

This minute will remain draft until ratified by JCVI at its next meeting.

JOINT COMMITTEE ON VACCINATION AND IMMUNISATION

Minute of the meeting held on Wednesday 5 October 2011
10.30am – 4.00pm
Skipton House, 80 London Road
London, SE1 6NX

Members

Professor Andrew Hall (Chair)
Dr Syed Ahmed
Dr Peter Baxter
Professor Ray Borrow
Professor Alan Emond
Professor Jonathan Friedland
Dr Anthony Harnden

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

Devolved administrations

Dr Andrew Riley (Scottish Government)
Dr Elizabeth Reaney (DHSSPSNI)

Invited observers and presenters

Dr David Hill (NaTHNaC)
Professor Elizabeth Miller OBE
Dr Mary Ramsay (HPA)
Dr Marc Baguelin (HPA)
Dr Richard Pebody (HPA)
Mrs Joanne White (HPA)
Dr Shamez Ladhani (HPA)
Dr Gayatri Amirthalingam (HPA)
Dr Katy Sinka (Health Protection Scotland)
Dr Richard Smithson (Public Health Agency, NI)
Lt Col Peter Hennessey (MoD)
Dr Linda Diggle (Jersey)
Dr Darina O'Flanagan (Eire)

DH

Professor David Salisbury CB
Dr Dorian Kennedy
Dr Tom Barlow (minute)
Dr Stephen Robinson (minute)
Mr Andrew Earnshaw (minute)
Mr Conall Watson
Mrs Jude Thorling
Mrs Madeleine Jude
Dr David Ishola
Dr Peter Grove
Mr Guy Walker
Mr Robert Scott
Miss Laura Weatherill

MHRA

Dr Phil Bryan
Dr Bridget King
Miss Catherine King

This minute will remain draft until ratified by JCVI at its next meeting.

I. Welcome

1. The chair welcomed all to the meeting. Apologies had been received from Professors Judith Breuer and Matt Keeling and Drs Richard Roberts and Patricia Moore. The committee was reminded that papers had been provided in confidence and that they should not be circulated nor the information they contain discussed outside of the meeting.
2. The chair explained that due to conflicts of interest arising since the last meeting that would be difficult to lose, Dr Daniel Jackson had resigned from the committee. Dr Patricia Moore had also resigned, as she will be moving back to the United States. Drs Richard Roberts and Alan Emond had come to the end of their second terms on JCVI and were also departing from the committee. The chair had written to all the departing members to thank them for their contributions to the committee and had also thanked Dr Emond for his work as chair of the travel sub-committee. A recruitment process for new members of JCVI would be taking place. The chair asked members to consider the vacant position of chair of the travel sub-committee. It would also be the last meeting for Dr David Hill, Director of the National Travel Health Network and Centre (NaTHNaC) and an invited observer to JCVI meetings. The chair thanked Dr Hill for his contributions to the work of the committee on travel vaccines. The Chair also thanked Dr Stephen Robinson from the secretariat for his contribution to the work of the committee as he was moving to a new job.

II. Minute of the previous meeting

3. The committee agreed that the minute of the meeting of 8 June 2011 was an accurate record following a change to the action point after paragraph 37 to read "**Action:** committee and sub-committee to consider the timing of an adolescent dose of meningococcal C vaccine".

III. Matters arising

4. The action points recorded in the 8 June 2011 meeting minute were reviewed. The chair noted that:
 - The secretariat will contact GSK and Sanofi Pasteur MSD/Merck to ask for data on a two-dose schedule of HPV vaccine following the completion of the current tender process for HPV vaccine.
 - The secretariat had discussed the need for epidemiological data on HPV types to support cost-effectiveness analysis of higher valency HPV vaccines.
 - The HPA is working on a sub-analysis of the relative risk of influenza in specific medical conditions, such as specific neurological conditions, in conjunction with Dr Baxter.
 - The statement on the pneumococcal vaccination programme for adults aged 65 years and older was published on the JCVI website on 20 July 2011.
 - The secretariat, following consultation with the HPA modelling team, wrote to GSK and Pfizer for data on pneumococcal conjugate vaccines to support a cost

