Notes

Rationale of resource
This resource is designed to support registered healthcare practitioners (HCPs) to discuss the changes to the Meningococcal serogroup C conjugate vaccination (MenC) schedule including the reason behind the changes and what the changes include. This resource may also be of interest to other professional groups involved in supporting the Meningococcal serogroup C programme.

Note: Meningococcal serogroup C conjugate vaccination is commonly known as MenC. For the purpose of this resource MenC is used throughout this document.

This resource does not cover the actual administration techniques involved in vaccination against MenC. If administration technique training is required staff should access this through their line manager. Information on immunisation by nurses and other health professionals is available in chapter 5 of Immunisation against infectious disease, Green Book available at http://immunisation.dh.gov.uk/category/the-green-book/. This resource does not cover the clinical management of meningococcal infection.
Acknowledgments

This resource was prepared by the Vaccine Preventable Disease Programme, Public Health Wales as a national training template to support the changes to the MenC conjugate vaccination schedule.

Amended by NES and HPS for use in Scotland.

Neisseria meningitidis title slide image: B Dowsett, HPA Porton Down, courtesy of Meningitis Trust.
Key Message

The changes will make the overall meningococcal serogroup C conjugate immunisation programme more effective and offer greater overall public protection.

Notes
Aims of resource

- To raise awareness of current meningococcal serogroup C (MenC) epidemiology and the impact of the vaccination programme to date
- To support registered healthcare practitioners (HCPs) involved in discussing MenC vaccination with parents and young persons by offering evidence based information
- To increase awareness of the changes among HCPs to ensure a smooth and effective transition to the new schedule

Notes
Learning outcomes

• Describe the aetiology and epidemiology of meningococcal serogroup C (MenC) disease
• Understand the registered healthcare practitioners’ role in implementing the changes to the MenC vaccination schedule
• To be able to advise and reassure parents and young people of the changes in the MenC vaccination schedule by providing evidence based information
• Be aware of useful resources

Notes
Contents

• What is meningococcal serogroup C disease?
• What, why and when are the changes happening?
• Which vaccines are recommended?
• The role of registered healthcare practitioners
• Resources
What is meningococcal serogroup C disease?

- Meningococcal disease occurs as a result of an invasive bacterial infection caused by *Neisseria meningitidis*
- Transmission is by aerosol, droplets or direct contact and usually requires frequent or prolonged close contact
- Incubation period 2-7 days
- Meningococcal infection most commonly presents as either meningitis or septicaemia, or a combination of both
- Meningococcal C is one of 12 serogroups of *Neisseria meningitidis*
- In the UK serogroups B and Y are currently the most common, less common include serogroups C and W

Notes

Serogroups include A, B, C, E, H, I, K, L, W, X, Y, and Z.

Since introduction of the routine meningococcal C conjugate (MenC) vaccination programme, cases of invasive meningococcal disease in the UK from serogroup C have reduced dramatically, with serogroup B now accounting for the majority of cases.

Meningococcal infection most commonly presents as either meningitis or septicaemia or a combination of both.

Less commonly, individuals may present with pneumonia, myocarditis, endocarditis, pericarditis, arthritis, conjunctivitis, urethritis, pharyngitis and cervicitis.\(^3\)
Clinical presentation of meningococcal infection

<table>
<thead>
<tr>
<th>Babies and toddlers</th>
<th>Children and young adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever with poor peripheral perfusion</td>
<td>Fever with poor peripheral perfusion</td>
</tr>
<tr>
<td>Poor feeding, refusing food or vomiting</td>
<td>Vomiting</td>
</tr>
<tr>
<td>Tense, bulging fontanelle and photophobia</td>
<td>Severe headache and photophobia</td>
</tr>
<tr>
<td>Fretful, unusual cry, moaning or rapid breathing</td>
<td>Confusion and irritability</td>
</tr>
<tr>
<td>Neck stiffness</td>
<td>Neck stiffness and muscle pain</td>
</tr>
<tr>
<td>Pale blotchy complexion and/or non blanching rash</td>
<td>Pale blotchy complexion and/or non blanching rash</td>
</tr>
<tr>
<td>Drowsy and loss of consciousness</td>
<td>Drowsy and loss of consciousness</td>
</tr>
</tbody>
</table>

