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The Industrial Injuries Advisory Council

Proceedings of the 7th Public Meeting

26 June 2008
Birmingham

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Foreword

The seventh Public Meeting of the Industrial Injuries Advisory Council (IIAC) was held in Birmingham on 26 June 2008. This event built on the success of the Public Meetings held around Great Britain over the past 5 years. The meeting allows members of the Council to hear from interested members of the public and for the public to get a much better understanding of the Council's work. Important issues were raised and discussed, including IIDB reform and take-up of the scheme, extrinsic allergic alveolitis and hand-arm vibration syndrome. The seventh IIAC Public Meeting was an informative occasion for the Council and we look forward to the next event. I would like to thank all members of the public who came to the meeting for contributing to the very lively discussions which made it so worthwhile.

IIAC is independent of the Department for Work and Pensions (DWP). It is supported by a Secretariat provided by the DWP and endeavours to work cooperatively with departmental officials to provide advice to the Secretary of State about the industrial injuries scheme. However, its recommendations are not necessarily consistent with current legislation, and during the Public Meetings members may have expressed personal views which are recorded in this report. The report should not be used as guidance on current legislation, or current policy within the DWP.

Professor Keith Palmer
Chairman IIAC

Agenda

09:00 – 09:45	Registration
09:45 – 10:15	**Welcoming Remarks** Chairman of IIAC – Professor Keith Palmer
	Followed by:
	IIAC's approach to scientific decision making Chairman of IIAC Research Working Group –Dr Anne Spurgeon and Professor Keith Palmer
10:15 – 10:30	**Industrial Injuries Disablement Benefit and its relation to other benefits** – Mr Simon Levene (presentation given by Fergus Whitty)
10:30 – 11:00	**Discussion and questions**
11:00 – 11:30	Break
	Presentations:
11:30 – 12:15	**Extrinsic allergic alveolitis** – Professor Mark Britton
12:15 – 13:00	**Hand-Arm Vibration Syndrome** - Dr Ian Lawson
13:00 – 14:00	Lunch
	Presentation and open forum:
14:00 – 14:45	**Stress** – Dr Anne Spurgeon
14:45 – 15:15	Open forum **Take up of Industrial Injuries Disablement Benefit** **Vocational rehabilitation** **General discussion** Facilitator – Mr Hugh Robertson
15:15	End of public meeting

Welcoming Remarks

Professor Keith Palmer
Chairman of IIAC

1. Professor Keith Palmer welcomed everyone to the Birmingham Public Meeting and the IIAC members introduced themselves.

2. The Industrial Injuries Scheme provides a non-contributory, no-fault benefit which includes Industrial Injuries Disablement Benefit (IIDB). This is paid to people who become ill as a consequence of a workplace accident or an occupational or 'prescribed' disease. A workplace or 'industrial accident' is defined as "an unlooked for occurrence" or "mishap" arising "out of and in the course of employment". A prescribed disease is one that is listed as a disease in the Scheme's regulations that has been linked with an occupational cause. The Scheme compensates employed earners; the self-employed are currently ineligible to claim IIDB for work-related ill health. Claimants can receive benefit from ninety days after the accident or onset of the prescribed disease; shorter periods of disablement are not compensated. The Scheme incorporates a presumptive element whereby if claimants fulfil the terms of prescription through being diagnosed with the disease and satisfying the occupational criteria, they do not have to prove that their disease was caused by their work.

3. The scheme compensates for "loss of faculty" and its resultant "disablement", which is assessed relative to age- & sex-matched peers. Assessments of disablement are based on functional, not vocational limitations, and are expressed as a percentage. Thresholds for payment are applied, such that in general disablement needs to be greater than 14% (exceptions exist for pneumoconiosis where payment starts at 1% disablement and occupational deafness where payment starts at 20%). Assessments of disablement for different accidents or diseases can be aggregated.

4. IIAC is a statutory body, established under the National Insurance (Industrial Injuries) Act 1946, to provide independent advice to the Secretary of State for the DWP on matters relating to the IIDB Scheme or its administration. The members of IIAC are appointed by the Secretary of State after open competition, and consist of a Chairman, scientific and legal experts, and an equal number of representatives of employers and employees. Officials from the Health and Safety Executive (HSE) and relevant policy divisions of the DWP attend IIAC meetings to provide information and advice. There are four meetings of the full Council per year.

5. The majority of IIAC's time is spent providing advice to the Secretary of State on the prescription of occupational diseases. IIAC's other roles are to advise on proposals to amend regulations under the Scheme, to advise on matters referred to it by the Secretary of State, and to advise on

general questions relating to the IIDB Scheme. The Council's remit does not include advising on individual cases or on decision-making for claims.

6. A permanent sub-committee of the Council, the Research Working Group (RWG), monitors and reviews the medical and scientific literature to identify developments in the field of occupational ill-health which are then brought before the Council. This work is supported by a Scientific Adviser. The RWG meets four times a year.

7. IIAC also investigates diseases following referrals from the Secretary of State, correspondence from MPs, medical specialists, trade unions, and others, including topics brought to its attention by its own members.

8. IIAC produces several different types of publication. IIAC Command Papers are produced at the 'command' of the Secretary of State and are laid before Parliament, often forming the basis of legislation. Position Papers are published on important subjects that IIAC have considered, but where it does not recommend prescription or where the matter has not been referred by Ministers. Commissioned research reports are usually published once a year, and are instigated at the request of the Council. These reports are carried out by an independent third party, usually by an academic expert, which have direct relevance to the Council's programme of work. Finally, IIAC publishes an annual report, a strategic plan and the proceedings from its Public Meetings.

9. IIAC's current work programme consists of reviews of osteoarthritis of the knee in miners, bronchiolitis obliterans and food flavouring agents, asbestos and laryngeal cancer, asbestos and retroperitoneal cancer, benzene and myelofibrosis, testicular cancer in fire fighters, cadmium and genitourinary or renal cancer, IIDB reform, review of percentage assessments for disablement and pleural plaques.

10. The Council has completed five reports over the past year covering a wide range of occupational health issues, including 'Chronic Obstructive Pulmonary Disease (COPD) - Chronic Bronchitis & Emphysema' Command paper (Nov 2007), 'Nasopharyngeal cancer due to exposure to wood dust' Command paper (July 2007), 'Pesticides & Parkinson's Disease' position paper (Feb 2008), 'Back & neck pain' position paper (July 2007) and 'An International Comparison of Occupational Disease & Injury Compensation Schemes' (March 2007).

