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**JOINT COMMITTEE ON VACCINATION AND IMMUNISATION**

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**Minute of the meeting on Wednesday 13 June 2012**  
**10.30am-4pm**  
**102A-124A, Skipton House, Department of Health**  
**80 London Road, London SE1 6LH**

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**Members**

Professor Andrew Hall (Chair)  
Dr Syed Ahmed  
Professor Ray Borrow  
Professor Judy Breuer  
Professor Jonathan Friedland  
Dr Anthony Harnden  
Mr Chris Liffen  
Dr Maggie Wearmouth

Dr Jennifer Harries  
Professor Matt Keeling  
Dr Gabrielle Laing  
Mrs Pauline MacDonald  
Mrs Anne McGowan  
Dr Andrew Riordan  
Professor Claire-Anne Siegrist

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**Devolved administrations**

Dr Nicola Steedman (Scottish Government)  
Dr Elizabeth Reaney (DHSSPSNI)  
Dr Heather Payne (Welsh Assembly Government)

**DH**

Professor David Salisbury CB  
Ms Carolyn Heaney  
Dr Tom Barlow (minute)  
Mr Christopher Lucas (minute)  
Dr Peter Grove  
Mr Zeeshan Ali  
Ms Joanne Yarwood

**Invited observers and presenters**

Dr Mary Ramsay (HPA)  
Dr Shamez Ladhani (HPA)  
Dr Gayatri Amirthalingam (HPA)  
Dr Kate Soldan (HPA) – for item 8  
Professor Liz Miller (HPA)  
Dr Mark Jit (HPA) – for item 8  
Dr Darina O’Flanagan (Eire)  
Dr Richard Smithson (PHANI)  
Lt Col Peter Hennessey (MoD)  
Dr Linda Diggle (Jersey)  
Professor John Edmunds (LSHTM)  
Dr Joanne White (HPA)  
Dr Jim McMenamin (HPA)  
Dr Richard Roberts (PHW)  
Dr Dipti Patel (NathNac)  
Dr Vanessa Field (NathNac)

**MHRA**

Dr Phil Bryan  
Dr Bridget King

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**I. Horizon scanning – members only**

1. The committee welcomed the information that had been provided in confidence by organisations involved in the development of vaccines and noted the timings of the possible availability of new vaccines.
2. It was noted that there may be a sufficient supply of shingles vaccine to implement a vaccination programme in 2013, provided the vaccine could be purchased at a cost effective price.

**II. Welcome**

3. The chair welcomed all to the meeting. Apologies had been received from Dr Peter Baxter. The chair welcomed Ms Carolyn Heaney who had replaced Dr Dorian Kennedy as head of immunisation at DH and Chris Lucas seconded from the Health Protection Agency (HPA) to the JCVI secretariat.
4. The chair reminded members that papers had been provided in confidence and that they should not be circulated nor the information they contain discussed outside of the meeting.

**III. Draft minutes of previous meetings**

5. The committee agreed that the minutes of the meetings of 1 February 2012 and 13 April 2012 were accurate records.

**IV. Matters arising**

6. The chair noted that:
  - a letter from the committee had been sent to the DH Children's and Young People Health Outcomes Forum. The Forum had yet to report. In response to questions about further contact with the Department for Education (DfE) about school-based immunisation programmes, members were informed that DfE was involved in the work of the Forum and DH immunisation and DfE officials would be meeting in the near future to discuss school-based programmes. The committee suggested that the importance of schools as a highly effective means of delivering immunisations to children should be highlighted to DfE officials;
  - the committee had reviewed a proposed model of the immunisation programme in the new health and public health service and discussed aspects of the changes in relation to immunisation at its April 2012 meeting;
  - further data on the live attenuated intranasal influenza vaccine had been discussed at the April 2012 JCVI meeting;

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- further data on the immunogenicity of one versus two doses of influenza vaccine in age groups of children would be discussed under agenda item 6;
- the chair had written to a clinician with advice on the use of CMV immunoglobulin prophylaxis to reduce CMV disease;
- DH had convened an expert working group to consider how uncertainty in cost effectiveness analyses of immunisation programmes might be handled and the work of that group was ongoing;
- Green Book guidance on the MMR vaccination of egg allergic individuals had been revised;
- draft service specifications for immunisation programmes are in preparation and would be provided to the committee for comment;
- extending the influenza vaccination programme to children would be discussed further under agenda item 5.

