



**The Industrial Injuries
Advisory Council**

**Proceedings of the
15th Public Meeting**

Held on 6 July 2017
Manchester

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Foreword

The fifteenth public meeting of the Industrial Injuries Advisory Council (IIAC) was held in Manchester on 6th July 2017. This event built on the successes of previous public meetings held around Great Britain over the past 15 years.

These meetings allow members of the Council to hear directly from interested members of the public and enable the public to get a better understanding of the Council's work. The Council has always found value in such public engagement. As in previous years, this meeting proved an informative occasion with several topics brought to the Council's attention. Important issues were raised, which the Council and the Department for Work and Pensions (DWP) will consider going forward. I would like to thank everyone who attended the meeting for contributing to the lively discussions which made the occasion so worthwhile.

Sadly, on a personal note, this must be the last such event over which I preside, since I am approaching the maximum allowed term of service as Chair of IIAC. Long may these meetings continue.

Professor Keith Palmer
Chairman IIAC

IIAC is a non-departmental public body that advises the Secretary of State for Work and Pensions and the Department for Social Development (DSD) in Northern Ireland on the Industrial Injuries Scheme. The DWP and DSD are responsible for the policy and administration of the Scheme. IIAC is independent of the DWP and the DSD. It is supported by a Secretariat provided by the DWP and endeavours to work cooperatively with Departmental officials in provision of its advice.

This document is a record of the London public meeting and covers events and discussions up to 6th July 2017. However, this report should not be taken as guidance on current legislation, or current policy within the DWP or DSD, as members may have expressed personal views, which have been recorded here for information.

Agenda

09:15 – 10:00	Registration with tea / coffee
10:00 – 10:35	Welcome remarks and setting the scene for the day Chair of IIAC – Professor Keith Palmer
	IIAC's approach to scientific decision making Chair of IIAC – Professor Keith Palmer
10:35 – 10:45	Q&A on IIAC's approach to scientific decision making
10:45 – 11:30	Mental health / depression - with Q&A Dr Ira Madan
11:30 – 11:45	Tea / coffee break
11:45 – 12:30	'A year in the life of IIAC' - looking at the source of enquires and the ultimate result – with Q&A Dr Andrew White
12:30 – 13:30	Lunch
13:30 – 14:20	Carcinogens - why not all are prescribed under the industrial injuries scheme – with Q&A Professor Anthony Seaton
14:30 – 15:15	Open Forum and closing remarks
15:15	End of public meeting

Welcoming Remarks

Professor Keith Palmer Chair of IIAC

1. Professor Keith Palmer welcomed everyone to the Manchester public meeting and the IIAC members introduced themselves.
2. The Industrial Injuries Scheme provides non-contributory, no-fault compensation which principally 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. These terms have specific legal meanings and have been refined by case law. 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 associated with an occupational cause and which is listed in the Scheme's regulations; IIAC uses a specific approach to check for this.
3. The Scheme compensates employed earners; the self-employed are ineligible to claim IIDB for work-related ill-health or injury. Claimants can receive benefit from ninety days after the accident or onset of the prescribed disease; shorter periods of disablement are not compensated.
4. Certain prescribed diseases are given the benefit of 'presumption' – if a claimant is diagnosed with a disease and had an appropriate exposure then it is presumed that their occupation has caused the disease; the rule is complicated and two reports detailing the Council's reviews of presumption have recently been published.
5. The Scheme compensates for "loss of faculty" and its resultant "disablement", as compared to an age- and gender-matched person as assessed by medical advisers engaged by the Department. Assessments of disablement are based on loss of function, rather than loss of earnings and are expressed as a percentage. Thresholds for payment are applied such that, in general, payments can be made if disablement is equal to, or greater than, 14%. The exceptions to this are pneumoconiosis and byssinosis where payment can be made if disablement is 1% or more and occupational deafness where the threshold for payment is 20% disablement. Assessments of disablement can be aggregated (this is the process whereby two or more concurrent assessments are added together to produce one award of benefit).
6. IIAC is a statutory body, established under the National Insurance (Industrial Injuries) Act 1946, to provide independent scientific advice to the Secretary of State for Work and Pensions and the Department for Social Development (DSD) in Northern Ireland 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 Chair, 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, Ministry of Defence and DSD may attend IIAC meetings to provide information and advice. There are four meetings of the full Council per year.

7. 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 has no involvement in decision-making of individual claims.
8. A permanent sub-committee of the Council, the Research Working Group (RWG), monitors and reviews 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.
9. 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 and by other stakeholders.
10. IIAC produces several different types of publication. Command Papers are reports that are presented to Parliament by the Secretary of State for Work and Pensions, often forming the basis of legislation or changes to DWP policy (the reports are produced by 'command' of Her Majesty). Position Papers are published on important subjects that IIAC has considered, but where it does not recommend prescription or where the matter has not been referred by the Secretary of State. IIAC also publishes information notes detailing the Council's review of a broad range of topics where a recommendation to prescribe is not appropriate and where there is insufficient evidence to warrant a position paper. Commissioned research reports may be published from time to time, funding permitting, and are instigated at the request of the Council. These reports are carried out by an independent third party, usually by an academic expert, following a bid via open competition, and are used to provide a research analysis of a specific area of the Council's work programme. Finally, IIAC publishes an annual report and the proceedings from its public meetings.
11. IIAC's current and recent work programme includes, by way of examples, reviews of the diseases due to ionising radiation, diesel exhaust emissions and cancer, medical assessments of disablement, occupational epicondylitis and osteoarthritis of the knee in joiners.