IIAC's approach to scientific decision making

Dr Anne Spurgeon and Professor Keith Palmer
Chairman of the IIAC Research Working Group and Chairman of IIAC

11. Dr Anne Spurgeon introduced the theme of her presentation, which outlined the framework in which IIAC works and the process by which it prescribes occupational diseases. The Council works to the legal requirements set out in the Social Security Contributions and Benefits Act 1992. The disease must be a risk of the occupation and not a risk common to all persons and attribution of the disease to the occupation in an individual case must be capable of being established or presumed with reasonable certainty.

12. Some occupational diseases are relatively simple to verify in that they have unique clinical features, rarely occur outside work, and have distinct clinical features that can be measured. Examples of 'easy' cases are specific poisonings and mesothelioma; also, occupational asthma and contact dermatitis, where challenge with the suspected occupational agent confirms the diagnosis. On the other hand, where a disease is common in the general population and has no clinical features that are unique to occupational cases, it is much more difficult to establish a link between the occupation and the disease. Both back pain and stress are examples of 'tough' cases for verification and attribution of occupational causation.

13. When considering a disease for prescription IIAC has to address the question of attribution, i.e. whether there is a link between the job and the disease that can be presumed with reasonable certainty. For the purposes of the Scheme, IIAC interprets reasonable certainty as meaning 'more likely than not'. Epidemiology is the branch of medicine that deals with the distribution of a disease in populations and IIAC applies epidemiological principles when considering prescription.

14. In epidemiological terms 'more likely than not' can be represented mathematically as an attributable fraction (i.e. the percentage of cases caused by an occupational exposure). 'More likely than not' means for those with exposure a fraction greater than 50%. If one considers there are 50 cases of a disease in a given-sized group of unexposed workers, this represents the background risk, which is common to everyone in the population under consideration. For the disease to be attributed to occupation as 'more likely than not' (e.g. have an attributable fraction that is larger than 50%) there would have to be at least 50 additional cases in a similarly-sized group of exposed workers, over and above the 50 'background' cases which occur as a matter of course. The benefit of presumption that the disease is caused by occupational exposure is with the exposed workers, since only 50 cases in that group are actually due to

occupational causes, but all the exposed cases get the benefit of the group's probability. Thus, 'more likely than not' equates to a more than doubling of risk in a given occupation compared with other occupations.

15. In order to establish whether there is a doubling of risk for a disease and attribution to a particular occupation, IIAC looks to scientific research and academic experts for evidence. It is important that the evidence comes from more than one independent study, ideally several of different design, since it is less likely that any decisions based on them will be due to error or overturned by future research. It is also important that the disease and the relevant exposures can be easily verified and that it is a cause of genuine disability.

16. The Council has already recommended prescription for several diseases where the process of attribution to occupation has been complex. These diseases include Vibration White Finger (VWF), carpal tunnel syndrome, chronic bronchitis and emphysema and osteoarthritis (OA) of the hip in farmers.

17. Professor Keith Palmer outlined an example of IIAC's scientific decision making in practise, using OA of the hip in farmers.

18. OA of the hip is common in the general population and has a similar clinical appearance in farmers to other people. An increased incidence of osteoarthritis in farmers was first suspected as this occupational group appeared on surgical waiting lists more often than expected given the relative frequency of farming in the population. This observation in itself was not proof that farmers were more at risk of OA of the hip, since the data could have arisen because farmers presented themselves to hospital for treatment more readily (their livelihood depends on their ability to perform physically demanding work). However, this observation was followed by additional research which concluded that the disease was more prevalent in farmers.

19. In one line of inquiry, researchers used X-rays which displayed the hip joints but which had been taken for other diagnostic purposes (e.g. to look for kidney disease). The frequency of farming was considered in those with and without hip OA. Studies from the University of Southampton and research groups in Sweden showed that there was a 2-10 fold increased risk of OA of the hip in farmers. In this research the problem of 'volunteering' bias was limited since the comparisons were made among people who had not been selected on the basis of their care-seeking for hip disease.

20. The consistent demonstration of a greater than doubling of risk in multiple surveys from more than one country allowed the attribution of OA of the hip in farmers to their occupation on the balance of probabilities.

21. Verification of OA of the hip is straightforward since there are well-defined diagnostic criteria. Dr Palmer showed pictures of X-rays of normal hips

and an osteoarthritic hip. An osteoarthritic hip is characterised by a narrowing of the joint space between the socket (acetabulum) and the head of the femur, and roughened joint surfaces. Bony spikes and bone cysts may also be present. Thus the disease can be confirmed, is disabling and has been shown to be at least twice as common in farmers as in other groups.

22. The Council then had to consider an exact definition of the occupational criteria for exposure – the definition of farming and whether particular types of farming carried special risks. No evidence was found on which to restrict prescription to a defined sub-category of farming activity.

23. OA of the hip in farmers fulfilled the criteria necessary to be able to diagnose and attribute a disease that is common in the general population to a particular occupation. Thus, IIAC recommended that OA of the hip be added to the list of prescribed diseases for those a) employed for at least 10 years in aggregate as a farm worker or farm manager and b) having osteoarthritis of the hip* or having had it prior to hip surgery (*as diagnosed by a specialist and based on a painful hip with restricted movement and on a hip joint radiograph).

24. As part of the review, OA of the hip in other occupations, such as those involved in heavy lifting, was also considered, but the weight of evidence was much less than for farming. IIAC regularly monitors emerging scientific literature on this and other issues and reviews the prescription where necessary. Future advances in research may enable the terms of prescription for OA of the hip to be widened. The case of OA in farmers illustrates the nature and level of evidence the Council needs in prescribing for the “tough” cases as defined in paragraph 12.

Questions and answers

25. *Construction work is also a physically arduous occupation similar to farming. Why is construction work not prescribed for osteoarthritis of the hip?* The research evidence of the risk between construction work and osteoarthritis of the hip is not as convincing in construction workers as it is for farmers. It is not clear what aspects of farming cause osteoarthritis of the hip.

26. *Is osteoarthritis of the hip linked to the use of chemicals by farmers?* There is no research evidence suggesting that chemicals cause osteoarthritis of the hip in farmers.

Industrial Injuries Disablement Benefit and its relation to other benefits

Mr Simon Levene (presentation given by Mr Fergus Whitty in place of Mr Levene)

27. IIDB can be claimed where a claimant has suffered from an accident at work or contracted certain industrial diseases. It is generally payable where it is shown that the claimant is at least 14% disabled as a result of the accident or disease.

28. Civil damages are payable where a claimant has been injured either by negligence or breach of statutory duty. Negligence is defined as carelessness. A breach of statutory duty is for example a breach of Workplace Regulations, or the Manual Handling Regulations.

29. Damages for injuries are designed to put the claimant back where they would have been if they had not been injured. The Courts avoid "double recovery."

