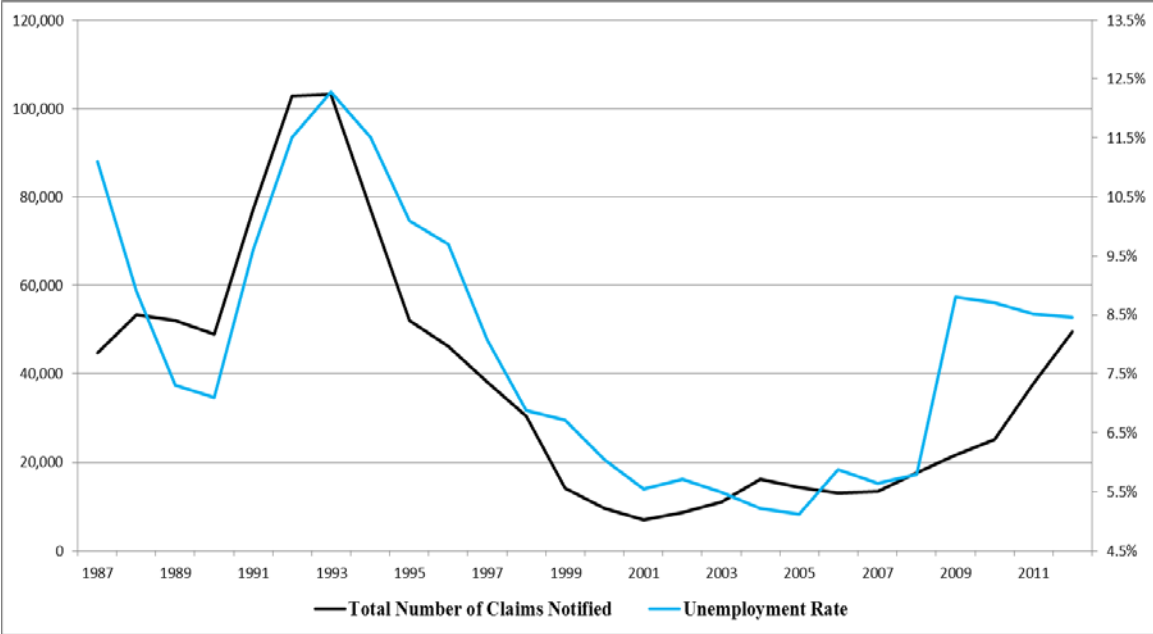


Figure 29b – Annual number of deafness notifications compared to the unemployment rate for ages 50+ only



While it is likely that the 2008 recession and subsequent increase in unemployment has driven an increase in deafness notifications to some extent, there are a two key reasons why we consider that it is unlikely to be the primary driver. These are:

- *Age profile of those affected by the recession* – the most recent recession is unusual compared to past recessions in terms of its unusually high impact on young people. The age group most heavily impacted by the recession are those aged under 50, whereas historically unemployment has affected all age groups fairly similarly. This group is also the least likely to make a claim for industrial deafness, having both worked in environments where noise control is more effective and been exposed to noise for a much shorter period.
- *Age profile of claimants* – the age profile of those claiming has changed dramatically since 2003. While only a relatively small proportion (20%) of claims notified in 2003 were made by those aged 65 and over, this group now makes up nearly 50% of all notifications. As the majority of these individuals will already be retired it is unlikely that they will have been significantly impacted by the recent increase in unemployment, and thus are potentially being driven to claim by some other factor.
- *The rise of claims management companies* – since 2000 the number of deafness notifications has been more strongly correlated with the activity of claims management companies and claimant solicitors.

6.8. Rise of CMC influence

It is proposed that the recent increase in deafness claim notifications is in part influenced by the increased activity of Claims Management Companies (CMCs).

Only businesses that have been authorised by the Ministry of Justice are legally allowed to provide regulated claims management services.

The Claims Management Regulator is responsible for regulating businesses that handle certain types of claims for compensation in relation to personal injury, financial products/services, employment matters, criminal injuries, industrial injuries disablement benefit and housing disrepair.

The Claims Management Regulation Unit was set up within the Ministry of Justice in April 2007. It is responsible for directly regulating the activities of businesses providing claims management services under Part 2 of the Compensation Act 2006. The Compensation Act defines claims management services as ‘advice or other services in relation to the making of a claim’.

The Ministry of Justice produces an annual report on the number of personal injury authorised CMCs:

Figure 30 – Number of CMCs

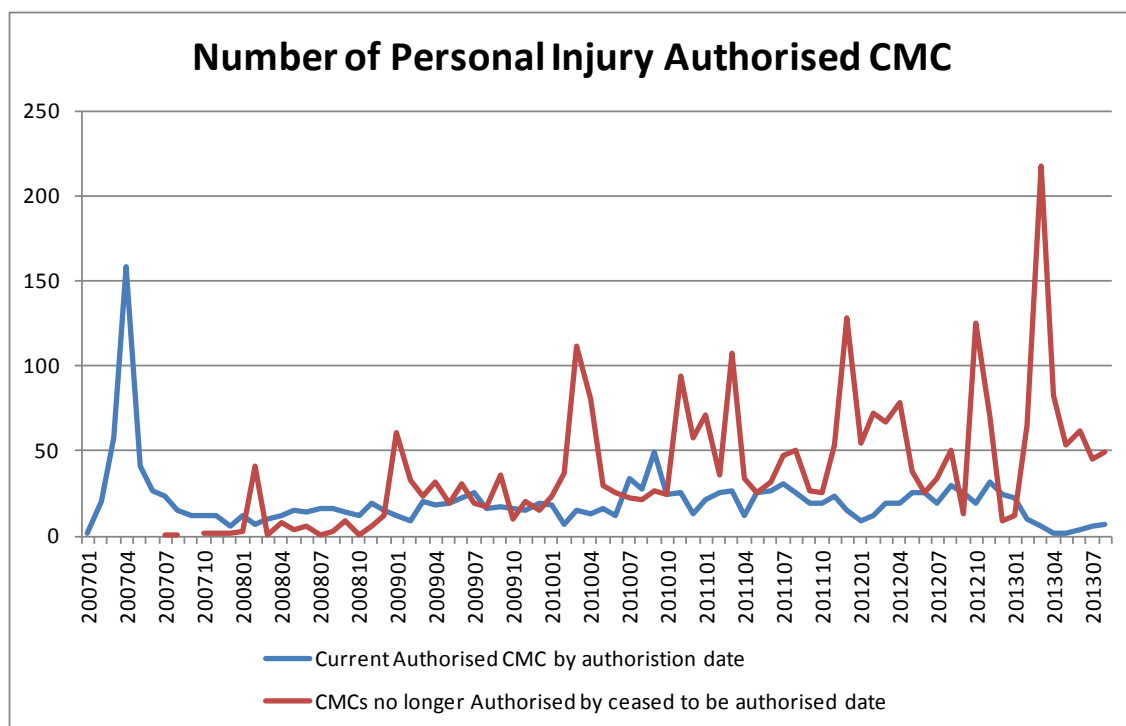
Year	MOJ Annual Report		DWP Notified Claims
	No. of CMCs	Turnover of CMCs (£m)	
2008	1,400		18,990
2009	2,200	247.5	22,898
2010	2,478	377.0	26,171
2011	2,553	455.4	36,354
2012	2,435	354.0	54,887
2013	1,902		

* No. of CMCs as at end of March numbers

* Turnover CMCs as at end of November figures

In addition, the Ministry of Justice publishes a search tool¹³ that keeps a record of current authorised claims management companies and the date that they were originally authorised, and records when previously authorised CMCs ceased to be authorised. As at 27 August 2013 there were 1,598 personal injury authorised CMCs, and 2,834 personal injury CMCs that have now ceased to be authorised.

Figure 31 – Number of Personal Injury Authorised CMC



This data indicates that the current number of new personal injury CMCs being authorised has reduced substantially in 2013.

A peak of 217 personal injury CMCs ceased to be authorised in March 2013 which is likely to be linked to the introduction of LASPO. Recent trends indicate the number of authorised personal injury CMCs continues to decrease.

6.9. Claimant Solicitor – Changing Landscape

As the number of CMCs in the market increased the claimant solicitor market has also changed with new entrants into the disease claims arena rapidly rising to the top. This can be demonstrated by reviewing claim notifications by claimant solicitor firm. The working party was unable to collect claimant solicitor information as not many of the insurance market participants in the per claim survey were able to separately identify claimant solicitor. Further, due to the data protection and competition act, the working party believed that the claimant solicitor needed to be on an anonymous basis, creating practical issues.