**V. Potential extension of the influenza vaccination programme to children**

7. The chair explained that further consideration on extending the influenza vaccination programme to children was needed following the April 2012 JCVI meeting and some additional economic analyses had been undertaken.
8. The committee considered the additional analyses and noted that:
  - the mathematical model of the impact and cost effectiveness of the influenza vaccination programme and possible extensions had been refined and that the model reconstructions of past influenza epidemics were an even better fit to the epidemiological data. The refinements to the model endorsed the previous overall conclusions that the current influenza vaccination programme is highly likely to be cost effective and that extension of the programme to children is also highly likely to be cost effective; in fact, the refined model suggested that the current and proposed extended programme were more likely to be cost effective than originally estimated;
  - an additional analysis looking at the option of extending influenza vaccination to children aged two to less than 17 years suggested that such an extension is highly likely to be cost effective.
9. Members agreed that, whilst some uncertainties remained about the expected impact of the programme based on the results of the modelling, as much as possible had been done to address those uncertainties and that the conclusions from the modelling were clear.
10. Members remained concerned about the scale of the programme to extend vaccination to children aged two to less than 17 years and the challenges to its implementation. The attitudinal research had suggested parental views, both on the health risk posed by influenza to children and on the benefits

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and risks of influenza vaccination are likely to be very mixed, and that this may also be true of health professionals. The committee considered that in order to successfully implement an extended influenza vaccination programme to children it would be vital to inform and educate parents, children, teachers and health professionals about influenza and the direct and indirect benefits of influenza vaccination of children. An extensive communications campaign would be needed both before and following the introduction of the extended programme. Further attitudinal research may be helpful to inform a communications campaign.

11. The committee considered that as there are too few school nurses currently available to achieve high vaccine uptake in school children, alternative arrangements would need to be explored. Advice would be sought from the Medicines and Healthcare products Regulatory Agency (MHRA) on whether live attenuated intranasal influenza vaccine (LAIV) can be administered by lay persons. Vaccination of pre-school children would also need to be delivered by GPs in addition to the influenza vaccinations under the current programme.
12. It was suggested that a phased approach to introduction of the programme either in one area of the country or on a small specific age group could allow implementation to be tested and the impact of the programme to be measured to assess whether the expected benefits would be realised. However, the committee agreed that, given the availability of an effective authorised vaccine for children aged two and older and clear evidence of the health impact and cost effectiveness of vaccinating children age two to less than 17 years, any phased implementation would be inequitable and would be likely to be challenged. Such piloting of an immunisation programme would therefore be inadvisable. However, it was recognised that a programme phased by age may be unavoidable should supplies of vaccine be initially insufficient to cover all the age cohorts. Under these circumstances it would be important to consider what age cohorts to target. Epidemiological and population mixing data are too limited to support meaningful mathematical modelling of narrower age ranges of children. Thus pragmatic decisions would be needed based on judgment and implementation grounds. It would also be important to consider whether two doses of vaccine in younger children who had not received influenza vaccine previously remained appropriate as it may be more beneficial to vaccinate more children with single doses of vaccine.
13. The committee agreed that the influenza vaccination programme should be extended to children aged two to less than 17 years (e.g. up to and including school year 12 in England) and that the committee would produce a statement with its advice and recommendations.

