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Version: 9.0

Name of Policy: Management of Bacterial Meningitis And Meningococcal Disease Policy

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Ratified Infection Prevention and Control Committee
Review Date 01/07/2014
Sponsor Director of Nursing and Midwifery
Expiry Date 26/07/2015
Withdrawn Date

This policy supersedes all previous issues.
## Version Control

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<td>IPCC</td>
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Management of Bacterial Meningitis And Meningococcal Disease Policy

1 Introduction

This document has been amended following recent HPA guidance 2011 for control measures. This has been necessary following changes in epidemiology, advent of new vaccines and new evidence on risk and control measures.

2 Policy scope

This policy covers care of patients with suspected/confirmed meningitis/meningococcal disease who come into hospital. It includes clinical management, infection control, control of infection spread (including pre-admission treatment), further investigation and treatment, prophylaxis and vaccination of cases and contacts notification.

3 Aim of policy

This policy outlines arrangements within Gateshead Health NHS Trust to minimise the risk of infection to patients, visitors and staff. The Trust is committed to working towards compliance with Standards for Better Health, Saving Lives and Winning Ways.

All Trust staff have a responsibility to adhere to Trust policy and ensure that appropriate measures are taken to reduce risks associated with infection. In addition Service Managers and identified leads within departments/directorates have a duty to ensure compliance with Trust policy. The Infection Prevention and Control Team management structure is enclosed, as Appendix 1. Leads for Infection Prevention and Control are required for each staff group within the Trust, See Appendix 2.

Actions required when an increase in the number of associated infections occur is explained in the Outbreak Management Policy No. 24.

Performance indicators for this policy are the achievement of the following standards.

- NHSLA Risk Management Standards for Acute Trusts
- Code of Professional Practice for the Prevention and Control of Healthcare Associated Infections
- Standards for Better Health
- Saving Lives
- Winning Ways
- Epic 2 Guidelines
- Health & Social Care Act 2008
(See reference list)
Contact points:

Duty Medical Microbiologist: - Bleep 2092
Head of Infection Prevention & Control: Mrs V Atkinson - Ext 3592
Infection Control Nurses: Surveillance - Bleep 2057

Director of Infection Prevention & Control: Mrs G MacArthur - Ext 6045/6102
Supplies Contact: Mrs S Patton - Ext 2805

4 Duties (Roles and responsibilities)

- **The Chief Executive** has responsibility for ensuring the Trust has robust and effective Infection and Prevention Control Policies.

- **Trust Board** has a responsibility to ensure that the risk of infection to patients, staff and visitors is minimised to its lowest potential and therefore supports the full implementation of this policy.

- **The Directors of Infection Prevention and Control (DIPC)** have executive responsibility for Infection Prevention Control and oversee Infection and Prevention Control activity via the Infection and Prevention Control Committee. Initiate a root cause analysis and where necessary convene a Hospital Coordinating Group meeting to ensure that patients, staff and visitors are protected.

- **Consultant Microbiologist** - will give advice against this policy and follow up positive suspected meningitis and/or infected patients with clinical staff that need Medical Microbiologist input. Out of hours and at weekends will follow up suspected meningitis, needing urgent input on a daily basis.

- **Head of Infection Prevention and Control** - will give advice against this policy and ensure that it is updated every two years or in line with current national guidance via the nominated Infection Prevention & Control Nurse lead within the review of policies section of the Infection Prevention & Control Committee.

- **The Infection and Prevention Control Nurse (IPCN)** – will give advice and support on suspected or known cases of bacterial meningitis management and policy interpretation.

- **Microbiology Secretary** coordinates IPC policy updates ensuring the OP27 is completed via DIPC and appropriate IPCN/Microbiologist and sent forward to the Membership Co-ordinator, Trust Headquarters in order that the policies can be uploaded to the Trust intranet.
• **The Infection Prevention and Control Committee** - is responsible for the ratification of Trust wide infection prevention and control policies, procedures and guidance, providing advice and support on the implementation of policies and monitoring the progress of the annual infection control programme. Acknowledging progress against action plans presented by the Divisions related to Healthcare associated infection RCA incidents.

• **Heads of Department** - Must ensure that appropriate training is available and that staff understand and comply with this Policy

• **Divisional Managers** – will ensure that all staff are aware of and follow this policy and are aware of their own roles and responsibilities to ensure safe practice. That staff have access to intranet copies of Infection Prevention & Control Policies.

• **All Trust staff** - have a responsibility to adhere to Trust policy and ensure that appropriate measures are taken to reduce risks associated with infection. All Trust staff have a responsibility to ensure they attend annual Infection Prevention and Control mandatory training.

