POLICY FOR THE CONTROL OF MENINGOCOCCAL INFECTION

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<td>Policy Group</td>
<td>Infection Control Committee</td>
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<tr>
<td>Author</td>
<td>Sara Bartram</td>
<td>Version no.</td>
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<td>Reviewer</td>
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<td>HAI &amp; Infection Control Committee</td>
<td>Last review date:</td>
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CONTENTS

1. Purpose and scope 2

2. Policy aims 2

3. Responsibilities and organisational arrangements 3

3.1 Specific Responsibilities 3
   3.1A GP / A+E  
   3.1B Admitting Consultant 3
   3.1C Consultant Microbiologist 5
   3.1D Health Protection Team 6

3.2 Organisational Arrangements 7
   3.2A Management of at risk contacts 7
   3.2B Chemoprophylaxis 8
   3.2C Vaccines 11
   3.2D Action if a further case is identified within four weeks 12
   3.2E Sporadic cases in educational settings 12
   3.2F Cluster of cases in educational setting 13
   3.2G Communication 13
   3.2H Organisational Flow Chart 15

4. Policy Dissemination, Implementation and Monitoring 16
   4.1 Dissemination and Implementation 16
   4.2 Monitoring, Audit, Review and Approval 16
   4.3 Risk Management 16
   4.4 Audit Tool 17

5. Equality and Diversity 18

6. Document Control Sheet 19

Appendices

1. Case Definitions 20
2. Classical CSF Findings in Acute Meningitis 21
3. Enhanced Meningococcal Infection Surveillance Form 22
4. Contact Tracing Form 24
5. Model Letter to Parents 25
6. Ciprofloxacin Advice Leaflet 26
7. Meningitis Fact Sheet 27
8. Meningitis Am I At Risk Leaflet 30
9. Useful Contact Numbers 38
1. PURPOSE AND SCOPE

The purpose of this policy is to detail required procedures for the surveillance, investigation, management and prevention of meningococcal infection in order to provide clarity to team members in regard to fulfilling their responsibilities. The policy is applicable to all members of the multidisciplinary team within NHS Dumfries and Galloway responsible for control of meningococcal infection. This includes public health, infection control, microbiology laboratory and community and acute service clinical staff. Procedures cover action to be taken in addressing possible, probable and confirmed cases (definitions provided in Appendix 1) and in tackling sporadic cases, clusters and outbreaks. The processes prescribed are consistent with evidence, guidance and good practice, including that provided in the following documents:

- Managing Meningococcal Disease in Higher Education Institutions (Universities UK 2004).

This policy also provides relevant background information so members of the multi-disciplinary team understand the context of and reasons for their role. The policy is not exhaustive and if in any doubt the Health Protection Team at Public Health should be consulted.

2. AIMS

The aims of this policy are to:

- ensure early identification and appropriate management and treatment of all possible cases and contacts
- ascertain whether the case is part of an outbreak
- determine possible sources and vehicles of the infection
- implement appropriate control measures as early as possible
- prevent further cases of infection
- prevent and reduce mortality / morbidity
- maximise opportunities to communicate, educate, advise and reassure individuals and communities affected
3. RESPONSIBILITIES AND ORGANISATIONAL ARRANGEMENTS

3.1 SPECIFIC RESPONSIBILITIES

3.1A GP / A&E (Clinician First Suspecting Meningococcal Meningitis)

Action required by a clinician who first suspects a diagnosis of invasive meningococcal disease is summarised in the Flow-Chart in Section 3.2H.

NICE recommends* that children and young people with suspected bacterial meningitis without non-blanching rash should be transferred directly to secondary care without giving parenteral antibiotics.* If urgent transfer to hospital is not possible (for example, in remote locations or adverse weather conditions), antibiotics should be administered to children and young people with suspected bacterial meningitis. For suspected meningococcal disease (meningitis with non-blanching rash or meningococcal septicaemia) parenteral antibiotics (intramuscular or intravenous benzylpenicillin) should be given at the earliest opportunity, either in primary or secondary care, but urgent transfer to hospital should not be delayed in order to give the parenteral antibiotics.

*http://guidance.nice.org.uk/CG102/NICEGuidance/pdf/English

<table>
<thead>
<tr>
<th>Recommendation 1: Pre-admission management</th>
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<tr>
<td>Rapid admission to hospital is highest priority when meningococcal disease is suspected.</td>
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<table>
<thead>
<tr>
<th>Immediate dose of iv/im benzylpenicillin for suspected meningococcal infections</th>
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<tbody>
<tr>
<td>Adults and children aged 10 years or over 1.2 g</td>
</tr>
<tr>
<td>Children aged 1 to 9 years 600 mg</td>
</tr>
<tr>
<td>Children aged under 1 year 300 mg</td>
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</table>

3.1B Admitting Consultant Paediatrician / Physician / Responsible Clinician

Action required by clinicians responsible for the admission, care and treatment of a suspected case of meningococcal disease is summarised in the Flow-Chart in Section 3.2H.