30. What happens if you are entitled to benefits *and* damages?

31. If damages are awarded before benefits, damages are irrelevant if the benefits are not means tested. For example, a claimant would get IIDB however much they receive in damages. If the benefits are means tested, damages may be taken into account in assessing entitlement to benefits.

32. If benefits are awarded before damages, some benefits are subject to claw back by the Compensation Recovery Unit (CRU) (e.g. Disability working allowance, Disablement pension, Incapacity benefit, Income support, Care component of disability living allowance, Mobility allowance, Mobility component of disability living allowance) and some benefits are not clawed back.

33. Before a claimant can be paid his damages, the defendant has to get a certificate of recoverable benefits from the CRU, repay those benefits, and deduct the repayment from the damages. Benefits are deducted in full, even if the claimant only gets a proportion of his damages because of his own negligence.

34. How are CRU benefits deducted? General damages (damages for the injury itself) are not subject to deductions by CRU. Benefits are deducted for a period of 5 years or until the case settles – whichever period is shorter. Future benefits not affected. Benefits are deducted on a "like for like" basis – e.g. Jobseeker's Allowance will be set off against damages for loss of earnings, but not against damages for care; mobility allowance will be set off against damages for care. Other benefits are deducted from damages in full *e.g.* sickness payments made from an employer's

insurance policy, redundancy payments where the injury caused the claimant to be selected for redundancy, foreign welfare benefits (if not repayable), tax rebate due to period off work and free maintenance in a public institution.

35. The Pneumoconiosis Act 1979 is designed for those who have not made a civil claim – whether they would be entitled to or not, and whether or not they later do so. "As a matter of principle, the 1979 Act payment is deductible from the total of damages as a whole. … The judge should allocate that deduction amongst the various heads of loss that he has identified… the fairest way of so allocating is simply to allocate the deduction pro rata amongst the various heads of damages." (Ballantyne v Newalls, Court of Appeal 2000).

36. IIDB is available for symptomatic asbestos-related conditions only i.e. asbestosis, diffuse pleural thickening, asbestos-related lung cancer and mesothelioma. Mesothelioma is always treated as a case of 100% disablement.

37. In 2008 new state provisions for mesothelioma patients will be enacted. in the Child Maintenance and Other Payments Act 2008. This Act applies to all cases of mesothelioma, however the claimant was exposed to asbestos as long as exposure was in the UK (i.e. non-occupational cases). Claimants will have 12 months from date of diagnosis to make a claim. The average payment is likely to be £10,000. In effect, there is therefore a state compensation system for mesothelioma.

38. Civil damages are available for a variety of asbestos-related diseases, including diffuse pleural thickening, asbestosis, lung cancer and mesothelioma. Damages are not available for asymptomatic pleural plaques.

39. Smoking is a well-known cause of lung cancer. If a smoker is exposed to asbestos and develops lung cancer, his history of smoking does not affect his entitlement to IIDB. If a smoker makes a claim for damages for asbestos-related lung cancer against an employer, the court may reduce the damages by 15—20% on the ground that smoking amounted to negligence.

40. In the 2006 case of Barker in the House of Lords, it was held in a mesothelioma claim that an employer only has to pay a *proportion* of the claimant's damages, according to how much of the asbestos exposure he was responsible for. This situation was very difficult for those who had been exposed to asbestos by a number of employers, some of whom were no longer in business. Barker was overturned by the Compensation Act 2006: employers now have to pay 100% of the damages as mesothelioma is indivisible and it is impossible to show which asbestos exposure in a particular job was responsible for causing the disease.

Questions and answers

41. *Do the principles of the Barker case apply retrospectively for claims for mesothelioma?* The Compensation Act is retrospective. All the claims for mesothelioma which were placed during the Barker case were staid and heard only after the Compensation Act was enacted.

42. *Most claims for mesothelioma are posthumous. Are there are changes proposed to aid posthumous claims for mesothelioma?* The query was passed on to Department for Work and Pensions officials.

Discussion and questions

Facilitator: Mr Hugh Robertson

43. *What does IIAC consider to be "sound, robust evidence" of the sort needed to prescribe for an occupational disease?* IIAC consider the weight of published, peer-reviewed scientific evidence and the risks from samples of exposed workers compared to relevant unexposed control populations. Generally IIAC seek evidence from several studies of different study design. There is no such thing as a perfect research study – they all have their strengths and weaknesses. IIAC seeks reasonable consistency in a number of reasonable quality studies, and will take account of studies from other countries.

44. *What benefit is IIDB for a farmer who is unable to work with osteoarthritis of the hip?* A farmer can claim for IIDB 90 days after the onset of symptoms or injury. The IIDB scheme is a compensation scheme and does not provide benefits for loss of earnings. The rate of payments can be higher for IIDB compared with Incapacity Benefit.

45. *Are there any initiatives to improve education for GPs to increase their knowledge about work and health?* This is not part of IIAC's remit, but is an important area for government consideration. Members of the Council were personally aware of a number of initiatives in this area, led by DWP.

46. *Up to the mid-1990s there was a question on the Incapacity Benefit claim form asking whether the individual was claiming for an industrial accident or prescribed disease. If the answer was yes, claim forms for IIDB would automatically be sent to the claimant. This provided a link between Incapacity Benefit and IIDB and encouraged potentially eligible claimants to make an IIDB claim. Why does this not occur nowadays?* [DWP to provide a view on current practise? Council members thought this a useful suggestion, given the need to consider the IIDB scheme in wider context.]

47. *IIAC published a report about including the self-employed in the IIDB scheme. Why was this recommendation rejected?* The Government of the day decided not to accept this recommendation. It is possible that it was rejected as there were queries about how IIDB payments would be funded for the self-employed. Originally the scheme was funded by national insurance contributions, to which the self-employed contributed at a different level.

48. *When will the Council's osteoarthritis of the knee in coal miners report be published?* It is hoped the report will be published mid-July 2008.

49. *The incidence of repetitive strain injury (RSI) is increasing with the increasing use of computers by the UK workforce. What is IIAC doing about prescription for RSI?* IIAC considered RSI during its review of work-

related upper limb disorders in 2005. There are 165 different disease labels used by clinicians to describe work-related upper limb disorders. It is clear there is diagnostic confusion for RSI – the term means different things to different doctors. There is no consensus diagnostic definition for RSI. This view is reflected in the law courts, where the argument occurs as to whether RSI exists at all. Research is similarly confused. It is difficult to ascertain the risks of RSI when it is unclear whether different research studies are comparing the same condition. IIAC held a workshop of international experts on work-related upper limb disorders to reach a consensus opinion about which conditions were suitable for IIAC's consideration. The experts could only identify a few conditions which were then the subject of a further in-depth commissioned review of the available research evidence. IIAC was able to recommend prescription be extended for carpal tunnel syndrome (this recommendation was accepted), but were unable to recommend prescription for diffuse RSI.