IIAC's approach to scientific decision making

Professor Keith Palmer
Chair of IIAC

12. How does IIAC decide which diseases to prescribe? The Council is bound by 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.
13. Some occupational diseases are relatively simple to verify in that they have unique clinical features that can be ascertained and occur relatively rarely outside work. 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 to verify and attribute as being caused by occupation. At the 'tough' end, judgements depend on assessment of the probabilities from the scientific literature rather than specific medical tests.
14. 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, 'reasonable certainty' is taken to mean 'more likely than not' – the usual civil law standard of proof. Epidemiology is the branch of medicine that deals with the distribution and determinants of disease in human populations, and IIAC applies epidemiological principles when considering prescription.
15. In epidemiological terms 'more likely than not' can be represented mathematically as an attributable fraction (i.e. the percentage of cases in occupationally exposed claimants that have been caused by that exposure, assuming a causal relationship). 'More likely than not' means, for those with the occupational exposure, an attributable fraction greater than 50%. Imagine we have two working groups of equal size (for example 1000 in each group), an exposed group and a non-exposed group. Imagine there are 100 cases in the exposed group and 50 cases in the non-exposed group. Then it is clear that there is an exact doubling of risk in the exposed group (100 per 1000 vs. 50 per 1000). Also, the total risk in the exposed group can be split into two parts (i) the 50% that is due to the background risk and would occur anyway and (ii) the 50% excess risk that is due to exposure. If the excess were slightly more (greater than a doubling of risk) then it would also be the case that the disease was 'more likely than not due to the exposure' in exposed claimants.

16. IIAC's task is to determine whether there is good evidence that the risk of a particular disease is more than doubled in a group with defined occupational exposure. If the answer to this question is yes, then in the absence of other factors IIAC would recommend that the disease is prescribed with the intention that the exposure is presumed to have caused the disease in an exposed worker on the basis of the defined group's probability.
17. The Council has already recommended prescription for several diseases where the process of attribution to occupation has been complex. These diseases include Vibration-induced White Finger (VWF), carpal tunnel syndrome (CTS), chronic bronchitis and emphysema (now commonly known as chronic obstructive pulmonary disease) and osteoarthritis (OA) of the hip in farmers.
18. In order to establish whether there is a more than doubling of risk of a disease attributable to a particular occupation, IIAC looks to scientific research and academic experts for evidence. It is important that the evidence is consistent and comes from more than one independent, good quality study, and ideally several studies of different design, since this reduces the likelihood of methodological problems resulting in error or bias, and of any decisions being overturned by the results of future research. The occupational circumstances also have had to have affected UK employed earners (at least in the past, if not presently).
19. Practically speaking, it is also important that the disease and the relevant exposures can be easily verified and that the disease is a cause of significant impairment.

Osteoarthritis of the hip in farmers – an illustrative example of decision making in practice

20. Professor Palmer outlined IIAC's scientific decision making in practice, using OA of the hip in farmers as an example.
21. 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 OA in farmers was first suspected as this occupational group appeared on hip surgery waiting lists more often than expected from the 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 common in farmers.
22. 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

between a two-fold to 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.

23. The consistent demonstration of a greater than doubling of risk in multiple surveys from more than one country and across a range of study designs allowed the attribution of OA of the hip in farmers to their occupation on the balance of probabilities.
24. Verification of OA of the hip is straightforward since there are well-defined diagnostic criteria. Professor Palmer presented 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 pelvic socket (acetabulum) and the head of the femur (thigh bone) and roughened joint surfaces. Bony spikes and bone cysts may also be present. Thus, the disease can be confirmed, can be disabling, and has been shown to be at least twice as common in farmers as in other comparable groups.
25. 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; evidence was additionally found on the necessary duration of exposure.
26. OA of the hip in farmers fulfilled the criteria necessary to 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 OA 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).
27. As part of the review, OA of the hip in other occupations (such as those involved in heavy lifting) was also considered, but the strength of evidence was much lower than for farming. IIAC regularly monitors emerging scientific literature on this and other issues and reviews the terms of prescription where necessary. Future advances in research may enable the 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 13.

Comments, questions and answers from the ‘Welcoming Remarks’, ‘IIAC’s approach to Decision Making’ and ‘The facts behind the Scheme’ sessions

28. ***A representative from the Durham Miners Association (DMA) noted that the Council had recommended that Dupuytren's contracture be added to the list of prescribed diseases over two years ago but that the Government has not decided on the recommendation. This was felt to be unacceptable. What is the current position and is it a question of costs?*** The Council agreed that it was regrettable that the decision was so delayed. A DWP official stated the case for prescribing was still being considered and that there were concerns over costs, but the views of the DMA would be fed back to DWP Policy officials. An IIAC member is meeting with the Minister in September and will raise the concern.
29. ***The DMA commented that the Prof Palmer had done an excellent job as Chair of IIAC and that he would be greatly missed in this his last public meeting after serving for a decade in this capacity.***
30. ***Another DMA representative asked if tinnitus could be considered as a prescribed disease?*** The Chair of IIAC said that the Council would consider this suggestion.
31. ***A member of the RMT Union noted that rail workers have to work and walk on uneven surfaces such as ballast. As this is a dynamic surface that moves, musculoskeletal disorders were more common in this occupational group - for example, the Union was aware of higher than expected numbers of their members requiring hip replacements. Is this sufficient evidence for the Council to look at this or would other research need to be commissioned?*** This has been looked at before, but the range of musculoskeletal disorders was not specific enough for prescription. However, the Council is prepared to look at the matter again if the RMT can share its data and this represents new evidence.
32. ***A representative from the National Union of Mineworkers (Yorkshire Branch), congratulated Prof Palmer for his tenure as IIAC chair.***
33. ***Would having rheumatoid arthritis exclude someone from claiming for vibration white finger syndrome?*** Presumption exists within the scheme and the existence of rheumatoid arthritis should not be a reason to deny an otherwise qualifying claimant compensation.

