
JOINT COMMITTEE ON VACCINATION AND IMMUNISATION

Minute of the meeting held on Wednesday 16 June 2010

10.30am – 4.00pm

Skipton House, 80 London Road

London, SE1 6NX

Members

Professor Andy Hall (Chair)

Dr Syed Ahmed

Dr Peter Baxter

Prof Ray Borrow

Prof Judith Breuer

Prof Alan Emond

Prof Jonathan Friedland

Dr Anthony Harnden

Dr Jennifer Harries

Mr Daniel Jackson

Prof Matt Keeling

Mrs Pauline MacDonald

Mrs Anne McGowan

Dr Patricia Moore

Mrs Vivienne Parry

Dr Andrew Riordan

Dr Richard Roberts

Prof Claire-Anne Siegrist

Invited observers and presenters

Dr Stephen Inglis (NIBSC)

Dr Mary Ramsay (HPA)

Ms Joanne White (HPA)

Dr David Hill (NaTHNaC)

Dr Katy Sinka (Health Protection Scotland)

Wg Cdr Andy Green (MoD)

Lt Col Colonel Peter Hennessey (MoD)

Dr Linda Diggie (Jersey Health Dept.)

Dr Phil Bryan (MHRA)

Dr Natalie Richards (MHRA)

Dr Mary Warrell (University of Oxford)

Dr David Brown (HPA)

Dr Ana Maria Henao Restrepao (WHO)

Mr Alan Sheridan (HPA)

DH

Professor David Salisbury CB

Dr Dorian Kennedy

Dr Tom Barlow

Dr Stephen Robinson (minute)

Dr Keith Perry (minute)

Mr John Henderson

Dr Peter Grove

Mr Tony Meredith

Ms Joanne Yarwood

Devolved administrations

Dr Andrew Riley (Scottish Government)

Dr Elizabeth Reaney (DHSSPSNI)

Dr Sara Hayes (Welsh Assembly)

I. Introduction

1. The Chair welcomed members to the meeting and introduced four new members: Dr Peter Baxter, a paediatric neurologist at the Sheffield Childrens' NHS Foundation Trust; Mr Daniel Jackson, a health economist at the Department of Economics, University of Surrey; Professor Matt Keeling, a mathematical modeller at the Department of Biological Sciences, University of Warwick and Dr Patricia Moore, an

Associate Professor in Evolution and Development, University of Exeter as a lay member.

2. Apologies were received from Dr Gabrielle Laing and Dr Paul Jackson.
3. The chair noted that it was Vivienne Parry's last meeting. The chair thanked her for her valuable contribution to the committee over the past eight years.

II. Horizon scanning

4. The committee reviewed in a members-only session the evidence gathered through the horizon scanning process conducted during March and April 2010 from those developing and manufacturing vaccines. The three representatives of the devolved administrations were also present. The session was held without observers present as manufacturers had submitted commercially confidential material.
5. The committee welcomed the information that had been provided and considered it extremely informative and helpful. Following review of the data the committee agreed the following actions:

ACTION: Secretariat to write to GSK to ask for further data on the immunogenicity and effectiveness, particularly in relation to the Hib component, of Infanrix Penta® when co administered with two doses of Menitorix®. The Secretariat to also ask GSK for further data on the immunogenicity and effectiveness, particularly in relation to the Hib component of Infanrix Hexa®.

ACTION: Convene a meningococcal sub-committee to consider the evidence for use of meningococcal C or ACWY vaccines in adolescents and meningococcal B vaccines. The Chair asked members to volunteer to chair or be members of the sub-committee.

ACTION: Convene the pneumococcal sub-committee to review the evidence on the immunogenicity and effectiveness of new pneumococcal conjugate vaccines in older people.

ACTION: Ask the influenza sub-committee to consider alternative strategies for seasonal influenza vaccines in light of the adjuvanted and live-attenuated influenza vaccines that may become available and the experience gained from the use of adjuvanted H1N1v influenza vaccine.