50. *IIAC relies on good research evidence in order to prescribe an occupational disease. What is IIAC doing to ensure it gets good research evidence?* IIAC does not have a research budget itself. Funding scientific research is not part of IIAC's remit. In previous reports, IIAC has called for research studies to be conducted in a particular field, which has resulted in the necessary evidence being published and made prescription possible, e.g. prescription for chronic bronchitis and emphysema in underground coal miners.

51. The lack of availability of good quality research can hamper IIAC's ability to prescribe a disease. This is especially problematic for rare diseases, where new evidence may not emerge. IIAC reviews evidence from both the UK and abroad. IIAC does consider factors, such as whether new evidence is likely to emerge in deciding whether the weight of evidence is sufficient, but must observe the regulatory requirements for prescription. Delays in publication of reports are usually tied to delays in researchers generating and publishing appropriate research studies of the necessary quality; delays in assessing the evidence or in ministerial consideration of recommendations are proportionately much less.

52. *What is the timeline for IIAC's review of pleural plaques?* IIAC has been asked to report to Ministers at the end of September.

Extrinsic allergic alveolitis

Professor Mark Britton

53. Extrinsic allergic alveolitis (EAA) is a potentially serious, rare respiratory disease caused by exposure to a variety of sensitizing agents. It is often encountered in occupational settings. EAA is already a prescribed disease in relation to several occupational exposures (Prescribed Disease [PD] B6).

54. EAA, also known as hypersensitivity pneumonitis, is an allergic reaction (usually mediated by T lymphocytes) in the gas exchanging parts of the lung (alveoli) to inhaled antigens, often poorly degradable particulate antigen, such as microbial fragments. The level of exposure to the antigen needed to induce an allergic reaction is unclear, but in an allergic individual exposure to the causal agent can provoke a systemic and pulmonary reaction within hours of the inhalation. EAA can present in an acute or a chronic form.

55. Acute EAA is caused by exposure to high concentrations of the antigen, typically provoking breathlessness and flu-like symptoms. These symptoms usually develop within 6 to 8 hours of exposure and resolve without further exposure in 48 hours, although lung function can take weeks to improve and months to recover.

56. The outcome of repeated episodes of acute disease or of long term exposure to lower levels of exposure to the sensitising antigen, by themselves insufficient to cause acute EAA. The condition is characterised by development of irreversible pulmonary fibrosis (scarring), which causes breathlessness on exertion. Symptoms do not resolve with avoidance of further antigen exposure. Early diagnosis with avoidance of exposure can prevent progression to chronic EAA.

57. EAA has a low incidence and prevalence. It was first described in dairy farmers exposed to mouldy hay. Since then, many antigens, the majority of fungal origin, have been associated with the development of EAA. The antigens have common features, such as small easily respirable size (1-5u), presence in high levels during exposure, and poor degradability. Many of the antigens associated with EAA are encountered in an occupational setting (e.g. mouldy hay leading to farmer's lung, mushroom spores released during spawning leading to mushroom grower's lung).

58. Three outbreaks of EAA were reported in Birmingham, South Yorkshire and Nottinghamshire at factories where workers were exposed to mists of metalworking fluids (MWF). This prompted IIAC to conduct a review to consider extending occupational coverage for PD B6 (EAA) to work involving exposure to mists generated during metalworking.

59. In the Nottinghamshire outbreak there were some confirmed diagnoses of occupational asthma and EAA, with about 13 cases in total. Some workers were thought to be suffering from both diseases. In South Yorkshire there was 1 confirmed diagnosis of EAA, with another possible case under consideration. There may also have been 2 -3 cases of occupational asthma.

60. The Birmingham outbreak was identified and investigated by the Birmingham Occupational Lung Disease Unit, which is part of the NHS resource for managing occupational diseases. The researchers looked back retrospectively at their records and noticed several more cases of EAA than would have been expected in workers at the Powertrain factory, where car engines were manufactured.

61. Twelve cases of EAA were identified in Powertrain workers. All the cases were male, age 36-59 (median 46.5) and there were no current smokers (6 were ex-smokers, 6 had never smoked). Four of the cases had been directly referred to the Occupational Lung Disease Unit from their occupational health unit, their GP or by a solicitor. Six had been referred by other clinicians in five hospitals.

62. The outbreak cases shared similar clinical features, typical of EAA, such as breathlessness on exertion, improvement of respiratory symptoms after time away from the exposure (e.g. at the weekend) and worsening of symptoms upon return to work (e.g. at the start or during the working week). Other symptoms included dyspnoea, weight loss, cough, wheeze, influenza-like symptoms, chest tightness and/or pain and production of sputum.

63. Diagnosis of EAA is relatively straightforward, relying on lung function tests, immunological tests and bronchoscopy.

64. MWF is widely used in industry wherever metal is cut, drilled, milled or shaped with cutting tools. It acts to dissipate heat, lubricate, remove debris (or 'swarf') and protect tools from corrosion. There are three types of MWF - straight oils (pure petroleum oils), semi-synthetic fluids (emulsions of petroleum in a water base) and synthetic fluids (emulsions of synthetic oils in a water base).

65. MWF is able to sustain growth of various bacterial and fungal species which are commonly found as contaminants, such as *Acinetobacter, Pseudomonas* and *Mycobacterium* species. Thus, biocides are added to the fluid to inhibit microbial growth. However, contamination by microbes can still occur. The 'Monday morning' or 'rotten egg' smell produced when workers start up machines after a weekend is due to heavy bacterial growth depleting oxygen and releasing hydrogen sulphide.

66. The fluid is generally applied to the material being worked on as a jet or spray and the drained fluid is typically recycled into a sump where it is filtered before being pumped back to the work area.

67. To cause EAA, the antigen in question, in this case MWF, must be capable of being inhaled (i.e. the MWF must be aerosolised). Aerosols are formed by three main processes:

a. impaction – small droplets are formed as the MWF is pumped at high velocity onto the work area and become aerosolised upon hitting a moving or rotating surface.
b. centrifugal force – aerosols are generated by rotating workpieces.
c. evaporation/condensation – hot surfaces cause evaporation of MWF; as the vapour moves away to cooler areas it condenses to form small droplets.

68. MWF is a complex mixture consisting of oil plus additives (e.g. anti-foaming agents), metals (e.g. residual components of what is being worked upon) and biocides.

69. The Health and Safety Executive (HSE) began its investigation in April 2004. The aim was to identify other affected workers and provide them with diagnosis and treatment, to prevent further harm, to help identify the cause of the outbreak and to allow the uninterrupted production of motor cars in Birmingham.

