MENINGOCOCCAL DISEASE – INFECTION CONTROL POLICY AND PROCEDURE

### Amendments

<table>
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<tr>
<th>Date</th>
<th>Page(s)</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Feb. 2010</td>
<td></td>
<td>Updated in line with the Trust’s Policy Writing &amp; Ratification Policy.</td>
<td>Caroline Becher, Chief Nurse</td>
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<tr>
<td>March 2012</td>
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<td>Expiry of review date</td>
<td>Suzanne Rankin, Chief Nurse</td>
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<td>Mar. 2014</td>
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<td>Suzanne Rankin, Chief Nurse</td>
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Compiled by: The Infection Control Team

In consultation with: Control of Infection Committee

Ratified by: Clinical Governance Committee

Date ratified: November 2007

1st Review: February 2010

2nd Review: March 2012

3rd Review: March 2014

Reviewed by: Angela Shaw

Review date: March 2016

Target audience: All Trust staff
Impact Assessment carried out by: Linda Towey, Consultant Nurse, Infection Prevention & Control

Comments on this document to: Angela Shaw, Consultant Medical Microbiologist/ Director of Infection Prevention & Control (DIPC)
1. INTRODUCTION

Meningitis is a term used to define inflammation of the pia and arachnoid mater, or meninges, which are membranous tissues that surround the brain and spinal cord. The term is usually restricted to inflammation due to infective agents.

Meningococcal disease is caused by the bacterium Neisseria meningitidis. These bacteria are carried naturally at the back of the throat or nose by about 10% of the population at any one time. But only some strains cause disease. Group B is the most prevalent in the UK, followed by Group C. W135 and Y occur more rarely. There is a vaccine available against Group A, C, W135 and Y but none available against Group B yet (although a vaccine has been developed). Vaccine against Group A is advised for some travellers abroad. Meningococci are transmitted between people through nasopharyngeal secretions either by the airborne route by coughing and sneezing, or by kissing. There is no reservoir other than humans and the organism quickly dies outside the host.

There are two predominant types of meningococcal illness: meningitis and septicaemia.

For further information see Appendix 1.

2. PURPOSE

The purpose of the policy is to ensure early recognition of cases with prompt treatment of patients and contacts.

3. PREVENTION OF SPREAD

Care and management of the patient:
- Intravenous antibiotic therapy should be commenced as soon as possible (see Trust Antibiotic Guidelines).
- The patient must be isolated in a single room with the door closed and an appropriate isolation notice on the door until the bacteria have been eliminated from the patient’s nose and throat after a minimum of 24 hours of appropriate antibiotics.
- Keep healthcare staff and visitors to a minimum.
- If the patient has septicaemia and their skin is breaking down, staff must wear gloves and plastic aprons for procedures involving direct contact with the patient (see Standard Precautions).

Health Care Workers:
The following precautions are recommended for front line staff in A & E, ITU, anaesthetics, medicine and paediatrics, who are involved in the immediate resuscitation of the patient on admission to the hospital.
- If you are resuscitating a patient with suspected meningococcal disease, or carrying out any procedure which may result in exposure to respiratory droplets, such as cough inducing procedures or tracheal suction, you should wear a surgical mask.

- If you do get respiratory secretions in your nose or mouth, contact a member of the Infection Control Team or Occupational Health for advice.

- If you develop conjunctivitis within 10 days of being exposed to respiratory droplets, contact the Infection Control Team or Occupational Health.

Treatment of contacts (see also Trust Antibiotic Guidelines):
After discussion with the CCDC, chemoprophylaxis, usually in the form of ciprofloxacin as a single oral dose, should be offered to close contacts of the patient.

Dose:  
- Adults & children over 12 years: 500mg
- Children 5-12 years: 250mg
- Children 1 month – 4 years: 125mg

For alternative prophylaxis please see British National Formulary.

Close contacts are defined as household members, kissing contacts, sexual partners and friends who have stayed at the patient’s home for several hours in the 7 days prior to onset of the illness.

Healthcare workers in contact with the patient do not need prophylaxis unless they have had direct exposure to respiratory droplets from the patient at the time of admission.

Appropriate vaccine may be offered by the CCDC to unvaccinated contacts of case with types other than B.

4. MICROBIOLOGY SPECIMENS IN CASES OF SUSPECTED MENINGOCOCCAL DISEASE

All of the following specimens should be taken on, or soon after admission to hospital:

A. BLOOD CULTURE
   ) state if, and which, antibiotic has been given.

B. CSF; MICROSCOPY CULTURE
   ) if not contraindicated
   Request urgent processing

C. EDTA blood (2.5 – 5 mls)

↓
if not available, send citrated blood or serum, but not heparinised blood.

D. PAIRED SERA (0.5 ml) for MENINGOCOCCAL SEROLOGY.
   i.e. early and late, preferably 2–3 weeks apart.
   Do not await 2nd serum at 10–14 days but it will be requested.
   Send late serum if no early one obtained.

   The serology tests are: OMP ELISA IgM and IgG.
   Group polysaccharide ELISA.