III. Welcome and announcements

6. The Chair welcomed the invited observers to the meeting, explaining that the committee had sat in a private session to review commercially sensitive data that had been submitted in confidence as part of the horizon scanning process. The Chair outlined the actions that had been agreed as above.

IV. Minutes of previous meeting

7. The committee agreed that the minute of the meeting for 3 February 2010 was an accurate record following a change to the conflicts of interest recorded for Prof. Borrow in relation to agenda item VI.

V. Matters arising

8. The action points recorded in the 3 February 2010 meeting minutes were reviewed:
 - a. Research to investigate the attitudes of parents and health care professionals to combining the childhood vaccinations given at 12 and 13 months of age (Hib/MenC, MMR, PCV) into a single visit had been delayed but will be available to JCVI at its October 2010 meeting.
 - b. The Chair had written to HPA to outline the importance of surveillance of vaccine preventable diseases.
 - c. The secretariat is in discussions with DH Research and Development Division about research to estimate the adolescent immunity to chickenpox to inform new cost effectiveness modelling.
 - d. A paper on openness would be discussed under agenda item VI.
 - e. The Chair had written to the Mayor of London outlining advice on BCG from JCVI and had received a reply from the Mayor thanking him for his letter and for clarifying the rationale behind the advice.
 - f. The JCVI Code of Practice has been amended and all members had signed the declaration.
 - g. Dates for JCVI meetings in 2011 have been agreed.
9. The Chair noted that:
 - the JCVI statement on vaccinations for the 2010/11 flu season had been revised following discussions by the committee in correspondence on the vaccination of pregnant women and immunocompromised individuals. A new statement of 25 March 2010 had been placed on the JCVI website.
 - following advice from the BCG sub-committee that was agreed by JCVI at the last meeting, small changes to the Green Book chapter on TB were made to clarify the advice.
 - a JCVI statement on varicella (chickenpox) and herpes zoster (shingles) vaccinations agreed by the committee had been placed on the JCVI website. Planning for the shingles vaccination programme was delayed due to the lack of availability of vaccine as described in a press release from Sanofi Pasteur MSD provided in the meeting pack.
 - following the availability of the MenACWY conjugate vaccine (Menveo®), advice on its use for travellers and in outbreaks was agreed by correspondence and changes to the meningococcal Green Book chapter made. Further advice in relation to the use of this vaccine would be discussed under agenda item XII.
10. The chair of the travel sub-committee noted that after reviewing the evidence on the timing of a booster dose of the Japanese encephalitis vaccine IXIARO®, the sub-committee advised that a dose of IXIARO should be given 12 to 24 months after the primary course. The committee agreed with this advice.

VI. Openness

11. The secretariat introduced a paper outlining several options for the committee holding public meetings and consulting on its work.
12. The committee agreed that a process of public consultation should be introduced at the start of major considerations by JCVI or one of its sub-committees (e.g. recommendations / advice on the possible introduction of new vaccination programmes) to gather views on the issue under consideration and additional evidence to inform the consideration. The committee decided not to consult on final recommendations as this could significantly delay its recommendations being submitted and views would have already been gathered at the beginning of its considerations.

ACTION: Secretariat to develop a process for public consultation, including identifying interested parties to consult.

13. The committee agreed that greater openness and transparency around the JCVI's work is welcome. However, members noted that it would not be possible to discuss pre-publication or commercially sensitive information in public and that holding meetings in public may inhibit full and frank discussion. Making part of meetings open to the public may lead to misunderstandings or conflicting impressions of discussions. The committee decided that it should hold a public meeting to present the considerations of the committee over the past year and that it should convene ad hoc fora to present and explain major completed pieces of work to interested parties. The committee agreed that, following the open meeting, it would review and consider further options for opening the work of the committee to the public, including broadcasts of meetings over the internet.

ACTION: Secretariat to arrange an open meeting and develop plans for ad hoc fora.