The clinician will prioritise and ensure optimal clinical management of the patient at all times.

- **Early Notification:**
  Prompt and effective communication between clinicians, microbiology laboratories and the Health Protection Team (HPT) at Public Health is essential to ensure successful control of invasive meningococcal disease. Formal notification of all forms of meningococcal disease is a legal
requirement. All suspected cases should be promptly notified to the Health Protection Team without waiting for microbiological confirmation. An early telephone alert should be made to the Consultant in Public Health Medicine (CD/EH) or Health Protection Nurse in the first instance:

Office Hours  Tel: 01387 272724
Out of Hours  Public Health On-call cover via DGRI switchboard:
              01387 246246

This enables appropriate chemoprophylaxis for ‘at-risk’ contacts to be administered within the recommended 24 hour period (See Sections 3.2A 3.2B). Chemoprophylaxis may be accessed by ‘at risk’ contacts attending the hospital under the guidance of the HPT via Accident and Emergency or the Out of Hours (OOHs) GP service as appropriate. Contacts outwith the hospital setting will be supported by the HPT to access chemoprophylaxis via their GP. Early measures can also be taken by the HPT to help to minimise potential public anxiety (See Section 3.2G). If a case is suspected through the night an urgent notification early the next morning is sufficient and greatly appreciated.

• **Diagnostic tests:**
  Precise identification of the causative organism is crucial in the control and management of both case and contacts. This information is also crucial to the surveillance of clusters, outbreaks and incidence trends of invasive meningococcal disease within Dumfries and Galloway and nationally.

The Area Microbiology Laboratory recommends certain essential samples to be taken from every case of suspected meningococcal disease as soon as possible after the patient is first seen in hospital (regardless of previous antibiotic treatment):

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Recommended Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood for culture</td>
<td></td>
</tr>
<tr>
<td>Blood for PCR (EDTA or other unclotted blood specimen)</td>
<td></td>
</tr>
<tr>
<td>Serum (on admission and 2-6 weeks later)</td>
<td></td>
</tr>
<tr>
<td>CSF for microscopy, culture, PCR (Lumbar Puncture is contraindicated in septicaemia because of cardiovascular instability, clotting and platelet derangements etc. However if lumbar puncture is carried out it should not be done until the patient’s condition has been stabilized and assessment made to rule out raised intracranial pressure – meningococcal DNA can be found in CSF up to 96 hours after commencing antibiotics).</td>
<td></td>
</tr>
<tr>
<td>Aspirate from other sterile sites suspected of being infected (e.g. joints) for microscopy, culture, PCR. (not recommended in septicaemic patients)</td>
<td></td>
</tr>
<tr>
<td>Nasopharyngeal (throat) swab (per nasal if patient unable to cooperate – less affected by prior antibiotic therapy)</td>
<td></td>
</tr>
<tr>
<td>Any other specimens to check for alternative diagnoses e.g. stool, viral throat swab.</td>
<td></td>
</tr>
</tbody>
</table>
The above samples are regarded as essential on admission provided the patient’s airway and circulation do not require attention. These specimens should be sent urgently to the Area Department of Microbiology and the laboratory and Duty Microbiologist alerted. On-call facilities should be used outwith normal working hours. All initial and subsequent samples should be marked ‘urgent’ ‘meningococcal infection’ on the request form.

Classical CSF laboratory findings of meningococcal infection are shown in Appendix 2.

Immunological abnormalities can predispose to meningococcal disease. In children and young adults with meningococcal disease caused by rare serogroups (not A, B, or C), or recurrent infection due to any serogroup, the CPHM will discuss immunological investigation with the clinician.

3.1C Consultant Microbiologist

Action required by the Consultant Microbiologist is summarised in the Flow-Chart in Section 3.2H.

- The Consultant Microbiologist will ensure that all specimens with request forms labelled ‘meningococcal infection’ are processed urgently.
- The Consultant Microbiologist will inform the responsible clinician of initial and subsequent test results as soon as possible within the same day of confirmation.
- The Consultant Microbiologist will assist the clinician in providing optimum clinical management.
- The Consultant Microbiologist will inform the Health Protection Team urgently of all initial specimen results confirming meningococcal infection. If a case is confirmed through the night an urgent notification early the next morning is sufficient and greatly appreciated.

Office HoursTel: 01387 272724  
Out of Hours: Public Health On-call cover via DGRI switchboard: 01387 246246

- All other subsequent results will be made available by e-mail on the same day. Meningococcal Reference Laboratory reports regarding serogrouping and typing of organisms will also be made available to the Health Protection Team on the same working day.
3.1D Health Protection Team (HPT)

Action required by the Health Protection Team is summarised in the Flow-Chart in Section 3.2H.

- The HPT will confirm the diagnosis of notifiable meningococcal infection (See Appendix 1 for case definitions).

- The HPT will conduct any required investigation, contact identification and tracing (See Appendix 3 and 4 for surveillance forms).

- HPT will liaise with the Accident and Emergency Department, OOHs GP Service or the contact’s GP as appropriate to enable access to chemoprophylaxis to appropriate close contacts within 24 hours (See Sections 3.2A 3.2B).

