



UNIVERSITY OF SYDNEY



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## *Meningococcal C conjugate vaccine:*

### **Guidelines for providers about administration of the vaccine**

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Meningococcal C conjugate vaccine will be added to the National Immunisation Program from 1 January 2003. Infants will be due for one dose of the vaccine at 12 months of age. A phased catch-up program over four years will also commence early in 2003 for those aged 1 to 19 years.

The commencement date for the catch-up program may vary between States and Territories. Commencing in 2003, Year One of the National Meningococcal C Vaccination Program will provide free meningococcal C conjugate vaccine (MenCCV) for:

- Pre-school aged children (aged 1 to 5 years) - accessible through general practitioners and other immunisation providers; and
- Senior high-school students (aged 15 to 19 years) – accessible through school-based immunisation programs.

For details of the roll-out of the National Meningococcal C Vaccination Program, contact the appropriate immunisation coordinator in your State or Territory. Contact details can be found at the front cover of the current Immunisation Handbook (7<sup>th</sup> edition).

### **Interim Guidelines**

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The 8<sup>th</sup> Edition of the Australian Immunisation Handbook (the handbook) will be released towards the middle of 2003. The revised Handbook will contain information relating to meningococcal C vaccination. These guidelines are intended to assist providers in the interim. These guidelines are only intended to address issues which may be new or where recommendations differ from the product information (PI). The guidelines are based on the recommendations of the Australian Technical Advisory Group on Immunisation (ATAGI) for the 8<sup>th</sup> edition of the handbook and have not yet been endorsed by NHMRC.

These interim recommendations relate only to the Meningococcal C conjugate vaccines (MenCCV), specifically Meningitec (Wyeth), Menjugate (CSL Vaccines/Chiron) and NeisVac-C (Baxter Healthcare).

### **Administration**

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Doses are given by intramuscular injection. Do not mix vaccine with other vaccines in the same syringe. Experience from the use of the conjugate Hib vaccines suggests that the different brands of the meningococcal C conjugate vaccines are interchangeable.

## Multiple injections at 12 months of age

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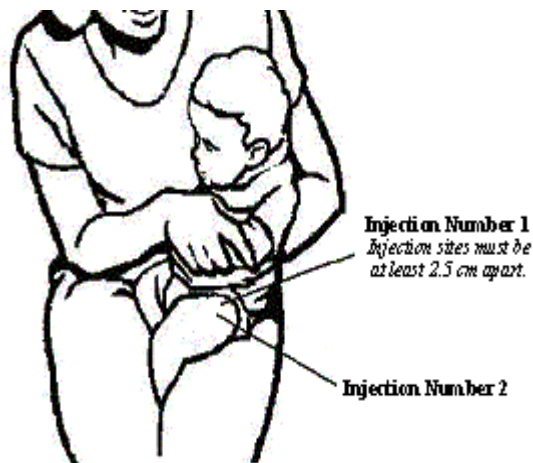
ATAGI has also advised that it is safe and appropriate practice to administer three vaccines during the one visit, using the injection sites outlined below.

Parents/guardians should be advised that it is safe and effective to give three injections at the same visit and that there is no evidence that administration of multiple vaccines at the same visit overloads a child's immune system.<sup>1</sup>

## Sites for multiple injections at the same visit

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### *Children under 12 months of age*



**Figure 1**

When three injectable vaccines are to be given at the same visit, two injections can be administered in the same anterolateral thigh but the injection sites should be separated by at least 25 mm (2.5cm), so that local reactions will not overlap (see Figure 1). The third injection (preferably those vaccines which may cause slightly more swelling or redness than others such as MenCCV or 7vPCV) should be administered in the opposite thigh. The location of each injection should be recorded so that the vaccine associated with a local reaction can be differentiated.

### *Children 12 months of age and older*

When three injectable vaccines are to be given at the same visit for a child aged 12 months and older, it is recommended that both deltoid muscles be used (a single injection into each muscle). The site of the third injection (deltoid or anterolateral thigh) should be determined as follows.

