

## JOINT COMMITTEE ON VACCINATION AND IMMUNISATION

## MEASLES VACCINATION SUB-COMMITTEE

Minutes of meeting held on 17 June 1983

The following members were present:

Dr J W G Smith	Chairman
Dr J Badenoch	
Dr M F H Bush	
Professor A G M Campbell	
Professor R W Gilliatt	
Professor J K Lloyd	
Professor K McCarthy	
Dr B W McGuinness	
Dr C L Miller	
Dr G C Schild	
Dr D W Zutshi	Medical Secretary
Mrs R C Gorvin	Secretary

Also present:

Dr J Barnes	DHSS
Dr D A Bartley	Health Education Council
Dr M Cotter	Welsh Office
Dr W M Prentice	Scottish Home and Health Department
Dr Donaldson	Northern Ireland
Brigadier England	Ministry of Defence

Introduction

The Chairman welcomed Professor Lloyd, Dr Bush, Dr Cotter (Welsh Office) and Dr Donaldson (Northern Ireland, Department of Health and Social Services). He also welcomed as Departmental representatives Dr Zutshi, as Medical Secretary to the Sub-Committee, and Mrs Gorvin, as Administrative Secretary.

1. Apologies for absence

Apologies were received from Professor Hull, Professor Knowelden, Professor Lambert, and Dr Pollock, and from Dr Harris, Dr Graveney, Miss Purvis and Miss Horridge from the Department.

2. Minutes of the meeting held on 26 February 1982

These minutes were agreed and signed by the Chairman.

3. Matters arising

Item 3(a) - Dr Schild reported that the serological studies were ongoing and that papers were being prepared for publication.

Item 5(b) - The Chairman reported that a follow-up of serious adverse reactions was now being undertaken and that this action was reflected in paper JCVI(M)(83)4 which described recent adverse reaction reports to measles vaccines to the CSM.

Item 7 - The Chairman said that at the last meeting of the Sub-Committee the then Chairman, and Dr Barnes, had undertaken to produce a paper for presentation to the Rubella Sub-Committee and subsequently to the main Committee. He reported that the Main Committee had endorsed the broad recommendations contained in the paper and had recommended no major changes in existing immunisation policy. Professor McCarthy asked that the paper be circulated to members of the Measles Vaccination Sub-Committee together with the minute which described the response of the JCVI to this paper. The Chairman agreed to see that this was done.

4. Some aspects concerning the epidemiology of measles JCVI(M)(83)1

Dr Zutshi introducing this paper said, that the level of notifications had fallen after the introduction of vaccination and the biennial epidemicity of measles was now less apparent. The fall in incidence in 1976 was followed by two years of higher incidence. This pattern was now apparently being repeated. Following a record low level in 1981, the level of notifications rose in 1982 and preliminary figures suggested that 1983 would also be a year with a high rather than a low level of notifications of measles. The total notifications for the first 18 weeks of 1983 exceeded that for the same period of 1981 and 1982 but was only two-thirds of that for 1980. Comparison of the notification rates for the pre-vaccination and post-vaccination eras showed that the reductions in attack rate had been most apparent in children under the age of 10. A fall had also occurred in the attack rate in the 15-24 age group suggesting that parents whose children had been vaccinated had also benefited from the immunisation programme. However, the notification rates had barely changed in the 10-14 age group.

With regard to the uptake of measles vaccine, Dr Zutshi said that the downward trend observed in 1975 and 1976 had been reversed. The uptake in 1981 for England was 55 per cent and the provisional uptake figure for 1982 was 58 per cent. Acceptance rates in Area Health Authorities in England for the years 1980 and 1981 showed wide variation ranging from 24 per cent to over 80 per cent. Members noted, that uptake tended to be poor in some AHAs in London and Dr Badenoch suggested that authorities with low uptake should be encouraged to improve their performance. It was observed that there was no evidence of increased incidence of measles in the older age groups.

Dr Prentice presented a paper recording the level of notifications of measles and the uptake of vaccine in Scotland. Since 1973, a year of high incidence tended to be followed by two years of lower incidence of measles. In Scotland the acceptance rate for measles vaccine by the age of three years for 1982 was 57 per cent.

5. Duration of protection of measles vaccine JCVI(M)(83)2

Dr Miller introducing this paper said the MRC vaccine trial involved a cohort of children entered into the study in 1964. So far, there was no increase in the attack rate from measles in vaccinated children, although the number of unvaccinated children in the cohort was now only about 360. Since these children were now aged 20 one would expect the attack rate from measles to be very small. The study showed that 75 per cent of cases of measles in unvaccinated children were confirmed by a doctor and

that measles in vaccinated children tended to be milder. Members noted that evidence was accumulating from this study of durable immunity provided by measles vaccination. The Sub-Committee emphasised the value of this particular study.