70. The epidemiological investigation consisted of three phases. Phase I comprised of respiratory screening to estimate the prevalence of respiratory symptoms, to identify areas with significant excesses of symptomatic workers and to find a sample of asymptomatic workers for immunological controls. Phase II was a detailed surveillance of affected workers, including symptom questionnaires, lung function tests, immunological tests and referrals to the Birmingham Chest Clinic. Phase III consisted of further clinical investigations at the Birmingham Chest Clinic.

71. Phase I found that 60% of workers sampled had respiratory symptoms, 18% had symptoms affecting the eyes and nose only and 22% were asymptomatic.

72. In 2003, Powertrain changed the MWF oils used. This coincided with a substantially increased number of cases reporting work-related breathlessness as seen by Phase II data. An excess number of cases were associated with work locations where lots of milling work (using MWF) was being undertaken.

73. As part of Phase III 161 affected Powertrain workers were seen at the Birmingham Chest Clinic. They all had a variable number of diagnostic tests, such as lung function tests, computed tomography, lavage, biopsies and/or inhalational challenges. Peak flow data showed characteristics

typical of EAA, e.g. dramatic peak flow decreases at work which improved on days away from work.

74. Twenty-two cases of EAA, 80 cases of occupational asthma and 7 cases of humidifier fever were identified in the Powertrain workers.

75. The HSE investigation also measured the amount of oil in the air. In 2002 the level of MWF in the air was 0.97 mg/m_3, and in 2003 it was 1.01 mg/m_3. The guidance limit value for MWF in the air is $1mg/m_3$.

76. The microbiological investigation analysis of MWF in the sumps and washer water showed some contamination with bacteria and endotoxin (toxins produced by bacteria). A variety of strains identified including *Acinetobacter* and *Ochrobacter*. There was little evidence of fungal contamination and no evidence of *Mycobacterium* contamination in the washers. Some of the EAA cases showed positive serological (immunological) results to crude MWF or to *Acinetobacter* and *Ochrobacter* species.

77. As a result of the identification of the EAA cases, the MWF oil at the Powertrain factory was completely drained and replaced in July 2004. All machines were steam cleaned. Local ventilation extraction was planned. Masks were provided and special ventilation helmets were provided for those with symptoms. Respiratory surveillance of workforce via the occupational health department was planned.

78. The HSE investigation concluded that exposure to MWF mists was responsible for the Birmingham outbreak. Several studies of different research design reported in the scientific literature provide further evidence to support the association of exposure to aerosolized MWF with the development of EAA.

79. IIAC published its report of EAA and MWF in July 2006, eight months after it began its review. IIAC recommended extending prescription for EAA due to mists from MWF. EAA due to MWF represents the easy end of prescription. IIAC's recommended prescription based on the clinical features of the disease due to the rare nature of the disease together with the evidence of clusters of work-related cases with similar exposures and the ability to diagnose the condition in a straightforward manner. It was not necessary to accumulate elaborate epidemiological evidence.

Questions and answers

80. *Before EAA due to MWF was prescribed workers were unable to claim for IIDB. What means of state compensation is available to them?* People can claim retrospectively for EAA due to MWF.

Hand-Arm Vibration Syndrome

Dr Ian Lawson

81. IIAC reviewed the evidence relating to Hand-Arm Vibration Syndrome (HAVS) and published its recommendations in the Command Paper 'Hand-Arm Vibration Syndrome' (Cm. 6098) in July 2004.

82. Dr Lawson discussed the background to the HAVS review. HAVS is a very topical issue. In 1999, more than 150,000 ex-miners were assessed through the Department of Trade and Industry (DTI) Medical Assessment Process. There have been various directives and reviews on the subject including the Faculty of Occupational Medicine Evidence-Based Medicine Guidelines of April 2004 and the Physical Agents Vibration Directive which was implemented in July 2005.

83. Prescription for HAVS has had long history. In 1954,1970, 1975 HAVS was rejected for prescription based on problems with diagnosis and attribution. In 1985 vibration white finger (VWF; one of the components of HAVS) was accepted with the prescription specifying the extent and occupations eligible. In 1993, Carpal Tunnel Syndrome (A12) due to the use of vibratory tools was accepted for prescription.

84. In 1995, IIAC recommended that prescription for VWF be extended to include the peripheral neurological (sensorineural component) of HAVS, that the Stockholm classification scale should be used to grade HAVS. IIAC further recommended methods of diagnosis for HAVS, such finger systolic blood pressure and vibrometry and recommended that a list of prescribed occupations replaced by a list of prescribed tools. The sensorineural component of HAVS was accepted if VWF was present, but IIAC's other recommendations were not implemented at that time.

85. HAVS is a common occupational disease. There are 4 million workers exposed to HAVS (around 7% of the population). There are around 30 million cases worldwide. According to the HSE's commissioned research there are around 220,000 cases of VWF and 300,000 sensorineural HAVS in Great Britain.

86. One of the first to identify VWF was Alice Hamilton who stated in her autobiography in 1918: *"The men call the condition 'dead fingers' and it is a good name, for the fingers do look like those of a corpse, a yellowish-greyish white and shrunken. There is a clear line of demarcation between the dead part and the normal part."*

87. HAVS has two main components – the sensorineural and the vascular components. The sensorineural component is characterised by numbness, tingling and loss of sensation. The vascular component, otherwise known as VWF consists of episodic finger whiteness. There is also a musculoskeletal component of HAVS characterised by pain, stiffness,

arthritis, bone cysts and reduced grip strength. The musculoskeletal component is not clearly understood and reduced grip may be part of the sensorineural component. Carpal tunnel syndrome is a separate condition which may be associated with vibration exposure and is being considered as part of the IIAC review of WRULD.

88. A variety of tools vibrate and are associated with the onset of HAVS, including percussive metal working tools (e.g. Fettling tools, Impact wrenches, Needle guns and Hammer drills), Grinders and other rotary tools (e.g. Hand-held polishers, sanders & grinders) and Percussive hammers & drills (e.g. Jack hammers, Rock (etc) drills, Rammers), and Forest & garden machinery (e.g. Chain saws, Anti-vibration chain saws, Brush saws / strimmers).

89. Diagnosis - The diagnosis of HAVS consists of a history of significant exposure to vibration with the appropriate symptoms combined with supportive evidence from clinical examination and standardised tests.

90. The sensorineural component consists of nerve damage characterised by:

- Numbness (excluding the temporary threshold shift which is a normal, short-lived physiological response following exposure)
- Tingling
- Reduced sensory perception
- Reduced manipulative dexterity

91. Numbness and tingling should be treated synonymously. Numbness is often poorly described. Persistent numbness and/or tingling (e.g. in the warmth, outside of the work environment or in the cold) is indicative of more severe sensorineural symptoms. Loss of dexterity in the warm is indicative of the most severe stage of the sensorineural component of HAVS.