Presentations

Mental health / depression

Dr Ira Madan

Independent member

34. Anxiety is an emotion characterized by an unpleasant state of inner turmoil, often accompanied by nervous behaviour, such as pacing back and forth, somatic complaints, and rumination. It may include subjectively unpleasant feelings of dread over anticipated events, such as the feeling of imminent death.
35. Anxiety is not the same as fear, which is a response to a real or perceived immediate threat, whereas anxiety is the expectation of future threat. Anxiety is a feeling of uneasiness and worry, usually generalized and unfocused as an overreaction to a situation that is only subjectively seen as menacing. It is often accompanied by muscular tension, restlessness, fatigue and problems in concentration. Anxiety can be appropriate, but when experienced regularly the individual may suffer from an anxiety disorder. These often occur with other mental disorders, particularly bipolar disorder, eating disorders, major depressive disorder, or certain personality disorders. Common treatment options include lifestyle changes, medication, and therapy.
36. Anxiety has been linked with physical symptoms such as Irritable Bowel Syndrome and can heighten other mental health illnesses such as Obsessive Compulsive Disorder and panic disorder. The first step in the management of a person with anxiety symptoms is to evaluate the possible presence of an underlying medical cause, whose recognition is essential in order to decide its correct treatment.
37. Anxiety can be either a short term "state" or a long term "trait". Whereas trait anxiety represents worrying about future events, anxiety disorders are a group of mental disorders characterized by feelings of anxiety and fear.
38. Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behaviour, feelings, and sense of well-being. People with a depressed mood may be notably sad, anxious, or empty; they may also feel notably hopeless, helpless, dejected, or worthless. Other symptoms expressed may include senses of guilt, irritability, or anger.
39. A depressed mood is a feature of some psychiatric syndromes such as major depressive disorder, but it may also be a normal temporary reaction to life events such as bereavement, a symptom of some bodily ailments or a side effect of some drugs and medical treatments. A DSM (Diagnostic and Statistical Manual of Mental Disorder) diagnosis distinguishes an episode or 'state' of depression from the habitual or 'trait' depressive symptoms someone can experience as part of their personality.

40. Depression and generalised anxiety disorder may co-exist and if so are referred to by various terms such as ‘mixed anxiety-depression’ or ‘anxiety-depressive disorder’. Anxiety is also a common *accompaniment* of depression.
41. The causes of anxiety, depression, and anxiety-depression are complex and multiple. Genetics, gender, environment, personal life events and personality are pre-disposing factors which have all been linked with these disorders. The frequency of mental health symptoms is also influenced by social, societal and cultural factors, and so may differ by setting.
42. When symptoms occur in an employed earner, occupational circumstances (e.g. lack of decision latitude, job strain, bullying, effort-reward imbalance, poor relations with colleagues and supervisors, high emotional pressures) may play a part in precipitating or perpetuating symptoms, but work may play no part at all, or only a limited part, extending say to the challenges in coping with previously acceptable demands of employment. A further complexity in disentangling the objective from the subjective is that employees’ perceptions regarding work as a cause of their symptoms can sometimes be influenced by the illness itself.
43. The Council sought evidence on whether risks of anxiety, depression, or mixed anxiety-depression, ideally diagnosed to formal psychiatric standards, are more than doubled in some occupations relative to most others. In doing so it acknowledges the limits of the evidence – for example, the need in many studies to group occupations together (because of lack of numbers for statistical analysis), which could thereby conceal higher (or lower) risks in sub-groups; the complication that psychosocial risk factors in the workplace may not be fixed, but change over time as working conditions evolve; and the issue of relevance of international research findings to British workers, when societal and cultural factors influence symptom frequency.
44. The starting position was a search for published research reports on teachers and healthcare workers – these being suggested by a stakeholder at the IIAC 2015 public meeting and by Council members themselves. Both occupations are widely believed to be at particular risk of mental health problems, several reports finding for example that up to half of teachers report their job to be “stressful” or “extremely stressful”.
45. The Council searched the research literature and identified many relevant papers. On balance, the evidence in teachers does not indicate a more than doubling of risks, the usual threshold for prescription under the IIDB Scheme, although indicating that teaching can be perceived as a stressful occupation.
46. The data on anxiety and depression in healthcare professionals make a stronger case for prescription, for example, the findings on affective disorder when allied to those on suicide risk. A challenge in assessing the literature on healthcare workers lies in the possibility that they may be more willing users of mental health services (e.g. more aware of

treatment possibilities and pathways to access them) than other occupations. Evidence on this is mixed. In any event, most reports suggest an increased risk of mental health problems in healthcare workers.

47. However, the balance of evidence does not suggest a more than doubling of risks of anxiety or depression, diagnosed in life, in healthcare professionals, while the evidence on suicide risk is difficult to interpret.
48. Risks of anxiety and depression are less well reported for other occupations than for teachers and healthcare professionals. There are some indications that risks are generally lower than in these two groups, but also insufficient evidence to be confident on this point.
49. The evidence reviewed by the Council does not provide a sufficient case for recommending prescription at present.