Symptoms can appear in any order, some may not appear at all

Notes

Please note that some or all symptoms may appear, in any order, and this list is not exhaustive. Table contents based on Meningitis Trust [http://www.meningitis-trust.org/meningitis-info/signs-and-symptoms/](http://www.meningitis-trust.org/meningitis-info/signs-and-symptoms/).

Onset of disease varies from fulminant with acute and overwhelming features, to insidious with mild prodromal symptoms.

Symptoms may be harder to identify in young infants particularly, the onset may be insidious and the signs be non-specific without classical features of meningitis.
The meningococcal rash

- The rash starts as a cluster of pinprick blood spots under the skin, spreading to form bruises. It can appear anywhere on the body.
- It can be distinguished from other rashes by the fact that it does not fade when pressed under the bottom of a glass (The Tumbler Test).
- A febrile illness and rash that does not fade under pressure is a sign of meningococcal septicaemia.

The Tumbler Test

Image source: Dr Petter Brandtzaeg, courtesy of Meningitis Trust

Notes

Absence of rash does not preclude the illness is meningitis.
Meningococcal disease, potential complications

- In Scotland in 2013 the case fatality ratio was 7.2%
- Mortality higher in cases with sepsicaemia than those with meningitis alone
- Most common long term effects:
  - Skin scarring
  - Seizures
  - Limb amputation
  - Brain Damage
  - Hearing loss

Notes

(Mortality figures also available for England and Wales.1,5)

In those who survive, approximately 25% may experience a reduced quality of life, with 10–20% developing permanent sequelae.6,7

The most common long-term effects are skin scars, limb amputation(s), hearing loss, seizures and brain damage.7,8
Background to MenC vaccination programme

• In 1999 children and adolescents under the age of 18 years were offered MenC vaccine over a two-year period
• January 2002 the campaign extended to include all adults under 25 years
• Following the campaign the number of cases fell by over 95% in all age groups immunised

Notes

The objective of the routine immunisation programme is to protect those under 25 years of age and individuals outside this age range who may be at increased risk from MenC disease.

Following the MenC vaccine campaign, the number of laboratory confirmed serogroup C cases fell by over 95% in all age groups immunised.9,10

Cases in other age groups fell by approximately two-thirds as a result of reduced carriage rates11 and therefore reduced risk of exposure.12 This indirect protection has contributed to the number of cases falling to a very low levels.
Impact of MenC vaccination programme

Number of laboratory confirmed serogroup C cases in Scotland 1997-2014*

Notes

The above figures shows that meningococcal disease caused by serogroup C has fallen by more than 95% since the introduction of the MenC vaccination programme.
Reduction in capsular group C carriage following introduction of meningococcal serogroup C conjugate vaccines

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Notes

Meningococci colonise the nasopharynx of humans and are frequently harmless commensals. Between 5 and 11% of adults and up to 25% of adolescents carry the bacteria without any signs or symptoms of the disease. In infants and young children, the carriage rate is low. Adolescence is the peak age for nasopharyngeal carriage of serogroup C meningococcus and rapid decline in rates of nasopharyngeal carriage were observed the year after the introduction of MenC vaccine.

The MenC vaccination campaign significantly reduced nasopharyngeal carriage of serogroup C meningococcus as seen in above slide. Approximately 60% of the organisms found in this Maiden et al. 2008 study were not B,C,W or Y. These typically were bacteria which did not have a capsule. A capsule is required for bacteria to cause disease so carriage of these other bacteria is harmless to humans.

