Meningococcal Infections

Management of Cases and Contacts

This APD supersedes: PAT/IC 12 v.4 – Policy for the Management of Cases and Contacts of Meningococcal Infections

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<table>
<thead>
<tr>
<th>Author/reviewer: (this version)</th>
<th>Dr. L Jewes Consultant Microbiologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date revised:</td>
<td>March 2015</td>
</tr>
<tr>
<td>Approved by:</td>
<td>Infection Prevention and Control Committee</td>
</tr>
<tr>
<td>Date of approval:</td>
<td>16 April 2015</td>
</tr>
<tr>
<td>Date issued:</td>
<td>23 April 2015</td>
</tr>
<tr>
<td>Next review date:</td>
<td>March 2018</td>
</tr>
<tr>
<td>Target audience:</td>
<td>Trust-wide</td>
</tr>
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# Amendment Form

<table>
<thead>
<tr>
<th>Version</th>
<th>Date Issued</th>
<th>Brief Summary of Changes</th>
<th>Author</th>
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</table>
| 5       | 23 April 2015 | • Policy updated in line with new trust format (CORP/COMM 1 v6)  
• Section 9 Change in prophylaxis for children  
• Amended contact details  
• Added Appendix 2 Equality Impact  
• Antimicrobial therapy added                                                            | Dr. L. Jewes  
IPCT                  |
| 4       | June 2012     | • Title change to ensure easier location on the Intranet/Internet  
• Paragraphs re-named and re-numbered in line with (CORP/COMM 1)  
• Page 4 – Section added on “Equality Impact Assessment”  
• Section 5 – changes to recognition and investigation of cases  
• Section 10 – changes to choice of antibiotic for prophylaxis  
• Section 11 – changes on immunisation                                                                 | Dr. L Jewes  
IPCT                  |
| 3       | June 2009     | • No changes to policy                                                                                                                  | Infection Prevention and Control Team |
| 2       | June 2008     | • Duties, Education and Training added.  
• Molecular diagnosis method added.  
• Expansion of section on prophylaxis of contacts.  
• Reference updated.  
• Appendix 1 updated.                                                                 | Infection Prevention and Control Team |
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1. **INTRODUCTION**

This guidance should be read in conjunction with “Guidance for public health management of meningococcal disease in the UK”, published by the Health Protection Agency (HPA).

Household contacts of a patient with meningococcal infection are at a higher risk than the general population of developing the infection themselves. The risk of a second case occurring in the household is around 1%. Other close contacts, e.g. family members and girlfriends or boyfriends, are also at increased risk. Less close contacts, e.g. work colleagues and school classmates are generally not at increased risk. Medical and nursing staff are not at increased risk either, unless they have been directly exposed to secretions e.g. during resuscitation.

Meningococci (Neisseria meningitidis) are spread from person to person by respiratory droplets, and prolonged close contact facilitates spread. The bacteria are then carried in the nasopharynx, usually harmlessly, but with the potential to multiply and invade the bloodstream, causing septicaemia and meningitis.

It is therefore essential to identify the close contacts of a patient with meningococcal infection and to give them antibiotic prophylaxis, which will keep their own risk of infection to a minimum if they have recently acquired the infection. Prophylaxis works by eliminating meningococci from the nasopharynx before they can multiply and cause infection. Prophylaxis also aims to eliminate carriage in the pool of contacts as one of these may have been the original source of infection. Immunisation is offered to contacts of group A, C, Y and W135 meningococci, after investigations have been completed but there is no vaccine currently routinely recommended for group B strains, apart from certain high risk groups (see “Green Book”).

2. **PURPOSE**

To ensure appropriate management of cases of meningococcal infection and to ensure that all measures are taken to limit spread of infection.

3. **DUTIES AND RESPONSIBILITIES**

This policy covers infection prevention and control management issues for Trust staff this includes:-

- Employees
- Volunteers
- Agency/Locum/Bank Staff
- Contractors whilst working on the Trust premises

All staff working on Trust premises, outreach clinics and community settings, including Trust employed staff, contractors, agency and locum staff are responsible for adhering to this policy, and for reporting breaches of this policy to the person in charge and to their line manager.
Chief Executive: To ensure that infection control is a core part of clinical governance and patient safety programmes. Promote compliance with infection control policies and national standards in order to ensure low levels of health care associated infections.

Board of Directors: The Board of Directors and executives, through the Chief Executive, is ultimately responsible for ensuring that systems are in place that effectively manage the risks associated with Infection Control. Their role is to support the implementation of a Board to Ward culture to support a Zero Tolerance approach to Health Care Associated Infections.