- The HPT will alert GPs and appropriate Out Of Hours Services to advise them of the case.

- The HPT will provide further information and guidance to GPs and inform them when any of their patients has been identified as a close contact of the case and given chemoprophylaxis.

- The HPT will communicate with schools and provide parental guidance (See Appendices 5 - 8). The Director of Education will be informed of all cases of diagnosed meningococcal infection attending schools within their jurisdiction.

- The HPT will inform NHS Dumfries and Galloway Head of Communications of all cases of confirmed meningococcal disease and communicate with the media in accordance with agreed policy (See Section 3.2G).

- The HPT will inform Health Protection Scotland (HPS) and the CMO’s Office at Scottish Government of all confirmed cases of meningococcal infection. The Enhanced Meningococcal Infection Surveillance Form (See Appendix 3) will be completed on all confirmed cases and returned to HPS within 24 hours.

- The HPT will take appropriate actions in the event of further cases of meningococcal infection within a 4 week interval (See Section 3.2D).

- The HPT will assist clinicians in providing information and advice for the family and close contacts of a case in regard to diagnostic tests, treatment, prophylaxis and the need for public awareness but not panic (See Appendix 7).
3.2 ORGANISATIONAL ARRANGEMENTS

3.2A Management of ‘at-risk’ contacts associated with a sporadic index case

About 97% of cases are sporadic. The risk of further cases of meningococcal disease linked to a probable or confirmed sporadic index case can be reduced by proper management of those who have had specific types of contact with the case.

An ‘at-risk’ contact is:
Any person who, since 7 days prior to the onset of illness in the case, has lived and slept in the same household and/or had mouth-to-mouth kissing contact with a confirmed case or a probable case of meningococcal disease.

The following are therefore to be classed as close contacts and should routinely be offered prophylaxis:

<table>
<thead>
<tr>
<th>‘AT-RISK’ / CLOSE CONTACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>People in the same household</td>
</tr>
<tr>
<td>People not in the same household, but who have slept in the house during the seven days prior to the onset of the illness</td>
</tr>
<tr>
<td>People not in the same household but who have spent a substantial period of time (i.e. several hours a day) in the house during the seven days prior to the onset of the illness</td>
</tr>
<tr>
<td>&quot;Kissing Contacts&quot; i.e. boy/girlfriend</td>
</tr>
<tr>
<td>Students sharing the same dormitory / room, kitchen or flat as the case</td>
</tr>
<tr>
<td>Anyone who gave mouth-to-mouth resuscitation to the index case</td>
</tr>
<tr>
<td>Children and adults who attended the same childminder as the index case in the seven days prior to the onset of the illness</td>
</tr>
<tr>
<td>Health care staff with unprotected airway exposure to large nasopharyngeal particle droplets / secretions of probable / confirmed patients around the time of admission to hospital until 24 hours of systemic antibiotics completed (e.g. airway management procedures including endotracheal intubation, mouth to mouth resuscitation, or if the patient coughs in your face).</td>
</tr>
</tbody>
</table>
The following contacts do not generally require prophylaxis:

**CONTACTS NOT REQUIRING PROPHYLAXIS**

- Health care staff, other than those who have given mouth-to-mouth resuscitation and in defined at-risk groups above
- Low-level salivary contact e.g. non-intimate kissing, food/drink sharing
- Work, school, nursery, playgroup or residential/nursing home contacts
- Community or social contacts, other than those described above
- Students on the same course not in the above categories
- Students in the same hall of residence not in the above categories
- Teaching staff, and staff at a hall of residence not in the above categories
- Other types of contact eg social activities, ambulance or routine clinical / nursing care
- Travel in the next seat on bus, plane or car
- Embalming or post-mortem contact

Evidence on risk is limited and judgement may be required to reach a decision about prophylaxis for those who do not clearly fall into either of the above categories. The HPT will conduct an investigation and interview the case and / or their family. Individual levels of contact will be assessed and the HPT will identify which contacts have had a level of exposure requiring prophylaxis. Every effort will be made to trace any ‘at-risk’ contacts where these may have dispersed within 7 days prior to the onset of illness (eg following end of term at university or boarding school). It is important that only true ‘at-risk’ contacts are identified and given chemoprophylaxis otherwise large numbers of persons may demand unnecessary medication.

### 3.2B Chemoprophylaxis

**Aim of chemoprophylaxis**

Chemoprophylaxis aims to reduce the risk of invasive disease by eradicating carriage in the group of close contacts at highest risk. It may act in two ways: 

(i) by eradicating carriage in established carriers who pose a risk of infection to other and 
(ii) by eradicating carriage in those who have newly acquired the invasive strain and who may themselves be at risk. The short – and medium term reduction in risk among household contacts who are given antibiotics suggest that both mechanisms may operate.