Questions and answers

50. **Janet Newsham – stated an interest in the statistics around suicide and occupation. Teachers are being forced out of the profession due to mental health issues. Could IAC look at this in depth? Could they look at the issues teachers face when they have left the profession?** The mortality rate from suicide does appear to be elevated in teachers compared to other occupations. The evidence on anxiety depression and mixed anxiety-depression in teachers forms part of the report described above and to be published shortly.
51. **Hazards has been looking at occupation and suicide and has carried out a study in France. Some evidence was found that when a person's job is under threat, they tend to develop mental health issues and may attempt suicide.** The association between job threat and mental ill-health is well known and of general concern. The Council cannot prescribe, however, for work circumstances of this kind or for the sequelae of job loss.

A year in the life of IIAC

Looking at the source of enquiries and the ultimate result.

Dr Andrew White

Employer representative

52. The full Council meets 4 times a year and is comprised of 9 independent experts, 4 employee representatives, 4 employer representatives and 7 observers. IIAC has a sub-committee, the Research Working Group (RWG), which meets separately, 4 times a year, from the full Council to consider the scientific evidence in detail. As part of its engagement programme, IIAC hold a Public Meeting every 2 years.
53. The Council receives enquiries, which can inform its investigations, from numerous sources:
- IIAC members
 - Medical assessors
 - Medical practitioners
 - MPs
 - Trade Unions
 - Support groups
 - The Public Meeting
 - Claimants
54. When an enquiry is received, the RWG collates, analyses and reviews the scientific/medical literature on occupational causation of condition in question and seeks to consider all available research data. These data are then discussed at full Council meetings for review and debate. IIAC will typically consider a way forward and often asks RWG for further analysis / advice.
55. The outcomes of the investigations will typically yield:
- Command Papers - this is a Council report that includes a review of the relevant literature and contains recommendations that require changes to legislation (e.g. recommending a disease and/or an exposure be added to the list of prescribed diseases for the purposes of prescription).
 - Position Papers - this is a Council report that details a review of a topic which did not result in recommendations requiring legislative changes.
 - Information Note - this is a short summary of an IIAC review which did not result in recommendations requiring legislative changes and where the evidence base is still emerging and may be liable to change, or where there was insufficient evidence to warrant a Position Paper.

56. IIAC frequently re-visits previous topics as new data emerge or queries are raised by stakeholders – deciding against a new or changed prescription is not ‘final’.... new evidence is always considered.

57. In 2016/2017 IIAC published 4 Command Papers which amended the prescription schedule:

- Diffuse Pleural Thickening
- Extrinsic Allergic Alveolitis
- Nasal Carcinoma
- Latex Anaphylaxis

58. Command paper on Diffuse Pleural Thickening:

- Already prescribed (exposure to asbestos in asbestos textile manufacture, insulation work, spraying, or in ship building)
- Medical assessors and respiratory consultants were concerned that the prescription (>10 years old) required a feature visible on X-rays when evidence was now being presented in the form of CT scans
- The prescription was updated and the requirement amended, so claimants can present high quality diagnostic CT scan evidence to medical assessors.

59. Command paper on Extrinsic Allergic Alveolitis (EAA):

- This is already prescribed for a specific list of biological agents (exposure to fungal spores, moulds etc in agriculture, handling birds, etc).
- IIAC noted that new causes of EAA are regularly identified. Prescription was amended to include a new ‘open category’ of biological cause, allowing greater flexibility to allow awards where medical specialists can clearly attribute EAA to an occupational exposure from a biological agent.
- Also, new evidence shows that isocyanates (chemicals in polyurethane paints, industrial glues, and foam rubber manufacture) can cause EAA – not just the biological causes above – so a new ‘open category’ prescription was added for EAA caused by chemicals.

60. Command paper on nasal and sinonasal carcinoma:

- This disease is already prescribed in relation to exposures to wood and leather dust.
- Prescription for wood dust requires work in a ‘building’ where wooden goods are manufactured/repared, excluding, for example, work as a carpenter on a construction site. An MP raised a case that narrowly fell outside these terms of prescription.
- IIAC reviewed over 40 research reports on the topic and decided to broaden prescription by redefining it more generically, in terms of exposures to wood dust arising from the machining of wood.

61. Command paper on latex anaphylaxis:

- This is already prescribed for healthcare workers in contact with products made with natural rubber latex.

- An MP raised the case of a constituent excluded from benefit because their occupational exposure to latex was other than in healthcare.
- Most research has been conducted on healthcare workers, but the Council's review found some newer research on latex anaphylaxis in other occupations, so it decided to widen the prescription to include non-healthcare workers exposed to latex products.

62. Points to note for the 4 Command Papers:

- All 4 are expansions of existing prescriptions, and not new prescriptions – not surprising as the list of prescriptions includes nearly 80 diseases.
- Of the 4:
 - 2 arose from MP enquiries
 - 1 enquiry came from a medical practitioner
 - 1 was raised by an IIAC member.
- Each involved painstaking consideration of all scientific data, and careful objective evaluation of that evidence – a major inquiry often takes up to 18 months and much of the work is done by Council members in their own time.
- IIAC is free from political interference – the science decides.

63. In 2016/2017 IIAC also published 4 Position Papers:

- Noise & occupational deafness.
- Anxiety & depression in teachers & healthcare workers.
- Renal cancer and exposure to trichloroethylene.
- Lymphatic and haematopoietic cancers and exposure to trichloroethylene.

64. Position paper on noise and occupational deafness:

- Deafness is already prescribed in terms of exposures to one of a range of specific occupational situations.
- IIAC decided to investigate whether exposure could be defined more broadly, either as a qualifying level of noise ('dose') or a specific clinical feature (a notched appearance on the audiogram).
- The evidence did not support either option, but IIAC invites suggestions for alternative approaches that are compatible with the science and legislation and are practically feasible.

