*From the Chief Medical Officer*
Dr Henrietta Campbell CB

**HSS(MD)30-2004**

To:
Director, Regional Cochlear Implant
All General Practitioners *(for onward distribution to practice staff)*
Directors of Public Health, HSS Boards
Consultants in Communicable Disease Control, HSS Boards
Medical Directors, HSS Trusts *(for onward distribution to ENT Consultants, Audiology Clinics and all Paediatricians)*
Director of Nursing, HSS Boards
Directors of Nursing, HSS Trusts *(for onward distribution to relevant nurses including Health Visitors, Practice Nurses, District Nurses, School Nurses and Treatment Room Nurses)*
Directors of Pharmaceutical Services, HSS Boards/Trusts
Community Pharmacists
Regional Epidemiologist, CDSC(NI)

Castle Buildings
Stormont Estate
Belfast BT4 3SQ
Tel: 028 9052 0563
Fax: 028 9052 0574
Email: Henrietta.Campbell@dhsspsni.gov.uk

Your Ref:
Our Ref: HSS(MD)30-2004
Date: 21 September 2004

Dear Colleague

**MODIFIED PNEUMOCCOCAL IMMUNISATION RECOMMENDATIONS FOR PATIENTS WITH COCHLEAR IMPLANTS**

In August 2002 we wrote to you to inform you that patients with cochlear implants may be at increased risk from pneumococcal meningitis (Circular: HSS(MD)23-02). At that time we recommended that pneumococcal vaccine be given to all existing and prospective cochlear implant patients to minimise the risk of meningitis.

## Background

People implanted with cochlear implants may have an increased risk of contracting bacterial meningitis. Congenital abnormalities to hearing organs may predispose this population to middle ear infections, and the presence of stimulation electrodes passing into the cochlea may present a route for the spread of infection which, if left untreated, may lead to bacterial meningitis.

In August 2002 the DHSSPS issued a Circular (HSS(MD)23/02)[1] informing clinicians of the potential risk of pneumococcal meningitis in cochlear implant patients. At that time the DHSSPS introduced the recommendation that all existing and prospective cochlear implant patients be given pneumococcal vaccine.

**Update**

A recent UK study has shown that although the risk of cochlear implant patients contracting bacterial meningitis remains low, the risk among implanted adults is slightly higher than for the general population.[2, 3] A larger study of paediatric cochlear implant patients in the USA has indicated an elevated risk for children.[4] Therefore patients fitted with cochlear implants may have an increased risk of contracting bacterial meningitis compared to the general population. In the UK the incidence of infection has not been observed to differ between the available models of cochlear implant.

In August 2003 the Department of Health updated chapter 25 of 'Immunisation against infectious disease'[5] ('The Green Book') to include the recommendation that all existing and prospective cochlear implant patients are immunised against pneumococcal infection. In August 2004 the DHSSPS further updated the immunisation recommendations for children aged between two and five years, which is summarised below (see Action) and in the Appendix.

**Actions**

For (1) Clinicians implanting Cochlear Implants
(2) General Practitioners

- Determine the pneumococcal immunisation status of existing and prospective cochlear implant recipients and immunise as necessary using 7-valent pneumococcal conjugate vaccine (PCV, Prevenar™) and/or 23-valent pneumococcal polysaccharide vaccine (PPV, Pneumovax® II) in line with the current Department of Health recommendations[1, 2] (summarised in the Appendix).
- Children between the ages of two and five years who have already received the 23-valent polysaccharide vaccine in line with the previous recommendations should be given an additional two doses of the 7-valent conjugate vaccine, at least two months after the polysaccharide vaccine.
- Schedule cochlear implant surgery when patients are fully protected by the DHSSPS immunisation programme. If for clinical reasons it is essential to implant prior to completion of immunisation, then consider the additional use of prophylactic antibiotics.
- Check for and treat middle ear infection before cochlear implant surgery. Consider the use of prophylactic antibiotics prior to implantation.
- Diagnose and treat middle ear infections promptly using the appropriate antibiotics.
- Report all occurrences of meningitis in cochlear implant patients to:

Northern Ireland Adverse Incidents Centre (NIAIC)
Room A7 Health Estates
Estate Policy Directorate
Stoney Road
Dundonald BT16 1US

Tel: 028 90 523714
Fax: 028 90 523900
E-mail: NIAIC@dhsspsni.gov.uk
Online: www.dhsspsni.gov.uk/niaic