The Director of Infection Prevention and Control will provide assurance to the board that effective systems are in place.

Director of Infection Prevention and Control: Is responsible for the development of infection prevention and control strategies throughout the Trust to ensure best practice.

The Infection Prevention and Control Team: is responsible for providing expert advice in accordance with this policy, for supporting staff in its implementation, and assisting with risk assessment where complex decisions are required.

Microbiologists: As part of their role provide expert advice to CSM / senior staff out of hours. They will also be responsible in alerting the IPC team of any new alert organisms and difficulties in isolation out of hours.

Senior Nurses: are responsible for ensuring implementation within their area by undertaking regular audits in ward rounds activities. Any deficits identified will be addressed to comply with policy.

Ward and Department Managers: are responsible for ensuring implementation within their area, and for ensuring all staff who work within the area adhere to the principles at all times.

Consultant Medical Staff: are responsible for ensuring their junior staff read and understand this policy, and adhere to the principles contained in it at all times.

Clinical Site Managers: are responsible for ensuring patients are managed in accordance with this policy, and for escalating any situations where safe placement cannot be achieved.

Chief operating officer / On-call Managers: are responsible for providing senior and executive leadership to ensure implementation of this policy, and for ensuring infection risks are fully considered and documented when complex decisions need to be made regarding capacity and patient flow.

4. RECOGNITION AND INVESTIGATION OF A CASE

Patients are usually aged between three months and thirty years, but any age may be affected. They may have septicaemia alone or septicaemia with meningitis.
**Signs and Symptoms**

Any of the following may occur:

- Sudden onset of fever, confusion, drowsiness
- Petechial rash; non-blanching, may be widespread or localised.
- Maculopapular rash also occurs
- Headache, vomiting, photophobia, irritability and neck stiffness

**NOTE:** septicaemia alone presents without meningitis and has a higher mortality than meningitis.

It is strongly recommended that general practitioners give I.V./I.M. benzylpenicillin to cases of suspected meningococcal disease (i.e. meningitis with typical non-blanching rash or meningococcal septicaemia) **before** transfer to hospital. Rapid transfer to hospital is of paramount importance, as even minutes can make a difference to the outcome - but urgent transfer **should not be delayed** in order to give the antibiotics.

However, NICE now recommends that children and young people under 16 years with suspected meningitis **WITHOUT** the typical rash should be transferred directly to hospital without giving parenteral antibiotics (unless urgent transfer is not possible, in which case the antibiotics should be given).

**Dosages of benzylpenicillin:**

- <1 year: 300 mg
- 1-9 years: 600 mg
- >10 years: 1.2 g

**Microbiological Investigations**

If the patient has had benzylpenicillin before admission, it may be difficult to grow the organism, but it is important to attempt it for, a) confirmation of the diagnosis, b) typing of the strain and decisions on vaccination, c) local and national epidemiology. Molecular methods of diagnosis are now available to diagnose and further characterise strains. The following should be routine:

1. **Blood culture.** Before further antibiotics (but do NOT delay giving antibiotics).

2. **EDTA blood sample (purple bottle)** for meningococcal PCR (polymerase chain reaction).

3. **Throat swab.** As soon after admission as possible. This may be the only specimen which is positive if prior antibiotics given. However, this is only suggestive and not diagnostic of the disease.

4. **CSF.** For microscopy and culture if clinically indicated and if patient condition suitable. This may be sent for PCR if appropriate.
5. **Paired sera** for meningococcal antibody if cultures negative. First within a week of onset, second around two weeks later.

Immunological abnormalities (e.g. complement deficiency) can predispose to meningococcal disease. This may present as recurrent infection or as infection with rare serogroups in teenagers or young children.

### 5. ANTIMICROBIAL THERAPY

Treatment needs to be commenced immediately if meningitis/meningococcaemia is suspected.

- **Cetotaxime 2-3g qds IV.**
  (If penicillin anaphylaxic contact Microbiologist)

Treatment may be adjusted once sensitivities are available on discussion with Microbiologist. For meningitis of unknown cause see Trust Antibiotic Policy. Cases should be discussed with the Consultant Microbiologist.

### 6. INFECTION CONTROL PRECAUTIONS

1. It is recommended that patients suspected of having meningitis (including viral) or meningococcal septicaemia are isolated in a side room for the first 24 hours of antibiotic therapy. If viral meningitis is suspected then enteric precautions are to be implemented for 7 days after the onset of illness unless a non-enteroviral diagnosis can be made. This is due to the possibility of the virus being shed in the faeces.