65. Position paper on anxiety and depression in teachers and healthcare workers:

- Anxiety and depression are not currently prescribed.
- The enquiry was raised by a delegate at the 2015 public meeting.
- Causes of anxiety and depression are complex and multiple.
- Many published research studies were found, but the Relative Risk (RR) threshold of >2 (risk more than doubled) was not consistently met.
- IIAC is open to the discovery or submission of further scientific evidence on the topic.

66. Position papers on trichloroethylene (TCE) and cancer – 2 reports were produced:

- IIAC noted that the International Agency for Research on Cancer (IARC) has classified TCE as carcinogenic, the human evidence being strongest for cancers of the kidney, blood and cervix. Risks for these 3 cancers were evaluated.
- Many published research studies were found on TCE for each cancer
 - but for all, the data was complex and mixed
 - some studies found no risk, some found a high risk
 - it proved difficult to translate TCE exposures in the studies into exposures that could be defined in a prescription schedule
 - there was also insufficient consistent evidence of doubling of risk.

67. Points to note for the Position Papers:

- All 4 have significant bodies of evidence, but not enough overall to reliably say (on balance of probabilities) that the risk is doubled.
- In each case, some studies do show doubling of risk
 - but one or a few studies are seldom enough
 - IIAC factors in the quantity and quality of evidence.
- TCE is a human carcinogen, but evidence is needed that the RR is doubled in circumstances that can practically be defined and applied.
- Enquiries came from a range of sources.
- There was a painstaking consideration of all scientific data and careful objective evaluation of that evidence.

68. In 2016/2017 IIAC published:

- 7 Information Notes (limited/emerging evidence)
- Examples:
 - Osteoarthritis of the knee in construction – an enquiry from an MP – IIAC looked at published studies and took evidence from international experts – but not enough evidence was found on the level of knee-strain exposure in different occupations in the UK.
 - Hand Arm Vibration Syndrome (HAVS) from motorcycle handlebars – an enquiry from an MP – HAVS is already prescribed for various tools. Insufficient evidence was found to prescribe in relation to motorcycle handlebars. IIAC took the opportunity to consider whether prescription could be broadened away a restricted list of tools and based instead on a vibration dose. Evidence was taken from an international expert, but a very large variation in vibration magnitude between apparently similar tools in different uses and states of repair made the approach too problematic to implement.
 - Carpel tunnel syndrome (CTS) – An enquiry from an MP regarding certain repetitive hand-arm movements and risk of CTS

– but there was too much inconsistency between studies in how they defined exposure to refine the current exposure schedule.

69. Points to note for the Information Notes:

- There is evidence in studies for each, but often:
 - findings inconsistent, and/or
 - exposures not clearly defined, and/or
 - exposures are not relevant occupationally, and would
 - be difficult to define in a prescription, and/or
 - not enough data yet for reliable analysis.
- IIAC often seeks advice from international experts, in addition to reviewing the scientific literature.
- IIAC looks at over 1,000 pages of abstracts of new research studies each year.
- IIAC often seeks to simplify and/or broaden prescriptions – which it was able to do for EAA, but cannot yet do for HAVS.
- The issues considered, and the research literature, are often very complex, and the scientific and medical expertise of IIAC is critical to reaching sound conclusions.
- Enquiries came from a range of sources.
- Painstaking consideration is always given to the evidence.

70. The core of IIAC's work is scientific evaluation of evidence to decide on prescription, but IIAC also looks at other IIDB issues:

- IIAC is currently reviewing medical assessments for 'offsets' (deductions) for disablement with another cause (in addition to the occupational cause) – a very complex issue.
- IIAC is seeking to ensure a consistent approach based on objective scientific evidence.
- IIAC is working with a range of experts on the issue of offsets in medical assessments
- IIAC has found that offsets are quite often used, they cost claimants money, the law requires them, there is inconsistency in tribunal rulings on them, and some offsets seem surprising in the Council's preliminary view, e.g. a miner with OA knee who had a knee injury 20 years beforehand but then completely recovered, sufficient to work underground for 20 years.
- IIAC is seeking to clarify the scientific basis for deductions for 'alternative causes' of disablement, how to properly apply them, and when to avoid them. Advice to medical assessors is expected in 2018.

71. Some final thoughts from the presenter:

- IIAC comprises outstanding experts in occupational medicine, epidemiology etc – a substantial scientific resource.
- IIAC carries out a large amount of work for modest remuneration – excellent value for money to the taxpayer.
- IIAC's published output is in the public domain and includes all the considered evidence.

- IIAC is always seeking new evidence and proposals for new prescription or changes to existing prescriptions.
- IIAC is free of political interference – decisions are based solely on scientific data and objective expert evaluation of those data.

Questions and answers

72. ***Durham Miners Association (DMA) – welcomed the move to look at off-sets.***

73. ***NUM – are medical assessments being looked at because of the number of appeals?*** The Council was driven to look at this because of concerns over some of the decisions being made. The appeals statistics were not the main driver, although an approach that reduces their number would be advantageous. ***What happens next?*** The Council will write and publish a report. IIAC doesn't act under and isn't constrained by financial considerations, but the Government is. IIAC could act to change guidance or elect to recommend that changes to legislation be made. Changing guidance does not require Ministerial approval, whereas changing regulations does. It seems possible therefore that guidance will be issued by IIAC in the first instance, but in the format of a Command Paper to stress the topic's importance and to ensure it comes to the attention of decision-makers. The Council wishes to monitor implementation of the guidance it issues.