This minute will remain draft until ratified by JCVI at its next meeting.

effectiveness analysis of vaccination of clinical risk groups. Data had been provided and sent on to the HPA modelling team. A review of the use of pneumococcal polysaccharide vaccine in children undertaken by Professors Ray Borrow, Claire-Anne Siegrist and Paul Heath is nearing completion. A meeting of the JCVI pneumococcal sub-committee will be convened to consider these studies. It was noted that the European Medicines Agency (EMA) had recently adopted a positive opinion on the use of PCV13 in those aged 50 years and older based on immunological, rather than effectiveness, data.

- A process to commission research into parents' perceptions and acceptance of fever following vaccination had begun.
- The secretariat had contacted Novartis for data on serogroup C-specific serum bactericidal antibody titres for infants given meningococcal serogroup C and B vaccines concomitantly. These data will be provided for the next meningococcal sub-committee that would be convened in Spring 2012.
- A statement had been prepared on the use of meningococcal serogroup C conjugate vaccine in the routine childhood immunisation programmes. The committee agreed that the statement could be considered final.
- The HPA plans to conduct a clinical trial to examine the immunogenicity of a childhood immunisation schedule containing a combined vaccine with a hepatitis B component and a single dose of meningococcal C-containing vaccine compared with the current immunisation schedule.
- A letter was drafted and a response sent to the Department of Health (DH) consultation on the UK pandemic influenza preparedness strategy.
- A letter was drafted and a response sent to the DH Scientific Policy Manager for Climate Change (Adaptation) in relation the possible impacts of climate change on infectious disease and the need for immunisation.

IV. Report from the influenza sub-committee

5. The chair summarised the outcomes of the JCVI influenza sub-committee meeting on the 19 September 2011. The sub-committee had been joined for part of the meeting by additional experts in infectious disease mathematical modelling and health economics to peer-review an unpublished study by the HPA on the impact and cost effectiveness of the seasonal influenza vaccination programme and to consider possible extensions to the programme.
6. The sub-committee and additional experts had first been presented with unpublished data from a modelling study conducted by Imperial College, London to understand better the unexpected extent of influenza activity in the 2010/11 influenza season. This suggested that the increase in activity seen may have been due to an increase in the transmissibility of the virus, although genetic analyses had not revealed mutations that may have accounted for this change in viral characteristics. The modelling and data from a number of surveillance streams suggested a shift in the age distribution of influenza towards older age groups

This minute will remain draft until ratified by JCVI at its next meeting.

compared with the 2009 pandemic, although younger age groups were more affected in 2010/11 than in pre-pandemic influenza seasons.

7. When considering the unpublished HPA study, the sub-committee and additional experts:
 - were generally content with the study, noting that, whilst refinements could be made, these would not materially change the findings and concluding that the study provides a robust basis on which JCVI could make advice;
 - noted that many of the assumptions were reasonable. Key assumptions upon which the findings were dependent included estimations of the burden of influenza, likely uptake of vaccine by those offered vaccine in an extended programme, the effectiveness of influenza vaccines in children, the life expectancy of those that die from influenza and future influenza activity based on retrospective data;
 - noted that the current programme is cost effective particularly when considered over a range of influenza seasons, including when influenza is mild or the vaccine was less well-matched against prevalent strains;
 - agreed that vaccinating school-aged children and possibly also pre-school children is likely to be cost effective but extending vaccination to those aged 50-64 years is unlikely to be cost effective; and
 - asked for a number of additional analyses from the HPA.The sub-committee's advice would be considered under agenda item five when HPA would present some of the additional analyses.
8. The chair explained that the sub-committee had also reviewed two industry backed studies on the cost effectiveness of vaccination programmes using a live attenuated influenza vaccine in children and an inactivated adjuvanted influenza vaccine in a range of age groups. The sub-committee found the studies to be in broad agreement with the HPA study.
9. The chair explained that the sub-committee had also received an update on the safety of influenza vaccines from the Medicines and Healthcare products Regulatory Agency (MHRA), which would be covered in the report for discussion under agenda item six. The sub-committee had also reviewed extensive information on the safety, immunogenicity and efficacy of new seasonal influenza vaccines collected from a call for evidence from interested parties conducted during 2011. The sub-committee had concluded that:
 - whilst the intradermal unadjuvanted inactivated influenza vaccine, Intanza® is somewhat more immunogenic than intramuscular inactivated influenza vaccines, it was difficult to translate this into an acceptance for claims of higher effectiveness of this vaccine and therefore the relative cost effectiveness of use of this vaccine is uncertain. It was therefore, not possible to support the use of this vaccine over other unadjuvanted inactivated influenza vaccines;
 - there is strong evidence that the live attenuated influenza vaccine now authorised for use in children aged two to under 18 years and the yet to be authorised adjuvanted inactivated influenza vaccine for use in children aged six