92. The vascular component is also known as Raynaud's Phenomenon (RP). RP is a descriptive term indicating episodes of digital ischaemia provoked by the cold. The affected fingers become white with loss of sensation. Whiteness maybe followed by blue discolouration (cyanosis). As the circulation is restored the affected part becomes red (reactive hyperaemia). There is a clear demarcation line between the normal skin colour and this whiteness; this is known as blanching. Blanching is typically circumferential e.g. around the finger and the nails on the affected finger are often reported as white. In a few cases it may only be the front or back of the finger that is affected. The finger, if cut, does not bleed.

93. During medical examinations, the history must be carefully recorded to assess the severity of blanching (e.g. number of attacks and extent of blanching). In diagnosing the severity of blanching it has to be established as to how far the whiteness extends up the finger. Mottling of the skin is a normal physiological phenomenon and should not be confused with HAVS.

94. Attacks of blanching normally commence in the distal phalanges extending proximally before receding distally with recovery. They are triggered by general body cold exposure or dampness. Some people report cold sensitivity where their fingers feel abnormally cold but cannot be classed as HAVS until blanching occurs. Trophic changes are extremely rare, and likely due to other causes.

95. RP may be caused by Raynaud's disease (which is constitutional) or may be due to other conditions. Raynaud's disease is common in the population, affecting 5% of men, and a greater percentage of women.

96. Severity of the vascular and sensorineural components is assessed using the Stockholm Workshop scale for each finger and hand. The grading of the vascular component can be paraphrased into four grades:

- VWF attacks in tips of fingers only – Mild
- VWF attacks of the distal and middle phalanges (rarely proximal) – Moderate
- VWF frequent attacks of the whole finger and most digits – Severe
- VWF attacks causing trophic changes to the skin – Very severe

97. The grading for the sensorineural component is as follows:

- Stage 1 – Intermittent numbness with or without tingling
- Stage 2 – Intermittent or persistent numbness and reduced sensory perception
- Stage 3 - Intermittent or persistent numbness with reduced tactile discrimination and / or manipulative dexterity

98. Stage 3 sensorineural cases are severe.

99. A desirable diagnostic test for HAVS must be able to determine true negative results and true positive results. In other words it must have a high specificity (true negative rate) with few false positives and a reasonable sensitivity (true positive rate). The tests must be repeatable, acceptable to those tested and cost effective with few false negatives.

100. IIAC reviewed the use of a variety of standardised tests to assess the sensorineural and vascular component of HAVS, such as:

- <u>Sensorineural component tests</u>
- Two point discrimination/depth sense aesthesiometry
- Grip strength
- Pain thresholds
- Semmes-Weinstein monofilaments
- Vibrotactile threshold
- Thermal threshold
- Purdue pegboard test
- <u>Vascular component tests</u>

- Cold water provocation test. The test monitors re-warming after a cold water challenge. There is a lack of confidence in this test as it not always reproducible. Two large studies of ex-miners questioned its diagnostic value.
- Finger systolic blood pressure. This test measures the pressure in the digital artery also on cold challenge. This test is expensive and the test results are sometimes difficult to interpret.

101. In an Administrative Court Judgement 2003 R .v. Secretary of State for Work and Pensions it was held that the cold water provocation was not to be used to support a negative diagnosis. A large volume study of ex-miners questioned the value of the cold water provocation test in diagnosis (Proud *et al*, 2004).

102. A carefully recorded history is the best way to diagnose the vascular component of HAVS. The cold water provocation test and the finger systolic blood pressure test are not sufficiently useful to recommend.

103. Diagnosis of the sensorineural component of HAVS should be based on a good clinical history. Results from vibrotactile threshold tests, thermal aesthesiometry and purdue pegboard tests are not specific to HAVS, but the tests are useful in staging severity.

104. More evidence has emerged about the sensorineural component since IIAC's 1995 review. This has provided a better understanding of how common the sensorineural disease is and how often it occurs in the absence of blanching (c 20%). The sensorineural component is more disabling than the vascular component.

105. The legal requirements of prescription state that the disease must be a risk of the occupation, not a risk common to all persons; and the attribution of particular cases to the nature of employment can be established or presumed with reasonable certainty. IIAC has interpreted attribution to be more likely than not based on epidemiological evidence that the risk is the disease is at least doubled in exposed compared to unexposed individuals. The evidence must come from several independent studies and be unlikely to be overturned by future research.

106. Attribution to occupation is easier for diseases where there are unique clinical features, it rarely, if ever, occurs outside work and there are clear-cut measurable clinical features. Attribution to occupation for HAVS is complicated as the clinical features not unique (VWF and sensory symptoms have common natural counterparts e.g. Raynaud's phenomenon), identical symptoms occur commonly outside work (Raynaud's Disease occurs in 5-10% in men), the clinical stages are hard to measure and confirm and attacks of white finger are rarely witnessed by a doctor. These considerations, in the case of sensorIneural disease, led the Council to emphasise the use of objective tests as an adjunct to diagnosis.

107. In 2004, IIAC recommended that prescription of PD A11 be widened to HAVS, including the sensorineural only component of HAVS. IIAC recommended that the onset of symptoms must occur before exposure to hand transmitted vibration. The occupational coverage remained unchanged, but IIAC recommended clarification about coverage for the regular use of hand held chain saws in forestry and recommended that secondary evidence could be used to support a claimant's case. The Council's recommendations were accepted, although recommendations relating to diagnostic tests to be used were not implemented. Since October 2007, there have been 3,700 assessments for the sensorineural only component of HAVS.

108. The prescription of HAVS demonstrates the difficulties of prescribing based on symptoms alone, where the symptoms are also common in the general population and how to corroborate the evidence.

Questions and answers

109. *One of the Dr Lawson's slides showed the pattern of VWF being oblique (one side of the phalanges is affected differently from the other side). But the regulations state that the blanching must be circumferential. Why is oblique patterns of blanching not prescribed?* Oblique patterns of blanching are very rare. The prescription covers the patterns of blanching which affect the vast majority of claimants.

110. *In IIAC's report on HAVS the recommendations state that for sensorineural component to be accepted there must be persistent numbness and tingling. In the Regulations it states there must be constant numbness and tingling. Why?* It is difficult to define persistent. IIAC wanted to define someone who had symptoms almost all the time as this indicates the severe sensorineural HAVS (Grade 3 on the Stockholm scale). IIAC has all the Department's proposed legislation regarding the industrial injuries scheme referred to them for their comments and views.

111. *What would happen if exposures occurred in different industries?* Exposure must have occurred before the symptoms developed to be eligible for HAVS, but the exposure does not have to be in the current job, although it has to be occupational and in a job or jobs listed in the prescription schedule.