**References**

1. DHSSPS Circular
2. Cochlear implantation and meningitis in the UK. Report by the MRC Institute of Hearing Research, August 2004, available at www.irh.mrc.ac.uk/reports
3. Incidence of meningitis and of death from all causes among users of cochlear implants in the United Kingdom, Summerfield Q et al. To be published in the Journal of Public Health.
4. Risk of bacterial meningitis in children with cochlear implants. Reefhuis J et al. N Engl J Med 2003; 349: 435-45.
5. Immunisation against infectious disease: HMSO 1996; ISBN 0-11-321815-X, with replacement chapter 25 (Pneumococcal) issued in August 2004, available at www.dh.gov.uk

**Further information is available from:**

Dr Lorraine Doherty (Medical Issues) lorraine.doherty@dhsspsni.gov.uk
Senior Medical Officer/Consultant Epidemiologist Tel: 028 90 520717

Dr Carolyn Mason (Nursing Issues) carolyn.mason@dhsspsni.gov.uk
Tel: 028 90 520795

Dr Jill Mairs jill.mairs@uh.n-i.nhs.uk
Regional Procurement Pharmacist Tel: 028 90 552386

Yours sincerely

**Dr Henrietta Campbell**
**Chief Medical Officer**

**Miss J Hill**
**Chief Nursing Officer**

**Dr N Morrow**
**Chief Pharmaceutical Officer**

cc Chair of General Practitioners Committee (NI), BMA
Chief Executives, HSS Boards/Trusts
Prescribing Advisers, HSS Boards
Regional Medical Information Service, RGH
Pharmaceutical Contractors Committee
Community Practitioners & Health Visitors Association
Royal College of Nursing
Royal College of Midwives
Dr Jim Livingstone, Director of Primary Care, DHSSPS
NI Adverse Incidents Centre (NIAIC)
Dr Jill Mairs, Regional Procurement Pharmacist
Professor Brenda Poulton, University of Ulster
Dr Mike Simmons, National Assembly for Wales
Dr Elizabeth Stewart, Scottish Executive

This letter is available at www.dhsspsni.gov.uk and also on the DHSSPS Extranet which can be accessed directly at http://extranet.dhsspsni.gov.uk or by going through the HPSS Web at http://www.n-i.nhs.uk and clicking on DHSSPS.

# Pneumococcal immunisation and cochlear implants

**Immunisation schedule for patients requiring cochlear implants and those with cochlear implants who have not been fully immunised.**

| Patient age at presentation | Vaccine | | Notes |
|---|---|---|---|
| | **7-valent pneumococcal conjugate vaccine (PCV)** (Prevenar™) | **23-valent pneumococcal polysaccharide vaccine (PPV)** (Pneumovax® II) | |
| Children aged < 6 months | ✓ | | 3 doses with 1st dose usually at 2 months; at least 1 month between doses. 4th dose recommended after the 1st birthday. |
| Children aged 6 months to 1 year | ✓ | | 2 doses with at least 1 month between doses. 3rd dose recommended after the 1st birthday, at least 1 month after previous dose. |
| Children aged 1 – 2 years | ✓ | | 2 doses with at least 2 months between doses. |
| Children aged 2 – 5 years | ✓ * | ✓ # | 2 doses of 7-valent conjugate vaccine with at least 2 months between doses followed by a single dose of 23-valent pneumococcal polysaccharide vaccine at least 2 months after final dose of conjugate vaccine. |
| Children aged over 5 years | | ✓ # | A single dose of 23-valent polysaccharide vaccine. If the 7-valent vaccine has been given, an interval of at least 2 months should be left between the final dose of the 7-valent conjugate vaccine and the 23-valent polysaccharide vaccine. |
| Adults | | ✓ # | A single dose of the 23-valent polysaccharide vaccine should be given. Individuals who have previously received 12 or 14-valent polysaccharide vaccines or 7-valent conjugate vaccine **should still be immunised with 23-valent polysaccharide vaccine** to gain protection from the additional serotypes. |

Notes:

* Children under 5 years of age who have already received the 23-valent pneumococcal polysaccharide vaccine but not the 7-valent pneumococcal conjugate vaccine should receive 2 doses of the 7-valent conjugate vaccine as above, at least 2 months after the 23-valent polysaccharide vaccine (previous Department of Health recommendations were that children between the ages of 2 and 5 years should be given the 23-valent polysaccharide vaccine only).

# Re-immunisation with the 23-valent polysaccharide vaccine is not currently recommended except in individuals in whom antibody levels are likely to have declined more rapidly such as those with no spleen, with splenic dysfunction or with nephrotic syndrome. These individuals should be re-immunised every 5 years. Testing of antibody levels prior to immunisation is not required.