## **VI. Influenza Green Book chapter**

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14. The committee was reminded that at its February 2012 meeting, it had considered evidence on the age threshold below which children who have not received influenza vaccine previously should receive two doses of vaccine. It had agreed that it should be lowered to less than nine years of age pending review of unpublished data from the United States on the age-related response to unadjuvanted influenza A 2009 H1N1v vaccine. Following review of these data, the committee agreed that the threshold should be aged less than nine years. Furthermore, this age threshold should apply to both inactivated and live attenuated influenza vaccines.
15. The committee considered the Green Book influenza chapter and suggested the following changes:
  - addition of a table on the relative risk of death from influenza by clinical risk group to the 'epidemiology of disease' section;
  - add to the examples in table of clinical risk categories under the chronic neurological disease category. "Clinicians should consider on an individual basis the clinical needs of patients including individuals with cerebral palsy, multiple sclerosis and related or similar conditions; or hereditary and degenerative disease of the nervous system or muscles; or severe neurological disability *or severe learning disability.*" [addition in italics].
  - removal of text on the safety of thiomersal from the chapter with the exception of the footnote in table 19.4, with addition of the text to chapter 8;
  - to advise that LAIV should be the preferred vaccine for children aged two to less than 18 years in clinical risk groups with the exception of children with specific precautions or contraindications for use of the vaccine;
  - revision of the definition of the groups contraindicated for LAIV as the current definition was too broad;
  - in relation to the precautions on the use of LAIV, severe asthma should be defined as that at British Thoracic Society and Scottish Intercollegiate Guidelines Network step 4 and above, and 'active wheezing' refers to the time of vaccination;
  - information on precautions for specific influenza vaccines should be included in the 'precautions' section;
  - the ovalbumin content of influenza vaccines would be best expressed as µg/mL;
  - amending the last bullet in the section on reducing transmission within health and social care premises to suggest it covers "...others involved directly in delivering health *and social care.*" [addition in italics].

## **VII. JCVI pneumococcal sub-committee report**

16. The chair of the JCVI pneumococcal sub-committee summarised the conclusions of the sub-committee meeting on 30 May 2012. There are very large uncertainties about the cost effectiveness of the use of pneumococcal

conjugate vaccine (PCV), primarily due to uncertainties about the effectiveness of the vaccine in clinical risk groups against invasive pneumococcal disease (IPD) and in particular against non-bacteraemic pneumococcal pneumonia (NBPP). The results of cost effectiveness analyses were very sensitive to assumptions about vaccine effectiveness against both IPD and NBPP. Furthermore, as there is evidence of substantial and accumulating herd protection arising from use of PCV13 in the routine childhood immunisation programme in the UK, the clinical and cost effectiveness of wider use of PCV13 in the UK would diminish rapidly irrespective of the effectiveness of the vaccine against IPD or NBPP in clinical risk groups or older adults. For this reason, the sub-committee advised that a programme to vaccinate clinical risk groups or older adults should not be introduced in the UK, although certain risk groups with a very high morbidity from IPD would benefit from vaccination with PCV13 for a short period of time and this should be under the supervision of a physician in secondary care.

17. The committee agreed with the sub-committee that it would not be effective nor cost effective to introduce a programme in the UK to offer PCV13 to those in clinical risk groups or to older adults given the evidence of accumulating indirect protection of the population from the childhood immunisation programme. However, certain groups with a greatly increased risk of death from IPD from PCV13 serotypes would continue to benefit, but only in the short-term, from PCV13 given under the supervision of a secondary care physician. Given the expected disappearance of PCV13 serotypes within a small number of years, use of PCV13 outside of the routine childhood immunisation programme would become ineffective even in these groups. It was noted that several medical professional bodies had recommended use of PCV13 in certain clinical risk groups.

**Action:** the committee and sub-committee to produce a more detailed statement with this advice.

18. In addition, the committee also accepted the advice of the sub-committee:
- to revise the definition of chronic kidney disease for the purposes of pneumococcal vaccination;
  - that there should be no changes currently to guidance on the use of pneumococcal polysaccharide vaccine (PPV23);
  - the use of PPV23 should be reviewed within two years to determine whether it remains effective and cost effective in light of the changing epidemiology of invasive pneumococcal disease and further analysis of the accumulating UK data on the effectiveness of PPV23.