VII. RSV immunisation

14. The Chair explained that the RSV sub-committee had been tasked with providing advice to the JCVI on the cost effective use of Palivizumab as a prophylaxis for Respiratory Syncytial Virus (RSV). The advice from the sub-committee would allow JCVI to make a recommendation on the cost effective use of Palivizumab under the NHS Constitution. The sub-committee met on 8th June 2010 to finalise its advice.
15. The committee reviewed and endorsed the advice from the sub-committee and recommended that the use of Palivizumab for premature infants of certain gestational ages with acyanotic congenital heart disease or chronic lung disease was cost-effective. The committee also agreed with the sub-committee that, based on clinical judgement, rather than a cost effectiveness analysis, the use of Palivizumab should be advised for children on long-term ventilation or with severe combined immunodeficiency syndrome (SCID).

16. A decision tool based on sub-committee advice that had been developed by DH was demonstrated. The committee agreed that this would be useful for commissioners and clinical staff involved in making decisions on the use of Palivizumab, and should be made available with the RSV Green Book chapter that is in preparation.

ACTION: Secretariat to draft a letter for the Chair informing the Secretary of State that all the immunisations that JCVI had been asked to consider under the NHS Constitution had been completed. Secretariat to draft a JCVI statement to explain the recommendation and advice and to draft an RSV Green Book chapter.

VIII. Coverage of childhood vaccinations

17. The committee considered childhood vaccine coverage data for the last two quarters of 2009 for England, Scotland, Wales and Northern Ireland.
18. It was noted that coverage in the UK for Pediacel (DTaP/IPV/Hib) is now at 94 per cent at one year, the highest level recorded since UK statistics were first produced. For both quarters, UK coverage for Pediacel at 24 months exceeded the WHO target of 95 per cent, which was last achieved in 2000.
19. In England, the introduction of immunisation monitoring within the Vital Signs programme, as part of the NHS Operating Framework, correlated with the continuing upwards trend in the coverage of the childhood vaccines. In contrast, coverage of the selective neonatal hepatitis B vaccination programme, which is not included in Vital Signs, has shown no improvement. Returns for neonatal hepatitis B data to the COVER programme have consistently been incomplete (around 75 per cent complete). MMR coverage in England had increased over seven separate quarters to 88.6 per cent for one dose of MMR at 24 months. There had been marked improvements in coverage of childhood vaccinations in London.
20. In Scotland, primary immunisations remained high.
21. In Wales, there has been an increase to sixteen out of twenty-two local health boards reaching 95 per cent for primary immunisations by one year.
22. In Northern Ireland, vaccination rates are above 97 per cent for primary (DTaP/IPV/Hib) immunisations. MMR is now above 90 per cent. A childhood Immunisation and Vaccination Implementation Group has been set up to provide detailed feedback focussing on hard to reach groups and small pockets of low uptake.

IX. Influenza

23. The committee considered a revised influenza Green Book chapter to replace the current chapters on influenza and pandemic influenza. Members noted that the chapter should make very clear that the guidance related to the 2010/11 influenza season only. The committee considered the vaccination of children between six months and under 13 years who had not received seasonal influenza vaccine

previously and agreed by correspondence following further deliberations after the meeting that children in the usual seasonal influenza clinical risk groups aged between six months and below 13 years who have not received trivalent seasonal influenza vaccine previously should be given a second dose of trivalent seasonal influenza vaccine at least four weeks after the first dose. In addition, children in the usual seasonal influenza clinical risk groups aged between six months and below five years who have not already received H1N1v vaccine should also be given the adjuvanted monovalent H1N1v vaccine at the same time as the trivalent seasonal influenza vaccine (given with the first dose if receiving two doses of trivalent seasonal influenza vaccine). The committee had already provided advice on the vaccination of those, including children, who are immunocompromised. The committee suggested that the chapter should also clearly differentiate between the two formulations of the intradermal trivalent seasonal vaccine (Intanza®) for those aged 18 – 59 years and for those 60 years and above. It was agreed that the examples of chronic neurological disease given in the clinical risk category table within the chapter should be changed to include those with “hereditary and degenerative disease of the nervous system or muscles”. A number of editorial comments were made.