74. ***The NUM raised the issue of claimants assessed for HAVS who have been turned down because they were taking β -blockers.*** Presumption applies within the scheme (i.e. the assumption that in someone who meets the terms of prescription the disease is normally caused by their work and not something else). Those taking β -blockers should be covered by presumption. The Council would welcome examples where occupational causation has been challenged and presumption not applied and would be interested to investigate it.

75. ***The NUM expressed concern that a recommendation of IIAC on “persistent symptoms of numbness and/or tingling in the digit” had been changed in the legislation to refer to “continuous numbness or continuous tingling” (in PD A11). This was felt to be a higher hurdle to meet.*** It was agreed that “continuous” and “persistent” do not carry the same exact meaning. The Council agreed to look again at the issue (for which there is a previous history that would be clarified). If appropriate, the wording would be changed.

76. ***NUM – idiopathic chest disease. When alive, presumption is ignored due to X-ray evidence. When deceased, a definite disease is apparent and had this information been known when the claimant was alive, a claim for IIDB would have been allowed e.g. asbestosis. This relates to misdiagnosis when alive.*** The importance of a detailed occupational history cannot be overstated. Improvements in diagnosis (and evidence) can result in misdiagnoses being rectified or

diseases formerly of unknown cause being reclassified. The Council recognises that this doesn't always happen. However, it cannot recommend prescription for 'idiopathic' disease, as the term refers to a disease of unknown cause (and hence, not a disease established to be work-caused).

Carcinogens – why not all are prescribed

Prof Anthony Seaton
Independent member

77. Prof Seaton outlined the history of occupational cancer, going back to Percival Pott's description of scrotal cancer in chimney sweeps' apprentices in 1775 and Joseph Bell's report of skin cancer in workers making paraffin in 1876.
78. Disease may be attributed to either genetic or environmental factors, but in most cases both play a part. Environmental factors include those to which people may be exposed at work. Doctors may think of cause in different ways. The clinical doctor thinks in terms of organ dysfunction, e.g. lung or heart failure, to assist making decisions on *treatment*. In contrast the public health doctor thinks in terms of risk factors for organ dysfunction, for example smoking or exposure to fumes as risk factors for chronic lung disease, leading to developing *preventive strategies*.
79. These different perspectives on causation stem from different logical processes. Medical diagnosis uses deductive logic, arguing from general knowledge to the particular circumstances of the patient. Epidemiology is inductive, arguing from particular observations or data to come to general conclusions (hypotheses).
80. Some diseases that are common in the general population may also have occupational factors that add to the risk. For example, asthma, chronic bronchitis, lung cancer and bladder cancer. This presents difficulties for prescription.
81. Concepts of occupational cancer vary according to the source, from a scare story in a newspaper about experiments on rats to official decisions by the International Agency on Cancer Research (IARC), which considers whether there is sufficient toxicological and epidemiological evidence to justify attribution to possible carcinogens. IARC has its own pragmatic concept; cancer is accepted for prescription if there is consistent epidemiological evidence of a doubled risk of that tumour in a particular occupation or work exposure (see para. 84)
82. IARC publishes a list of carcinogens, justified by the evidence, in categories of increasing certainty. There are 120 in category 1, where the evidence is considered conclusive. Of these 26 are medicinal drugs, mostly used for treating cancers, 9 are foods or substances taken by

mouth, 9 are infections, 3 are tobacco-related, 3 are components of ambient air pollution, and about 70 are job- or chemical-related cancers.

83. Comparing IARC and IAC's lists of carcinogens, there is concordance on most:

- Lung cancer (arsenic, nickel, chromium, bis-chloromethyl ether, coke ovens, tin mines, silicosis)
- Bladder cancer (many organic chemicals, rubber manufacture, aluminium smelting, coal tar workers)
- Nasal cancer (wood dust, nickel, chromium, but not isopropyl alcohol manufacture)
- Leukaemia (benzene, radiation)
- Liver angiosarcoma (vinyl chloride monomer)
- Mesothelioma and asbestos-related lung cancer
- Foundry work and lung cancer (if silicosis is present)
- Skin cancer (oils, tars, soot, arsenic)

84. However, there are important areas of difference – all relating to very common exposures

- Diesel exhaust and lung cancer
- Welding fume and lung cancer
- Ultra violet light exposure and skin cancer/melanoma
- Trichloroethylene and cancers
- Asbestos and laryngeal cancer

85. The 'doubling of risk' test used by IAC is as follows:

- If in a workforce with a given exposure the risk of the disease is more than double that in an unexposed or general population, it can be argued that any individual in that population with the disease in question is more likely than not to have acquired it as a result of working in that job.

86. In certain circumstances this raises problems. These may be explained in terms of inductive (epidemiological) vs deductive (clinical) thinking.

- The epidemiologist accepts that it is not possible to prescribe an occupation unless there is consistent evidence of a doubled risk in that occupation or exposure group, in the absence of individual proof. This means that individuals in occupations where the risk is elevated by less than 100% cannot be compensated unless, as in some cases such as asthma and skin allergies, there is individual clinical evidence of causation.
- The clinical doctor may be persuaded by the medical literature that certain high exposures in particular occupations have in the past led to cancer but such exposures were insufficiently common in those occupations to double the risk overall.
- This gives scope to question the IAC methodology. What is a doubled risk, how were the studies selected, which papers were analysed, how well designed were the studies, did the job titles represent the toxic exposures adequately? These are all matters taken into account in making IAC's decisions.