### 5 Definitions

**Confirmed case**

A clinical diagnosis of meningitis or septicaemia which has been confirmed microbiologically (microscopy and/or culture) as being caused by *Neisseria meningitidis*. Meningococcal infection of a joint, the heart or eye (including conjunctiva) should also be regarded as a confirmed case for Health Protection Unit (HPU) action.

**Probable case**

A clinical diagnosis of meningococcal meningitis or septicaemia without microbiological confirmation requires consultation between the clinician in charge of the case and a Medical Microbiologist. The HPU should be informed of probable cases.
6 Bacterial Meningitis And Meningococcal Disease

6.1 When a case occurs:

6.1.1 Infection Control

Ensure that the local policy for isolation nursing is implemented. The patient should be admitted to a negative pressure isolation room where available and respiratory precautions be instituted. See Isolation Policy No: 6. Following 48 hours of antibiotic treatment (see 1.6) a patient no longer requires respiratory isolation.

6.1.2 Pre-Admission Treatment

NICE recommends that children and young people with suspected bacterial meningitis without a non-blanching rash get transferred directly to secondary care without giving parenteral antibiotics (except if urgent transfer is NOT possible when antibiotics should be administered immediately)

In patients with suspected bacterial meningitis who have non-blanching rash/meningococcal septicaemia – need to administer parenteral antibiotics immediately but urgent transfer to hospital must not be delayed on this account.

6.1.3 Investigations

As soon as the patient is seen in hospital, specimens should be taken where possible for microscopy (rash aspirate, CSF) and culture (blood, throat swab, rash aspirate and CSF). In addition the Microbiology department will arrange for any CSF, EDTA blood sample and serum to be forwarded to the Meningococcal Reference Laboratory for PCR and serology. If the diagnosis remains unconfirmed it is helpful to collect a convalescent serum specimen 14 – 21 days after onset of the illness.

6.2 Notification of Cases

6.2.1 Suspected Meningococcal Disease

When meningococcal disease is suspected always notify one of the Medical Microbiologists immediately. The HPU should be notified directly, or if asked, the Medical Microbiologist will do this. Copies of laboratory reports are routinely sent to the HPU.

6.2.2 Notification of Cases and Treatment of Contacts

All cases of acute bacterial meningitis and all forms of invasive meningococcal disease and invasive Haemophilus influenzae type b (Hib) disease are notifiable. This policy should be read in conjunction with the following policies in order to maintain a high standard of care and protection for Trust users and staff:

<table>
<thead>
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<tr>
<td>Standard Precautions</td>
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<td>Hand Hygiene</td>
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<tr>
<td>Isolation</td>
<td>Policy No: 6</td>
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</table>
6.2.3 Contact Details

MEDICAL MICROBIOLOGISTS:

Duty Medical Microbiologist: - Bleep 2092

(Out of hours via Microbiology BMS on-call – QEH Switchboard)

LOCAL HEALTH PROTECTION UNIT TEAM:

HPA North East
Floor 2
Citygate
Gallowgate
Newcastle upon Tyne
NE1 4WH

Telephone: 0844 225 3550

For out of hours access to the HPU on call rota please contact QEH switchboard. Contact person first on call for Northumberland, Tyne & Wear Health Protection Unit (HPU).

6.3 Treatment

Treatment of suspected bacterial meningitis where no microscopy is available is CEFTRIAXONE 2g IV BD. **ADD** AMOXICILLIN 2g IV 4 hourly if the patient is over 55 years, immunocompromised, pregnant or diabetic.

The treatment of choice for bacterial meningitis caused by *Neisseria meningitidis* (meningococci), *Streptococcus pneumoniae* (pneumococci) or *Haemophilus influenzae* type b is CEFTRIAXONE 2g IV BD.

If microscopy indicates presumed *Listeria monocytogenes* then give AMOXICILLIN 2G IV 4 hourly.

If anaphylaxis to beta-lactams (Penicillins and Cephalosporins), under 55 years and NOT immunocompromised give CHLORAMPHENICOL 25mg/kg IV QDS plus VANCOMYCIN 1g IV BD (if pregnant in 3rd trimester contact Medical Microbiologist).

**ADD** CO-TRIMOXAZOLE 1.44g IV BD to the above regimen if over 55 years and / or immunocompromised (if pregnant in 1st or 3rd trimester contact Medical Microbiologist).

**FOR FULL DETAILS ON ALL ANTIMICROBIALS – PLEASE REFER TO BRITISH NATIONAL FORMULARY (BNF).**
6.4 Prophylaxis of Contacts

6.4.1 Chemoprophylaxis

Unless index cases have been given IV Ceftriaxone they should receive chemoprophylaxis as soon as they are able to take oral medication.