2. Respiratory precautions including wearing a surgical face mask must be taken by staff. For meningococcal meningitis (and/or septicaemia) respiratory precautions must continue until 24 hours of appropriate (systemic) antibiotic therapy is completed.

### 7. NOTIFICATION

Meningitis (all causes) and meningococcal septicaemia are notifiable diseases, i.e. it is a statutory requirement that the Consultant in Communicable Disease Control (the CCDC) is informed of each case. Each district has a CCDC, who is based at Public Health England (PHE). The CCDC manages the community aspect of the case, e.g. prophylaxis and vaccination if there are a large number of contacts, information to schools, enquiries from the media etc. The clinician is required to notify the CCDC about all suspected cases as soon as possible. Notification is the responsibility of the doctor treating the patient, but the Consultant Microbiologist or Infection Control Nurses can give advice on this. The doctor should telephone the CCDC initially, to provide information about the patient’s condition, contacts during the seven days before onset, and place of work / school. (See appendix 1 for contact details of CCDC). A notification form (available on the ward) must be completed and sent to the CCDC, who feeds this information into regional and national epidemiology centres.

**Note:** NOTIFICATION IS A LEGAL REQUIREMENT
8. IDENTIFICATION OF CONTACTS OF CASES PROBABLE MENINGOCOCCAL INFECTION

As soon as the patient’s condition has been stabilised, the ward doctors should begin collecting information from the family about the patient’s contacts during the seven days before onset of illness. For the close contacts who always need prophylaxis (see below), names, dates of birth, addresses and general practitioners should be listed as far as possible. It is also helpful to get information about the patient’s school or place of work and the date they were last there.

97% of cases are sporadic but there is a small risk to people who live in the same household as a case of meningococcal disease. This is highest in the first 7 days and falls over the following 4 weeks.

For public health management of contacts, advice must be sought from the CCDC (details in Appendix 1)

**Close contacts who always need prophylaxis (Give irrespective of vaccination status)**

1. People living in the same house as the patient or who have had prolonged close contact with the case in a household type setting.

2. Family members and friends who have spent time with the patient, especially “Kissing contacts”. Girlfriends or boyfriends should be included.

3. Any childminder who has been looking after the patient in a domestic situation.

4. Members of staff. Chemoprophylaxis is recommended only for those whose mouth or nose is directly exposed to large particle droplets/secretions from the respiratory tract of a probable or confirmed case of meningococcal disease during acute illness until they have completed 24 hours of systemic antibiotics. This type of exposure will only occur among staff who are working close to the face of the case without wearing a mask or other mechanical protection. In practice this implies a clear perception of facial contact with droplets/secretions and is unlikely to occur unless using suction during airway management, inserting an airway, intubating, or if the patient coughs in your face. **General medical or nursing care of cases is not an indication for prophylaxis**

**Contacts who do not usually need prophylaxis**

1. Children and teachers at the patient’s school (including nursery/ pre-school) or college.

2. Work colleagues.

3. Residents of nursing/residential homes.

4. Ambulance staff, nursing and medical staff, who have not been **directly** exposed to the patient’s saliva or nasopharyngeal secretions.

5. Food or drink sharing or similar low levels of salivary contact.
The ward doctor should then telephone the CCDC, a) to notify the case, and b) to discuss prophylaxis for the contacts. Family members are usually visiting and can be given their antibiotics on the ward. Other contacts, e.g. friends or childminders can go to their general practitioner for prophylaxis. The CCDC will let the GPs know.

The CCDC will decide whether a wider circle of contacts, e.g. at a nursery school, need to have prophylaxis. This will depend on the circumstances of the case, whether there have been any other cases which could be linked etc. The ward doctors are not involved in arranging prophylaxis for these contacts. A & E doctors should advise contacts who attend the department that they will be contacted by the CCDC. The Consultant Microbiologist and the Infection Control Nurses can also give advice. Occupational Health Department should be contacted by staff concerned about prophylaxis and they will arrange it if necessary.

Notes

1. In the event of delayed diagnosis, the CCDC will arrange prophylaxis for close contacts up to four weeks after onset of the patient’s illness.

2. The patient may continue to carry meningococci if treated with benzylpenicillin or cefotaxime. One of the prophylactic antibiotics should be given in addition before the patient leaves hospital. However, treatment with ceftriaxone will have eliminated the organism and an additional antibiotic is not necessary.

9. ANTIBIOTICS FOR PROPHYLAXIS

The BNF should be consulted for further details of doses, contraindications and side effects.