This minute will remain draft until ratified by JCVI at its next meeting.

months to under three years are significantly more effective in these age groups than unadjuvanted inactivated influenza vaccines. The live attenuated intranasal influenza vaccine should be the vaccine of choice for children within its market authorisation for reasons of efficacy and possible immunological advantages arising from the vaccination replicating natural infection. Although the live attenuated vaccine is not authorised for use in those who are immunocompromised, the sub-committee was uncertain about the basis of this contraindication as the attenuated virus is cold adapted and therefore should be inactivated at body temperature; and

- without head-to-head trials with laboratory-confirmed influenza as an end point, comparisons of the effectiveness of influenza vaccines in a range of age groups would remain difficult.
10. The committee accepted the advice from the sub-committee. The committee noted that the differing but overlapping age ranges for which the live attenuated vaccine and the adjuvanted inactivated vaccine could be used meant that following authorisation of the adjuvanted inactivated vaccine, demonstrably effective vaccines could be offered to children aged six months to under 18 years. Subgroups for which these vaccines were contraindicated would need to be offered unadjuvanted inactivated vaccines as, although they are of lower efficacy, they would be the only non-contraindicated alternative.

V. Influenza vaccination

11. The chair reminded the committee that it had asked the HPA to conduct a study on the impact and cost effectiveness of the current seasonal influenza vaccination programme and to consider a range of possible extensions to the programme. In addition, the Secretary of State for Health had written to the chair to ask for recommendations on the seasonal influenza vaccination programme under the 'right to immunisation' terms of the NHS Constitution. The new HPA study could be used as a basis for recommendations as it had been peer-reviewed by the JCVI influenza sub-committee and additional experts: they had found the study to be sufficiently robust.
12. The HPA provided an overview of the study and presented data from some of the additional analyses on options to extend the programme as had been requested by the JCVI influenza sub-committee. The study comprised three main components: (i) an analysis of the burden of influenza in terms of GP consultations, hospitalisations and deaths by influenza strain, age and risk group¹; (ii) a transmission dynamic model able to reconstruct past influenza epidemics from 1995/6 to 2008/9 to assess the impact of the current and other vaccination strategies²; and (iii) an economic model incorporating the outputs of (i) and (ii) that followed the methodology and criteria of the National Institute of Health and Clinical Excellence to estimate the cost effectiveness of the current seasonal influenza vaccination programme compared

¹ Cromer *et al.* Estimating the burden of influenza by risk group. *Unpublished.*

² Baguelin *et al.* Reconstructing past influenza epidemics from consultation, virological surveillance data and a contact survey. *Unpublished.*

This minute will remain draft until ratified by JCVI at its next meeting.

with no vaccination and also considered the incremental cost effectiveness of a range of extensions³.