This reduction in carriage provides indirect protection to unvaccinated and susceptible vaccinated members of the population through herd immunity.
Notes

This chart summarises the serogroups for laboratory confirmed cases of meningococcal disease in Scotland since 1999 and only includes cases of invasive disease, additionally these are a small number of isolates that are ungrouped/ungroupable.

There has been a general decline in the numbers of invasive cases confirmed since 2001, with cases due to *Neisseria meningitidis* Group C becoming increasingly rare.

No cases of invasive MenC were reported in Scotland in 2013. Two cases were reported in 2012. One was likely to have acquired the infection in Scotland. The other case was a visitor to Scotland and the timing of the onset of symptoms was consistent with the infection having been acquired outwith Scotland. Prior to these two cases, there had been no reported invasive cases of serogroup C in Scotland since the four cases reported in 2007.
Notes

Age, season, smoking, preceding influenza A infection and living in closed or semi-closed communities, such as university halls of residence or military barracks, have been identified as risk factors. The Ministry of Defence (MOD) offer MenC vaccine as part of their occupational health scheme.

The incidence of meningococcal disease is highest in children under five years of age, with a peak incidence in those under one year of age. There is a secondary peak in incidence in young people aged 15 to 19 years of age. In infants and young children, the carriage rate is low.

New entrants to university (freshers) who live in halls of residence have elevated risk of meningococcal disease compared to other college students. Military recruits are at risk of acquiring meningococcal disease particularly in training camps and large scale mobilisations.

Fischer et al. identified tobacco smoke as a risk factor in meningococcal disease. Tobacco smoke exposure independently increases the risk of developing meningococcal disease.

The risk of meningococcal infection increases for students entering university compared with those of a similar age in the general population. The incidence of infection is:

- 5.1 cases per 100,000 in first year of university, and
- 1.4 cases per 100,000 in general population.
What are the changes to the UK schedule for MenC vaccination

<table>
<thead>
<tr>
<th>Infants</th>
<th>Adolescents</th>
<th>New starters at university/fresher students</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2013</td>
<td>Autumn 2013</td>
<td>Summer 2014</td>
</tr>
</tbody>
</table>

Notes

The changes affect three parts of the schedule. One change was for infants which happened in June 2013, one for adolescents which happened in autumn 2013, and one is a time limited catch-up programme for young people planning to attend university – the first time university entrants (under the age of 25) catch-up programme, which will start from 1 August 2014.

JCVI Statement, January 2012 advises that in order to maintain low levels of disease and herd immunity there is evidence to support:

(i) one dose of MenC vaccine offers protection to infants; and

(ii) Moving one dose of MenC vaccine to adolescents will maintain herd protection for infants and younger children and extend protection for adolescents and young people.
Revised MenC vaccination schedule

<table>
<thead>
<tr>
<th>Age</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months (12 weeks)</td>
<td>1 dose - MenC vaccine NeisVac-C®. Menjugate Kit® only</td>
</tr>
<tr>
<td>12-13 months</td>
<td>1 dose Hib/MenC vaccine Menitorix®</td>
</tr>
<tr>
<td>Around 14 yrs (S3)</td>
<td>1 dose MenC vaccine Any MenC vaccine</td>
</tr>
<tr>
<td>New starters at university/freshers (summer 2014)*</td>
<td>1 dose MenC vaccine Any MenC vaccine</td>
</tr>
</tbody>
</table>

*Temporary catch up for new starters entering university setting under 25 years

Notes

The infant part of the schedule

Since June 2013 just two MenC vaccinations are given to infants – one at three months of age, and a second one between 12 and 13 months.

Meningitec® (Nuron Biotech) should not be used to offer primary vaccination for infants as it is less immunogenic as a single dose in infancy than other vaccines.

NeisVac-C® (Baxter) or Menjugate Kit® (Novartis) only should be used for the 3 month dose as they provide a good immune response after 1 dose in infants under 1 year of age, and strong immune responses when boosted with Hib/MenC (Menitorix®) routinely offered at 12 -13 months. See ‘What vaccines are recommended’ slide 23.