### **VIII. HPV vaccination**

19. The chair noted that since the introduction of the Human Papillomavirus (HPV) vaccination programme, emerging evidence suggests that HPV vaccination could provide protection against a wider range of HPV-related

diseases and that two dose vaccination schedules might be considered. Furthermore, given that there may be a higher burden of HPV-related disease in men-who-have-sex-with-men (MSM) and that they are likely to get less direct protection from the vaccination of girls, vaccination strategies to protect MSM should be evaluated.

20. The committee was presented with data on HPV infections and noted that:
  - there is early evidence to suggest the HPV immunisation programme in England is lowering the number of HPV 16 and 18 infections in females in birth cohorts that have been eligible for vaccination;
  - data are very limited on the prevalence of HPV infections in MSM. However, research is underway at University College London that will provide more data and an age profile of HPV prevalence;
  - HPVs, particularly types 16 and 18, are associated with the majority of anal cancers as well as cervical cancers. HPVs are associated to lesser degree with penile, vaginal, vulval and head and neck cancers but HPV types 16 and 18 predominate in cancers at those sites that are HPV-related. Data on the impact of HPV vaccination on infection at some of these non-cervical sites is limited.
21. Following review of submissions provided by vaccine manufacturers, the committee considered that the impact and cost effectiveness of a two dose schedule should be evaluated. It was noted that a two dose schedule had been introduced in Switzerland and a number of Canadian Provinces based on an assessment of immunogenicity. JCVI asked the HPA to assess the impact of a two dose schedule and how this may affect the duration of protection and cost effectiveness of the HPV immunisation programme. The HPA had already begun this work and suggested that it could be completed within one year.
22. The committee noted that the potential impact of HPV vaccination on non-cervical cancers would make the current HPV immunisation programme even more cost effective. However, it would remain the case that, given the expected effects of immunisation on HPV transmission and the indirect protection of boys that accrues from high levels of coverage of HPV vaccination in girls, vaccination of boys in addition to girls was unlikely to be cost effective. Evidence for indirect protection would continue to be evaluated by the ongoing HPV surveillance programme at the HPA. However, there may be little indirect protection of MSM from the current immunisation programme. Therefore, the impact and cost effectiveness of vaccination strategies for MSM with the offer of vaccination through general practice and/or at genitourinary medicine clinics needs to be assessed. Data on the prevalence of HPV infections in MSM by age, and in the settings where vaccination could be offered to MSM, are needed to determine the potential effectiveness and cost effectiveness of HPV vaccination of MSM. The vaccines are less effective against those with

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vaccine type HPV infection(s) at the time of vaccination. Additionally it would be important to understand better the rates of HPV-related disease in MSM and the influence of HPV on HIV infection. JCVI asked the HPA to undertake modelling work to assess the impact and cost effectiveness of HPV immunisation of MSM acknowledging that it may take some time to acquire the data needed and that additional modelling resources may be required.

23. The committee also asked that the HPA undertake modelling work to assess the impact and cost effectiveness of higher valency HPV vaccines noting that these are in development. Completion of this work was a longer-term priority.
24. The committee agreed that a call for evidence from interested parties should be issued to support the modelling work in these three areas and to inform further JCVI considerations.  
**Action:** secretariat to issue a call for evidence.

#### **IX. Pertussis**

25. The committee was updated on the epidemiology of pertussis and noted that:
  - since late 2011 there has been a marked increase in pertussis cases (particularly in those aged 15 years and older), exceeding levels in 2008 (the last peak year);
  - hospital admissions of young infants (aged < three months) with pertussis had increased to levels exceeding those in the past decade. The number of confirmed deaths of children aged less than one year up to end May 2012 was already at a similar level to recent whole years;
  - although most infants receive their primary immunisation on time a significant proportion of infants receive them late (e.g. based on data extracted from Child Health Information Systems around 20% of infants may not have received their first dose DTaP/IPV/Hib by 10 weeks of age)
  - HPA is seeking improved case reporting, undertaking a case control study, issuing guidance to health professionals and providing communications materials for patients.
26. A number of suggested additional options proposed by HPA were considered: a booster dose of pertussis-containing vaccine for adolescents; vaccination of pregnant women; a 'cocooning strategy' where close contacts of neonates are vaccinated; neonatal vaccination; timely completion of the primary course of infant vaccinations; earlier initiation of primary immunisations and vaccination of healthcare workers.