GPs and hospital clinicians may prescribe chemoprophylaxis to ‘at-risk’ contacts as defined above and as advised by the HPT. It is sometimes most practicable for these contacts to receive chemoprophylaxis directly from the hospital ward (e.g. mothers staying with their sick child on the ward). GPs will be informed by the HPT if their patient has received chemoprophylaxis in this way.
• In addition to chemoprophylaxis it is also good practice to give advice and information verbally and in the form of leaflet material to ‘at-risk’ contacts (See Appendix 6, 7, 8). All ‘at-risk’ contacts should be advised of the small risk of disease (whether or not prophylaxis is given) and of the need to seek urgent medical advice if any symptoms suggestive of meningococcal disease develop.

• **Chemoprophylaxis for the case**
  The case should receive chemoprophylaxis when able to take oral medication and before discharge from hospital, unless the disease has already been treated with ceftriaxone. Those treated with cefotaxime should still receive prophylaxis because it is not known whether cefotaxime eradicates carriage.

**Choice of agent for chemoprophylaxis**
The use of single dose ciprofloxacin is recommended by a Cochrane review. Ciprofloxacin has a number of advantages over rifampicin because it is given as a single dose, does not interact with oral contraceptives, and is more readily available in community pharmacies. It is contraindicated in cases of known ciprofloxacin hypersensitivity.

Rifampicin was the drug of choice for meningococcal chemoprophylaxis because it has been licensed for chemoprophylaxis for many years. However, the disadvantages of rifampicin are that it is associated with rapid induction of resistance, inhibits contraceptives, has a longer regime duration and is usually only available from hospital pharmacies.

**Ciprofloxacin**
Recommended for use in all age groups and in pregnancy.

The administration of ciprofloxacin may, however, be followed by anaphylactic reactions (P Monk, M Evans, unpublished data). Healthcare staff should give out information sheets that include the risk of side effects (Appendix 6) and be prepared to deal with allergic reactions. It can also interact with other drugs but a single dose is unlikely to have a significant effect. It has an unpredictable effect on epilepsy but may be preferable to rifampicin if the patient is on treatment with phenytoin (see notes below).

*Dosage:*
Adults and children over 12 years 500 mg stat
Children aged 5–12 years 250 mg stat
Children 1 month–4 years 125 mg stat
Rifampicin
Recommended for use in all age groups.
Rifampicin is contraindicated in the presence of jaundice or known hypersensitivity to rifampicin. Interactions with other drugs, such as anticoagulants, phenytoin, and hormonal contraceptives should be considered. Side effects should be explained including staining of urine and contact lenses. Written information for patients should be supplied with the prescription.

Dosage
All to be given twice daily for 2 days:
Adults and children over 12 years of age 600 mg
Children aged 1–12 years 10 mg/kg
Infants (under 12 months of age) 5 mg/kg
Suitable doses in children based on average weight for age are:

0–2 months 20 mg (1 ml*)
3–11 months 40 mg (2 ml*)
1–2 years 100 mg (5 ml*)
3–4 years 150 mg (7.5 ml*)
5–6 years 200 mg (10 ml*)
7–12 years 300 mg (as capsule/or syrup)
* Rifampicin syrup contains 100 mg/5 ml

Pregnancy and breast feeding
Either Ciprofloxacin, Ceftriaxone, or Azithromycin can be used as chemoprophylaxis in pregnancy.

Ciprofloxacin has the advantage of being easy to access in the community and in short duration usage appears to be safe.

The safety of antibiotic regimens for chemoprophylaxis in pregnant and lactating women is poorly described. The only RCT, involved 176 pregnant and lactating women, administered ceftriaxone (2 g) via the intra-muscular route, and only five subjects reported mild side effects; however, there was no control group. Rifampicin teratogenicity has been demonstrated in high doses in animals, but epidemiological studies did not reveal any notable risk in humans when administered for tuberculosis treatment. Whilst Ciprofloxacin is contraindicated in its SPC for use in pregnancy, short duration treatment for other indications appears to be safe.

Safety of antibiotic regimen for the nursing infant is poorly studied, and a drug that is safe for use during pregnancy may not be safe for the infant. A systematic review of antibiotic use in lactation considered ciprofloxacin and rifampicin as compatible with breastfeeding; other antibiotics were not studied.
Ceftriaxone
As ceftriaxone can only be given by injection and is painful, its main indication is when preferred for specific reasons, e.g. in pregnancy. Potential side effects include diarrhoea, allergies, hepatic and blood disorders.

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

Dosage
Azithromycin 500 mg stat

3.2C Vaccines
Close contacts
Individuals who were identified as close prolonged contacts of cases due to vaccine preventable strains of *N. meningitidis* who received chemoprophylaxis should be offered an appropriate vaccine once diagnosis has been confirmed and up to four weeks after illness onset.

For confirmed serogroup C infection, MenC conjugate vaccination should be offered to all close contacts who are previously unimmunised with MenC conjugate vaccine. Close contacts who are partially immunised should complete a course of MenC conjugate vaccination. Close contacts of any age who were only immunised in infancy and those who completed the recommended immunisation course (including the 12-month booster) more than one year before should be offered an extra dose of MenC conjugate vaccine.