The adolescent part of the schedule

Since autumn 2013 school children have been given a MenC booster vaccination during adolescence. This is given from 13/14 years of age (academic year S3).

The new starters at university/freshers catch-up programme - from summer 2014

Older adolescents, who are too old to have received a dose in S3 are at a higher risk of contracting meningitis C when they first go to university. A time limited catch-up campaign will start on 1 August 2014 to offer the vaccine to first time university entrants.

If unsure of previous immunisation status follow guidelines set out in table 22.2 of Green Book chapter on meningococcal disease. Advice also available in PHE guidance on individuals with incomplete or uncertain immunisation status.21

Changes to the meningococcal C conjugate (MenC) vaccine schedule 2014 - first-time university entrants under the age of 25

An update for registered healthcare practitioners

© Health Protection Scotland/NHS Education for Scotland August 2014
Why is there a change to the MenC vaccination schedule?

- One dose MenC vaccine is now considered to offer sufficient direct protection to infants with the 12-13 months booster
- Individual protection in young children wanes
- A booster dose for adolescents will provide longer-term protection and maintain herd protection to help protect infants and younger children
- To protect freshers (temporary catch up starts summer 2014 for new starters at university setting under 25 years) because of an increased risk of disease and sub-optimal protection from vaccination under 10 years

Notes

The JCVI advised that an adolescent dose of MenC vaccine be introduced and a dose of MenC vaccine in infants be removed.

Following a study that showed a single priming dose in infancy at three months of age would be sufficient to prime infants against MenC disease, and provide protection for the first year of life, JCVI recommended that the second priming dose at four months of age be removed from the routine schedule.

Recently published studies show that vaccination against MenC disease in early childhood provides a short-term protective immune response. Vaccination later in childhood provides higher levels of antibody that persist for longer.

New starters to university (freshers) who live in halls of residence have elevated risk of meningococcal disease compared to other college students.
When will the change to the schedule be implemented?

Infant

- Changes to SIRS (Scottish Immunisation & Recall System) were implemented on 1 June 2013
- One dose in infancy has been shown to provide sufficient protection until booster at 12/13 months
- The infant will still be called for other primary immunisations at 8, 12 and 16 weeks
- Hib/MenC booster with MMR and PCV13 is still given at 12/13 months

Notes

Since 1 June 2013 infants are no longer called for MenC vaccination at age 16 weeks
- At 8 weeks infant will be called for DTaP/IPV/Hib, PCV13 and rotavirus;
- At 12 weeks infant will be called for DTaP/IPV/Hib, Men C and rotavirus;
- At 16 weeks infant will be called for DTaP/IPV/Hib, PCV13.

When will the change to the schedule be implemented?

Adolescent

- Begin in academic year starting September 2013
- An adolescent booster dose of MenC vaccine to be given at same time as the Td/IPV teenage booster vaccine
- MMR vaccine can be given at same time
- Delivered primarily through school based delivery model

Notes

Vaccination later in childhood provides higher levels of antibody that persist for longer.\(^{26}\)

Should be delivered alongside Td/IPV from 13/14 years (Academic Year S3) dependent on local arrangements. Note: MenC can be given at the same time as other vaccines such as MMR.
When will the change be implemented?

New starters at university/freshers

- From 1 August 2014
- A time limited catch-up programme offering vaccine to freshers entering university
- Will be offered to:
  - Any student entering university for the first time and has only received MenC vaccine under the age of 10 years
  - Ideally at least 2 weeks before starting university
  - Those that have received a MenC vaccine over the age of 10 years will not require the booster dose

Notes

The increased risk has been found to be more pronounced in the first days or weeks when students first start to live and socialise together in university halls of residence/campus. Seroconversion can take up to two weeks so vaccination should ideally take place at least two weeks prior to the student leaving for university.