27. The committee noted that evidence on the effectiveness and cost effectiveness of additional programmes to target new groups of the population for immunisation with pertussis-containing vaccine is lacking. The JCVI sub-committee on adolescent vaccinations had considered recently a number of the options and concluded that before firm advice could be provided, further data and analyses would be required, including on: routes of transmission, burden of disease, the duration of vaccine-induced and natural protection, and epidemiological and economic modelling of potential vaccination strategies including vaccination of young and older adolescents, adults, pregnant women and cocooning to protect young infants. JCVI agreed that research and modelling should be conducted to look at all these options, including review of efficacy, safety and implications of these options and asked the HPA to conduct this work. It was acknowledged that the modelling work is likely to be very complex as routes of transmission and age-related immunity are poorly understood, hence it may take some considerable time to complete. The committee suggested that it may be possible for HPA to determine whether or not adolescent vaccination is likely to be an effective and cost effective strategy based on a simpler analysis. However, this analysis should assess the potential impact of this strategy on shifting pertussis infections towards adults of parental age which could increase neonatal infections. The HPA agreed to consider what simpler modelling might be undertaken. The simpler modelling study could be considered by the JCVI sub-committee on adolescent vaccinations later in 2012.
- Action:** HPA to conduct review of data on pertussis vaccination during pregnancy, modelling to assess the impact and cost effectiveness of a range of pertussis vaccination strategies and, for review by the JCVI sub-committee adolescent later in 2012, a simpler model of adolescent pertussis vaccination.
28. The committee noted that neonates and young infants are most susceptible to severe pertussis disease and death. The data presented did not identify the vaccination status of young cases of deaths to allow discrimination between non-vaccination or vaccine failure. This information is required urgently to identify the most effective strategy. The HPA agreed to provide this information. Any delay in children receiving primary immunisations left them unprotected for a longer period than necessary. It is important that children receive immunisations at the recommended ages. The committee considered but advised against lowering the age of first DTaP/IPV/Hib vaccination. Furthermore, implementing such a change would be complex. The committee advised that in the case of families considering delaying the start of immunisations for travel or other reasons, it was better to start the course at six weeks. It was noted that delays in some infant immunisations may be due to the way GP IT systems schedule immunisation clinics as they may cap the number of children attending any one clinic. The committee advised that the importance of adherence to the routine

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immunisation schedule should be reinforced and agreed that DH should have discussions with the British Medical Association and Royal College of General Practitioners to encourage GPs to clear any waiting lists and actively advocate for timely immunisation. DH will communicate with GPs and immunisation coordinators and investigate possible adjustments to GP IT systems to ensure the protection of infants is not delayed.

**Action:** HPA to provide data on the vaccination status of young pertussis deaths. DH to issue advice on timely immunisation and early vaccination under some circumstances and to explore possible adjustments to GP IT systems.

29. The committee considered that, as healthcare workers could become infected with pertussis, they could pass infection on to neonates and young infants. The committee advised that healthcare workers with close contact to children under three months of age should receive pertussis-containing vaccine, particularly those providing healthcare for the most vulnerable neonates (e.g. midwives and those working in paediatric intensive care units). Further consideration would need to be given to the possible need for booster immunisations for healthcare workers and, by the HPA, in relation to chemoprophylaxis against pertussis.

**Action:** DH to consider pertussis vaccination of certain healthcare workers and HPA to consider chemoprophylaxis against pertussis.