For confirmed serogroup A, W135 or Y infection, vaccination with quadrivalent conjugate vaccine should be offered to all close contacts of any age (2 doses one month apart if aged <1 year, one dose in older individuals) who were previously not immunised or vaccinated more than one year previously with MenACWY conjugate vaccine.

The 4CMenB vaccine is currently not routinely recommended for household contacts of an index case or for contacts in an educational setting. However for meningococcal B clusters, 4CMenB (Bexsero®) may be considered unless additional typing suggests that the cluster strain is not caused by a vaccine-preventable meningococcal B strain.

Vaccination of the index case
MenC, MenACWY and/or 4CMenB vaccine should also be offered according to the recommended national schedule to any unimmunised index cases under the age of 25 years (whatever the serogroup). This policy ensures that persons in this age group are given equivalent protection to their age-matched immunised peers.
Cases of confirmed serogroup C disease who have previously been immunised with MenC conjugate (or polysaccharide) vaccines should be offered a booster dose of MenC vaccine around the time of discharge from hospital.

Index cases who are in the risk-group for meningococcal disease (e.g. asplenia, complement deficiency) and have not been immunised (or are incompletely immunised for age) with the quadrivalent MenACWY conjugate vaccine should complete the recommended immunisation course (2 doses one month apart if aged <1 year; 1 dose after first birthday), while those who received the quadrivalent MenACWY conjugate vaccine more than 12 months previously should receive an extra dose of the quadrivalent MenACWY conjugate vaccine.

Any case provides an opportunity to check the vaccine status of the index case and contacts, and to ensure that eligible individuals have been fully immunised according to the UK schedule.

3.2D Action if a further case is identified within 4 weeks

In the event of a further case of meningococcal disease identified within 4 weeks of the first case the following actions will be required:

- **Any connection with the first case should be established** by careful and rapid investigation eg attendance at the same educational setting or workplace, date of onset of illness. Although sensitivity is required it is acceptable to breach confidentiality in such situations and discuss the name and address of the index case with subsequent cases or their families.
- **Precise identification of the causative organism is crucial in confirming any connection.** (See Section 3.1B).
- **The HPT should be alerted urgently** to enable appropriate investigation, contact tracing, chemoprophylaxis and vaccination to proceed.
- **The formation of an Outbreak Control Team (OCT) will be considered.**
- **Communication** with all relevant partners and agencies will be appropriately cascaded (See Section 3.2G).

3.2E Sporadic Cases in Educational Settings

The following guidance applies, in term time only, to single sporadic cases in pre-school groups, primary schools, secondary schools, colleges and Universities.

- ‘Household-type’ contacts (e.g. dormitory contacts in a boarding school or students sharing rooms / kitchens / flats) or mouth-to-mouth kissing contacts should be treated as ‘at-risk’ (See Section 3.2A 3.2B).
• Other ‘at risk’ contacts not associated with the educational establishment should be managed as such (See Section 3.2A 3.2B).

• On the basis of a single sporadic case in an educational setting chemoprophylaxis or vaccination should not routinely be offered to all staff or attendees / pupils / students etc. (See Section 3.2A 3.2B). Reassurance, advice and written information about meningococcal disease should be given to staff, parents/guardians and local GPs (See Appendices 5, 7, 8). In secondary schools, colleges and universities, pupils / students should also be informed. The HPT will work to achieve this in collaboration with appropriate School and Community Health Services and Local Authority Education Services.

3.2F A Cluster of Cases in an Educational Setting

A cluster of cases is defined as two or more cases in the same educational establishment involving organisms with the same serogroups within a four week time period. An association of cases like this, in time and place, requires further rapid and careful investigation to establish if the two cases are linked by chance or genuinely associated. A definite cluster (two cases of the same serogroup) or a potential cluster (one confirmed case and another that could potentially be of the same group) require further public health action. Two cases of different serogroups are coincidental and unlinked sporadic cases.

In addition to management of identified individual ‘at-risk’ contacts (See Section 3.2A 3.2B) the HPT will give specific advice regarding chemoprophylaxis for any additional institutional contacts according to the specific circumstances of the case. The feasibility of clear identification of any ‘at-risk’ cohort or sub-group will need to be considered. If there is a definite or likely cluster, the Major Outbreak Plan will be implemented and an Outbreak Control Team assembled without delay.

3.2G Communication

Specific responsibilities of individuals for notifying, alerting and communicating with other members of the multi-disciplinary team and with colleagues in other local and national agencies and departments are specified in Section 3.1. A list of useful contacts is available in Appendix 9.

Media

In addition to the above necessary communication meningococcal infection often attracts considerable media interest. Doctors are accountable to the GMC and nurses to the Nursing and Midwifery Council for their professional practice including matters of confidentiality. We are often approached by the media for details of suspected and confirmed cases. The following guidance is intended to help health professionals maintain appropriate confidentiality, and to help the media understand the level of detail they can expect.