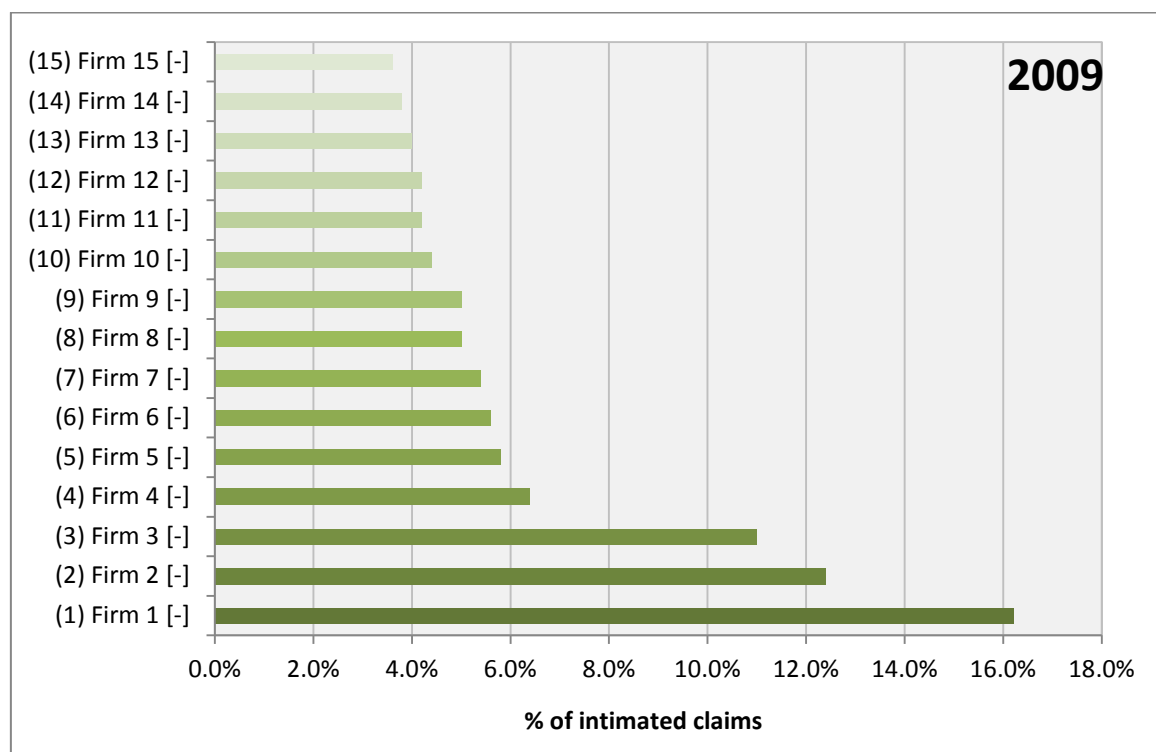
As discussed in section 4.3. the relationship we developed with defendant solicitor firms enabled us to get round these problems, and we were provided an anonymous analysis of claimant solicitor trends. The following graphs are based on annual intimations from one defendant solicitor, DAC Beachcroft. This data does not capture all claims in the market, it only represents around 10%, however due to DAC Beachcroft's large and varied client portfolio we believe that the data is a suitable proxy for the general market make-up of claimant solicitors.

The 2009 graph can be read as follows:

Example y-axis label **(1) Firm 1 [-]** where:

(1) = Current year ranking
Firm 1 = Fixed firm reference
[-] = Prior year ranking

Figure 32 – Percentage of deafness claims by Claimant Solicitor in 2009



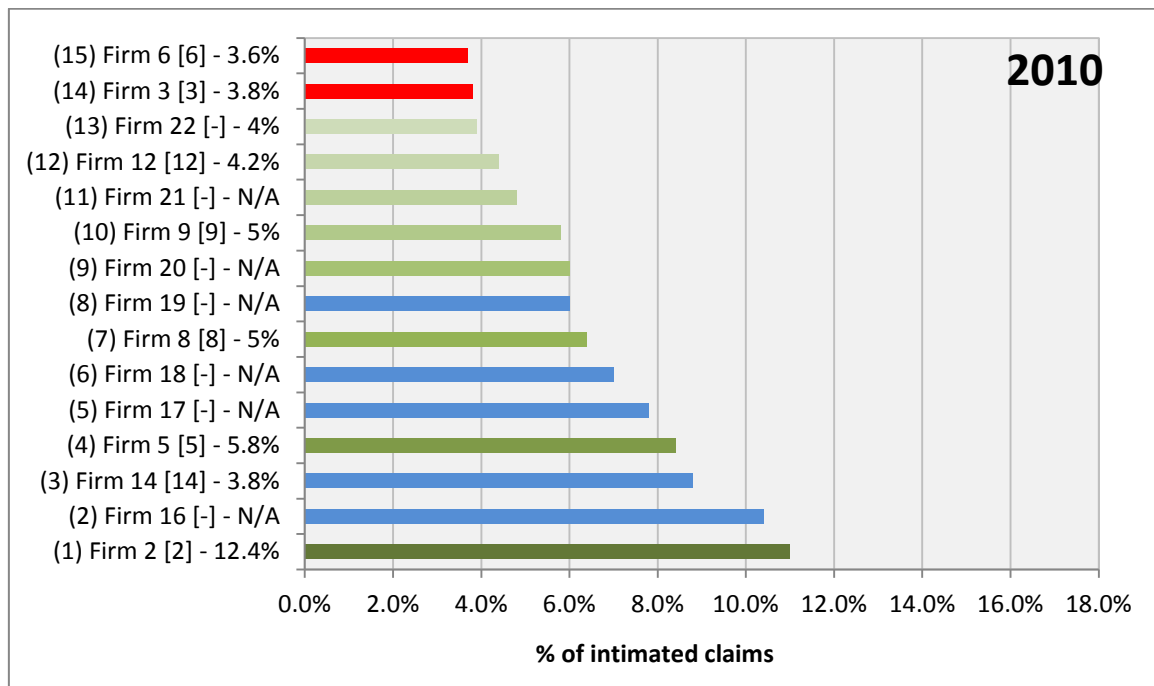
This shows that in 2009 the number of claims notified was dominated by three claimant solicitor firms, representing around 40% of all notifications in the sample.

For the 2010, 2011 and 2012 the prior year's percentage of intimations is also provided and the y-axis label has the following components **(1) Firm 2 [2] – 12.4%** where:

(1) = Current year ranking
Firm 2 = Fixed firm reference
[2] = Prior year ranking
12.4% = Prior year % of intimations

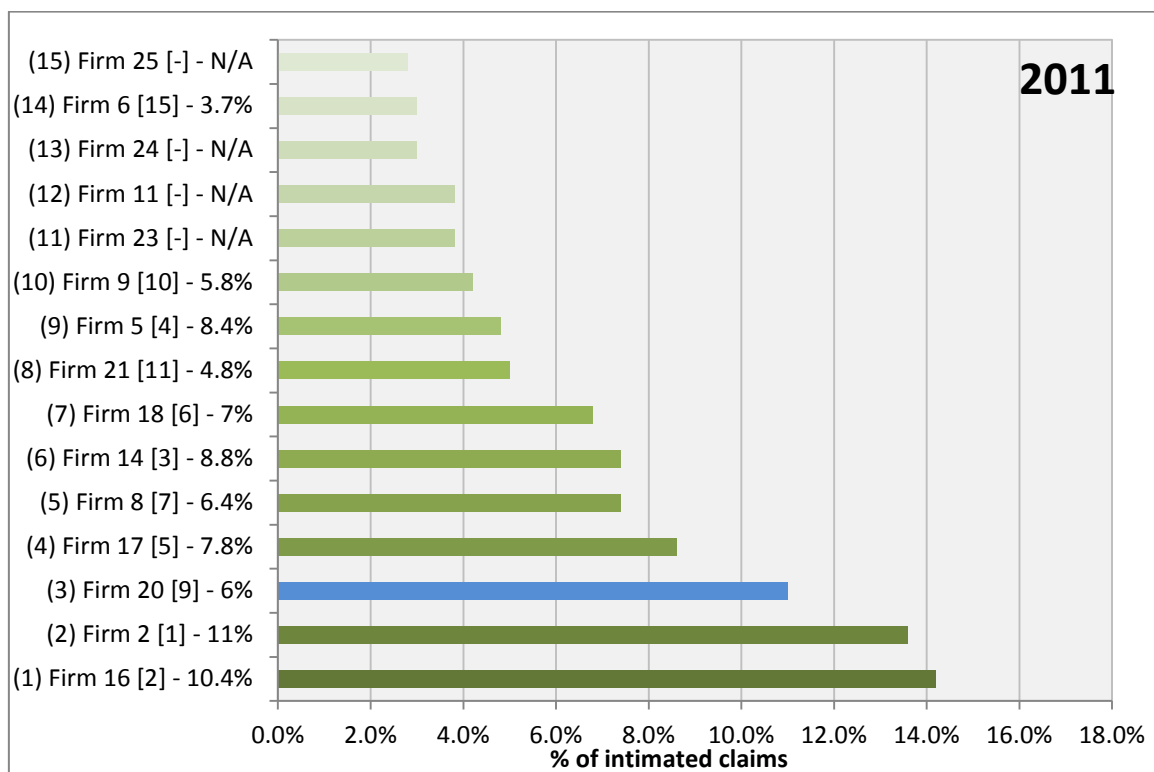
Firms moving either up or down significantly are highlighted in blue and red respectively.