E. THROAT SWAB (= sweep of pharyngeal wall and tonsils)
   ) request
5. NOTIFICATION

Meningococcal disease is compulsorily notifiable. The Consultant in Communicable Disease Control (CCDC) should be informed immediately a case is suspected by the attending physician (see Notifiable Diseases Leaflet).

6. DISSEMINATION AND IMPLEMENTATION

The policy has been written by the Infection Control Team, been agreed by the Control of Infection Committee and ratified by the Clinical Governance Committee. The policy will be available on TrustNet.

7. PROCESS FOR MONITORING COMPLIANCE WITH THE EFFECTIVENESS OF POLICIES

Monitoring compliance of the policy will be undertaken with individual cases as they occur. This will be undertaken by the Infection Control Team. Any failings will be immediately addressed.

8. EQUALITY IMPACT ASSESSMENT

The Trust has a statutory duty to carry out an Equality Impact Assessment (EIA) and an overarching assessment has been undertaken for all infection control policies.

9. ARCHIVING ARRANGEMENTS

This is a Trust-wide document and archiving arrangements are managed by the Quality Dept. who can be contacted to request master/archived copies.

10. REFERENCES


MENINGITIS – GENERAL INFORMATION

1) Viral meningitis
Viruses are the most frequent cause of meningitis. The main culprits are enteroviruses such as ECHO and coxsackie viruses (50% of cases), mumps virus, herpes simplex virus and Epstein–Barr virus. These are spread by coughing, sneezing or poor hygiene (faeco–oral route for enteroviruses) and some can be found in sewage polluted water.

Although thoroughly unpleasant, viral meningitis is almost always benign. It is a self–limiting condition that usually lasts 4 to 10 days; but headaches and tiredness can last up to a year or more.

Symptoms are:
- Sudden onset of fever
- Headache
- Neck stiffness
- Some drowsiness
- Photophobia

2) Bacterial meningitis
Bacterial meningitis is a life–threatening form of the disease.

<table>
<thead>
<tr>
<th>Table 1: Causes</th>
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<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>0–4 weeks</td>
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<tr>
<td>4–12 weeks</td>
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<tr>
<td>12 weeks to 18 years</td>
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<tr>
<td>19-50 years</td>
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<tr>
<td>&gt;50 years</td>
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Haemophilus influenzae type b used to be a cause of bacterial meningitis in children aged between 12 weeks and 4 years. It is now rare due to the vaccination programme in the UK.
Pneumococcal meningitis develops from a septic focus elsewhere in the body and is not infectious to others.

Risk factors for meningococcal infection apart from direct contact with a case are:

- Overcrowding
- Smoking
- Travel to areas of the world with a prevalence of group A meningococci
- High seasonal incidence, during winter months

Incidence is higher in individuals with one or more of the following characteristics:

- Lack of immunity to the strain circulating in the community
- Recent influenza infection
- Under 1 year of age
- Familial deficiency of complement. (rare)
- Asplenism

### Table 2: Signs and symptoms of bacterial meningitis and septicaemia

<table>
<thead>
<tr>
<th>Newborns and Infants</th>
<th>Older Children and Adults</th>
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<tbody>
<tr>
<td><strong>Non–specific</strong></td>
<td><strong>Older Children and Adults</strong></td>
</tr>
<tr>
<td>• Fever</td>
<td>• Fever</td>
</tr>
<tr>
<td>• Vomiting/diarrhoea</td>
<td>• Vomiting</td>
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<tr>
<td>• Drowsiness</td>
<td>• Back or joint pains</td>
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<tr>
<td>• Irritability</td>
<td>• Headache</td>
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<tr>
<td>• Off feeds/distress on handling</td>
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<table>
<thead>
<tr>
<th>More specific</th>
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<tbody>
<tr>
<td>• Neck stiffness</td>
</tr>
<tr>
<td>• Tense or bulging fontanelle</td>
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<td>• Purpuric/petechial rash</td>
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<tbody>
<tr>
<td>• Seizures/convulsions</td>
</tr>
<tr>
<td>• Neck retraction</td>
</tr>
<tr>
<td>• Piercing cry or dull whimpering</td>
</tr>
<tr>
<td>• Coma</td>
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</tbody>
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<table>
<thead>
<tr>
<th>More specific</th>
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</thead>
<tbody>
<tr>
<td>• Neck stiffness</td>
</tr>
<tr>
<td>• Photophobia</td>
</tr>
<tr>
<td>• Confusion/drowsiness/ impaired consciousness/lethargy</td>
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<th>Late</th>
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<tr>
<td>• Focal neurological signs</td>
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<tr>
<td>• Cranial nerve palsies/seizures</td>
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<tr>
<td>• Hemiparesis, aphasia or visual field defect</td>
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<tr>
<td>• Coma/shock</td>
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<tr>
<td>• Widespread haemorrhagic rash</td>
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</table>
**Children and adults**
In addition to the clinical signs and symptoms outlined in Table 2, two important clinical signs, resulting from pain in the inflamed meninges caused by traction on spinal nerves, are to be noted:

- Kernig’s sign: inability to straighten the knee, due to pain, when the hip is flexed 90°.
- Brudzinski’s sign: flexion of the hips and knees in response to forward flexion of the neck.

**Acknowledgements**