The freshers catch-up programme is of limited duration (possible up to five years) to offer the vaccine to those young people entering university for the first time who will not have been vaccinated under the revised schedule at age 13-15 years.

Evidence that the risk of meningococcal infection increases for students entering higher education compared with those of a similar age in the general population:

- 5.1 cases per 100,000 in first year of higher education
- 1.4 cases per 100,000 in general population

The increased risk is in the first few days, weeks or months of entering higher education. It has been suggested that increased exposure to meningococcal bacteria occurring in the first year of higher education leads to asymptomatic carriage that boosts immunity to provide protection over subsequent years.

Prospective students who have previously received a dose of MenC vaccine at the age of 10 years or over do not require an additional dose as they will still be protected. Offering a dose of MenC vaccine

Continued overleaf
When will the change be implemented?

New starters at university/freshers
- From 1 August 2014
- A time limited catch-up programme offering vaccine to freshers entering university
- Will be offered to:
  - Any student entering university for the first time and has only received MenC vaccine under the age of 10 years
  - Ideally at least 2 weeks before starting university
- Those that have received a MenC vaccine over the age of 10 years will not require the booster dose

Notes (cont.)

over the age of ten years to those students who may be unimmunised or partially immunised will ensure satisfactory boosting of their antibody levels prior to starting university. This is important, as evidence shows that the acquisition of meningococcal bacteria and increased risk of disease occurs soon after entry.26

Any student of any age entering or being at university who is unvaccinated against MenC disease will continue as before. This is outwith the Fresher’s programme but covered by the Green Book recommendations.

Please note: GP practices will be able to claim additional fees for each vaccination given under the Fresher’s programme, whereas the rest of the MenC immunisation under Annex J (SGPC contact) and clinical reasons will not attract additional remuneration for GP practices as they are part of the core funding of GP practices.
How will freshers know about the MenC vaccination programme?

- Students will be informed about the need for a dose of MenC vaccine through the Universities and Colleges Administration Services (UCAS)
- Students should attend their GP practice for vaccination from August 2014
- Should ideally receive vaccination at least two weeks before they attend university

Notes

Prospective students will be informed about the need for a booster dose of MenC vaccine through the Universities and Colleges Administration Services (UCAS). It is expected that eligible prospective students will attend their GP practice for vaccination from mid August 2014. If required, GP practices can opportunistically offer a booster dose of MenC vaccine before August 2014 to prospective eligible students who they are expecting to go to university in autumn 2014.

It is important that eligible students, including overseas students, receive vaccination at least two weeks before they attend university whenever possible to ensure timely protection. Where students are not vaccinated before leaving for university they can register with a new GP practice once they arrive and arrange to get the vaccine there as soon as possible, ideally in ‘freshers’ week and no later than 31 October 2014. If an eligible student seeks the vaccine after the 31 October 2014, then GP practices should apply clinical judgement to assess the needs of the patient.
Which vaccines are recommended?

<table>
<thead>
<tr>
<th>Age</th>
<th>Primary/Booster</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months (12 weeks)</td>
<td>Primary</td>
<td>MenC NeisVac-C® or Menjugate Kit® only</td>
</tr>
<tr>
<td>12-13 months</td>
<td>Booster</td>
<td>Hib/MenC Vaccine Menitorix®</td>
</tr>
<tr>
<td>Around 14 years (S3)</td>
<td>Booster</td>
<td>MenC Vaccine Any MenC vaccine</td>
</tr>
<tr>
<td>New starters at university / freshers (summer 2014)</td>
<td>Booster</td>
<td>MenC Vaccine Any MenC vaccine</td>
</tr>
</tbody>
</table>

Notes

Meningitec® vaccine does not provide adequate protection against MenC disease when administered as single dose in infancy, and is therefore no longer recommended for use in those less than 12 months of age. NeisVac-C® (Baxter) or Menjugate Kit® (Novartis) only should be used for the three month dose as they provide a good immune response after one dose in infants under one year of age, and strong immune responses when boosted with Hib/MenC (Menitorix®) routinely offered at 12-13 months.