13. In considering the study, the committee noted that the findings showed that:
 - the prevalence of clinical risk factors for influenza increased markedly with age;
 - hospitalisation attributable to influenza is highest in children aged under six months and is also high in children aged six months to under five years and adults aged 65 years and older. However, for those in the influenza clinical risk groups, the relative risk of hospitalisation was higher in adults than children and is highest for those aged 45 to 65 years;
 - mortality estimates in the HPA study were likely to underestimate influenza-related deaths as they are based on influenza-related deaths in hospital only and therefore do not include influenza-related deaths outside of hospital such as in long-stay residential homes for the elderly. Other methods of estimating influenza-related deaths in the UK based on all cause winter mortality gave higher numbers of influenza-related deaths, although these may be overestimates. It was possible that the impact of secondary infections following influenza infection on the burden of disease may be underestimated in the HPA study if there is a long delay in the diagnosis of the secondary infection in a significant number of cases; and
 - the burden of influenza falls mostly on those who have clinical risk factors for influenza and older people and most especially on older people with clinical risk factors. These are the groups currently targeted for annual influenza vaccination. The current seasonal influenza programme is highly likely to be cost effective compared with no vaccination, particularly when considered over a number years, but for some individual years there may be little benefit to vaccination when the influenza season is mild, or the vaccine is not well-matched to the prevalent strains. Cost effectiveness is sensitive to estimates of the number of influenza-related deaths and by the number of influenza-related deaths that may be prevented by vaccination.
14. The committee was presented with data from some of the additional analyses that had been requested by the JCVI influenza sub-committee and noted that:
 - there was generally good agreement between the serology data from the Fluwatch study and the data generated by the HPA model reconstructing previous influenza epidemics. However, in two influenza seasons the Fluwatch data suggested lower attack rates in children than the model, although the model results were supported by other data showing that the H1N1 and H3N2 strains that were circulating in 2007/8 and 2008/9, respectively had high attack rates in children. There was also some divergence between pre-season susceptibilities to infection for the H1N1 strain estimated in the modelling and the Fluwatch data in some years for some age groups. It was suggested that for years where there is good agreement between the Fluwatch and the

³ Baguelin *et al.* The cost effectiveness of vaccination against seasonal influenza in England. *Unpublished.*

This minute will remain draft until ratified by JCVI at its next meeting.

- modelling studies a check should be made on the consistency with the datasets, if available, for completeness;
- data suggested that increasing uptake to 75% in clinical risk groups within the current vaccination programme would be beneficial;
 - data suggested that the impact of extensions to the vaccination programme increased with vaccine uptake over the range 15% to 50% and there may be little or no additional benefit from vaccinating further age groups if uptake between 30 and 50% in children aged six months to under 17 years was achieved; and
 - cost effectiveness of vaccinating children is not highly sensitive to a higher cost of vaccine, taking into account the possible higher costs of the live attenuated intranasal influenza vaccine or the adjuvanted inactivated influenza vaccine.
15. The committee agreed that the study was sophisticated, detailed and robust. All of the additional analyses, when completed, should be peer-reviewed by the JCVI influenza sub-committee and additional experts to ensure that they are similarly robust.
16. The committee noted that, on the basis of the findings of the current study, extending vaccination to children aged five to under 17 years or to children aged six months to under 17 years is likely to be cost effective. However, additional analyses would be required to establish the incremental cost effectiveness of vaccinating children aged six months to under five years on the vaccination of children aged five to under 17 years. Extending vaccination to those aged 50 to 64 years is unlikely to be cost effective. Depending on uptake of vaccine and the impact of vaccination of children on transmission of influenza to other age groups, there may be little to be gained from extending vaccination beyond children aged six months to under 17 years. As the number of influenza-related deaths in children is very small, in comparison with those in middle- and older-aged adults, the economic benefits from vaccinating children came mostly from reducing influenza transmission from children to adults rather than from protecting children themselves.
17. The committee noted that the Chief Medical Officer had already recommended a trajectory for improving uptake to 75% by the 2013 influenza vaccination campaign⁴. The HPA study provided further evidence that those with clinical risk factors are at greatly increased risk of hospitalisation and death from influenza and there would be significant additional benefit from increasing vaccine uptake to 75% in those with clinical risk factors and aged below 65 years. Therefore, the committee advised that increasing vaccine uptake in clinical risk groups should remain the priority in order that those at greatest risk of influenza receive direct protection from vaccination. As increased vaccine uptake in clinical risk groups would influence the cost effectiveness of extensions to the programme, further analyses would be required to establish the cost effectiveness of current programme at a level of 75% vaccine