24. The committee considered a request for advice from the South West Peninsula Health Protection Unit, Devon Team on the influenza vaccination of patients with a history of Panton-Valentine Leukocidin-positive *Staphylococcus aureus* (PVL-SA) and their close / family contacts. The committee concluded that there is currently insufficient evidence to specifically include this group within the existing clinical risk groups to receive influenza immunisation. However, clinical judgment should be applied if it is thought that certain individuals are more at risk because of their medical history.

ACTION: The Secretariat to draft a letter for the Chair to the South West Peninsula Health Protection Unit, Devon Team to inform it of the committee’s decision on influenza vaccination for PVL-SA patients and close contacts.

25. A letter by Tinnion and Berrington (2010)¹ on influenza vaccination for children under 6 months of age was considered. The committee agreed that more data were needed to determine if influenza vaccines are immunogenic and effective in pre-term infants. The committee noted that new adjuvanted seasonal influenza vaccines might be available soon and given the observed better immunogenicity of the adjuvanted H1N1v influenza vaccine in young children; these may be effective in pre-term infants. The committee also noted that the current recommendation to vaccinate pregnant women against influenza is likely to provide children under 6 months with some protection by transplacental passive immunity.

X. Vaccine Safety

¹ Tinnion RJ, Berrington JE (2010) Flu vaccination for ex-preterms and infants under 6 months--are we getting it right? Arch Dis Child. 95 (5):400-1. <http://www.ncbi.nlm.nih.gov/sites/entrez/20457710>

26. The Medicines and Healthcare products Regulatory Agency (MHRA) updated the committee on the UK suspected adverse reactions (ADRs) associated with routine and/or commonly used vaccines reported to the MHRA/Commission on Human Medicines (CHM) via the yellow Card Scheme during the period of 1 January 2009 to 31 December 2009. It was noted that report of an ADR following vaccination does not necessarily mean that the vaccine was the cause.
27. The committee noted that no significant new safety issues related to vaccines had been identified, including with the pandemic H1N1 vaccines; the latter had a safety profile similar to trivalent seasonal influenza vaccines, although increased minor reactogenicity was observed with the use of the adjuvanted vaccine. It was noted that the use of the adjuvanted vaccine had not been associated with an increase in autoimmune disease.
28. The committee considered a paper on the detection of porcine circovirus (PCV) in two licensed rotavirus vaccines. Several agencies, including the FDA and WHO had advised that the presence of PCV in the vaccines is not a safety concern for humans and that the vaccines should continue to be used. The presence of PCV in these vaccines continues to be investigated. The committee noted that, whilst these vaccines are not used routinely in the UK as their use had not been shown to be cost-effective; the findings of the presence of PCV would not change its advice about the safety and efficacy of the licensed rotavirus vaccines. The MHRA noted that, whilst there had been concerns about an association between an older rotavirus vaccine and intussusception, there had been no reported increase in intussusception or Kawasaki disease with the currently used rotavirus vaccines in other countries.
29. The committee considered an article that it had been asked to review by Clifford Miller of an ecological analysis reporting a putative association between vaccines and autism (entitled 'Japanese and British data show vaccines cause autism'). The committee noted that such "ecological" analyses are prone to confounding and that the data in the study was arranged to suggest an association. It was agreed unanimously that the paper provided no evidence for an association between vaccination and autism.
30. The committee considered a paper by Wharton (2010)² and referred to other papers^{3,4} that describe a finding that in a small number of patients diagnosed with encephalopathy following receipt of DTP vaccine, the patients had met clinical

² Wharton M (2010) Vaccine safety: current systems and recent findings. *Curr Opin Pediatr* 22 (1):88-93.

<http://www.ncbi.nlm.nih.gov/sites/entrez/19952750>

³ Berkovic SF, Harkin L, McMahon JM, Pelekanos JT, Zuberi SM, Wirrell EC, Gill DS, Iona X, Mulley JC, Scheffer IE (2006) De-novo mutations of the sodium channel gene SCN1A in alleged vaccine encephalopathy: a retrospective study. *Lancet Neurol.* 5 (6):488-92.