• We will not give names or addresses to the media
• We will not send out press releases relating to sporadic cases
• If approached by the media for confirmation of reports from other sources the following is the **maximum** level of detail that we can release

  - Approximate age
  - Approximate place of residence (eg “Dumfries area”)
  - Sex
  - Hospital where the case is being treated
  - Whether the infection is classified as possible, probable or confirmed

We will not discuss individual clinical matters with the media, but will discuss public health aspects of the case, such as:

• Levels of risk to immediate family members, school and work contacts etc.
• The role of antibiotics and vaccination in the control of the infection
• Advice to the public about symptoms and signs of meningococcal infection
• Sources of further information for the public

If a person suffering from meningococcal infection, or their family, expresses concern about releasing details such as those outlined we reserve the right to reduce the level of detail in accordance with their wishes.

**Special Circumstances**

Very occasionally, it may be considered in the best interests of public health to release additional information eg if we are dealing with a potential cluster of meningococcal disease among pupils at a particular school or nursery, or among residents of a particular town or locality. In such cases it may be necessary to issue press releases in order to brief the media and ensure that accurate information is available to the public. However, the privacy of families is paramount and confidentiality will be respected.

Suitable public information material is available from the [National Meningitis Trust](http://www.inmed.co.uk) (Tel: 0845 600 0800) and the [National Meningitis Research Foundation](http://www.meningitis.org) (Tel: 0808 800 3344).
3.2H ORGANISATIONAL FLOW-CHART FOR MANAGEMENT OF MENINGOCOCCAL INFECTION

Clinician suspecting diagnosis of meningococcal disease
- Administer appropriate antibiotic (See Section 3.1A)
- Arrange urgent hospital admission

Admitting Consultant / Clinician
- Ensure optimal clinical management
- Urgently notify Health Protection Team (See Section 3.1B)
- Arrange appropriate urgent diagnostic samples and tests (See Section 3.1B)

Health Protection Team
- Confirm diagnosis (See Appendix 1)
- Conduct investigation and contact tracing (See Appendix 3 and 4)
- Communicate with A&E, GP or OOHs service as appropriate to arrange appropriate prophylaxis within 24 hours (See Sections 3.2A 3.2B)
- Communicate with and provide information for appropriate relevant colleagues and agencies eg GPs, Out of Hours, Communications, Schools, Education Services, Health Protection Scotland, Scottish Government (See Sections 3.1D 3.2G)
- Take appropriate action in the event of further cases (See Sections 3.2D 3.2E & 3.2F)

Consultant Microbiologist
- Ensure all samples from suspect case are processed urgently
- Inform responsible clinician and HPT urgently of all results confirming meningococcal infection
- Assist clinician in providing optimal clinical management
4. POLICY DISSEMINATION, IMPLEMENTATION AND MONITORING

4.1 Dissemination and Implementation
This policy, once approved through the process defined below, will be placed in the on the intranet and DGHPS website. All key personnel involved in the surveillance, investigation, management and prevention of meningococcal infection to whom this policy applies will be informed of the reviewed policy by e-mail. Document control procedures will apply and the intranet copy of the document will always be considered the definitive copy.

4.2 Monitoring, Audit, Review and Approval
The Infection Control Committee is responsible for monitoring of implementation and compliance with this policy. The policy will be reviewed as a minimum every two years. As part of any review an audit will be conducted to ascertain implementation and compliance using the audit tool in section 4.4. The reviewer of the policy will take responsibility for conducting an audit and all members of the multi-disciplinary team will be involved and included. Any changes as a result of audit and review will be consulted on for a period of four weeks. Following audit, review and consultation the Infection Control Committee will approve any new versions of the policy prior to dissemination and implementation.

4.3 Risk Management
This policy has been risk assessed. The overarching risk is that a preventable outbreak of meningococcal infection may occur with consequent morbidity and mortality. The likelihood of this is rare but consequences are major giving a risk rating of medium. A preventable outbreak may occur due to delays in communication and action or errors in decision making. Comprehensive control mechanisms are in place. However, regular audit (on an annual basis) using the tool in section 4.4 will help identify any further areas of concern and enable more robust risk assessment.
### 4.4 AUDIT TOOL

<table>
<thead>
<tr>
<th>Standard</th>
<th>Yes</th>
<th>No</th>
<th>Reason for deviation?</th>
<th>Comments / recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-admission antibiotics given</td>
<td></td>
<td></td>
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<tr>
<td>GP or A+E notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Protection Team notified urgently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>HPT log of calls, Patient hospital notes</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostic samples taken and sent to lab urgently</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><em>Patient notes, Lab request forms</em></td>
<td></td>
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<td></td>
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<tr>
<td>Samples processed and reported urgently</td>
<td></td>
<td></td>
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<tr>
<td><em>Lab reports</em></td>
<td></td>
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<tr>
<td>Clinician informed of results urgently by telephone</td>
<td></td>
<td></td>
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<tr>
<td><em>Lab report and clinical notes</em></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Health Protection Team informed by telephone urgently</td>
<td></td>
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<tr>
<td><em>HPT log</em></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Health Protection Team conduct investigation, identify contacts and</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>administer prophylaxis appropriately within 24 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>HPT log, investigation and contact tracing forms</em></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Health Protection Team communicate urgently with HPS, SG, Communications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and other relevant agencies eg GPs, OOH, schools</td>
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</tr>
<tr>
<td><em>HPT log</em></td>
<td></td>
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</tbody>
</table>
5. EQUALITY AND DIVERSITY