87. Consider individual claimants working in an occupation in which the epidemiological data show a significantly elevated risk of say 20% and who may have been exposed to an IARC carcinogen. There are many possible explanations of this outcome, from 20% being exposed to the carcinogen and 80% not, to all being exposed but only 20% being susceptible. However, it is likely that, whatever the explanation, 20% got cancer who would not have got it had they not worked in that situation. The issue for IIAC is whether it is possible to identify such individuals.
88. A partial solution:
- If the risk of a disease is *significantly* increased in a workforce by less than 100%, this is likely to be due to only a proportion of the total workforce having had excessive exposures.
 - IIAC would have to define an exposure above which the risk is doubled.
 - Compensation of such claimants might require an individual clinical judgement to be made, based on estimate of exposure, usually duration.
89. So IIAC examines the data further to see if it is possible to identify subgroups in the population who are likely to have had high exposures, based on duration and work in a particularly dangerous situation. Unfortunately, such information is rarely available in the medical literature. However, some recent IIAC decisions on prescription, based on the doubled risk criterion but illustrating this compromise, have been made:
- Lung cancer associated with (i) at least five years of work at the top of coke ovens in aggregate, or (ii) at least 15 years of coke oven work in aggregate should be included in the list of prescribed diseases
 - Cancers of the colon, liver, lung, stomach, ovary and bladder, in workers exposed to ionising radiation when measured exposure exceeded certain levels.
90. On the contrary, some occupations where there is a less than doubled risk have not been scheduled:
- Lung cancer in foundry work, as the evidence for a doubling of risk, either overall or in specific groups of foundry workers or workers with a sufficient length of exposure, is insufficiently consistent (but foundry workers with silicosis are eligible since silicosis is on the list of scheduled diseases).
 - Lung cancer in beryllium workers, as at present there is insufficient evidence of a doubled risk or an exposure that is associated with such a risk.
 - Laryngeal cancer and asbestos exposure, as the current literature is considered not to provide sufficient evidence of a doubled risk.

91. Finally, it is accepted by IAC that some claimants with a cancer recognised as occupational by IARC may fail to obtain compensation. This is because they:
- fail to satisfy the IAC criteria at the time because their occupation or some aspect of it does not satisfy the doubled risk criterion;
 - have a condition in which the association is newly discovered and has not yet been considered by IARC.
- In such circumstances IAC remains open to reviewing the developing epidemiological evidence as part of its ongoing work.

Questions and answers

92. **NUM – when miners moved to different shift practices as mines adopted the continental shift pattern, they were exposed to dust for ~12 hours compared to previous 7. Can the criteria, relating to 20 years history of working under ground and 40 years on the surface, be reviewed in line with the change of working practices as many miners do not meet this length of service but still suffer from the industrial disease and are not eligible to claim IIDB?** The graph presented in the talk answered this question, as it is a matter of dose. After extensive studies in mines, these data were incorporated into IAC publications to shape the prescription. The values quoted are deemed to be generous and unlikely to be changed.
93. **NUM – stated that coal mining is not recognised in prescription D11, whereas tunnelling is. The nature of coal mining involves tunnelling through different types of rock, which may include sandstone or granite.** The wording of PD D11 will be looked at with a view to rewriting to make it clear that it applies to tunnelling and cutting/drilling through quartz-bearing rock for coal mining purposes.

Open forum and Closing remarks

Mr Doug Russell Representative of employed earners

94. Mr Doug Russell opened the floor to the attendees, inviting questions and comments on any aspect of IIAC's work or the presentations heard during the meeting.
95. NUM Yorkshire submitted written questions prior to the public meeting, some of which related to Departmental procedural issues, rather than decisions of the Council.
96. ***NUM Yorkshire submitted written questions prior to the public meeting. A concern was raised about how COPD and, in some instances, pneumoconiosis were assessed by DWP. The criteria specify 'with maximum effort where there is evidence of a forced expiratory volume (FEV) in 1 second which is at least 1 litre below the appropriate mean value predicted' – what does this relate to in real terms and what % disability or loss of faculty does 1 litre drop in lung function relate to?***
97. ***What is the difference between the NHS and GP spirometry use of the 'system of turbine transducer' in measuring 'loss of faculty' or in simple terms 'the 1 litre drop' as opposed to the DWP/IIAC insinuations on the use of 'Cotes formula'?*** The medical assessors don't carry out as many spirometry tests as the NHS. Differences between practice in the NHS and DWP are likely to be fairly small. However, NHS practice is less standardised: it does not specify any particular technique or machine (so long as the method chosen is a satisfactory one). The Scheme, however, places emphasis on consistency and regular calibration of equipment. (Differences may arise due to the operator, the equipment used or the rules the operator has to follow.)
98. ***Are the DWP operators as skilled as NHS staff? In some instances the Union has had reports that registered nurses carry out***

spirometry testing. The DWP guidance is clear that only doctors will carry out spirometry tests. The Union was asked to supply evidence of instances where this has not been the case. (Post-meeting note: In general practice, much of the spirometry is conducted by practice nurses.)