#### **X. Meningococcal ACWY vaccination**

30. The committee noted the recent market authorisation of a new quadrivalent meningococcal ACWY conjugate vaccine (Nimenrix® produced by GSK) for children from one year of age and adults. Current Green Book guidance covers use of another quadrivalent meningococcal ACWY conjugate vaccine (Menveo® produced by Novartis) in certain risk groups and as a travel vaccine. The current market authorisation for Menveo® is for use in children from 11 years of age and adults. However, JCVI had advised that it should be used in certain younger children outside of its market authorisation. It was noted that the market authorisation for Menveo® may change in relation to use in younger children.
31. The committee agreed that Green Book guidance should be changed to specify that either Menveo® or Nimenrix® may be used in certain risk groups and as a travel vaccine in individuals from one year of age. Only Menveo® should be used in children under one year of age as there are some data on its use in that age group (there are no data on use of Nimenrix® in this age group) and the amount of tetanus toxoid in Nimenrix® could potentially give rise to greater reactogenicity in infants.
32. The committee also noted that the summary of product characteristics of both vaccines suggested a booster dose of vaccine after one year in individuals that remain at risk of exposure to serogroup A meningococci

bacteria because of evidence of waning immunity against this strain. However, it was considered that the data on waning meningococcal A immunity may be unreliable due to the type of assay (human complement serum bactericidal assay) used in clinical trials. It was agreed that a booster dose after five years may be more appropriate for individuals at continued risk from serogroup A meningococci, in line with that of the meningococcal ACWY polysaccharide vaccines.

## **XI. Tetanus testing**

33. It was explained that a point of care diagnostic test for the assessment of tetanus immunity was available that might be used in accident and emergency settings to inform decisions about the need for tetanus prophylaxis for those with wounds. The committee noted that:
- the incidence of tetanus disease is very low;
  - there is evidence that current guidance on tetanus prophylaxis may be variably applied in accident and emergency settings;
  - it seems likely that, should a point of care tetanus test be introduced, it may also be variably applied with the potential for inappropriate use;
  - there are limited data on the use of the test within the NHS; however data from elsewhere suggest that the performance of the test may vary widely both in terms of specificity and sensitivity. Therefore, there is potential for a significant proportion of false positive results, increasing the risk of tetanus infection and disease. The economic analyses that had been conducted on the use of the test did not appear to include the treatment costs of a potential increased number of tetanus cases;
  - the increased risk of tetanus infections might be mitigated by restricting use of the test to patients based on their age and therefore likelihood of completed tetanus immunisations and/or type of injury. However, this would complicate the conditions on which the test may be used, would involve training, and could give rise to the potential that the test may be inappropriately used.
34. Given the potential for significant numbers of false positive results and the inappropriate use of the test, the committee advised against the inclusion of guidance on its use in the Green Book.

## **XII. Coverage data**

35. Routine childhood vaccine coverage rates for the quarter January to March 2012 were summarised for England, Scotland, Wales and Northern Ireland:

England	<a href="http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/VaccineCoverageAndCOVER/">http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/VaccineCoverageAndCOVER/</a>
Scotland	<a href="http://www.isdscotland.org/Health-Topics/Child-Health/publications/index.asp">http://www.isdscotland.org/Health-Topics/Child-Health/publications/index.asp</a>
Wales	<a href="http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&amp;pid=54144">http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&amp;pid=54144</a>

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Northern Ireland <http://www.publichealth.hscni.net/directorate-public-health/health-protection/vaccination-coverage>

36. The committee was encouraged by the continued high- and/or improved-uptake of the routine childhood vaccination programmes in all UK countries.

**XIII. AOB**

37. The chair thanked all those present and closed the meeting.

DRAFT

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## Annex A – declarations of interest

### Item 5 and 6

The following members declared interests in companies that manufacture and supply influenza vaccines (Abbott, AstraZeneca, Baxter, Crucell, GSK, MASTA, Novartis, Pfizer, Sanofi-Pasteur MSD).