112. *A claimant for the DTI scheme was questioned about blanching in members of his family. His symptoms of VWF had occurred during his time as a miner and then progressed in his subsequent employment as an engineer. What is the effect of a family link to blanching and how does successive exposure to vibration affect a person?* There is some evidence of a genetic basis to blanching, but the evidence is not strong. The development of HAVS is based upon the total exposure to vibration accumulated over time.

Stress

Dr Anne Spurgeon

113. This presentation focuses on stress-related conditions and the difficulties that face IIAC in prescribing them under the IIDB Scheme. There are two categories of occupational stress which have been considered by IIAC: general stress-related illness and the more specific Post-Traumatic Stress Disorder (PTSD).

114. Prescription of any disease within the IIDB Scheme must meet criteria which are set down in law. This process involves identifying a health outcome (disease or condition), quantifying the exposure necessary to cause the disabling condition and attributing the illness to an occupation on the basis of research which describes epidemiological distributions and clinical features.

115. Defining a health outcome relies on assessing the disease, its severity and its clinical impact. The HSE define stress as 'the adverse reaction people have to excessive pressure or other types of demand placed upon them'. Stress is a sensation – an adverse response to pressure and not, in itself, a disease, although it may lead to ill-health.

116. Individuals may respond to stress with adverse physiological, psychological and behavioural reactions. An example of physiological responses would be an increased heart rate and elevated blood pressure. Psychological responses would include the development of conditions such as anxiety and depression, while changes in behaviour might include altered patterns of eating and sleeping or abuse of substances such as drugs and alcohol. Possible outcomes of these responses together or alone might be demonstrable effects on physical or mental health, effects on social behaviour or on performance at work.

117. Stress-related conditions pose a number of challenges for IIAC. There is poor consensus on case definition and on the assessment of severity of stress-related disorders. There is a general reliance on symptoms which makes independent verification of the conditions difficult. Mental health problems such as anxiety or depression may be more readily identifiable but there is frequently disagreement between experts on diagnosis. Coronary heart disease is verifiable, but the evidence of a link between potential stressors is not firmly established and other risk factors have been identified.

118. The assessment of exposure is important when IIAC are considering whether a disease should be prescribed for the IIDB Scheme. Considering the question of exposure to stress, several sources of excess pressure have been identified:

i) **Demands** - overload, time pressure, long hours, inadequate resources

ii)	**Control**	-	lack of participation in decision about the way work is organised
iii)	**Support**	-	lack of support from colleagues
iv)	**Relationships**	-	being subjected to unacceptable behaviours (e.g. bullying at work)
v)	**Role**	-	lack of understanding about roles and responsibilities
vi)	**Change**	-	lack of consultation or information when undergoing organisational change

119. Difficulties arise in identifying and confirming the sources of stress-related disorders. The source of stress-related disorders may be occupational or non-occupational. Stress at work may affect stress at home, and vice versa. While a number of triggers have been identified, there is no agreement on a reliable method by which to confirm with consistency, the presence or absence of particular stressors, or the degree of exposure to these.

120. The attribution of a stress-related condition to occupation is difficult, not least because these conditions are very common in the general population and are not unique to any particular occupation. In addition these conditions do not have distinctive clinical features when related to occupation; the causes are often multi-factorial; risk factors may be influenced by personal perceptions and most importantly from IIAC's point of view, there is no strong evidence to identify a doubling of risk for the condition in specific occupations.

121. IIAC have been unable to recommend that any adverse health outcomes ascribed to stress at work be included on the schedule of prescribed diseases.

122. Post-traumatic stress disorder (PTSD) is a recognised psychiatric disorder which can be compensated under the Accident Provisions of the IIDB Scheme. PTSD must have arisen as consequence of an identifiable accident (which can be a single event or a series of single events over a short period of time) arising out of their work for a claim to be eligible for IIDB. IIAC recommended in its Position Paper that a diagnosis of PTSD should only be made where the person has experienced, or witnessed at first hand, a life-threatening event (or series of single life-threatening events over a short period).

123. The definition of PTSD has two elements:

i)	**Condition**	ii)	**Exposure**
-	Response to event - intense fear, horror. helplessness.	-	Traumatic single event.
-	Avoidance of related situations.	-	Life threatening or potential to cause serious harm to self or others.

- Flashbacks.
- Persistent psychological distress & anxiety.
- Impaired social functioning.
- Outside realms of normal experience.
- Readily perceived as such by others.

124. In summary, at present PTSD can be compensated through the Accident Provisions of the IIDB Scheme. However, no adverse effects ascribed to occupational stress are included in the list of prescribed diseases for which IIDB is payable.

Questions and answers

125. *Stress can be taken into account where stress is a component of an accident. What situations constitute an accident?* An accident can be a single event or a series of discrete, identifiable incidents. This issue was the subject of a House of Lords decision where a fire fighter claimed for PTSD as a result of his occupation. The claimant was unable to identify which discrete incidents had led to his PTSD and so was not eligible for IIDB.

126. *Problems arise in getting medical evidence to agree when claiming for accidents, for example in relation to chronic fatigue syndrome – what can be done?* Diagnosis of mental health problems is subjective and there is a diversity of medical opinion.

127. *The Labour Force Survey provides subjective evidence about stress. What would IIAC like to see in terms of research into stress?* Ideally, IIAC requires good quality, robust, epidemiological research which is well controlled and comes from several different sources and study designs. The outcome should be as objective and verifiable as possible, and the exposure should be verifiable within the constraints of the Scheme. The Labour Force Survey relies on self-reported symptoms and is subjective, but is valuable as an estimation of the scale of the problem for the HSE and others in safety planning.

128. *What can be done to utilise the evidence from GP records about work-related health issues?* It is not routine for GPs to ask about a patient's occupation when diagnosing their health complaint. However, asking about a patient's occupation may not be very informative as job titles can be vague and do not provide details of the tasks the person is performing. There is a national surveillance programme where selected GPs report to the HSE about work-related health problems (THOR-GP), and this seeks to improve on this situation.

Open Forum: Take up of IIDB and linking with Rehabilitation
Facilitator: Mr Hugh Robertson

129. The topic for the open forum was take-up of IIDB and rehabilitation. This forum provided the members of IIAC and the attendees of the Public Meeting an opportunity to discuss the matter and any other general matters relating to the Council's work and the IIDB Scheme.

130. Mr Hugh Robertson gave a brief presentation to provide a context to the open forum topic of take-up of IIDB and rehabilitation.

131. The IIDB scheme has a caseload of 350,000 claimants and there were 13,000 new successful claimants last year. This number has fallen from 34,000 in 1997/8. Accidents account for 60% of claims, with 35% for prescribed diseases and 5% for both accidents and prescribed diseases.