NHS Dumfries and Galloway are committed to equality and diversity in respect of the six equality groups defined by age, disability, gender, race, religion/belief and sexual orientation. A rapid impact assessment has been carried out on this policy. The issues identified were:

- Provision of accessible information in alternative formats.
- Access to prompt medical attention and investigation across the region.

We believe these issues are addressed as far as reasonably possible within the policy.
6. DOCUMENT CONTROL SHEET

1. Document Status

<table>
<thead>
<tr>
<th>Title</th>
<th>Policy for the Control of Meningococcal Infection</th>
</tr>
</thead>
</table>
| Author | Lucy Denvir  
|        | Dr David Breen |
| Approver | Infection Control Committee |
| Document reference | HPT |
| Version number | 1.2 |

2. Document Amendment History

<table>
<thead>
<tr>
<th>Version</th>
<th>Section(s)</th>
<th>Reason for update</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>3.1A, 3.2B &amp; 3.2C Re-written</td>
<td>New HPA Guidance January 2011</td>
</tr>
<tr>
<td>1.2</td>
<td>General update of contacts</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>All sections updated / revised</td>
<td>New Green Book Guidance, New local arrangements for chemoprophylaxis.</td>
</tr>
</tbody>
</table>

3. Distribution

<table>
<thead>
<tr>
<th>Name</th>
<th>Responsibility</th>
<th>Version number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Protection Team</td>
<td>E-mail final version to PH Directorate, Microbiology, Pharmacy, relevant Physicians and Paediatricians, Communications and Dumfries and Galloway Council Education Services</td>
<td>1.2</td>
</tr>
<tr>
<td>Communications</td>
<td>Place final version on intranet &amp; DGHPS website</td>
<td>1.2</td>
</tr>
</tbody>
</table>

4. Associated documents

- Guidance for Public Health Management of Meningococcal Disease in the UK (Health Protection Agency January 2011)
- Managing Meningococcal Disease in Higher Education Institutions (Universities UK 2005)

4. Action Plan for Implementation

<table>
<thead>
<tr>
<th>Action</th>
<th>Lead Officer</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribute to Microbiology, Pharmacy, relevant Physicians and Paediatricians, Communications and Dumfries and Galloway Council Education Services</td>
<td>Health Protection Team</td>
<td></td>
</tr>
<tr>
<td>Place on Intranet Infection Control Manual</td>
<td>Communications</td>
<td></td>
</tr>
</tbody>
</table>
CASE DEFINITIONS

Case requiring public health action

Confirmed case
Clinical diagnosis of meningitis, septicaemia or other invasive disease (e.g. orbital cellulitis, septic arthritis)*

AND at least one of:
- *Neisseria meningitidis* isolated from normally sterile site
- Gram negative diplococci in normally sterile site
- Meningococcal DNA in normally sterile site
- Meningococcal antigen in blood, CSF or urine.
* Although not meeting the definition of a confirmed case, *meningococcal infection of the conjunctiva* is considered an indication for public health action because of the high immediate risk of invasive disease.

Probable Case

Clinical diagnosis of meningitis or septicaemia or other invasive disease where the CPHM/NCHP, in consultation with the physician and microbiologist, considers that meningococcal infection is the most likely diagnosis. Some microbiological tests (e.g. rising antibody levels) that are not considered sufficient to confirm the diagnosis of meningococcal disease may change the case category from ‘possible’ to ‘probable’.

Case not requiring public health action

Possible Case
Clinical diagnosis of meningitis or septicaemia or other invasive disease where the CCDC/CPH, in consultation with the clinician and microbiologist, considers that diagnoses other than meningococcal disease are at least as likely. This category includes cases who may have been treated with antibiotics but whose probable diagnosis is viral meningitis.

In such cases, prophylaxis for contacts is not indicated, but giving out information about meningococcal disease may be helpful.