⁴ Chief Medical Officer letter on the seasonal immunisation programme 2011/12.
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_128175.pdf

This minute will remain draft until ratified by JCVI at its next meeting.

uptake in clinical risk groups and then review the incremental cost effectiveness of extending the programme to age groups of children.

18. The committee noted that a critical factor in the impact and cost effectiveness of vaccinating children was the contribution of children to influenza transmission to others. This was based on data on population contact and mixing from the POLYMOD study⁵. Given that these data influence heavily the results of the HPA study, the committee agreed it would be important to consider supporting data on the contribution of children on influenza transmission and on the herd protection arising from influenza vaccination of children, including data from the United States and Japan.
19. The committee considered that vaccination of school-aged children may be best carried out in primary and secondary schools, given the successful experience of the delivery of human papillomavirus vaccination programme through schools, and vaccination of pre-school children carried out in GP practices. However, it would be important to assess the likely acceptability of these approaches with attitudinal research and also the resources required to implement these programmes.
20. The committee noted that the HPA study assumed that the cost of vaccinations under the extended programme would be similar to the current cost of vaccinations through GP practices. However, it is possible that the cost of offering vaccination to a large number of age cohorts of children before influenza starts to circulate may be higher than had been estimated as it may require hiring additional staff and other resources. An assessment of the likely costs of extensions to the programme to cover children should be made. The committee also considered that there may be opportunity costs and benefits associated with expanding the programme to include children. Opportunity costs may include: the extension of the programme resulting in a lower emphasis on vaccinating clinical risk groups leading to lower vaccine uptake and also the possible shift of resources away from other immunisation programmes such that the wider immunisation programme is adversely affected. Therefore, any large extension of the influenza vaccination programme would need to be well planned and adequately resourced to prevent adverse effects on the current influenza and wider immunisation programme. Opportunity benefits may include: schools-based vaccination programmes leading to greater knowledge of influenza amongst children, adults and clinical risk groups and also increased vaccine uptake of children in clinical risk groups that is low currently.
21. The committee noted that there is now good evidence that the live attenuated intranasal influenza vaccine and the adjuvanted inactivated intramuscular influenza vaccine are significantly more effective in children than currently available unadjuvanted inactivated vaccines which are of uncertain efficacy in children, particularly in young children. The assumptions about vaccine efficacy made in the HPA study are consistent with the more effective live attenuated and adjuvanted

⁵ Mossong *et al.* (2008) Social Contacts and Mixing Patterns Relevant to the Spread of Infectious Diseases. *PLoS Med.* 5(3):e74. doi:10.1371/journal.pmed.0050074

This minute will remain draft until ratified by JCVI at its next meeting.

vaccines. The live attenuated intranasal vaccine is authorised for use in children aged two to under 18 years and would be marketed in the UK for the 2012 influenza vaccination campaign. The adjuvanted inactivated vaccine is being considered for authorisation for use in children aged six months to under three years. The committee agreed that, given the established and superior efficacy of these vaccines in children compared with non-adjuvanted inactivated vaccines, the live attenuated vaccine should be the vaccine of choice for children aged two years and older and the adjuvanted inactivated vaccine should be the vaccine of choice for children aged six months to under two years once available and provided other concerns were addressed. Data on the safety of both vaccines would need to be reviewed before final advice could be given, especially when these vaccines are given concomitantly with other vaccines and also with respect to the safety of the live attenuated vaccine for those with asthma or immunocompromise. It would also be important to review data on the United States experience of use of the live attenuated intranasal vaccine where it has been used for a number of years.