6.4.2 Family and Social Contacts

Prophylaxis should be offered to contacts living in the same “household” as the case during the 7 days prior to the onset of illness. Household contacts are defined as people who have had close/prolonged contact with the case. In addition to those sleeping in the same house and close intimate saliva exchange contacts (girlfriend/boyfriend), both grandparents and childminders may be included. The local HPU will carry out a risk assessment as regards who is a defined contact and advise on prophylactic treatment.

6.4.3 School and Work

Chemoprophylaxis is not usually indicated for one sporadic case, but is indicated if there are 2 or more connected cases. Necessary arrangements will be made by the CCDC and local HPU.

6.4.4 Healthcare Personnel

Prophylaxis would be appropriate only in exceptional circumstances, for example if mouth to mouth resuscitation had been undertaken or when staff have been exposed to aerosols of respiratory secretions in known or suspected meningococcal disease. A member of the Infection Prevention and Control Team (IPCT) should be contacted for advice. Out of hours the on call Medical Microbiologist should be contacted for advice. See Personal Protective Policy No: 2 and Standard Precautions Policy No: 3

6.4.5 Chemoprophylaxis for Contacts

Ciprofloxacin single dose – now replaces rifampicin as agent of choice for contacts of meningococcal meningitis or meningococcal sepsis

Dosage:
Adults and Children > 12 years  500mg stat
Children aged 5 – 12 years  250mg stat
Children 1month – 4 years  125mg stat
Side Effects/Precautions:
The administration of Ciprofloxacin may be followed by anaphylactic reactions. Healthcare staff should give out information sheets that include the risk of side effects and be prepared to deal with allergic reactions.

Ciprofloxacin has fewer interactions than rifampicin which was previously used for prophylaxis. Although Ciprofloxacin was not recommended in children previously due to possible risk of arthropathy seen in juvenile animal studies, studies have found that this risk is low and arthralgia is transient, so prophylaxis dosing should have minimal risk.

CONTACTS SHOULD CONTACT THEIR GENERAL PRACTITIONER URGENTLY IF THEY BECOME UNWELL OR ATTEND THE NEAREST ACCIDENT AND EMERGENCY DEPARTMENT.

In cases/contacts of meningitis or other invasive infections with *Haemophilus influenzae type b* i.e. meningitis/septicaemia however rifampicin is still used for prophylaxis:
Rifampicin induces enzymes in the liver and may affect other medication the patient is taking.

<table>
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<tr>
<th>Drug</th>
<th>Rifampicin (note precautions)</th>
<th>Dose:</th>
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<td>Adults and children over 12 years</td>
<td>600 mg bd</td>
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<tr>
<td>Child 1 – 12 years</td>
<td>10 mg per kilogram bd (Max. dose 600mg bd)</td>
<td></td>
</tr>
<tr>
<td>Child under 1 year</td>
<td>5 mg per kilogram bd</td>
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In cases of invasive infections with *Haemophilus influenzae type* i.e. meningitis/septicaemia please contact a Medical Microbiologist for advice regarding treatment of contacts

Side effects/Precautions:
Rifampicin is contra-indicated in the presence of jaundice or known sensitivity.

Red discolouration of urine/tears/sputum. May permanently stain soft contact lenses.

Rifampicin may significantly interfere with a variety of drugs. Important interactions arise with **ANTICOAGULANTS, ANTICONVULSANTS, ANTI-ARRHYTHMICS AND ORAL CONTRACEPTIVES**. This may influence the choice of chemoprophylaxis. When given with oral contraceptives additional contraceptive precautions will be needed during that entire menstrual cycle. (British National Formulary (BNF) recommends use additional precautions for four weeks).
Household contacts able to attend hospital may be given Rifampicin (available in the hospital on a 24 hour basis) and the GP should be informed by the HPU. The HPU will liaise with the GP regarding prophylaxis for contacts unable to attend hospital. Chemoprophylaxis should be initiated as soon as possible after diagnosis of the index case. Ceftriaxone is now available as an alternative to Rifampicin or Ciprofloxacin for chemoprophylaxis. A single injection is given (250 mg IM in adults, children less than 12 years, 125 mg). Ceftriaxone is contraindicated in patients with hypersensitivity and in the first 6 weeks of life.

The HPU will inform the GP of all contacts who have received chemoprophylaxis.