Figure 33 – Percentage of deafness claims by Claimant Solicitor in 2010



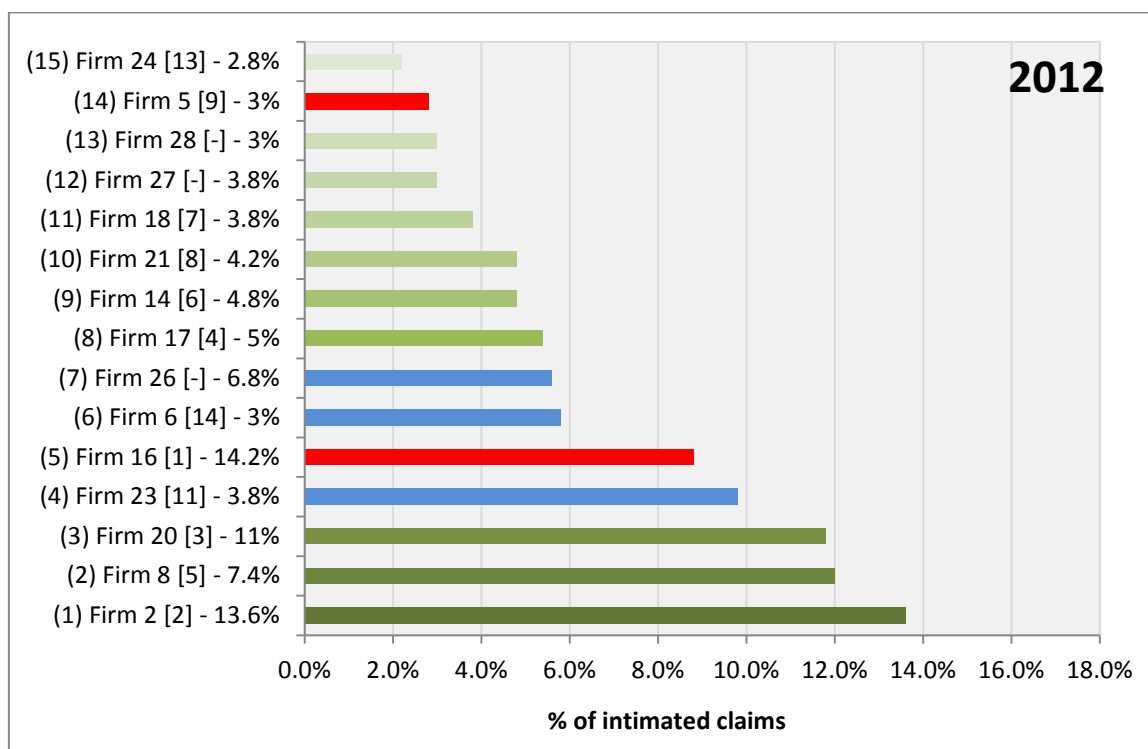
This shows that in 2010 the claimant solicitor firm that produced the most claims in 2009 does not feature in the top 15 in 2010. There have been seven new claimant solicitor firms entering in to the top 15.

Figure 34 – Percentage of deafness claims by Claimant Solicitor in 2011



In 2011 the changing landscape continues. Firm 2 has moved into first place and another three new firms enter into the top 15, with other new firms in 2010 making progress up the table.

Figure 35 – Percentage of deafness claims by Claimant Solicitor in 2012



Another three new entrants in 2012, with now five firms starting to dominate the claims notifications made in 2012, three of which did not feature in the top 15 as at 2008.

This demonstrates the changing influence of the claimant solicitor firms over the last few years. Many new firms have been established with a view to specialise in NIHL claims. The new firms' business models are likely to be based on identifying large numbers of potential claimants with a target level of success rate. Providing the success rate remains sufficiently high, which will depend on the quality of evidence for the potential claimant, the rewards for the claimant solicitors will justify their investment.

Recent legislation and process changes, see section 5.2, may change the business model for the claimant solicitors, but it is difficult at this stage to predict what impact this might have.

6.10. Potential other key drivers

There are other potential drivers of both the frequency and severity of industrial deafness claims. While many of these apply to general insurance claims more widely, a few are of particular importance to NIHL claims:

- *Legislative changes* – as has happened a number of times historically, there is the potential for changes in legislation specifically targeted at industrial deafness. For example, the decibel level at which employers must take action to protect their employees may be lowered, or the degree of hearing loss required in order to claim may be reduced.
- *Changes in medical assessment* – as medical science progresses it may be possible to identify hearing loss with greater sensitivity. This may result in currently borderline cases becoming claims in the future.

- *Medical cost inflation* – the cost of remediation for deafness may increase more quickly than the retail price index (RPI) as further advances in technology are made, potentially resulting in more expensive hearing aids.
- *Court award inflation* – the amount of damages awarded by courts for personal injury cases may increase faster than the RPI as various judges make awards for amounts higher than previously foreseen.
- *Changes in legal costs* – given the uncertainty around the impact of the changes recently brought about by LASPO, there is the potential for legal costs (both defence costs and third party legal costs) to change. As these constitute a significant part of a typical deafness claim it is difficult to assess whether this will improve or worsen the situation for insurers.
- *Employer and employee education* – there is the potential for education campaigns run by the HSE, employers, or some other body to result in a better understanding of safety procedures at work, causing fewer workers to be negligently exposed to damaging levels of noise.

7. Potential Reserving Methodology

7.1 Introduction

This section sets out our thoughts about the reserving methodology that an actuary faced with reserving deafness claims may adopt. It does not set out any recommendations as to what the actual methodology used should be, nor does it outline what assumptions should be used. Any method or illustration set out in this section is just an example. The reserving actuary should take these thoughts into consideration to help choose what they believe is the most suitable methodology and assumptions to reflect the emerging deafness claims experience. Reference should also be made to the earlier sections to help them achieve this as well as section 8 which is an overall summary of the things a reserving actuary should consider.

7.2 Chain ladder methods are clearly wrong for projecting the total claims cost

The chain ladder methodology requires an allocation of claims to specific origin periods – be these the occurrence period (i.e. the period in which the event which triggered the claim occurred) or the period in which the claim was initiated or notified. We then need to be able to analyse the development of these claims over time – i.e. observe how certain claims metrics change by delay period. This methodology can theoretically be applied to claims numbers, payments and handlers estimates and numerous derivatives thereof.

The aim of our reserving is to assess the ultimate cost of the relevant claims arising from the historic exposure to risk carried by the insurer. This means that we need to understand the amount by which existing claims will develop before they ultimately settle (incurred but not enough reported (IBNER)) and also those claims that have already happened but are currently unknown to us (incurred but not reported (IBNR)). An important feature of deafness claims, as with most latent claims, is that the IBNR is significantly greater than the IBNER.

The nature of deafness claims, as with other latent claims (such as those caused by exposure to asbestos) means that there is not a single obvious point at which the claim is triggered – in general exposure to workplace noise will have taken place over a prolonged time and the precise extent of this time period may not be clear.

Consequently it is not possible to create robust data triangles where the development over time of claims arising in specific occurrence periods can be tracked through to the current day. As such, we cannot sensibly use these methods to develop claims experience by occurrence period from today out to ultimate – and importantly this means that the method cannot be employed to allow us to assess an appropriate IBNR. The main problem is that we see a strong calendar year impact in the claims triangles based on accident year i.e. all the accident years develop at the same time as is illustrated in the following triangle:

Figure 36 – Deafness Claims Triangle by AY

Deafness Claims Triangulated by Accident Year		Illustrative Claims Cost Development							
Accident Year		Development Period (5 Years)							
		5	10	15	20	25	30	35	40
	1970	0	0	5	40	80	100	120	180
								
	1975	0	2	60	70	110	140	200	
								
	1980	2	50	90	120	130	200		
								
	1985	20	90	105	120	170			
								
	1990	70	100	120	150				
								
	1995	30	50	70					
								
	2000	10	15						
								
	2005	4							
								

The colours show the strong calendar year effect evident in the triangle.