22. The committee agreed that the likely uptake of these vaccines in children is difficult to predict. The intranasal route by which the live attenuated vaccine is given might be regarded as more acceptable to parents and children than the intramuscular route by which other influenza vaccines are given. However, the live, albeit cold adapted and attenuated, nature of the vaccine may raise concerns. Some may be deterred given the expected impact of vaccinating children would be mostly for adults and risk groups rather than for children themselves: vaccinated children would be protected directly against influenza. Attitudinal research should be conducted to inform assessment of likely vaccine uptake.
23. The committee noted that the scale and rate of roll-out of extensions of the programme to children will be heavily dependent on the supply and availability of the two vaccines of choice. Enquiries should be made of the vaccine manufacturers to establish the quantities of the vaccines that might be supplied in the coming years. It is possible that extension of the programme to children would need to be staggered over a number of years. If supplies of the vaccines of choice are limited, they should be prioritised for use in children in clinical risk groups within the market authorisations for the vaccines.
24. The committee agreed it would be timely to review evidence on the age below which children that have not received influenza vaccine previously should receive two doses of vaccine.
25. The committee agreed that the first priority for influenza vaccination should be, as presently, the vaccination of those aged 65 years and older and all those aged six months to under 65 years in the clinical risk groups (including pregnant women). Further prioritisation of age groups of children in an expanded programme could not be made at this time but could be informed by the results of additional analyses of the impact and cost effectiveness of vaccinating children and also attitudinal research on administering the vaccine in different settings. The POLYMOD data

This minute will remain draft until ratified by JCVI at its next meeting.

may also be informative – children aged five to 16 years may be the greatest transmitters of influenza in the general population, however primary and pre-school children may have a greater impact on influenza transmission to younger siblings who cannot be directly protected through vaccination e.g. those under six months of age and, if the adjuvanted seasonal influenza vaccine is not available, children aged under two years. This would be an important consideration as there is some evidence from other infections (e.g. measles and chickenpox) of higher case-fatality ratios when viral infections are acquired in households compared with other settings, possibly due to exposure to higher viral loads.

26. The committee agreed in principle to support extension of the vaccination programme to children on the basis of the findings of the current study. However, this would be dependent in part on additional analyses supporting the conclusions drawn and other information that would allow it to make recommendations on how best the programme could be extended including:
- a comprehensive review of data on the safety of the vaccines and on the United States experience of use of the live attenuated intranasal vaccine;
 - further data on the contribution of children on influenza transmission to others as this is a key factor in the impact and cost effectiveness of their vaccination;
 - additional analyses on the impact and cost effectiveness of extending the programme to children, including circumstances where vaccine uptake in risk groups had reached 75%, and for these analyses to be peer-reviewed;
 - information from the vaccine manufacturers about the availability of sufficient quantities of the vaccines of choice to support extensions to the programme;
 - attitudinal research studies on the acceptability and hence uptake of the vaccines in pre-school children in GP practices and in primary- and secondary school-age children in schools; and
 - potential costs of implementing GP- and schools-based programmes such that they could be resourced adequately.

ACTION: secretariat to gather these data and the committee to issue a statement on its current position.

VI. Vaccine safety update

27. MHRA explained that Yellow Card surveillance had not identified any new safety issues on the vaccines in use, including Prevenar 13® that is currently labelled with a black triangle.
28. MHRA updated the committee on a number of safety issues relating to influenza vaccines. The CSL Biotherapies generic influenza vaccine and Enzira® both marketed by Pfizer had been restricted in children aged under five years due to an increased frequency of febrile convulsions in this age group following vaccination. The causative agent had not been identified. There were no indications that any other influenza vaccines were associated with an increased risk of febrile convulsions. However, Viroflu® marketed by Crucell had been developed using the generic influenza vaccine bulk antigen from CSL Biotherapies as in Enzira®. Although this vaccine is then produced using a significantly different purification

This minute will remain draft until ratified by JCVI at its next meeting.

process, as the causative agent for the increased frequency of febrile convulsions had not yet been identified, it would not be possible to determine whether the agent was present in the final product. European Union (EU) regulators had considered the evidence on the use of Viroflu® in young children, and had decided to take a precautionary approach, recommending the use of alternative vaccines in children aged under five years.