In children over 18 months, there may be sufficient muscle mass to deliver 2 intramuscular injections into one deltoid, spaced by 25mm (2.5cm) and a 3<sup>rd</sup> into the other deltoid. This will ordinarily be the case in older children and adults and will require the judgement of the provider. If, in the opinion of the provider, there is insufficient muscle mass for this technique, then one injection should be given in each deltoid and the anterolateral thigh used for the third injection. If using the thigh, the vaccine least likely to cause redness and swelling should be selected for this site and the vaccine should be injected slowly so as to reduce the risk of local reactions and pain.

## If a parent does not give consent

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If an immunisation provider offers three injections at 12 months of age, and the parent/guardian does not give consent for all three injections, it is important that the offer and refusal are well documented. Where a parent does not give consent for three injections, priority should be determined by the provider based on clinical information obtained from the parent/guardian. If only two vaccinations are given, arrangements should be made to administer the third vaccine at a subsequent visit.

## **Administration of meningococcal C vaccine with other vaccines**

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The Meningitec product information states that the vaccine should not be administered with either the other infant vaccines in the ASVS at 2, 4 and 6 months of age, or with both IPV and varicella vaccines 'on a routine basis'. The NeisVac-C product information states that the vaccine should not be administered with IPV-containing vaccines 'on a routine basis'. However, the ATAGI states that the vaccine may be administered simultaneously with other vaccines in the ASVS.

The administration of the meningococcal C vaccine at 12 months of age will mean that children will be due for MMR, Hib or combined Hib-hepB, and MenCCV at the same time. On occasion, the administration of a non-ASVS vaccine (such as Hepatitis A) may be contemplated at the time of administration of MenCCV.

Studies in the United Kingdom have shown that meningococcal C vaccine can be safely given with routine childhood vaccines and does not effect the seroconversion rate of other vaccines administered at the same time.

There are limited data on the co-administration of MenCCV and non-ASVS vaccines. The ATAGI recommends that MenCCV may be given at the same time as, or at any time before or after other live and/or inactivated vaccines, provided that the ages that the vaccines were being given were consistent with those in the NHMRC Guidelines.

See the next section for a caveat.

## **Administration of both conjugate and polysaccharide meningococcal vaccines**

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On occasion both meningococcal C conjugate vaccine and meningococcal polysaccharide vaccine are recommended (eg. persons with asplenia and certain laboratory personnel). If the conjugate vaccine is given first, a period of at least 2 weeks should lapse before the polysaccharide vaccine is given. There are limited data available on the length of time that should lapse before administration of the conjugate vaccine after giving a polysaccharide vaccine. The ATAGI recommends a period of 6 months should lapse before the conjugate vaccine is given.

## **Conflicts with product information**

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The product information for all 3 conjugate vaccines state that under the age of 12 months, 3 doses of vaccine are required. The ATAGI recommends that, for infants aged between 4 and 11 months at the commencement of vaccination, 2 doses are sufficient.

The product information for all 3 conjugate vaccines state that there are no data on the use of meningococcal C conjugate vaccines in lactating women, whereas the ATAGI does not consider breast feeding in a healthy woman a reason for not immunising.

The Meningitec product information states that an allergic reaction following a prior dose is a contraindication to further doses whereas the ATAGI states that only an anaphylactic reaction following a prior dose is a contraindication.

## **Vaccine side effects**

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Common (>10%) adverse events caused by meningococcal C conjugate vaccines are pain, redness and swelling at the site of injection, fever, irritability, anorexia and headaches. There are some age-related differences in the type of adverse event following vaccination, with systemic adverse events tending to decrease with increasing age, and local adverse events tending to increase with increasing age. Headache is more likely to be reported in the adolescent age group. Serious general adverse events are rare.

## **Other issues**

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Although no clinical study data are available on the use of the vaccine in pregnant women, it is unlikely that it would have any deleterious effect on the pregnancy. Routine pregnancy testing prior to vaccination is not justifiable.

The vaccine is recommended for any children, adolescents or young adults who have had previous meningococcal disease. These persons should receive the vaccine regardless of infecting serogroup. This is because young children may not have mounted an optimal immune response to the infection and older persons may have an unrecognised risk factor for meningococcal disease.

As with other vaccines, administration should be postponed in subjects presenting with an acute febrile illness.

### Reference

1. Offit PA, Quarles J, Gerber MA, et al. Addressing parents' concerns: do multiple vaccines overwhelm or weaken the infant's immune system? *Pediatrics* 2002;109:124-9.