It is normally possible to develop triangles using notification date, since in this case it is straightforward to identify an appropriate single point of origin. Then considering the subsequent development of claims from the current date through to ultimate allows us to model the value of claims that have already been intimated. This gives us a potential methodology for the calculation of IBNER, but such an approach does not give expected numbers of claims for future notification periods – i.e. there is not allowance for IBNR claims. The major unknown in the assessment of suitable reserves for such business is the IBNR rather than IBNER, hence another methodology is required.

It is usual to derive the IBNR by using an average cost per claim method. The future cost of claims can be derived by multiplying an expected future number by the expected cost of settling these claims in the future. The latter is less uncertain to project as the current cost of settled claims is known, or at least can be projected using chain ladder techniques based on notification year. Applying an inflation rate will enable an average cost per claim for future notification periods to be estimated.

Future number of notified claims is the most uncertain part of the projection of deafness claims, as is generally the case for many latent type claims. Generally the future number of notified claims need to be estimated from first principles using exposure based techniques or estimates based on a general reasoning approach. We consider each in turn in the next couple of sections.

7.3 Exposure Based Techniques

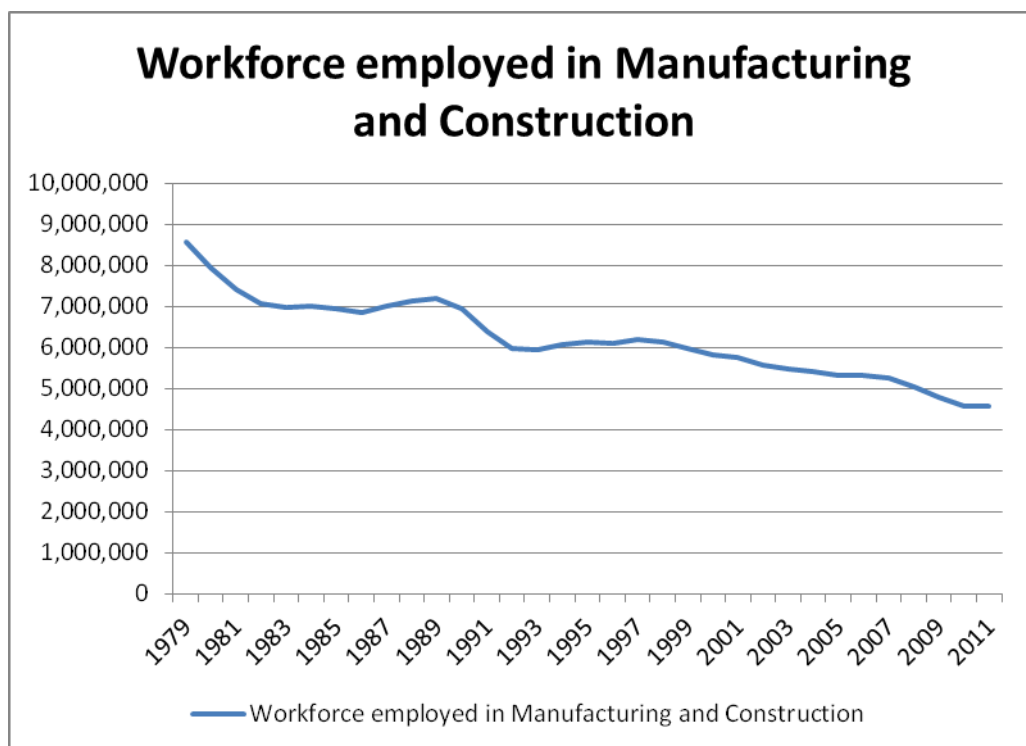
This methodology is dependent upon understanding the exposure to risk that was historically carried. However, once again we face a number of difficulties in establishing this.

In the first instance many insurers will not have detailed records of the policies that were underwritten in the past. Whilst they may be able to confirm that specific companies were insured when claims are submitted, e.g. in response to an ELTO search request, it may not be feasible to review historic policy exposure and to say with any degree of certainty what the nature of the business of these policy holders was and consequently what the risk of them being a source of future deafness claims might be.

For total UK mesothelioma claims, a good proxy of exposure existed – asbestos imports – and was used by the UK Asbestos Working Party to develop a projection model. What exposure information exists that could help in the case of deafness claims?

A starting point might be those people who worked in industries that had the most work place exposure to noise and where most claims appear to arise from, for example – Manufacturing and Construction. The Office of National Statistics has estimates of the number of employees working in these industries back to 1979. This is shown in the following graph:

Figure 37 – Workforce employed in Manufacturing and Construction



These statistics from the ONS cover a range of industry classification and these can be tailored by the individual actuary based upon judgement of relevance in relation to the nature of the underlying book of business.

We then need to consider that not all of these employees will have been exposed to noise at the relevant threshold. It is likely that a different number of people will be exposed to noise above 90 dB(A) prior to 1990 and above 85 dB(A) post 1989. By considering the HSE Impact Assessments of the 1989 and 2005 Noise at Work Regulations (published 1996 and 2005 respectively) we can derive proportions of workers exposed to noise levels at the relevant action thresholds (see section 4.1.1).

Furthermore a relevant factor would be the impact of the availability and the actual use of ear protectors. Again the HSE Impact Assessments can be used to derive appropriate factors and how these may have changed through time.

It is therefore possible, by making sensible assumptions and combining them together, to estimate a potential figure for numbers of workers negligently exposed at the relevant noise thresholds over time. This is likely to be a steeper curve compared to that shown in Figure 37. It would suggest that, with a constant latency period, the level of deafness claims, all other things being equal, should be falling over time.

We can then combine these derived figures with assumptions relating to:

- the proportion of who will have adequate medical evidence to make a valid claim
- the latency period between exposure and manifestation
- the average period of employment

to enable us to project potential claimant numbers for the population as a whole. If we were to then combine such a projection with the numbers already notified we could potentially derive an estimate of future notification numbers and even attempt to allocate these to specific future notification periods.

It should be noted that any such approach will be very sensitive to certain of the underlying assumptions, and even having performed such an exercise the actuary has then to decide upon the relevant share of this population projection that is applicable to the portfolio they are considering. Ultimately there are a large number of sensitive assumptions compounding with one another to generate a very uncertain range of outcomes.

Unfortunately there is no widely accepted view of an appropriate latency period to use in modelling expected claims that might manifest themselves in the future. Indeed as outlined in earlier sections of the report, it can readily be argued that the inflow of new deafness claim notifications is currently driven by the level of activity of claims management companies and has little to do with latency periods and historic exposure to workplace noise at all.

If insurers consider that they have appropriate data they could analyse the relevant exposure periods on claims that have been presented to them and draw conclusions about the relevant period of latency from exposure to manifestation. This could be combined with an exposure curve, either derived from the company's own data if available, or from an approximation at a total market level as discussed above. However, the derived claims projection using this type of approach is unlikely to fit the actual experience very well. This sort of approach can help with the general reasoning approach that is usually the only course a reserving actuary can follow in order to project deafness claims.

7.4 Suggested Method for Reserving Deafness Claims

This section builds on the thoughts outlined in Section 7.3 and gives a framework that an actuary can use to reserve deafness claims.

The following items of data should be separately identified into triangles using notification year as the origin year:

- claims notified
- claims settled at no cost
- average paid excluding claims settled at no cost
- average incurred excluding claims settled at no cost

The average paid and incurred projections will enable a suitable average cost for the current notification year to be selected. Future expected average settled costs can then be estimated by applying a relevant level of inflation. It will be worth considering indemnity payments and costs separately, if possible, due to the legislative changes that have happened recently. See Section 5.2.

Claims settled at no cost should be considered separately as, particularly given the current claims environment, this is likely to vary over time. The analysis outlined in section 6.4 showed that historically around 50% of deafness notifications settle at no cost. This is observed to have increased for the 2011 notification year, but it is too early to tell whether this has continued into the 2012 notification year. It is expected, given the change in mix of claimant solicitor firm observed over the last few years, that the nil claim rate could continue to increase for the 2013 notification year. This is discussed further in Section 8.