CONTACTS SHOULD CONTACT THEIR GENERAL PRACTITIONER URGENTLY IF THEY BECOME UNWELL OR ATTEND THE NEAREST ACCIDENT AND EMERGENCY DEPARTMENT

6.5 Vaccination

a) Group C conjugate meningococcal vaccine is now available in the UK for all people from 2 months up to and including 25 years of age. However, travellers to areas of the world where the risk of acquiring meningococcal infection is much higher than in the UK, may be offered an alternative meningococcal polysaccharide vaccine, which is effective against serogroups A, C, W135 and Y.

b) In contacts of meningitis C case of any age if immunised only in infancy or if completed whole course including booster > 1 year ago → one extra dose of meningitis C conjugate vaccine is given. In addition vaccination may be offered along with chemoprophylaxis to contacts of index cases using the quadrivalent conjugate vaccine to all contacts of any age (2 doses 1 month apart if < 1 year) if it is known that N. meningitidis group A, C, W135 or Y is the causative organism. For confirmed cases and probable cases (if NPS swab +ve for serogroups A, W 135 or Y).

c) Index case vaccination – if index case belongs to a known risk group for meningococcal disease (asplenia, complement deficiency) and not immunised with quadrivalent vaccine (Men A C W Y) should received a course and if had been give a course with quadrivalent conjugate vaccine > 1 year ago receive 1 dose of vaccine.

d) Routine vaccination of healthcare workers is not recommended.

Haemophilus influenzae type b (Hib) vaccine is offered routinely to all infants at 2,3 and 4 months of age.
6.6 Disseminating Information

General issues:

- The Medical Microbiologist will liaise with the HPU on a regular basis in order to ensure the accuracy of local information.

- Leaflets for patients are available from:

  Meningitis Trust Tel No: 01453 768000
  Meningitis Research Foundation Tel No: 01454 281811
  Department of Health Tel No: 0800 555777

For further information please refer to local HPU policy – Guidance for Public Health Management of Meningococcal Disease in the UK – January 2011.
Website: www.hpa.org.uk

6.7 Information for Patients

This is routinely provided by the HPU for the patient and all contacts.

6.7.1 Antibiotics are given to the contacts of patients with meningococcal and invasive *Haemophilus influenzae b* infection to clear any bacteria they may be carrying in the nose and throat. This prevents the passage of the bacteria to other people and substantially reduces the risk of developing meningitis.

6.7.2 The antibiotic usually prescribed is Rifampicin, but as this may interfere with other medicines you may be taking (anticoagulants, anticonvulsants and some heart drugs) an alternative may be used. As Rifampicin also interferes with the effectiveness of the contraceptive pill, women on the pill must use additional contraceptive methods during the cycle in which Rifampicin was taken. Extra contraceptive precautions are recommended for 4 weeks in the BNF.

6.7.3 Rifampicin is red in colour and as it ends up in body fluids, it may cause urine, tears and sputum to develop a red discolouration. Soft contact lenses may become permanently stained.

6.7.4 You should contact your General Practitioner urgently if you become unwell or attend the nearest Accident and Emergency department.
7 Training

- All staff will be made aware of existence of the policy at induction.
- Treatment guidelines are also available on the antibiotic policy on the Trust intranet.
- Training from the IPC perspective included in relevant policies.
- This is one of the diseases in the notifiable disease list and staff will be reminded by Microbiologists
- Mandatory training to include guides for hand hygiene, PPE use, isolation and environmental cleaning.

8 Equality and diversity

The Trust is committed to ensuring that, as far as reasonably practicable, the way we provide services to the public and the way we treat our staff reflects their individual needs and does not discriminate against individuals or groups on the grounds of any protected characteristic (Equality Act 2010).

The policy has been appropriately assessed.

9 Monitoring compliance with the policy

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<td>Retrospective audit of cases</td>
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<td>Antibiotic Prescribing Committee</td>
<td>6 monthly</td>
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<td>Prospective audit of case and datix of non compliant cases</td>
<td>Microbiologists</td>
<td>IPCC</td>
<td>Review datix entry 6 monthly</td>
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10 Consultation and review

Members of Infection Prevention and Control team (IPCT) and Infection Prevention and Control Committee (IPCC) and Antimicrobial prescribing Committee

11 Implementation of policy (including raising awareness)

All members of staff will be informed via trust wide e mail, Mandatory Training and Safecare Bulletins and individual team meetings when due for review.
12 References

1. Guidance for Public Health Management of Meningococcal Disease in the UK January 2011


13 Associated documentation

IC Policy 2  Personal Protective Equipment in Clinical Practice
IC Policy 3  Standard Precautions for the Prevention and Control of Infection
IC Policy 4  Hand Hygiene Policy
IC Policy 6  Isolation Policy (including respiratory isolation)