The choice of prophylactic agents is as follows:

1. **Ciprofloxacin**

   Recommended for use in all age groups and in pregnancy, although not licensed for this indication. It has the advantage over rifampicin in being given as a single dose and does not interact with oral contraceptives. It is given as a single oral dose;

   **Dosage-**
   - Adults and children over 12 years: 500 mg
   - Children 5 to 12 years: 250 mg
   - Children 1 month to 4 years: 125 mg

   **Contraindications:**
   Contraindicated in known ciprofloxacin hypersensitivity. Unpredictable effect on epilepsy (but may be preferable to rifampicin if patient is on phenytoin). It interacts with several drugs, e.g. anticoagulants, antidiabetics, but a single dose is unlikely to have significant effect.
2. **Rifampicin**

In the absence of contraindications, this may be used in all age groups.

**Dosage**

To be given twice daily for 2 days;

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Dosage</th>
</tr>
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<tbody>
<tr>
<td>Babies under 1 year</td>
<td>5 mg/kg/dose</td>
</tr>
<tr>
<td>Children 1 to 12 years</td>
<td>10 mg/kg/dose (max 600mg)</td>
</tr>
<tr>
<td>Adults and children over 12 years</td>
<td>600 mg/dose</td>
</tr>
</tbody>
</table>

**Contraindications:**

Rifampicin is not recommended in pregnancy or in liver disease. It interacts with many other drugs, e.g. oral contraceptives, anticoagulants, antidiabetics, steroids and propranolol. (See BNF for full details). Rifampicin may produce a reddish discolouration of the urine, sputum and tears. The patient should be forewarned of this. Soft contact lenses may be permanently stained.

3. **Ceftriaxone**

Suitable for pregnant women and people for whom rifampicin or ciprofloxacin are contraindicated. It is given as a single I.M. injection, which is painful. Side effects include diarrhoea, allergies (caution in penicillin allergy), hepatic and blood disorders.

**Dosage**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Dosage</th>
</tr>
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<tbody>
<tr>
<td>Children 1 month to 12 years</td>
<td>125 mg dose</td>
</tr>
<tr>
<td>Adults and children over 12 years</td>
<td>250 mg/dose</td>
</tr>
</tbody>
</table>

4. **Azithromycin**

A single dose can be advised for chemoprophylaxis for pregnant women.

**Dosage**

Azithromycin 500mg stat

10. **IMMUNISATION**

A conjugate vaccine is available for group C infection (MenC). It is only effective against group C infection but gives long-term protection, is highly effective, and can be used in babies from 2 months. It is now part of the childhood immunisation schedule.

Close contacts of confirmed serogroup C disease who were only immunised in infancy or who completed their immunisation course more than 1 year before should be offered and extra dose of menC conjugate vaccine. Previous serogroup C disease is not a contra-indication to MenC vaccination.

Any unimmunised Index case under 25 years old (any serogroup) should receive a course of MenC. Any previously immunised case of group C should receive a booster dose of MenC at time of discharge from hospital.

Contacts of any age of confirmed cases of serogroup A, W135 or Y (including those with organism isolated from nasopharyngeal swab) should receive quadrivalent conjugate vaccine.
MenB vaccine is not currently recommended for contacts of an index case.

See national guidance\(^1\) for further details.

Immunisation will be co-ordinated by the CCDC who will advise on the type of vaccine to use. The vaccine is usually administered by the General Practitioner of the contact, who will be contacted by the CCDC. Immunisation is carried out in addition to antibiotic prophylaxis and is given when typing results from the Reference Laboratory are available. Contacts of group B infections are not immunised.

11. TRAINING AND SUPPORT

Staff will receive instructions and direction regarding infection prevention and control practice and information from a number of sources:-

- Trust Induction
- Trust Policies and Procedures available on the intranet
- Ward/departmental/line managers
- As part of the mandatory infection control education sessions that Trust staff attend.
- Infection Prevention and Control Educational displays/ posters
- Trust Infection Prevention and Control Team

12. MONITORING COMPLIANCE WITH POLICY

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>Who</th>
<th>Frequency</th>
<th>How Reviewed</th>
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<tr>
<td>The policy will be reviewed in the following circumstances:</td>
<td>APD Process Group IPCT</td>
<td>Every three years routinely, unless:</td>
<td>Approved Procedural Document (APD) database Policy will be approved and ratified by the Infection Prevention and Control Committee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- When new national or international guidance are received.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>- When newly published evidence demonstrates need for change to current practice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Action required from Root Cause Analysis Serious Incident Investigation Report</td>
<td></td>
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<tr>
<td>Compliance with policy to negate cross-infection</td>
<td>The Infection Prevention and Control Practitioners</td>
<td>Weekly</td>
<td>“Alert organism review” to monitor adherence with the policy.</td>
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</table>
Audits in ward rounds activities