The MenC conjugate vaccines are made from capsular polysaccharide that has been extracted from cultures of serogroup C Neisseria meningitidis. In the UK, MenC vaccines have been used that have been conjugated with either CRM197 (a non-toxic variant of diphtheria toxin) or tetanus toxoid. The conjugation increases the immunogenicity, especially in young children in whom the plain polysaccharide vaccines are less immunogenic. The Monovalent MenC vaccine confers no protection against other serogroups of meningococcal disease, such as A, B, W, or Y.
What about any infants who have received only one dose of Meningitec®?

- Meningitec® vaccine does not provide adequate protection against MenC disease when administered as single dose in infancy
- If a single dose of Meningitec® has inadvertently been given the infant should receive a dose of Meningitec® or Menjugate Kit® at least one month after the first dose.

Notes

Meningitec® vaccine does not provide adequate protection against MenC disease when administered as single dose in infancy, and is therefore no longer recommended for use in those less than 12 months of age.

Should Meningitec® have been given as part of the infant schedule for example inadvertently or overseas, a second dose of MenC vaccine, preferably one containing a CRM conjugate such as Meningitec® or Menjugate Kit® should be given at least one month after the first dose.
Vaccine products

Primary under 1 year

USE THE CORRECT VACCINE
Meningitec® is less immunogenic and should not be used as a single dose in infancy.

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Notes

The MenC conjugate vaccine is available either as a lyophilised powder for reconstitution with a diluent or as a suspension in a syringe. After reconstitution of the lyophilised suspension, the vaccine must be used within one hour.

Given by intramuscular injection. However for individuals with bleeding disorder vaccines should be given by deep subcutaneous injection to reduce the risk of bleeding.

May only be administered:

- Against a prescription written manually or electronically by a registered medical practitioner or other authorised prescriber
- Against a Patient Specific Direction (PSD)
- Against a Patient Group Direction (PGD)

The vaccines do not contain thiomersal. They are inactivated, do not contain live organisms and cannot cause the diseases against which they protect.

Further information on the vaccine products is available from the Summary of Product Characteristics (SPC).

Menjugate Kit® SPC is available at: http://www.medicines.org.uk/emc/.


Meningitec® SPC is available from Nuron Biotech, tel: 0800 756 3332.

Changes to the meningococcal C conjugate (MenC) vaccine schedule 2014 - first-time university entrants under the age of 25
An update for registered healthcare practitioners
© Health Protection Scotland/NHS Education for Scotland August 2014
Different schedules for MenC vaccines

- Summary of Product Characteristics (SPC) for MenC conjugate vaccines state that two doses should be given two months apart in those under one year of age
- This is superseded by the Green Book recommendation to give a single dose of NeisVac-C® or Menjugate Kit® MenC vaccine in infancy
- Consideration should be given as to whether a quadrivalent meningococcal vaccine should be used if protection is required for travel

Notes

The recommendations regarding vaccines given in the Green Book chapters may differ from those in the Summary of Product Characteristics (SPC) and Patient Information Leaflet (PIL) for a particular vaccine. When this occurs, the recommendations in the Green Book¹ are based on current expert advice received from the JCVI and should be followed.

The Green Book¹ states that evidence from a UK study shows that immunogenicity is adequate following a primary course of either NeisVac-C® or Menjugate Kit® as a single dose in infants,²² and the UK schedule for childhood vaccination has been amended to reflect this evidence.