6. Measles serology in children with a history of measles in early life  
Article by Dr W Marshall et al, EMJ Vol 286,  
page 1478 (1983) JCVI(M)(83)3

The Chairman said that this paper described 80 children who were reported to have had a history of measles under the age of two years. When serological investigation was carried out, it had not been possible to confirm the diagnosis in 70 per cent of children who were reported to have had measles under the age of one year, and in 30 per cent of children aged between 13 and 24 months. The conclusion of the authors was that measles vaccine should be administered to children irrespective of a history of disease in the first year of life. Dr Barnes said this finding had implications for the Computer Immunisation Programme which accepted a history of measles as evidence of immunity and for the Department's proposed policy of offering measles vaccine to children entering playgroups, nursery school or school. Professor Lloyd agreed that measles tended to be loosely diagnosed and that a parental past history of measles could be unreliable. Dr Bush suggested that it might be difficult to encourage parents to have their children vaccinated when they believed they had already had the disease. After discussion, it was agreed that the Memorandum "Immunisation Against Infectious Disease" should contain the statement to the effect that a previous history of measles in the first two years of life should not be regarded as a contra-indication to measles vaccination.

7. Suspected adverse reactions to measles vaccine : recent  
reports to the CSM JCVI(M)(83)4

Dr Zutshi reported that the CSM had received 66 reports of suspected adverse reactions to measles vaccine over the period January 1982 to April 1983. These included three cases of encephalitis; on follow-up, two of these patients were left one year later with severe handicap and the third patient, after a year, appeared to be developmentally normal. It was noted that the two patients who were handicapped by encephalitis did not show a rise in the complement fixation test for measles virus; it was pointed out that the complement fixation test was not a very sensitive index of infection with measles virus. It would be more significant if the haemagglutination inhibition test was negative since this was a more sensitive measurement of infection with measles virus. Members observed that encephalomyelitis such as this could be caused by direct viral infection or by an immune mediated response. It was suggested that such children be investigated to see whether they had any deficiency in their immune-response. There were 14 reports of convulsions following measles vaccination and associated pyrexia was noted in eight of these. There was also a report of a child aged 18 months with a history of having had measles three months previous to vaccination who developed an extensive haemorrhagic rash four days after immunisation.

8. Register of cases of subacute sclerosing panencephalitis JCVI(M)(83)5

Dr Miller introducing this paper, said that the ratio of SSPE cases to notifications of measles had not varied significantly between 1967 and 1974. There was a suggestion of a recent fall in incidence but the possibility existed of some under-reporting. Nine of the 94 reported cases of SSPE

had a documented history of measles vaccination. Three cases had had vaccine before the onset of measles suggesting a failure of the vaccine to protect, three cases were vaccinated after a history of measles and the three remaining cases had no history of measles. It was concluded that the risk of developing SSPE following measles vaccination was relatively small compared with the risk of developing SSPE after natural measles.

9. Allergic reactions to measles vaccine in egg protein hypersensitive patients

JCVI(M)(83)6

The Chairman asked Dr Barnes to speak to this subject. Dr Barnes referred to the draft of a paper by J J Herman, R Radin and R Schneiderman which described allergic reactions to measles vaccine among subjects who were highly sensitive to egg-white protein. Dr Barnes reminded the Sub-Committee that sensitivity to eggs had been a contra-indication to measles vaccination but the Measles Vaccination Sub-Committee and the Joint Committee had studied an American paper (Kamin P B, Fein B T and Britton H A, JAMA, (1965) Vol 913, page 143) which demonstrated that measles vaccine had been given to patients alleged to be allergic to egg without ill-effect. Subsequently the Joint Committee had commissioned studies to assay the amount and nature of the protein content of both the US and UK measles vaccines; the results of this assay demonstrated that there was little or no difference between the protein content of these vaccines. The Joint Committee therefore recommended that egg-sensitivity need no longer be stated as a contra-indication to measles vaccination. The Biological Substances Committee of the CSM had recommended that the data sheet on measles vaccination should state the following:-

"The vaccine might contain traces of egg protein but this is not normally contra-indicated to use except in cases of severe hypersensitivity."

After discussion, the Sub-Committee recommended that the section on measles in the revised Memorandum "Immunisation Against Infectious Disease", should contain a statement to the effect that sensitivity to eggs was not normally a contra-indication to measles vaccination except in cases of severe hypersensitivity.