Given the difficulties with an exposure based technique, and the observed actual claims with its apparent many driving forces, it is only really possible to project future deafness claims numbers using a general reasoning approach or what the chairman of the working party likes to call “educated guesswork”, with the methods being relatively simplistic and pragmatic, and any refinements dependent upon known factors within the given insurer’s portfolio.

Key questions to help this technique would include:

- What is the level of claims I might expect from the exposures currently written?
- Do I think the level of deafness claims has currently peaked?
- If the deafness claims have not peaked, when will the peak be, at what level and how quickly will it take to reach the peak?
- Once the peak has been reached, how quickly will the claims fall towards the level I expect from the exposures currently written?

The obvious start point will be to consider the current ‘run rate’ of claims notifications. If it is believed that the level of claims has peaked, then the projection simplifies to how quickly the claims will reduce to expected future anticipated levels. Such a reduction may be based on the exposure based type of analysis outlined in section 7.3. However, even with this type of analysis, the expected reduction in the level of claims will be highly dependent on the assumptions made and hence will be subject to a large amount of judgement.

Given the recent increases that have been observed in the Insurance Market claim notifications as discussed in Section 5 and 6, it is important to understand what is driving the increases so that an appropriate assumption can be made as to whether the increase will continue, and if so, how long for? A judgement will inevitably need to be made as to when it is expected that deafness claims will peak and then from this peak how quickly the rate of claims falls towards the expected future anticipated levels.

Ultimately the actuary has to make assumptions about the pattern of future notifications of claims based upon what they can see from the data presented to them, from market factors they deem appropriate and from any other source they regard as suitable. These assumptions will be therefore based largely on judgement and will be subjective.

It will be appreciated that, given the recent levels of deafness claim notifications, there is a vast level of uncertainty surrounding an appropriate set of parameters for such a simple projection model of future claim notifications. However, the working party believe that this is the best approach to take. The key will be around the driving factors, interpretation of recent trends, and views from other parties (e.g. internal claims team and/or panel solicitors), to help with the justification for the judgements that need to be made. Things that the working party feel that the actuary needs to consider when making these judgements are set out in Section 8.

7.5 Other Methods for Reserving Deafness Claims

There are a number of alternative but simplistic approaches one can adopt by applying suitable multipliers to the base data.

In theory a Survival Ratio approach can be used, that is multiplying the current payment rate by a market benchmark multiple. Similarly, an IBNR to O/S ratio approach can be used by applying a market benchmark multiplier to the current level of case handlers' estimates.

These are obviously basic, and assume that market benchmarks are available. Unfortunately this is generally not the case as to derive a reliable market benchmark a reliable market projection would need to be made. As discussed earlier, the working party feel that the uncertainty is currently too great to produce a useful market projection. However, it is worthwhile for an actuary to derive the implied survival ratio and IBNR to OS ratio for their portfolio as this, if nothing else will potentially provide sanity checks for other approaches, and also comparisons with other latent claim reserves.

8. Key things for an Actuary to consider when setting reserves

The purpose of this section is to draw to together the issues discussed in this paper insofar as they may affect reserving for industrial deafness claims. This list of issues is not intended to be exhaustive (for example, additional considerations will apply to a portfolio in run-off) and should be thought of as a guide rather than a prescription.

Section 7.4 suggested an approach using:

- claims notified (“volumes”)
- claims settled at no cost (“nil rate”)
- average paid excluding claims settled at no cost
- average incurred excluding claims settled at no cost

We have grouped the issues according to this structure, with the estimation of paid and incurred averages combined into one: “average cost excluding nils”. Claims inflation is a key factor in projecting long-tail claims of this sort and is covered in this section. It should be noted though that the issues are equally relevant whatever approach is adopted.

This section focuses on the questions relevant to the development of an undiscounted gross best estimate of reserves. Other tasks will require additional considerations, for example discounting reserves will involve consideration of settlement patterns.

The starting point for reserving an insurance portfolio is the data specific to that portfolio. However, comparing portfolio experience with the market data collected by the DWP (and summarised in this report) can help give insight across several areas. For example, are portfolio claim numbers a consistent share of the DWP total? Are nil rates similar? One word of caution though: the portfolio average cost will be a function of the 100% average cost and the typical portfolio time on risk share of claims. This may vary so that differences between portfolio and market average costs may indicate nothing other than different shares.

Alongside the factors listed in this section other factors may provide some insight:

- lead insurer / follow insurer – are there different characteristics
- industry – is the portfolio dominated by one industry so that an exposure type measure becomes feasible
- geography – LASPO does not apply in Scotland
- litigation rates – do these say anything about denials

In the next few sections the main questions for an actuary to consider are highlighted and discussed.

8.1 Volumes: Analysis of Experience

Demographics/epidemiology

The circumstantial evidence is that other factors have driven the recent increase in claim volumes. Moreover, changes in demographics and epidemiology are likely to have a gradual increase in a relatively long-tailed condition such as deafness.

However, it is important to assess the likely ‘underlying’ claims level and latency. Analysis of the empirical drivers may help this part of the work. Credible and reasonably complete exposure data for the portfolio is therefore important.

Economic conditions

This paper has shown that high historical correlation between employment levels and claims has fallen away recently.

Noise at Work regulations/rulings

Successive regulations and rulings imposed lower hearing thresholds on certain industries or from certain dates. Are changes in numbers emerging from particular exposure dates or in certain industries?

CMC/solicitor activity/LASPO

Are there changes in solicitor mix, or of the sources of claims? To what extent does this explain increases in claims numbers? How many claims are pre/post LASPO? What are the CFA dates? If most claims remain pre LASPO then tracking CFA dates may be a lead indicator of when post LASPO claims might start to predominate.

ELTO

Has ELTO driven a change in solicitor behaviour, to the extent of revisiting old untraced claims? ELTO search volumes could be a lead indicator of impending claims volumes.

Portal

There will be discrete changes over the course of 2013.

Business mix/volume

Changes in a portfolio business mix/volume are unlikely to affect short-term patterns though they need to be considered in the longer term picture.

Specific policyholders/Group Litigation Orders (GLOs)

Are there high claim numbers against one policyholder or from one originating cause?

Changes in claim handling practices

Are outsourced claims recorded differently from claims managed in-house? Is a claim set up when letter received or when coverage established? Are there backlogs or catch-ups? Are there bordereau files, multiple claims being recorded as a single file?

8.2 Volumes: Projecting Forward

Demographics/epidemiology

The 'ideal' solution is a top down model that projects the UK suffer population and then applies a market share. There are studies investigating, at a high level, likely rates of industrial deafness in the UK, we have found none that address the additional questions relevant to reserving:

- do any models provide a link to exposure
- do any focus on the numbers suffering actionable levels of hearing loss
- do any look at the 'emergence' of symptoms and therefore help predict, absent other factors, when people may come forward with a claim
- what is the 'normal' proportion of sufferers making a claim

Even if no holistic model of this sort is feasible, a view on the 'underlying' level and latency will be necessary to help project the longer term run off and inform how to adapt the model for past exposures.

Economic conditions

The extent to which economic conditions are thought to impact current claim levels will drive consideration of the future.

Noise at Work regulations/rulings

If there is a link in current experience will we see more post 1990s claims (and eventually more post 2005 claims)? Conversely are the regulations driving better risk management and possibly fewer cases?

CMC/solicitor activity/LASPO

Have pre-LASPO claims been stockpiled by solicitors? If so, how long will this continue? How will CMCs and solicitors react in the longer term to LASPO? Will this see a reduction in numbers if the industry focuses (with success fees linked to damages) on more severe cases?

ELTO

How will ELTO affect the picture going forward?

Portal

How many single defendant (not single insurer) deafness claims fall within the terms of the portal? Will solicitors try to keep claims out of the portal in order to avoid fixed fees? Do disease claims in general become relatively more attractive when accident claims are subject to fixed fees?

Specific policyholders/Group Litigation Orders (GLOs)

GLOs are time-bound and therefore need to be separated from other claims in projecting forward. Similarly, there could be an influx of claims from a particular policyholder or cause. These need to be treated separately from the balance.

Changes in claim handling practices

Any significant changes need to be adjusted for.

8.3 Nil Rates: Analysis of Experience

Deafness claims typically take over a year to settle and the ultimate nil rate for recent notifications will therefore need to be estimated. Typically this can be done by projecting the development of nil numbers against either (1) notified claims or (2) settled claims. There are a number of factors that affect these measurements.