<http://www.ncbi.nlm.nih.gov/sites/entrez/16713920>

⁴ McIntosh AM, McMahon J, Dibbens LM, Iona X, Mulley JC, Scheffer IE, Berkovic SF (2010) Effects of vaccination on onset and outcome of Dravet syndrome: a retrospective stud. *Lancet Neurol.* 9 (6):592-8

<http://www.ncbi.nlm.nih.gov/sites/entrez/20447868>

criteria for severe myoclonic epilepsy of infancy (SMEI) or borderline SMEI. Of these 14 patients, 11 were found to have mutations of the sodium channel gene SCN1A, an established cause for SMEI. The committee considered that reference to this finding should be made in the Pertussis chapter of the Green Book.

ACTION: The Secretariat to draft text for the Pertussis Green Book chapter.

XI. Rabies

31. The committee considered a proposal for routine serological testing to determine the need for booster doses of rabies vaccine for those individuals who are at continued risk of rabies infection. It was noted that ninety percent of individuals who receive the primary course and booster dose of rabies vaccine develop protective levels of antibodies. Serological testing is performed in one facility in the UK (at the Veterinary Laboratories Agency [VLA]) and its cost is similar to a dose of rabies vaccine. The global supply of rabies vaccine is limited and testing before boosting would be one way in which to use the vaccine more efficiently.
32. Following consideration of the serological data following rabies vaccination, the committee considered that scientific evidence supports the use of serology testing to determine the need for booster vaccinations in those at frequent / continuous risk of rabies infection. However, as there is only one laboratory that currently carries out rabies virus neutralising antibody (RVNA) testing, the practicalities of using this approach would have to be carefully considered before introducing a testing regime to inform on the need for booster vaccinations. The HPA is to discuss the practicalities with VLA.
33. The committee also considered two proposals to change the pre- and post-exposure vaccination regimen for rabies vaccine: (i) reducing the number of doses from five to four for post-exposure prophylaxis and (ii) reintroduction of intradermal (ID) vaccination for pre- and post-exposure prophylaxis and an approach of concurrent multi-site vaccination. ID administration of rabies vaccine had been mentioned in older versions of the Green Book but not in the most recent 2006 version. It was suggested that the introduction of ID administration may enable the limited amounts of vaccine to be used more efficiently. However, caution was needed with ID administration for pre-exposure prophylaxis for travel particularly if Chloroquine malaria prophylaxis was being used. Only intramuscular (IM) administration should be used in these circumstances.
34. The Department of Health (DH) noted that, whilst there had been shortages of vaccine elsewhere, there has been no interruption of supply of rabies vaccine in the UK. In 2008, DH met with both companies to discuss supply as they both planned to upgrade their manufacturing facilities at the same time. This meant there would be a gap in the supply of licensed vaccine in 2008 and 2009. To ensure consistency in supply, Sanofi Pasteur MSD made their product Verorab (unlicensed in the UK but licensed in France) available. MASTA also imported an unlicensed product.

Immunisers were alerted to the change in vaccine in the July 2008 publication of Vaccine Update.

35. The committee noted the equivalent immunogenicity of IM and ID dosing but suggested that the expertise needed to administer ID rabies vaccine may not be widespread. Furthermore, it is highly unlikely that GP practices would administer rabies vaccinations to multiple patients at a single session, possibly negating the dose sparing advantage of the ID approach.
36. The Chair concluded that since the proposals for the use of rabies vaccine were complex, the committee should ask its travel sub-committee to explore the options further and provide a redrafted Green Book chapter for consideration at the October 2010 meeting. The committee further noted that advice to use quaternary ammonium compounds to clean animal bite wounds should be removed from the rabies Green Book chapter, since soap and water neutralises the virus.

ACTION: Secretariat to organise a review of the evidence for rabies pre- and post-exposure prophylaxis by the travel sub-committee and to redraft the rabies Green Book chapter following the discussions.