10. Revised Memorandum "Immunisation Against Infectious Disease" section on measles

JCVI(M)(83)7

Dr Barnes said that this revised section reflected the amendments suggested by the Measles Vaccination Sub-Committee at the last meeting and endorsed by the Joint Committee. He said that one of the recommendations was that the sources of immunoglobulin for administration should be clearly stated and on investigation, he had confirmed that three different types of immunoglobulin were available:

- a. Specially dilute immunoglobulin for use when vaccinating children with a personal history of convulsions or a family history of idiopathic epilepsy.
- b. Normal immunoglobulin for the passive immunisation of children exposed to measles; this usually applied to children under the age of one year.
- c. Human immunoglobulin with a specific content of measles antibody for use in children who were known to be immunosuppressed and who were exposed to measles.

The Committee noted this information.

It was agreed that the word 'puberty' should be deleted and that the last sentence of paragraph 3 on page 32 should read "vaccination is recommended for all unprotected children from the second year of life up to 15 years."

On the fifth paragraph of page 33 the first sentence should read "Children with a personal history of convulsions or whose parents or siblings have a history of idiopathic epilepsy."

Dr Bush pointed out that the package insert of Attenuvax stated that measles vaccine should not be given before the age of 15 months; he said that this was contrary to the current advice of the Joint Committee. Members suggested that the advice in the Memorandum "Immunisation Against Infectious Disease" should state that measles vaccine can be given from the age of 12 months notwithstanding the advice of the manufacturer. The Chairman suggested that the advice of Dr John Holgate of Medicines Division should be sought before such a statement was inserted into the revised Memorandum.

11. Czechoslovakia: Measles surveillance, interruption of natural transmission - Extract from WHO Weekly Epidemiological Record No 12, 25 March 1983

JCVI(M)(83)8

The Chairman said that this paper, together with papers under agenda item 12, encapsulated the arguments concerning the benefits of measles vaccination and the effort which was needed in a campaign to eliminate measles. He pointed out that the Czechoslovak programme involved the administration of two doses of measles vaccine.

12. United States of America

- (a) Epidemiology of measles and its complications Paper by Alan B Bloch et al

JCVI(M)(83)9

Professor Gilliatt pointed out that the incidence of encephalitis following natural measles was similar in the United States to that described in the paper by Professor D L Miller.

- (b) History of measles control efforts Paper by Alan R Hinman et al

JCVI(M)(83)10

The Chairman said that this paper gave an account of the programme to eliminate measles from the United States. One of the most important elements in the programme was the requirement that children should receive measles immunisation prior to first entry to school.

- (c) Measles - United States 1982 Extract from the Morbidity and Mortality Weekly Report - No 4 Vol 32 - 4 February 1983

JCVI(M)(83)11

The Chairman noted that this report recorded that in 1982 the occurrence of measles in the United States had reached its lowest level since national reporting of the disease began in 1912. The paper indicated a large proportion of the outbreaks of measles which now occurred in the United States originated from imported index cases.

13. Global Measles Eradication

a. The case for global measles eradication  
Article by Donald R Hopkins et al, Lancet 1982,  
Vol 1, pages 1396-1398

JCVI(M)(83)12

The Chairman said that this paper suggested that it may be possible to eradicate measles on a global scale in the same way that smallpox had been eradicated. The paper stressed the cost benefit aspects of eradication.

b. Global measles eradication  
Letter by Dr D A Henderson, Lancet 1982  
Volume 2, page 208

JCVI(M)(83)13

The Chairman reminded members that Dr Henderson was Chief of the WHO Smallpox Eradication Programme. His letter suggested a more cautious and realistic attitude towards global eradication of measles.

c. Mathematics and measles - Lancet,  
Leader 1982 Vol 1, page 1982

JCVI(M)(83)14

The Chairman pointed out that this Leader quoted a paper by Anderson and May which estimated that in order to achieve eradication of measles in this country an uptake of vaccination of 96 per cent would be required.

14. Feasibility of measles elimination in Europe -  
WHO informal consultation 17-18 January 1983

JCVI(M)(83)15

The Chairman said that this paper described the discussion by experts of what could be accomplished in Europe. The meeting had concluded that it might be possible to eliminate measles from most countries in Europe by the year 1990 if a sustained effort was made. It was possible that this proposal would be put to European Ministers later in 1983.

In the ensuing discussion, it was considered that it would be embarrassing for this country to commit itself to such a European programme and to fail in the process. It was considered that a determined attempt should be made to undertake the elimination of measles. In doing this, the Sub-Committee was aware of the fact that it may be impossible to achieve elimination with vaccination on a voluntary basis. The vaccination programme would need the full support of paediatricians. Professor Campbell reported that the Immunisation Committee of the British Paediatric Association was proposing to issue briefer and more positive advice on measles vaccination in the form of a pamphlet. It was also necessary to develop age and sex registers in general practices and District Health Authorities to ensure full coverage of vaccination to identify practices with good and bad rates of immunisation, and continue promotion of the primary immunisation programme.