Member	Action	Interest
Ray Borrow	Non-personal, non-specific GSK, Baxter, Novartis, Pfizer and Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Judith Breuer	Non-personal, non-specific Sanofi-Pasteur MSD	The member is able to participate in the discussion and vote
Anthony Harden	Personal, non-specific AstraZeneca	The member is able to participate in the discussion but not to vote
Anne McGowan	Non-personal, non-specific Crucell, Pfizer, GSK and Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Andrew Riordan	Non-personal, non-specific GSK	The member is able to participate in the discussion and to vote

### Item 7

The following members declared interests in companies that manufacture or supply pneumococcal vaccine (Pfizer, Sanofi-Pasteur MSD and GSK)

Member	Action	Interest
Ray Borrow	Non-personal, non-specific Pfizer, GSK and Sanofi-Pasteur,	The member is able to participate in the discussion and to vote
Judith Breuer	Non-personal, non-specific Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
John Friedland	Non-personal, non-specific Pfizer	The member is able to participate in the discussion and to vote
Anne McGowan	Non-personal, non-specific Pfizer, GSK and Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Andrew Riorden	Non-personal, non-specific GSK	The member is able to participate in the discussion and to vote

### Item 8

The following members declared interests in companies that manufacture and supply HPV vaccines (GSK, Sanofi-Pasteur MSD).

Member	Action	Interest
Ray Borrow	Non-personal, non-specific GSK, Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Judith Breuer	Non-personal, non-specific Sanofi-Pasteur MSD	The member is able to participate in the discussion and vote
Anne McGowan	Non-personal, non-specific GSK and Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Andrew Riordan	Non-personal, non-specific GSK	The member is able to participate

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in the discussion and to vote

**Item 9**

The following members declared interests in companies that manufacture and supply pertussis containing vaccines (GSK, Sanofi-Pasteur MSD)

<b>Member</b>	<b>Action</b>	<b>Interest</b>
Ray Borrow	Non-personal, non-specific GSK, Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Judith Breuer	Non-personal, non-specific Sanofi-Pasteur MSD	The member is able to participate in the discussion and vote
Anne McGowan	Non-personal, non-specific GSK and Sanofi-Pasteur MSD	The member is able to participate in the discussion and to vote
Andrew Riordan	Non-personal, non-specific GSK	The member is able to participate in the discussion and to vote

**Item 10**

Our records show that the following members declared interests in companies that manufacture and supply Meningococcal ACWY vaccines (Novartis, Sanofi-Pasteur MSD, GSK, Pfizer).

<b>Member</b>	<b>Action</b>	<b>Interest</b>
Ray Borrow	Non-personal, non-specific Sanofi-Pasteur MSD, Pfizer and GSK	The member is able to participate in the discussion and to vote
Judith Breuer	Non-personal, non-specific Sanofi-Pasteur MSD	The member is able to participate in the discussion and vote
Anne McGowan	Non-personal, non-specific Sanofi-Pasteur MSD and GSK	The member is able to participate in the discussion and to vote
Andrew Riordan	Non-personal, non-specific GSK	The member is able to participate in the discussion and to vote

**Item 11**

The following members declared interests in companies that manufacture and supply Meningococcal ACWY conjugate and polysaccharide vaccines (Novartis, Sanofi-Pasteur MSD and GSK).

<b>Member</b>	<b>Action</b>	<b>Interest</b>
Ray Borrow	Non-personal, non-specific Novartis, Sanofi-Pasteur MSD, and GSK	The member is able to participate in the discussion and to vote
Judith Breuer	Non-personal, non-specific Sanofi-Pasteur MSD	The member is able to participate in the discussion and vote
Anne McGowan	Non-personal, non-specific Sanofi-Pasteur MSD and GSK	The member is able to participate in the discussion and to vote
Andrew Riordan	Non-personal, non-specific GSK	The member is able to participate in the discussion and to vote

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## **Annex B – evidence considered by the committee**

### **Agenda item 3:**

- Minute of JCVI meeting 1 February 2012
- Minute of JCVI meeting 13 April 2012

### **Agenda item 2:**

- Horizon scanning paper with commercial information withheld.