Changes in claim handling practices

Has there been a change in closure protocols? Are practices for outsourced claims different? Has the denial strategy changed? Is the use of Coles being recorded? The adoption of the Coles test is likely to lead a greater number of denials based on causation (i.e. that the hearing loss suffered arose from long term exposure to noise) and may ultimately affect the nil rate. However it typically takes several months before a claim on which a denial has been issued can be closed. It may therefore be necessary to develop lead indicators of denial behaviours.

Changes in claim volumes

As the paper has shown, early claim closures are dominated by nils and later closures are dominated by non-nil settlements. While claim volumes are increasing, newer claims dominate,

and proportionately more closures will therefore be nil. This means that the headline 'nil as a percentage of closure' rate will be higher. This does not of itself mean that the ultimate nil rate will be higher. As these claims wash through, the nil rate will start to fall again.

One other potential impact of a short-term increase in volumes is that claims teams temporarily spend increasing time logging new claims and less time settling claims. This can push the headline 'nil as a percentage of notification' rate down. But when the teams return to settlements, the nil rate will rise again.

Changes in claim mix

Different groups of claims may have different characteristics. For example, a solicitor may have purchased a list of potential claimants from a CMC but it may turn out that the quality of the audiometric testing was relatively poor and that a relatively high number turn out to be nil. Therefore, nil or denial rate by solicitor may add some insight.

LASPO/Portal/Civil procedure rules

Is sufficient history available on post LASPO or portal claims to analyse denials or closures?

8.4 Nil Rates: Projecting Forward

Changes in claim handling practices

It's key here to understand the interaction between denials and nils, particularly because a lot of claims are simply never followed up after the first letter of claim. What's the historical relationship? If denials using Coles are increasing, this will impact the population of claims accompanied by a medical report, not the population of claims that are simply not followed up.

Changes in claim volumes

A measure that looks beyond short-term distortions and gives a reliable indicator of ultimate nil rates is vital.

Changes in claim mix

If there is a short term change in claims mix, will this persist into the future? Is the nil rate on 'underlying' claims likely to be the same?

LASPO/Portal/Civil procedure rules

Assessing the potential impact of recent legal changes is problematic. In the context of nil rates, it may be necessary to develop new ways of measuring nils, as the civil procedure rules will in most cases prevent the insurer from recovering costs from the claimant, leading to more 'own costs' only claims.

8.5 Average Cost Excluding Nils: Analysis of Experience

Paid/incurred

As always, incurred data provides a lead indicator of cost but it's necessary to assess the accuracy of claims reserves. If claims are only reserved at nil value when closed then there could be substantial positive run-off. It's likely that this is the cause of the apparent recent increase in average cost in the market data. It's advisable to analyse both paid and incurred and adopt a balanced view.

Costs/damages

If data can be split between 'own costs', third party costs and damages, then analysis can add insight. Are outsourcing costs recorded against individual claims?

Share

Has the average portfolio share of the claim been changing?

LASPO/Portal/Civil procedure rules

Is sufficient history available on post LASPO or portal claims to analyse average costs?

Other factors

Have averages been affected by Pre Action Disclosures (PADs)? Are there changes in claims handling procedures affecting costs, for example are there measurable differences between claims outsourced and claims handled in house? Have there been changes in the scope of the typical claim? Are average costs distorted by specific policyholders or claim sources? Do bordereaux files of generic costs files distort averages? Are there significant volumes of policies with per claim or aggregate deductibles?

Inflation

What's the true 'underlying' inflation rate once the factors above have been corrected for? On the face of it, the market average non-nil cost has reduced a little in recent years, but this is likely to be due to specific factors rather than a sign of negative underlying inflation.

8.6 Average Cost Excluding Nils – Projecting Forward

Paid/incurred

Alongside the projection of IBNR, if the projection of incurred claims shows significant variation from current reserve levels then IBNER will need to be taken into account. Average IBNR claim costs should be based on ultimate settlement values.

Costs/damages

Will changes in handling practices such as outsourcing affect the mix?

Share

Will ELTO drive wider sharing of legal costs if, as intended, more potential compensators are identified?

LASPO/Portal/Civil procedure rules

Assessing the potential impact of recent legal changes is problematic. On the face of it, LASPO will drive down some elements of legal cost (ATE and success fees) and *Simmons v Castle* will increase damages. However, it's likely in the longer term that these changes will change the whole industry with a potential focus on more severe cases. If this is true then average costs could actually increase with a much higher proportion of damages.

Other factors

Any identified factors will need to be considered in future projections.

Inflation

Ideally, legal costs and damages would have different inflation rates applied, with the former possibly based on wage inflation and the latter judicial inflation. However, in practice, this level of sophistication may not be achievable.

9. Conclusions and future monitoring

There is a large level of uncertainty in respect of NIHL claims at this current time. This makes it difficult for the reserving actuary, not only to reserve for NIHL claims, but also to communicate the inherent uncertainty, so that the key stakeholders are not surprised if the actual experience turns out to be much different to the expected experience.

A number of considerations and questions have been identified and set out in section 8. The working party hope these questions and the rest of the paper represent a useful source of reference and a touch point that all reserving actuaries responsible for reserving NIHL claims can refer to and help them with the difficult judgements and communication that will be required during these turbulent and uncertain times.

The working party will continue into 2013/4 with the aim of tracking the actual insurance market experience and further developing an exposure based approach.

10. Thanks

A number of people have helped the Working Party members produce this paper. These include Gary Brankin, Jim Byard, Debbie Try, Mike Klaiber, David Sanders, Paul Buckley and other members of the Health and Safety Executive.

A special thank you goes to all the companies, and all the people therefore involved, that provided data to the working party, and also to Dawn McIntosh for her help and patience in coordinating the data collection.

11. List of Appendices

The following appendices are attached to this paper:

Appendix A – UK Deafness Working Party 2012 – Questionnaire request
Appendix B – UK DWP 2012 - Summary Data request
Appendix C – UK DWP 2012 - Per Claim Data request
Appendix D – UK DWP 2013 - Monthly Summary Data request
Appendix E – UK DWP 2012 - Summary Data – Results
Appendix F – References

Appendix A: UK Deafness Working Party 2012 - Questionnaire

The UK Deafness Working Party was formed to look into the emerging experience of deafness claims on Employers' Liability policies written in the UK. It is perceived that there has been an increase in the frequency of the deafness claims in the last few years. The main aim of the UK Deafness Working Party is to understand the current trends that the Insurance Market is facing in relation to deafness claims and to understand the drivers behind these trends. This will then help the actuary improve their understanding of the key trends and hopefully improve the reserve projections that are made for these claims in the future.

The UK Deafness Working Party has created an Insurance Market data survey and questionnaire that will help observe the recent trends experienced by the Insurance Market as a whole in the past. You are receiving this e-mail as you have been identified as a key contact that is associated with an entity that can complete the questionnaire and the data survey. Instructions on how to complete the survey and questionnaire are included within the spreadsheet and word document and these should be returned to Dawn McIntosh at the Institute of Actuaries (Dawn.McIntosh@actuaries.org.uk) by 31st August 2012.

The working party is trying to cover as much of the Insurance Market as possible and your help in achieving this is very much appreciated.

The answers to these questions will be combined and anonymised before being sent to the working party. Please can you complete as many questions as you can and return to Dawn McIntosh at the Institute of Actuaries by e-mail - Dawn.McIntosh@actuaries.org.uk - by 31st August 2012 . Many thanks.

Exposure data

- 1) Are you able to identify the claimant start and end exposure dates to which the claim relates?
- 2) Are you able to identify the relevant insurance start and end exposure dates to which the claim relates?
- 3) Would you be prepared to share claims data split by exposure period on an anonymous basis?
- 4) Do you try to obtain policy exposure data, such as turnover, number of employees, proportion at risk of noise in the work place? If so, please supply general approach.
- 5) Do you classify policies or claims into trade groupings?

Claims data

- 6) Do you have available a split of claims between indemnity and costs? If yes would you be prepared to share this data on an anonymous basis?
- 7) Do you have available a split of claims between lead and follow i.e. claims that are handled by your company (lead) compared to claims that are handled by other companies and your company just pays its share of the claims cost (follow)? If yes would you be prepared to share this data on an anonymous basis?
- 8) What is your current estimate of how many claims that are notified in a particular year finally settle at zero cost and have no allocated expenses?

- 9) Do you observe a sizable proportion of claims that settle at zero indemnity, but with allocated costs only? If so what is your estimate for this as a proportion of the total notified claims in a particular year?