Dr Bartley said that the Health Education Council was considering a revision of the measles leaflet and the inclusion of measles in the grey immunisation leaflet with the other four primary diseases of childhood.

Dr Badenoch welcomed the initiative suggested by the paediatricians. He hoped that their pamphlet would accord with the revised Memorandum so that the public would not receive conflicting advice. Professor Gilliatt expressed concern about the comparatively high risk of neurological complications to measles vaccine in the UK compared with the experience in the United States. If efforts were to be made towards achieving eradication of the disease, it was essential to be able to establish the risk elements as well as the benefits of immunisation. Any legislation for making immunisation a requirement for school entry would put pressure on the Government for a compensation scheme for vaccine damage. It was suggested that different types of vaccine be compared for their incidence of adverse reactions. Dr Miller said that Attenuvax (Enders attenuated Edmonston strain) was being compared with Mevilin (Schaers strain) in two Area Health Authorities.

15. The UK measles vaccination programme

- a. Measles immunisation : Why have we failed?  
Article by Professor Campbell, Archives of  
Disease in Childhood (1983, 58, 3-5).

JCVI(M)(83)16

The Chairman noted that Professor Campbell had observed in his paper that the most important component of the American programme was enforcement of measles vaccination by legislation.

- b. Consideration of the feasibility of eliminating  
measles in the UK - Paper by the Department

JCVI(M)(83)17

Dr Barnes said that the paper outlined the progress of the measles vaccination programme in this country. It suggested reasons for lack of success in achieving a higher uptake, although it should be noted that these had not been verified by field observations. There were some disadvantages (mostly theoretical) to a programme aimed at elimination of measles but the advantages of such a goal were obvious. Research might be required on the most effective ways of improving uptake. He emphasised that any change of policy which affected the present rubella vaccination programme would need the agreement of the Rubella Sub-Committee and the Joint Committee on Vaccination and Immunisation. However, the JCVI had moved away from the idea of offering rubella with measles because the uptake of measles vaccination was so low. Dr Barnes said also that policy initiatives which might attract increased resource demands would require Ministerial approval.

- c. Consideration of the use of measles vaccine to eliminate  
indigenous measles from the United Kingdom

The Chairman introduced a draft paper which suggested advice to the JCVI for the elimination of measles. The draft was discussed in detail and members made certain suggestions to its format, and the following was agreed.

The Committee agreed to advise the JCVI that the elimination of indigenous measles is feasible, and offers great benefits to health. It should be the aim of the United Kingdom immunisation programme, although the difficulties are considerable.

Elimination depends upon a vaccine acceptance rate in excess of 90%, and this must be maintained, together with effective surveillance and vigorous outbreak control procedures. Elimination in the USA has depended heavily on "no shots - no school" and such an approach may be necessary to secure an adequate immunisation rate in the UK. Vaccine acceptance varies between 32 and 76% in different Area Health Authorities in England and it is as yet uncertain whether rates of 90% can be reached throughout the UK without school entry immunisation requirements.

The following approach is therefore suggested:

- i. Vigorous efforts are made to increase vaccine acceptance with the aim of reaching a level from which a successful elimination campaign could be mounted.
- ii. Periodic reviews are made, at least annually, of the success of the campaign and related matters in order:
  - a. to identify where improvements can be made;
  - b. to evaluate problems;
  - c. to decide at what time a full eradication campaign can be recommended.

In seeking to increase vaccine acceptance, the following possibilities should be considered.

- i. Official promotion of immunisation of infants and of defaulters at entry to school/play groups, at national, regional, area and district levels.
- ii. Comprehensive surveillance designed to observe and record vaccine acceptance and the occurrence of measles, and to trigger appropriate responses, including a. intensified campaigns in areas of low vaccine acceptance b. dealing with outbreaks by immunisation of contacts and school closure.
- iii. Feed-back to general practitioners, clinic doctors and others on the results of their immunisation programmes.
- iv. Simplification of the method for notifying immunisation.
- v. Publicity on the risks of measles and the benefits of vaccination - to parents, nurses, doctors, the general public.
- vi. Improved education about immunisation for doctors, nurses and health personnel, both pre- and postgraduate.
- vii. Recruitment of family doctors, paediatricians, clinical medical officers and nursing organisations to support the programme.
- viii. Ready public access to immunisation clinics.
- ix. Adoption of a uniform vaccination record card for all children.
- x. Adoption of school entry vaccination requirements - should be kept in mind since without it elimination may be impossible.



xi. The use of measles/mumps/rubella vaccine for all children, as in the USA and some other countries. The sub-committee is aware that JCVI recently reaffirmed its rubella vaccine policy, but if measles vaccine acceptance rates were to be raised appreciably, the question might be reopened.

16. Any other business

There was none.

17. Date of the next meeting

No date was arranged.