ACTION: HPA to discuss with VLA about the practicalities of serology testing to determine the need for booster vaccinations

XII. Meningococcal

37. The Chair informed the committee that its advice on the use of the meningococcal ACWY conjugate vaccine (Menveo®) for travel and outbreaks, which was formulated via correspondence in May 2010, had been published in the Green Book. During the correspondence two members had indicated that other risk-groups, namely asplenic and individuals who are complement deficient, may benefit from this vaccine. Two papers were considered by JCVI outlining the evidence for the inclusion of the risk groups outlined above.
38. The committee agreed that asplenic and people who have complement deficiency should receive the MenACWY conjugate vaccine, as these individuals are more susceptible to MenY disease. Therefore, individuals without a spleen and people who have complement deficiency should receive one dose of Menitorix (Hib/MenC) followed by one dose of Menveo (MenACWY) as the tetanus toxoid conjugate in Menitorix would provide better priming than a CRM₁₉₇ conjugate as in Menveo. Since children are usually identified as being complement deficient after the time of their primary immunisations, this advice is unlikely to affect the primary immunisation course

39. The committee noted that a paper from the Oxford Vaccine Group⁵ shows a decline in MenC antibody levels in 6-12 years old children but a good antibody response to boosting with Hib-MenC vaccine. The committee agreed that the meningococcal sub-committee should provide advice on booster dosing with meningococcal C or ACWY in adolescence.

XIII. Pneumococcal

40. The committee considered a revised 'Green Book' pneumococcal chapter that incorporated advice provided by JCVI and its pneumococcal sub-committee in 2009 on the wider use of pneumococcal conjugate vaccine (PCV) for those with chronic kidney disease, HIV infection, and those who have received bone marrow transplants. The committee concluded that its previous advice had been given in relation to the use of the seven-valent PCV that was available at that time. As the seven-valent PCV had since been replaced by a 13-valent PCV, the previous advice should be disregarded and the use of the 13-valent PCV and PPV in risk groups should be reconsidered by the pneumococcal sub-committee.
41. The committee considered a proposal from the secretariat outlining the possible future work of the JCVI pneumococcal sub-committee. The committee agreed that the sub-committee should consider:
- new evidence on the potential impact of pneumococcal vaccination in clinical risk groups;
 - review the results of a survey on the potential impact of high valency pneumococcal polysaccharide vaccine (PPV) in risk groups (including over 65 year olds) to consider the value of the PPV vaccinations and in light of the possible licensing of PCV for adults; and
 - review the work by the Clinical Operational Research Unit (CORU) that is examining the option of using PPV as an additional counter measure in an influenza pandemic.

The committee asked that the pneumococcal sub-committee consider how best to present any new advice in a draft Green Book chapter.

ACTION: Secretariat to organise a meeting of the pneumococcal sub-committee.

XIV. Adolescent vaccinations

42. The committee considered a scoping paper on adolescent vaccination and agreed to the formation of a new sub-committee. The sub-committee could evaluate the impact (and cost effectiveness) of additional vaccinations for older children / young adults ('adolescents') on infectious disease and provide advice on the implementation of adolescent vaccinations. Anthony Harnden had agreed to Chair the sub-committee. Syed Ahmed, Judith Breuer, Alan Emond, Pauline MacDonald,

⁵ Perrett KP, Winter AP, Kibwana E, Jin C, John TM, Yu LM, Borrow R, Curtis N, Pollard AJ (2010) Antibody persistence after serogroup C meningococcal conjugate immunization of United Kingdom primary-school children in 1999-2000 and response to a booster: a phase 4 clinical trial. Clin Infect Dis. 50 (12):1601-10.
<http://www.ncbi.nlm.nih.gov/sites/entrez/20459323>

Claire-Anne Siegrist, Patricia Moore and Gabrielle Laing volunteered to join the sub-committee.

ACTION: Secretariat to organise sub-committee meeting following a public consultation on the proposed work of this group and to gather evidence.