The Green Book¹ states MenACWY conjugate vaccine (Menveo®) should replace the monovalent MenC vaccine if the infant requires protection for travel at the same time as the routine MenC.
Contraindications and precautions

Contraindications

- Confirmed anaphylactic reaction to a previous dose of MenC vaccine
- Confirmed anaphylactic reaction to any constituent of the vaccine, including meningococcal polysaccharide, diphtheria toxoid or the CRM197 carrier protein or tetanus toxoid

Precautions

- Acute febrile illness (defer until recovered)
- Unstable/evolving neurological conditions

Notes

There are very few individuals who cannot receive meningococcal vaccines. When there is doubt, appropriate advice should be sought from a consultant paediatrician, immunisation co-ordinator or consultant in public health medicine, rather than withhold immunisation.

Meningitec® and Menjugate Kit® vaccines are conjugated to Corynebacterium diphtheriae CRM197 protein. NeisVac-C® is conjugated to tetanus toxoid protein.

More detailed vaccine information and a full list of vaccine contents are contained in the Summary of Product Characteristics (SPC).

Menjugate Kit® SPC is available at: http://www.medicines.org.uk/emc/.


Meningitec® SPC is available from Nuron Biotech, tel: 0800 756 3332.

The tip cap of the Menjugate Kit® vaccine contains natural rubber (latex). Both Meningitec® and NeisVac® are latex free.

Minor illnesses without fever or systemic upset are not valid reasons to postpone immunisation. If an individual is acutely unwell, immunisation may be postponed until they have recovered fully. This is to avoid confusing the differential diagnosis of any acute illness by wrongly attributing any signs or symptoms to the adverse effects of the vaccine.

Continued overleaf
Contraindications and precautions

Contraindications
- Confirmed anaphylactic reaction to a previous dose of MenC vaccine
- Confirmed anaphylactic reaction to any constituent of the vaccine, including meningococcal polysaccharide, diphtheria toxoid or the CRM197 carrier protein or tetanus toxoid

Precautions
- Acute febrile illness (defer until recovered)
- Unstable/evolving neurological conditions

Notes (cont.)
Meningococcal vaccines may be given to pregnant women when clinically indicated. There is no evidence of risk from vaccinating pregnant women or those who are breast-feeding with inactivated virus or bacterial vaccines or toxoids. In cases where meningococcal immunisation has been inadvertently given in pregnancy, there has been no evidence of fetal problems.
Adverse events

- Pain, tenderness, swelling or redness at the injection site and mild fever
- Infants and toddlers: crying, irritability, drowsiness, impaired sleep, reduced eating, diarrhoea and vomiting
- Older children and adults: headaches, myalgia and drowsiness
- Neurological reactions such as dizziness, febrile/afebrile seizures, faints, numbness and hypotonia are very rare

Notes

Anaphylaxis is a very rare side effect of most vaccines and facilities for its recognition and management must be available.

Further information on adverse events are contained in the Summary of Product Characteristics (SPC).

Menjugate Kit® SPC is available at: http://www.medicines.org.uk/emc/.


Meningitec® SPC is available from Nuron Biotech, tel: 0800 756 3332.
Reporting Adverse Events

Yellow card scheme

- Voluntary reporting system for suspected adverse reaction to medicines/vaccines
- Serious adverse events in adults or all suspected adverse reactions in children that may be attributable to the vaccine should be reported using the yellow card system
- [http://yellowcard.mhra.gov.uk/](http://yellowcard.mhra.gov.uk/)
- Chapter 8 of Green Book for details

Notes

As with all vaccines and other medicines, registered healthcare practitioner (HCP) and patients are encouraged to report suspected adverse reactions using the yellow card reporting scheme.
Supplies

- MenC conjugate:
  - Menjugate Kit® – manufactured by Novartis Vaccines
  - NeisVac-C® – manufactured by Baxter Healthcare
  - Meningitec® – manufactured by Nuron Biotech

- Supplies should be obtained in line with routine ordering for childhood vaccines

Notes
Monitoring uptake

- Vaccination against MenC should be recorded in the GP, patient and child health computer records as routine
- Immunisation uptake data will be collected using SIRS for the infant and adolescent doses

Notes

For the infant group monitoring uptake will be based on the same reporting measures for vaccines given as part of the routine childhood schedule.