### **Agenda item 5:**

- Cover paper: Potential extension of the influenza vaccination programme to children
- Draft JCVI statement
- Economic analyses
  - HPA paper: (2012). How Much Money Could be Spent on Start Up Costs for a Childhood Influenza Vaccination Campaign, Before the Programme is not Cost Effective. (Unpublished)
  - HPA Paper: (2012) The cost-effectiveness of vaccination against seasonal influenza in England. (Unpublished)
- HPA paper - (2012) Further Analyses on Extension of Influenza Immunisation. (Unpublished)

### **Agenda item 6:**

- Cover paper: influenza Green Book chapter
- Revised Influenza Green Book chapter
- US data on 1 vs 2 doses of influenza vaccine

### **Agenda item 7:**

- Cover paper: Report from the JCVI pneumococcal sub-committee – pneumococcal vaccination of clinical risk groups
- Studies considered by the sub-committee
  - HPA paper: Cost effectiveness of vaccinating risk groups in the UK against invasive pneumococcal disease using the 13 valent conjugate pneumococcal vaccine.
  - Paper by manufacturer (Pfizer): Cost effectiveness analysis of adult vaccination with the 13-valent Pneumococcal Conjugate Vaccine.
  - van Hoek AJ, Andrews N, Waight PA, Stowe J, Gates P, George R, Miller E. The effect of underlying clinical conditions on the risk of developing invasive pneumococcal disease in England. J Infect. 2012 Jul;65(1):17-24.
  - Borrow R, Heath PT, Siegrist CA. Use of pneumococcal polysaccharide vaccine in children: what is the evidence? Curr Opin Infect Dis. 2012 Jun;25(3):292-303.
- Minute of the JCVI Pneumococcal sub-committee meeting 30 May 2012

### **Agenda item 8:**

- Cover paper: HPV vaccination
- Submissions from the vaccine manufacturers: GSK and Sanofi Pasteur response to JCVI consideration of Human Papillomavirus (HPV) vaccination schedules.
- HPA paper: Work to inform human papillomavirus vaccination decisions.

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**Agenda item 9:**

- HPA paper: Update on Pertussis: Recent Epidemiology and Control Options for Consideration.
- HPA paper: Options matrix for Pertussis Control.
- Southern J, Andrews N, Burrage M, Miller E. Immunogenicity and reactogenicity of combined acellular pertussis/tetanus/low dose diphtheria vaccines given as a booster to UK teenagers. Vaccine. 2005 May 31;23(29):3829-35.

**Agenda item 10:**

- Cover Paper: Recommendations for quadrivalent Meningococcal ACWY vaccination
- Nimenrix® Summary of Product Characteristics
- Menveo® Summary of Product Characteristics
- Letter to the committee on changes to the licensure for Menveo®
- Data on Menveo® immunogenicity in children

**Agenda item 11:**

- Cover Paper: JCVI advice on tetanus prone wounds
- Protetanus® IVD declaration
- Protetanus® marketing information
- NHSPASA (2010) Evidence Review on 'Rapid tests for tetanus immunity'.
- McVicar. Should we test for tetanus immunity in all Emergency Department patients with wounds? (Unpublished)
- Scott T, Point-of-Care tetanus immunoassay: An audit of unscheduled tetanus prophylaxis. International Journal of Orthopaedic and Trauma Nursing Volume 16, Issue 2 , Pages 97-103, May 2012
- Cooke MW. Are current UK tetanus prophylaxis procedures for wound management optimal? Emerg Med J. 2009 Dec;26(12):845-8.
- HPA paper: Current epidemiology of tetanus in England and Wales.
- Draft article for Vaccine: Wagner S et al. Immunity to tetanus and diphtheria in the UK in 2009.

**Agenda item 12:**

- UK COVER report October to December 2011
- England coverage October to December 2011
- Scotland coverage October to December 2011
- Wales coverage January to March 2012
- Northern Ireland coverage October to December 2011