99. ***The Cotes formula predictive value is based upon height and age – has this been updated to reflect an increase in people’s health so data may be out of date?*** The Cotes formula was selected as it is deemed an appropriate method to use. One of several advantages is that it included some people who smoked among its participants. Age and height remain the primary determinants of normal lung function.
100. ***NUM written question – the NUM continues to be baffled by the criteria specified and applied for both COPD and in some instances D1, ‘with maximum effort where there is evidence of a forced expiratory volume in 1 second which is at least 1 litre below the appropriate mean value predicted’. In essence, what does this relate to in ‘real terms’? What % disability or loss of faculty does 1 litre drop in lung function relate to?*** The 1 litre threshold is used in the definition of the prescribed disease (PD D12); a ‘drop’ of FEV₁ of 1 litre is roughly equivalent to a value of 65% of that one would expect for a healthy man of the same age and height (the ‘predicted’ value). It is, on average, associated with shortness of breath when walking with others on level ground (grade 3 on the MRC breathlessness scale). The threshold is not used in *the assessment of disability*, for which any decline in FEV₁ is considered, alongside a consideration of the degree of an individual’s symptoms of breathlessness. The latter is assessed through questions about walking on flat ground or climbing stairs; these are different from the questions in the MRC Dyspnoea scale.
101. ***The NUM also raised the MRC breathless scale and the assessment of disability under the Social Security IIDB scheme and asked why, when looking at comparisons with the general population who do not suffer from an occupationally related chest disease would be more in line with DWP guidelines, are they not used?*** The MRC breathless scale is not used for individual assessment in the Scheme, but symptoms are still considered in the overall assessment, together with loss of lung function.
102. ***NUM written question – in many instances FEV1 tests vary, where spirometry requirements form part of the diagnosis, if someone is unable or unwilling to perform spirometry, other sources of evidence can be used from their hospital or GP information.*** There are times that medical evidence can be used rather than the board assessment, in posthumous cases. However, since all claimants need an assessment, there would always be an opportunity to perform spirometry. In some cases spirometry from a hospital might have been conducted at a time the patient had a lung related condition and may not have represented his normal condition. The standardised spirometry performed by the assessing doctor is the one on which decisions are based. Spirometry is never forced onto anyone.

103. **NUM written question – throughout 2017 it has become noticeable that very few claimants have been successful at achieving a % award whatsoever for the industrial disease A11 (formerly vibration white finger). We have noticed there is far greater emphasis being placed on carrying out ‘tests’ for carpal tunnel syndrome, even though that is not what is being claimed. ...invariably the HCP has no other equipment available to carry out further tests such as ‘grip, vibrotactile, thermal threshold’ etc.** Statistics available on the DWP’s website indicate that success rates in 2016 are about the same as the long run average. The number of claims has decreased substantially from the late ‘90s however. There would be concern if claimants who meet the terms of prescription are being turned down because they are deemed to have a non-work cause, as presumption should apply. The concern about availability of test equipment was referred to the Department.
104. **NUM – It has been noted that there are no clear guidelines regarding what is an acceptable score for the ‘Purdue Pegboard’ test.** The pegboard test is just one of a number of tests used and is not the sole discriminator – a medical history is also taken.
105. **NUM – DWP may be experiencing operational difficulties as in some instances only the pegboard test is performed.** The DWP will look into this and respond. The NUM was asked to provide evidence to support the investigation.
106. **NUM – follows on from para 75 – in the Union’s experience, no coal miner understands the term blanching, yet HCPs invariably mention in their conclusion ‘the claimant failed to mention their fingers blanched’** The DWP advised that its medical assessors are trained to ask about colour change, not specifically blanching.
107. **Audience member from the mining community – very often working in very hot and humid conditions, breathing is faster and workers have to drink ~8l of water to maintain hydration. Could this be looked at?** In some instances heat stroke and kidney disease may develop. The latter will be looked into by IIAC, but the former may be better for claimants to pursue through the Scheme’s accident provisions.

List of delegates

Atkinson	Rachel (Dr)	Centre for Health and Disability Assessment
Baker	Paul	IIAC Member
Cavilla	Ian	Centre for Health and Disability Assessments
Chambers	B	Durham Miners' Association
Chetland	Ian	IIAC Secretariat
Claughan	L	Durham Miners' Association
Clynes	Paul	RMT
Cobden	Alfie	DWP
Corkan	Keith	IIAC Member
Cummings	Alan	Durham Miners' Association
De Matteis	Sara	IIAC Member
Faupel	Paul	IIAC Member
Fawcett	Helen	Tribunal Judge, Social Entitlement Chamber
Gammond	Clare	Industrial Disease Solicitor, Stephenson's Solicitors LLP
Hadley	Nigel	Doctor
Hegarty	Catherine	IIAC Secretariat
Johnson	Alan	Durham Miners' Association
Kent	Maurice	NUM
Khan	Sayed	IIAC Member
Lowman	Dave	NUM
Madan	Ira	IIAC Member
McDermott	Claire	Scottish Government, Social Security Policy & Delivery
Mitchell	Karen	IIAC Member
Nasir	Sayed (Dr)	Occupational Consultant Physician
Newsham	Janet	Greater Manchester Hazards Centre
Palmer	Keith	IIAC Chairman
Parker	Gordon (Dr)	Central Manchester Foundation Trust, Occupational Physician
Parkinson	Carl	NUM
Poulson	Keith	NUM
Rees	Lexi	DWP
Robertson	Hugh	IIAC Member
Russell	Doug	IIAC Member
Seaton	Anthony	IIAC Member
Skidmore	Chris	NUM
Thompson	Peter	Durham Miners' Association
Thomson	John H	NUM
Turner	Susan (Dr)	Central Manchester Foundation Trust, Occupational Physician
White	Andrew	IIAC Member
Whitney	Stuart	IIAC Secretariat
Whitworth	Joseph	Durham Miners' Association
Zhou	Anli (Dr)	Central Manchester Foundation Trust, Occupational Medicine

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