Reserving Methodology

- 10) Do you use a reserving method involving separate projection of future claim numbers and average claim cost? If No, please skip the remainder of this section.
- 11) Do you project future claim numbers by curve fitting, by exposure projection for major insureds, or by other methods (please specify)?
- 12) What do you consider to be a typical average claims cost (excluding nil claims?)
- 13) Are these the full claimant cost or is the claimant's share (contributory negligence) and company's share (if more than one insurer or uninsured period) implicit in the averages?
- 14) If these shares are implicit, do you know what the full average costs are?
- 15) What is your estimate of how the average claims cost (in Q11 or Q13) is split between indemnity payments and the cost element (e.g. solicitors costs, success fee, ATE premium etc)?
- 16) What do you consider as a reasonable estimate of the average annual inflation rate for a deafness claim?

Other non-benchmark methods

- 17) What other non-benchmark methods do you use to reserve for UK deafness, and how do these operate?
- 18) What methods would you like to use if you had the data?

Benchmarks

- 19) Do you use benchmarks or multipliers as a check against your reserve estimates or not at all?
- 20) Which benchmarks or multipliers do you use?
- 21) From where do you get the benchmark values?
- 22) What do you believe is an appropriate 3 year survival ratio (total reserves @ valuation date / average annual payments 3 years prior to valuation date) for UK deafness claims?

Claims Handling

- 23) Do you use the Coles test?
- 24) If the answer is yes to Q23, how long have you used it?
- 25) Do you outsource claims handling for deafness claims?
- 26) Have you observed trends relating to claimant solicitors e.g. have you observed the number of claimant solicitors notifying claims to have increased / decreased, become more widespread etc. Please comment.

Past and Future developments

- 27) What do you consider to be the main impact that has influenced claims experience in the last 10 years?
- 28) What do you consider to be the main influences on claims experience in the next 5 years?

Appendix B: UK DWP 2012 – Summary Data

UK Deafness Working Party 2012 - Summary Data Template (as at December 2012)

1. We have asked for a refresh of the data as at 2012 Q4 so that we can be sure about the 2012 experience and that it is consistent with the more detailed per claim data request. Also, in the last data request, there was a misinterpretation of some of the data items and hence we would like to correct this.
2. We have deliberately asked for a small set of data items, and hope that most companies will be able to provide every data item. However, if not, please provide as much data as you can. In particular, we are most interested in receiving as much history as possible for notified claims, so please go back as far as you reliably can.
3. Ideally all figures should be extracted at 31 December 2012. However if this is not possible please clearly indicate the extraction date.
4. The sheet gives more detail on exactly what data we are collecting, but if you are unsure on any of the definitions, please contact Brian Gravelsons of the UK Deafness Working Party via brian.gravelsons@uk.zurich.com who can help clarify what data is required.
5. Please indicate for each notification or settlement year on each completed sheet whether you believe the data entered to be "reliable and consistent". Clearly this is a fairly subjective question. For instance you may believe that data for notification years before, say, 2000 is partially incomplete, based on a different data source or processes, and therefore subject to greater uncertainty or reduced credibility, and therefore can not be compared to years post 1999. In this case you would enter 'Y' in years from 2000-2012 only.
6. Please return completed forms to Dawn McIntosh at the Institute of Actuaries at Dawn.McIntosh@actuaries.org.uk by 28th February 2013 Dawn will be responsible for collating the responses to provide back to the Working Party for analysis. All submissions will therefore be completely anonymous.
7. Only direct employers' liability 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).
8. Many thanks for your participation.

The first spreadsheet requested **Notification Year** data:

Data As At:

Notification Year	Total Number of Claims Notified	Number of Non-Nil Claims Notified	Number of Nil Claims Notified	Number of Open Claims	Paid Amount on Notified claims	Incurred Amount on Notified claims	Reliable and Consistent? (Y / N)
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003							
2004							
2005							
2006							
2007							
2008							
2009							
2010							
2011							
2012							
Total	-	-	-	-	-	-	
2012 grossed up	-	-	-	-	-	-	

Notes

Please provide the total number of claims (nil and non-nil) notified to your company for each notification year.

Please provide the number of claims notified to your company **and settled** at some **cost** for each notification year.

Please provide the number of claims notified to your company **and settled** at **precisely nil-cost** for each notification year.

Please provide the number of claims that remain open as at the date of data extraction.

Note that total number of claims notified = notified and settled at cost (non nil claims notified) + notified and settled at nil (nil claims notified) + notified and still outstanding (open claims)

Please provide the total gross incurred amount (paid + outstandings) in respect of indemnity and costs (both own and third-party) on all notified claims (open or settled) for each notification year.

Please provide the total paid amount to date in respect of indemnity and costs (both own and third-party) on all notified claims (open or settled) for each notification year.

The second spreadsheet requested **Settlement Year** data:

Data As At:

Settlement Year	Total Number of Claims Settled	Number of Claims Settled at Cost	Number of Claims Settled at Nil	Paid on Settlement	Reliable and Consistent? (Y / N)
1980					
1981					
1982					
1983					
1984					
1985					
1986					
1987					
1988					
1989					
1990					
1991					
1992					
1993					
1994					
1995					
1996					
1997					
1998					
1999					
2000					
2001					
2002					
2003					
2004					
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
Total	-	-	-	-	

2012 grossed up	-	-	-	-
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Notes

Please provide the number of claims notified to your company and settled at cost for each year of claim settlement.
Please provide the number of claims notified to your company and settled at **precisely nil-cost** for each settlement year.
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.

Appendix C: UK DWP 2012 – Per Claim Data

Per Claim Data Guidance

- All claims notified after 31/12/2002 should be included and data is as at 31/12/2012.
- Amount paid to date should be in £s. There will be three fields in the template: one for damages, one for costs and one for total. Damages and costs should be filled out separately if available and then the total = damages plus costs, otherwise just the total to be filled out with damages and costs left blank.
- A blank paid field(s) and a non-blank settlement year imply the claim has been settled at nil with no costs allocated.
- Current outstanding claim, i.e. as at 31/12/2012, in £s should be given. If the claim has been settled then this field should be blank and the settlement year filled in.
- Year of settlement is the year the claim has been settled. If the claim is currently open (i.e. has a claim estimate) then this field should be blank.
- Year of birth should be derived from date of birth if available, otherwise should be estimated from any age data available, e.g. if age at notification is available, then the year of birth can be calculated from this information. A blank response implies that no age related data is available.
- Exposure year should be calculated as follows in order of relative priority:
 - If actual claimant start year of culpable exposure is available then this year should be entered
 - If only policy start year within culpable period of exposure is available then this year should be entered
 - If a relatively reliable policy year is available that is broadly indicative of the relevant exposure period of the claim is available then this should be entered
 - Otherwise the field should be left blank.
- The insured name should be the name of the insured used by the submitting company to enable potential trade matching at a later date.
- Sex should be M (Male) or F (Female) if known, otherwise it should remain blank.
- Claimant solicitor should be the name of the claimant solicitor involved in the claim as recorded on your system or otherwise.

If in doubt please contact Brian Gravelsons: brian.gravelsons@uk.zurich.com

Deafness Working Party - Per Claim Template (as at 31/12/2012)

The following fields for each claim notified **post 31/12/2002** should be filled in or left blank if there is no data (as per guidance).

The examples have been correctly formatted and give an example of some of the expected field values.

One sheet should be completed and then e-mailed to Dawn McIntosh - Dawn.McIntosh@actuaries.org.uk by 28th February 2013

Notification Date	Paid - Damages	Paid - Expenses	Total Paid	Current Outstanding	Year of Settlement	Year of Birth	Exposure Year	Insured Name	Sex	Claimant Solicitor
31/03/2006	4,000.00	8,000.00	12,000.00	1,000.00	2005	1945	1983	A Bloggs and Co.	M	A Bloggs and Co.
									F	

Appendix D: UK DWP - Monthly Summary Data

UK Deafness Working Party 2012/3 - Summary Monthly Notification Template

- 1) We believe that there have been some interesting developments in the claim notifications during 2013. In order to view this at a market wide level we would like to collect monthly gross claim notifications in 2013. We think that this will provide interesting insights into the recent claim number trends.
- 2) We are only asking for gross notification numbers as it is believed that this is the main area of interest given LASPO. We will share this insight at our workshop at GRIO 2013. We are also asking for 2012 monthly notifications so that we can check the consistency with the previous data collection and enable us to make an accurate comparison with the past data trends.
- 3) Please can you fill in the template as at 2013 Q2? There are only 18 numbers to fill in so we hope it will not take too long to complete. If there are any questions in relation to the request please contact Brian Gravelsons, Chairman of the UK Deafness Working Party via brian.gravelsons@uk.zurich.com who can help clarify what data is required.
- 4) Please return completed forms to Dawn McIntosh at the Institute of Actuaries at Dawn.McIntosh@actuaries.org.uk by 31st July 2013. Dawn will be responsible for collating the responses to provide back to the Working Party for analysis. All submissions will therefore be completely anonymous.