XV. Dates of future meetings

Wednesday 6 October 2010

Wednesday 2 February 2011

Wednesday 8 June 2011

Wednesday 5 October 2011

The JCVI agenda and meeting papers are published on the meetings area of the JCVI website <http://www.dh.gov.uk/ab/jcvi/index.htm>

Annex 1
Declarations of interest

Agenda Item VII

The following member declared an interest in the manufacturer of Palivizumab (Medimmune/AstraZeneca) or the UK distributor (Abbott)

| Member | Interest(s) | Action |
|----------------|----------------------------------|--|
| Andrew Riordan | Non-personal, specific MedImmune | The Chair ruled that the member was able to participate in the discussion, but not any subsequent vote |

Agenda Item VIII

The following members declared interests in companies that manufacture seasonal and pandemic influenza vaccines (Baxter, GSK, MASTA, Novartis, Pfizer, Sanofi-Pasteur MSD, Solvay):

| Member | Interests | Action |
|----------------------|--|--|
| Ray Borrow | Personal, non-specific Baxter, GSK, Novartis and Pfizer Non-personal, non-specific Sanofi-Pasteur MSD | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Judith Breuer | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Jon Friedland | Non-personal, non-specific Pfizer | The member participated in the discussion and decision |
| Pauline MacDonald | Personal, non-specific GSK Non-personal, non-specific Sanofi-Pasteur MSD | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Anne McGowan | Non-personal, non-specific GSK, Pfizer, Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Vivian Parry | Personal, non-specific Wyeth (Pfizer) | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Andrew Riordan | Personal, non-specific GSK | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Claire-Anne Siegrist | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |

Agenda Item XI

The following members declared interests in companies that manufacture rabies vaccines (Sanofi-Pasteur MSD and Novartis):

| Member | Interests | Action |
|----------------------|---|--|
| Ray Borrow | Personal, non-specific Novartis and non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Judith Breuer | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Jon Friedland | Non-personal, non-specific Pfizer | The member participated in the discussion and decision |
| Pauline MacDonald | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Anne McGowan | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Claire-Anne Siegrist | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |

Agenda Item XII

The following members declared interests in companies that manufacture vaccines that have a meningococcal component (GSK, Novartis, Baxter, Pfizer):

| Member | Interests | Action |
|-------------------|--|---|
| Ray Borrow | Personal, specific Novartis, Baxter, GSK and personal, non-specific Pfizer | The member presented his paper but did not participate the in the discussion or forming of advice |
| Jon Friedland | Non-personal, non-specific Pfizer | The member participated in the discussion and decision |
| Pauline MacDonald | Personal, non-specific GSK | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Anne McGowan | Non-personal, non-specific GSK | The member participated in the discussion and decision |
| Vivian Parry | Personal, non-specific Wyeth (Pfizer) | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Andrew Riordan | Personal, non-specific GSK | The Chair ruled that the member was allowed to participate in the discussion and decision. |

Agenda Item XIII

The following members declared interests in companies that manufacture pneumococcal vaccines including Pfizer and Sanofi-Pasteur MSD:

| Member | Interests | Action |
|----------------------|---|--|
| Ray Borrow | Personal-specific Pfizer Non-personal, non-specific Sanofi-Pasteur MSD | The member was not allowed to participate in the discussion |
| Judith Breuer | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Jon Friedland | Non-personal, non-specific Pfizer | The member participated in the discussion and decision |
| Pauline MacDonald | Non-personal, non-specific Sanofi-Pasteur MSD | The member participated in the discussion and decision |
| Anne McGowan | Non-personal, non-specific Sanofi-Pasteur MSD and Pfizer | The member participated in the discussion and decision |
| Vivian Parry | Personal, non-specific Wyeth (Pfizer) | The Chair ruled that the member was allowed to participate in the discussion and decision. |
| Claire-Anne Siegrist | Non-personal, specific Sanofi-Pasteur MSD | The Chair ruled that the member was able to participate in the discussion |