29. The committee noted that the United States Centre for Disease Control and Prevention (CDC) had identified a small increased risk of febrile seizures with concomitant use of seasonal influenza vaccines and Prevenar13®. No such signal had been observed in the UK but it was likely that these vaccines would be co-administered in only a relatively small number of children. It was noted that the CDC statement had, similar to NICE guidance, indicated no role for antipyretics to prevent febrile convulsions. It was agreed that current Green Book advice on the use of antipyretics should be reviewed to acknowledge the NICE guidance but that it was still appropriate to administer antipyretics to treat post-vaccination fever in children to alleviate distress.

ACTION: secretariat to amend the Green Book.

30. MHRA explained that there had been an agreement amongst EU regulators to change the wording of the core Summary of Product Characteristics for seasonal influenza vaccines to indicate that these vaccines can be used in any trimester of pregnancy. Each manufacturer will still have to implement this wording before their individual licenses will reflect this change.
31. MHRA explained that the use of Pandemrix® in those under twenty years of age had been restricted following evidence particularly from Finland and Sweden of an association with narcolepsy. No clear evidence of a link had been found in the UK, although studies are on going.
32. The committee considered an ecological study by Miller and Goldman (2011)⁶ suggesting an association between infant mortality rates and vaccination. The committee considered there to be a number of significant confounding factors in the study and noted that the confidence intervals around the results were particularly wide. The committee agreed that the study provided no convincing evidence of the suggested association.

VII. Coverage of childhood vaccines

33. Routine childhood vaccine coverage rates for the quarter April to June 2011 were summarised for England, Scotland, Wales and Northern Ireland:

England	http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/VaccineCoverageAndCOVER/
---------	---

⁶ Miller & Goldman (2011). Infant mortality rates regressed against number of vaccine doses routinely given: is there a biochemical or synergistic toxicity. *Human and Experimental Toxicology*. 1-9.

This minute will remain draft until ratified by JCVI at its next meeting.

Scotland	http://www.isdscotlandarchive.scot.nhs.uk/isd/5705.html
Wales	http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=54144
Northern Ireland	http://www.publichealth.hscni.net/directorate-public-health/health-protection/vaccination-coverage

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

VIII. Papers for comment

35. The committee considered a letter from a member of the public suggesting a hypothetical association between vaccination and an increase in allergies. The committee asked the MHRA to review this hypothesis.
36. A letter had been received from GSK and Sanofi-Pasteur MSD requesting clarity around the recommendation on rotavirus vaccination noting that the wording is different from that of the recommendation on shingles vaccination. The committee noted that the recommendations had been based on cost effectiveness analyses with different findings. In the case of shingles vaccination, the programme was considered to be cost effective at the estimated price considered. However in the case of rotavirus vaccination, a programme was not cost effective at the estimated prices considered.
ACTION: the chair to write to the manufacturers to respond to the points raised.
37. The committee was provided with a report by the International Longevity Centre (ILC)–UK on ‘Life course immunisation: improving adult immunisation to support healthy aging’. The committee noted that a recommendation to extend routine influenza vaccination for all over those aged 50 and older had been made in the absence of a cost-effectiveness analysis. The cost-effectiveness analysis considered under agenda item five showed this was unlikely to be cost-effective.
ACTION: secretariat to draft letter to the authors on the JCVI conclusions on influenza vaccination of all those aged 50 to under 65 years.