5) Many thanks for your participation.

Data As At:	2013 Q2
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Notification Year	Total Number of Claims Notified
Jan-2012	
Feb-2012	
Mar-2012	
Apr-2012	
May-2012	
Jun-2012	
Jul-2012	
Aug-2012	
Sep-2012	
Oct-2012	
Nov-2012	
Dec-2012	
Jan-2013	
Feb-2013	
Mar-2013	
Apr-2013	
May-2013	
Jun-2013	

Note:

Please provide the total number of claims (nil and non-nil) notified to your company for each notification month.

Appendix E: UK DWP 2012 - Summary Data – Results

Summary data by notification year:

Data As At: 31/12/2012

Notification Year	Total number of claims by NY	Number of non-nil claims by NY	Number of nil claims by NY	Number of open claims by NY	Paid amount by Notification Year	Reported amount by NY	Reliable and Consistent? (Y or N)	Reliable and Consistent? (Y)
1980	13,471	10,908	2,563	-	7,604,747	7,604,747	9	7
1981	17,888	15,411	2,477	-	10,768,733	10,768,733	10	8
1982	15,863	12,125	3,738	-	8,730,881	8,730,881	10	8
1983	18,833	14,303	4,530	-	9,183,120	9,183,120	10	8
1984	18,934	15,255	3,679	-	9,432,141	9,432,141	10	8
1985	21,135	17,190	3,945	-	11,746,436	11,746,436	10	8
1986	29,408	23,386	6,022	-	17,589,478	17,589,478	10	8
1987	38,816	29,439	9,377	-	20,822,647	20,822,647	10	9
1988	46,099	32,517	13,582	-	21,858,966	21,858,966	10	9
1989	45,635	31,326	14,309	-	24,140,557	24,141,347	11	9
1990	43,439	28,921	14,517	1	25,606,523	25,606,623	11	9
1991	62,931	45,244	17,687	-	28,118,517	28,120,117	11	9
1992	84,778	53,048	31,723	7	37,932,072	37,946,791	12	10
1993	86,837	51,395	35,434	8	42,084,763	42,125,262	12	10
1994	66,473	39,027	27,420	26	36,683,170	36,729,998	12	10
1995	45,764	26,218	19,507	39	29,740,163	29,822,505	13	11
1996	40,504	23,046	17,395	63	27,645,460	27,764,291	13	11
1997	34,376	19,311	14,994	71	25,052,413	25,091,592	13	11
1998	27,711	14,016	13,612	83	20,345,936	20,368,155	13	11
1999	13,621	6,636	6,913	72	14,311,328	14,350,054	13	12
2000	9,848	4,539	5,227	82	13,787,244	13,876,987	13	12
2001	7,375	3,402	3,897	76	13,238,299	13,274,124	13	12
2002	8,895	4,166	4,631	98	18,169,963	18,278,476	13	13
2003	11,631	5,308	6,182	141	25,182,020	25,443,848	14	14
2004	17,019	8,117	8,605	297	46,107,362	46,766,036	14	14
2005	15,292	7,410	7,562	320	43,138,807	43,776,569	14	14
2006	13,687	6,578	6,610	499	39,876,606	40,959,969	14	14
2007	14,445	6,470	7,295	680	42,881,702	45,169,901	14	14
2008	18,990	8,438	9,026	1,526	53,731,371	58,374,590	14	14
2009	22,898	9,878	9,961	3,059	61,036,310	73,890,589	14	14
2010	26,171	8,406	10,153	7,612	57,332,161	91,801,424	14	14
2011	36,354	5,492	9,783	21,079	40,369,152	143,056,113	14	14
2012	54,887	868	5,073	48,946	9,676,919	284,243,173	14	14
Total	1,030,008	587,794	357,429	84,785	893,925,968	1,328,715,685		

Appendix E: UK DWP 2012 - Summary Data - Results

Summary data by settlement year:

Data As At:	31/12/2012
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Settlement Year	Total Number of Claims Settled	Number of Claims Settled at Cost	Number of Claims Settled at Nil	Paid by Settlement Year	Reliable and Consistent? (Y or N)	Reliable and Consistent? (Y)
1980	6,204	4,431	1,773	3,252,364	8	6
1981	17,928	15,472	2,456	13,034,674	8	6
1982	10,573	9,227	1,346	6,135,476	8	6
1983	10,453	7,923	2,530	5,870,392	8	6
1984	21,472	17,323	4,149	11,619,760	10	8
1985	28,286	22,870	5,416	13,893,498	10	8
1986	24,067	19,348	4,719	13,500,278	10	8
1987	26,961	21,601	5,360	15,452,523	10	9
1988	32,083	24,392	7,691	16,169,234	10	9
1989	34,427	24,812	9,615	15,327,416	10	9
1990	39,410	27,390	12,020	18,620,793	10	9
1991	45,899	32,451	13,448	22,071,290	10	9
1992	57,143	41,302	15,841	25,667,557	11	9
1993	62,940	43,532	19,408	30,342,568	11	9
1994	64,105	42,733	21,372	32,264,715	11	9
1995	69,879	40,524	29,355	34,883,142	11	9
1996	69,131	36,811	32,320	35,817,786	11	9
1997	52,642	28,543	24,099	32,734,492	11	9
1998	41,705	22,655	19,050	28,656,896	11	10
1999	30,029	15,801	14,228	21,342,662	11	11
2000	23,158	12,086	11,072	18,976,407	11	11
2001	13,207	5,709	7,498	13,808,326	12	12
2002	9,901	4,123	5,778	13,494,158	13	13
2003	7,900	3,417	4,483	12,612,193	13	13
2004	8,957	3,851	5,106	15,646,975	13	13
2005	11,884	5,104	6,780	23,361,200	13	13
2006	13,762	6,653	7,109	30,674,827	14	14
2007	16,094	7,989	8,105	40,053,114	14	14
2008	15,838	8,036	7,802	43,303,607	14	14
2009	17,079	7,557	9,522	44,264,419	14	14
2010	20,510	10,178	10,332	56,988,116	14	14
2011	23,759	11,496	12,263	63,844,307	14	14
2012	29,282	12,765	16,517	70,201,687	14	14
Total	956,668	598,105	358,563	843,886,851		

Appendix E: UK DWP 2012 - Summary Data - Results

Monthly data by notification year:

Data As At:	2013 Q2
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Notification Year	Total Number of Claims Notified	Number of contributors
Jan-2012	3,282	12
Feb-2012	3,907	12
Mar-2012	4,210	12
Apr-2012	3,979	12
May-2012	4,202	12
Jun-2012	3,648	12
Jul-2012	4,914	12
Aug-2012	5,076	12
Sep-2012	4,569	12
Oct-2012	5,728	12
Nov-2012	5,377	12
Dec-2012	4,688	12
Jan-2013	5,101	12
Feb-2013	5,608	12
Mar-2013	6,656	12
Apr-2013	8,729	12
May-2013	8,168	12
Jun-2013	6,515	12

Appendix F: List of References

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

¹ “Disease and Employers’ Liability Insurance” A Arterton, K Felisky-Watson, DEA Sanders, S Wilson 1994 General Insurance Convention;

² www.hse.gov.uk/noise/noise.pdf

³ The Costs and Benefits of the Noise at Work Regulations 1989. Institute for Employment Studies. HSE Contract Research Report No. 116/1996 ISBN 0 7176 1266x;

⁴ <http://www.hse.gov.uk/research/rrpdf/rr669.pdf>

⁵ <http://www.hse.gov.uk/research/rrpdf/rr517.pdf>

⁶ <http://www.hse.gov.uk/research/rrpdf/rr604.pdf>

⁷ <http://www.hse.gov.uk/research/rrpdf/rr618.pdf>

⁸ <http://www.hse.gov.uk/research/rrhtm/rr651.htm>

⁹ Robinson & Shipton (1977) Tables For the Estimation of Noise- Induced Hearing Loss. Report Ac 61. National. Physical Laboratory. Teddington.

¹⁰ 11th edition of the Guidelines for the Assessment for General Damages in Personal Injuries was published in September 2012 by Oxford University Press.

¹¹ www.official-documents.gov.uk/document/cm79/7947/7947.pdf

¹² <http://www.publications.parliament.uk/pa/bills/cbill/2010-2012/0205/2012205.pdf>

¹³ <https://www.claimsregulation.gov.uk/search.aspx>