132. The majority of the claims for accidents (94%) come from people of working age, but this drops to 40% of prescribed disease claims. 93% of disease claims and 70% of the accidents claims are from men. The biggest occupational sector claiming for IIDB is manufacturing (24%), followed by construction and mining.

133. In terms of prescribed diseases, 68% of successful claims are for pneumoconiosis or diffuse mesothelioma. Vibration white finger accounts for the most claims for IIDB.

134. DWP estimates that the number of new successful claimants will "level out" at 10,000 a year (34,000 10 years ago and 13,000 now). Is this due to a decline in claims or a decline in successful claims? There have been small decreases in accidental injury levels in recent years, but an increase in occupational diseases. Personal Injury cases against employers have also been falling, but by a smaller proportion.

135. The decline in claims could be due to a number of factors. Many of the prescribed diseases covered are historical, and reflect industrial exposures which do not occur or are much less prevalent nowadays. Certain diseases/illnesses are not covered by the prescribed disease provisions of the scheme, e.g. stress, back and neck disorders. There is a greater awareness of the scheme's provisions in some industries, but little awareness in service industry. Many solicitors do not know about the scheme. Claiming for compensation is viewed by some employees as causing problems with promotion. What can be done?

136. The members of IIAC thanked the attendees for their participation in the Public Meeting.

Suggestions

137. *IIAC asked attendees for their opinions about what could be done by DWP to improve awareness and take-up of the IIDB scheme.*

138. Stephen Guy (Principal Welfare Rights Officer) - Awareness and take-up of the scheme could be improved by re-introducing the link between Incapacity Benefit and IIDB by asking on the Incapacity Benefit claim form about whether the person is claiming for an industrial accident or prescribed disease. It could also be made compulsory to make a claim for IIDB when reporting to RIDDOR. However, under-reporting to RIDDOR is a problem.

139. Dan Shears (GMB, Health and safety environmental research and policy officer) – Health and Safety representatives are key to informing workers about the IIDB scheme. There are certain sectors where the scheme is very well-known. These are usually the areas which have good trade union representation. There is a need to raise awareness of the provisions of the scheme with trade unions.

140. Chris Skidmore (NUM, Yorkshire) – There are a number of reasons why there are a decrease in claims. There has been mass media coverage about the 'sick note culture' which discourages people from claiming compensation. There is a decline in trade union membership and a consequent loss of knowledge. Some people do not claim as they find the forms too difficult to fill in.

141. Malcolm Crawford (Derby Advice, Corporate and Adult Social Services, Welfare Rights Officer) – There is a positive disincentive for employers to advertise the provisions of the IIDB scheme due to fears about their own liability.

142. Paul Faupel (Head of Campus Health and Safety and Laboratory Facilities, Wellcome Trust Sanger Institute) – The HSE produces a poster about health and safety for employers. This poster could be amended to incorporate details about the IIDB scheme.

143. Professor Keith Palmer thanked all those attending for their input to a highly constructive and useful meeting.

List of delegates

Name		Organisation
Anderson	June	Benefit Integrity Division
Asherson	Janet	Industrial Injuries Advisory Council
Aylward	Mansel	Industrial Injuries Advisory Council
Bartlett	Simon	National Industrial Injuries Disablement Manager, Llanelli BDC
Bell	Mary	UK GI Disease Claims Controller
Jessica	Burns	Regional Chairman, Birmingham Tribunal Service
Britton	Mark	Industrial Injuries Advisory Council
Carlin	Joanne	Co-ordinator, Asbestos Support - Trade Union Safety Team
Carlin	Audrey	Co-ordinator, Asbestos Support - Trade Union Safety Team
Carney	Julie	Project Administrator, Asbestos Support West Midlands
Church	John	Welfare Rights Officer - Doncaster Metropolitan Borough Council
Cockcroft	Anne	Industrial Injuries Advisory Council
Comins	David	Voice Care Network
Comins	Rosamund	Trustee, Voice Care Network
Crawford	Malcolm	Derby Advice, Corporate and Adult Social Services, Welfare Rights Officer
Faupel	Paul	Head of Campus Health and Safety and Laboratory Facilities, Wellcome Trust Sanger Institute
Fisher	Steve	RSI ACTION, Chairman of Trustees

Guy	Stephen	Principal Welfare Rights Officer
Hajee	Zarina	IIAC Secretariat
Harbinson	John	Warwickshire Welfare Rights Officer
Hegarty	Catherine	IIAC Secretariat
Hoskins	Linda	Occupational Health and Safety Inspector, HSE Birmingham
Jewell	Doug	Project Worker, Asbestos Support West Midlands
Kloss	Diana	Industrial Injuries Advisory Council
Lamb	Keith	Durham Mechanics
Lawson	Ian	Industrial Injuries Advisory Council
Lawson	Lynne	Belvoir Vale Group Healthcare, Managing Consultant
Lee	Shaun	Union of Construction Allied Trades and Technicians (UCATT)
Lewis	Richard	Head of Corporate Science Unit, Health and Safety Executive, Chief Scientific Advisor's Group
Martin	Jane	Belvoir Vale Group Healthcare Service
Mc Cann	James	Regional Organiser, T&G Section of Unite
Moore	Irene	Belvoir Vale Group Healthcare Service
Nicholls	Lorraine	Occupational Health and Safety Inspector, HSE Birmingham
Oldale	Brian	Barnsley Metropolitan Borough Council, Senior Welfare Officer
Palmer	Keith	Industrial Injuries Advisory Council
Parkhouse	John	Rowley Ashworth Solicitors
Reed	Susan	Health Work an Well-being

		Directorate, DWP
Roach	Gareth	IIAC Secretariat
Robertson	Hugh	Industrial Injuries Advisory Council
Sadhra	Steven	Institute of Occupational and Environmental Medicine, University of Birmingham, Senior Lecturer and Director of Education, Occupational Health
Shears	Daniel	GMB, Health and safety environmental research and policy officer
Shelton	Marianne	IIAC Secretariat
Skidmore	Chris	Chairman, National Union of Mineworkers, Yorkshire
Spurgeon	Anne	Industrial Injuries Advisory Council
Sullivan	Claire	Industrial Injuries Advisory Council
Turner	Andrew	Industrial Injuries Advisory Council
Walsh	John	T&G Section of Unite, Regional Organiser
Ward	Rob	Benefit Integrity Division
Watkin	Terry	Durham Mechanics
Weightman	Sharon	Coal Industry Social and Welfare Organisation (CISWO)
Welch	John	Solicitor, Raleys Solicitors
Whitty	Fergus	Industrial Injuries Advisory Council
Wright	Lucille	Industrial Injuries Advisory Council
Wood	Jill	Warwickshire Welfare Rights Advice Service