IX. Any other business

38. The chair noted that London Health Programmes (LHP) had recently proposed universal neonatal BCG vaccination across all of London. The chair had discussed this with LHP and the Regional Director of Public Health for London. It had been agreed that any change to the BCG policy would need to be supported with a review of TB epidemiology in London and an assessment of the effectiveness and cost effectiveness of different vaccination strategies. Other areas of the country had considered changes to BCG vaccination policy such as the re-introduction of schools-based vaccination. The JCVI BCG sub-committee would be convened to consider these issues and also the occupational vaccination of those that might be at increased risk of bovine TB.

This minute will remain draft until ratified by JCVI at its next meeting.

39. Members asked about the maintenance of Child Health Information Systems (CHIS) in the restructured NHS. The secretariat explained that work is currently ongoing to consider who should have responsibility for CHIS in the future and welcomed any feedback that committee members wished to provide.

X. Dates of future meetings

Wednesday 1 Feb 2012

Wednesday 13 June 2012

Wednesday 3 October 2012

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>

DRAFT

This minute will remain draft until ratified by JCVI at its next meeting.

Annex 1

Declarations of interest

Agenda Item IV and V

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

Member	Action	Interest
Ray Borrow	Non-personal, non-specific Baxter, GSK, Novartis, Pfizer and Sanofi-Pasteur,	The member was allowed to participate in the discussion and decision
John Friedland	Non-personal, non-specific Pfizer	The member was allowed to participate in the discussion and decision
Pauline MacDonald	Personal, non-specific GSK and Sanofi-Pasteur	The member was allowed to participate in the discussion but not in the decision
Anne McGowan	Non-personal, non-specific Crucell, GSK, Pfizer, and Sanofi- Pasteur MSD	The member was allowed to participate in the discussion and decision
Claire-Anne Siegrist	Non-personal, non-specific Sanofi-Pasteur MSD	The member was allowed to participate in the discussion and decision

This minute will remain draft until ratified by JCVI at its next meeting.

Annex 2

Evidence considered by the committee.

Agenda item 2:

- Minute of JCVI meeting 8 June 2011.

Agenda item 3:

- Statement on vaccinations against meningococcal disease.

Agenda item 4:

- Minute of the influenza sub-committee 19 September 2011.

Agenda item 5:

- Cover paper: Impact and cost effectiveness of the seasonal influenza vaccination programme and possible extensions.
- Baguelin M, Flasche S, Demiris N *et. al.* (2011) Reconstructing past influenza epidemics from consultation, virological surveillance data and a contact survey. (**unpublished paper and oral presentation**)
- Cromer D, Edmunds J, Jit M *et. al.* (2011) Mortality due to influenza and respiratory syncytial virus by age group in England and Wales 1999-2000. (**unpublished paper and oral presentation**)
- Hardelid P, Pebody R and Andrews N (2011) Mortality due to influenza and respiratory syncytial virus by age group in England and Wales 1999-2010. (**pre-publication**)
- Baguelin M, Flasche S and Edmunds J (2011) The cost-effectiveness of vaccination against seasonal influenza in England. (**unpublished paper and oral presentation with further analysis**)

Agenda item 6:

- MHRA (2011) Vaccine-associated suspected adverse reactions reported via the yellow card scheme during 2010.
- Miller NZ and Goldman GS (2011) Infant mortality rates regressed against number of vaccine doses routinely given: Is there a biochemical or synergistic toxicity? *Hum Exp Toxicol* **30**(9): 1420-8. <http://www.ncbi.nlm.nih.gov/sites/entrez/21543527>

Agenda item 7:

- UK COVER report April to June 2011
- England coverage, Q1 2011 (April to June 2011)
- Scotland coverage, Q2 2011 (April to June 2011)
- Wales coverage, Q2 2011 (April to June 2011)
- Northern Ireland coverage, Q4 2010-11 (January to March 2011) and oral update on data for April to June 2011.

Agenda item 8:

- Letter to the committee
- Letter on rotavirus vaccination for SP-MSD and GSK.
- ILC-UK Life Course Immunisation Improving adult immunisation to support healthy ageing http://www.ilcuk.org.uk/files/pdf_pdf_190.pdf.