<table>
<thead>
<tr>
<th>Matron Weekly</th>
<th>Deficits identified will be addressed via agree action plan to comply with policy.</th>
</tr>
</thead>
</table>
| Training needs for infection prevention and control
  Ward and Department Managers Annually
  Training and Education Department | Staffs Professional Development Appraisal
  Attendance will be captured by the via OLM system |

13. DEFINITIONS

**Immunisation** – protects children and adults against harmful infections.

**Antibiotic Prophylaxis** – treatment with antimicrobials to prevent/ward off disease e.g. meningococcal infection.

14. EQUALITY IMPACT ASSESSMENT

As part of its development, this policy and its impact on equality, an Equality Impact Assessment (EIA) has been conducted in line with the principles of the Equality Impact Assessment Policy CORP/EMP 27.

The Purpose of EIA is to minimise and if possible remove and disproportionate impact on employees and or patients on the grounds of race, sex, disability, age, sexual orientation or religious belief. No detriment was identified. See Appendix 2.

15. ASSOCIATED TRUST PROCEDURAL DOCUMENTS

This policy should be read in conjunction with other Trust Policies and protocols for the prevention and control of HCAI in line with the Health and Social Care Action 2008. In particularly:

- Hand Hygiene Policy – PAT/IC 5
- Mental Capacity Act 2005 - PAT/PA 19
- Pathology Specimens – Collection & Handling of Pathology Specimens – PAT/IC 11
- Privacy and Dignity Policy – PAT/PA 28
16. REFERENCES

Guidance in this document is based on the following national guidance:


   https://www.nice.org.uk/guidance/cg102

APPENDIX 1 – CONTACT DETAILS OF THE CONSULTANT IN COMMUNICABLE DISEASE CONTROL (CCDC)

CONTACT DETAILS OF CONSULTANT IN COMMUNICABLE DISEASE CONTROL (CCDC)

Suspected or confirmed cases of meningococcal infection must be immediately reported to the CCDC.

List of contact numbers

Consultant in Communicable Disease Control (Doncaster)

Public Health England (PHE) South Yorkshire  
Tel: 01142 321177  
Fax: 01142 428874

Out of office hours: Contact office number and the call will be transferred to out of hours service who will contact the on call person.

Consultant in Communicable Disease Control (Bassetlaw)

Public Health England East Midlands  
Tel: 0344 225 4524  
Fax: 0115 9693523

Out of office hours via EMAS  
Tel: 01159 675099
## APPENDIX 2 - EQUALITY IMPACT ASSESSMENT FORM

<table>
<thead>
<tr>
<th>Policy</th>
<th>CSU/Executive Directorate and Department</th>
<th>Assessor (s)</th>
<th>New or Existing Service or Policy?</th>
<th>Date of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningococcal Infections Management of Cases and Contacts PAT/IC 12</td>
<td>Corporate Nursing Infection Prevention and Control</td>
<td>Dr L. Jewes</td>
<td>Existing Procedural Document</td>
<td>16 April 2015</td>
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</table>

1. **Who is responsible for this policy?** Infection Prevention and Control Team

2. **Describe the purpose of the policy?** To implement safe working practices within the healthcare setting.

3. **Are there any associated objectives?** To ensure appropriate management of cases of meningococcal infection and to ensure that all measures are taken to limit spread of infection.

4. **What factors contribute or detract from achieving intended outcomes?**

5. **Does the policy have an impact in terms of age, race, disability, gender, gender reassignment, sexual orientation, marriage/civil partnership, maternity/pregnancy and religion/belief?**
   - **No**

6. **Is there any scope for new measures which would promote equality?**
   - N/A

7. **Are any of the following groups adversely affected by the policy?**
   - a. Protected Characteristics
     - Affected? | Impact
     - Age | No
     - Disability | No
     - Gender | No
     - Gender Reassignment | No
     - Marriage/Civil Partnership | No
     - Maternity/Pregnancy | No
     - Race | No
     - Religion/Belief | No
     - Sexual Orientation | No

8. **Provide the Equality Rating of the service/ function/policy /project / strategy**
   - Outcome 1 ✓  
   - Outcome 2
   - Outcome 3
   - Outcome 4

9. **Date for next review**
   - April 2018

**Checked by:** Maurice Madeo - Deputy DIPC  
**Date:** 16/04/15.