For adolescent dose uptake will be monitored as adolescent booster Td/IPV vaccination.

Data on the number of vaccines given as part of the freshers programme will be collected via GP returns to Practitioner Services Division.
Resources

**Green Book**

**Patient group direction (PGD) (national specimen)**
- [http://www.hps.scot.nhs.uk/](http://www.hps.scot.nhs.uk/)

**Chief Medical Officer (CMO) Letter**

**Leaflets/posters/factsheets**
- [http://www.immunisationscotland.org.uk/](http://www.immunisationscotland.org.uk/)

**Q&As**

**JCVI minutes**
- [https://www.gov.uk/government/policy-advisory-groups/joint-committee-on-vaccination-and-immunisation#minutes](https://www.gov.uk/government/policy-advisory-groups/joint-committee-on-vaccination-and-immunisation#minutes)

Notes
Key Message

The changes will make the overall MenC conjugate immunisation programme more effective and offer greater protection by extending routine protection to adolescents and young adults.

Notes
Additional Slides
Quadrivalent Vaccines

- Licensed vaccines:
  - Conjugate ACWY vaccines (Menveo® and Nimenrix®)
  - Polysaccharide ACWY (ACWY Vax®) (Men ACWY quadrivalent conjugate vaccine is preferred to the polysaccharide vaccine in all instances)

- Used for:
  - Travel or to reside abroad
  - Asplenia, splenic dysfunction, complement deficiency or who are to receive Eculizumab therapy

- Protects against serogroups ACW and Y

Notes

The above slide shows the quadrivalent meningococcal vaccines available.

GSK have taken the decision to withdraw the polysaccharide vaccine from the market – it is thought that the vaccine will become scarce from July 2014.

Patients with asplenia, dysfunctional spleen, immunosuppression, complement deficiency, or who are to receive Eculizumab therapy may be at increased risk of invasive meningococcal infection. Please see suggested schedule for immunisation with conjugate vaccines, Green Book Chapter 7: Immunisation of individuals with underlying medical conditions Table 7.1. Depending on individual circumstances an additional Men ACWY conjugate vaccination may be considered for these patients.

The recommendations given in the Green Book chapters¹ may differ from those in the Summary of Product Characteristics (SPC) and Patient Information Leaflet (PIL). When this occurs, the recommendations in the Green Book¹ are based on current expert advice received from the JCVI and should be followed.
Groups currently recommended for MenB vaccine - Bexsero®

Bexsero® is the only licensed vaccine for MenB. It is NOT currently part of the routine schedule. Restricted to certain groups at high risk of developing invasive meningococcal disease:

- Children and adults with asplenia, splenic dysfunction or complement disorders
- Laboratory workers working with meningococci
- In some situations as part of the management of outbreaks of meningococcal disease

Notes

On 21 March 2014, the Joint Committee on Vaccination and Immunisation (JCVI) recommended that meningococcal group B (MenB) vaccine is introduced into the national immunisation schedule for infants (at 2, 4 and 12 months), provided that the vaccine can be obtained at a cost effective price. The introduction of the vaccine is dependent on reaching this agreement with the vaccine manufacturer, through a UK wide procurement exercise, which the Department of Health will take forward on behalf of the four UK countries. For that reason it cannot be said for certain when the programme will start.

Although MenB vaccine (Bexsero®) is licensed and has been available for use in the UK since December 2013, it is not yet part of the routine immunisation schedule and its use is currently restricted to certain groups at high risk of developing invasive meningococcal disease (children and adults with asplenia, splenic dysfunction or complement disorders; laboratory workers working with meningococci; and in some situations as part of the management of outbreaks of meningococcal disease). For details see the meningococcal chapter of the Green Book at https://www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22.
References

   Available at: https://www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22
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