Infection in non-sterile sites
Isolation of meningococci from sputum or from swabs taken from nasopharynx or genital tract is not by itself an indication for public health action because asymptomatic carriage in the respiratory and genital tract is common. However, when assessed together with other clinical and microbiological parameters, a positive nasopharyngeal swab may increase the index of suspicion that this is a probable case, especially if the isolate is a virulent strain. Meningococcal pneumonia is not an indication for public health action but may carry a low risk of transmission in healthcare settings especially to the immunocompromised.
### Classical CSF findings in acute meningitis

<table>
<thead>
<tr>
<th></th>
<th>Cells</th>
<th>Gram stain for bacteria</th>
<th>Bacterial antigen detection</th>
<th>Protein g/l (normal 0.1-0.4)</th>
<th>Glucose mmol/l (normal 2.3-4.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VIRAL</strong></td>
<td>$10^1$-$10^3$ lymphocytes</td>
<td>Negative</td>
<td>Negative</td>
<td>Normal or slightly high</td>
<td>Usually normal</td>
</tr>
<tr>
<td><strong>BACTERIAL</strong></td>
<td>$10^1$-$10^4$ predominantly polymorphs</td>
<td>Positive</td>
<td>Positive</td>
<td>High</td>
<td>Less than 70% of blood glucose</td>
</tr>
<tr>
<td><strong>TUBERCULOUS</strong></td>
<td>$10^1$-$10^3$ predominantly lymphocytes</td>
<td>Positive or negative</td>
<td>Negative</td>
<td>High or very high</td>
<td>Less than 60% of blood glucose</td>
</tr>
</tbody>
</table>
## Meningococcal Invasive Disease Augmented Surveillance

### APPENDIX 3

**Title:** Policy for Control of Meningococcal Infection  
**Date:** December 2015  
**Version:** 1.4  
**Author:** Sara Bartram

---

### PATIENT DETAILS

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname/family name</td>
<td></td>
</tr>
<tr>
<td>Forename/given name</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Postcode</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Sex: M</td>
<td>F</td>
</tr>
<tr>
<td>DoB:</td>
<td></td>
</tr>
<tr>
<td>Date of onset of symptoms</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
</tr>
<tr>
<td>Hospital number</td>
<td></td>
</tr>
<tr>
<td>GHI number</td>
<td></td>
</tr>
<tr>
<td>Date of admission</td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td></td>
</tr>
<tr>
<td>Date of notification</td>
<td></td>
</tr>
<tr>
<td>Denotified? Yes No</td>
<td></td>
</tr>
<tr>
<td>If yes, Date</td>
<td></td>
</tr>
</tbody>
</table>

### CLINICAL PRESENTATION, OUTCOMES & VACCINATION HISTORY

**Disease:** (tick as many as apply)
- Meningitis
- Septicaemia
- Joint infection
- Peri-orbital cellulitis
- Other
  - (if Other, please define)

**Final outcome:**
- Alive
- Dead
- If dead, date of death

**Vaccination status:**
- MenC conjugate vaccine:
  - Dose 1
  - Dose 2
  - Dose 3
  - Dose 4
- ACWY conjugate vaccine:
- ACWY polysaccharide vaccine:
- MenB vaccine:
  - Dose 1
  - Dose 2
  - Dose 3

**Reason for Men B vaccination:**
- Clinical high risk group
- Private use
- Lab worker
- Unvaccinated for MenB
- Unknown vaccination status for MenB

---

*Title: Policy for Control of Meningococcal Infection*  
*Date: December 2015*  
*Version: 1.4*  
*Author: Sara Bartram*
### APPENDIX 3

**LABORATORY DATA**

<table>
<thead>
<tr>
<th>Laboratory confirmed?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is serogroup known?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Positive results (tick as many as apply)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSF microscopy</td>
<td>Blood culture</td>
<td></td>
</tr>
<tr>
<td>CSF culture</td>
<td>Serum PCR</td>
<td></td>
</tr>
<tr>
<td>CSF PCR</td>
<td>Plasma PCR</td>
<td></td>
</tr>
<tr>
<td>CSF antigen</td>
<td>Serology (acute)</td>
<td></td>
</tr>
<tr>
<td>Urinary antigen</td>
<td>Serology ( convalescent)</td>
<td></td>
</tr>
<tr>
<td>Other test (define)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of first positive lab report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submitting laboratory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONTACT TRACING**

Number of contacts identified by Public Health for prophylaxis and/or vaccination

<table>
<thead>
<tr>
<th>Number of contacts offered advice only</th>
<th>Number of contacts offered antibiotic prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of contacts offered MenC vaccine</td>
<td>Number of contacts offered ACWY vaccine</td>
</tr>
<tr>
<td>Number of contacts offered MenB vaccine</td>
<td></td>
</tr>
</tbody>
</table>

Setting(s) in which close contacts were identified: (fill in as many as apply)

<table>
<thead>
<tr>
<th>SETTING</th>
<th>DETAILS/ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within a Household</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td></td>
</tr>
<tr>
<td>Social Group</td>
<td></td>
</tr>
<tr>
<td>Workplace</td>
<td></td>
</tr>
<tr>
<td>Nursery</td>
<td></td>
</tr>
<tr>
<td>Primary School</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SETTING</th>
<th>DETAILS/ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary School</td>
<td></td>
</tr>
<tr>
<td>College/ University</td>
<td></td>
</tr>
<tr>
<td>Recreational</td>
<td></td>
</tr>
<tr>
<td>Institutional</td>
<td></td>
</tr>
<tr>
<td>Other (define)</td>
<td></td>
</tr>
</tbody>
</table>

**CLUSTERS**

This case is part of a cluster? Yes | No

Number of cases in cluster

Factor(s) linking cluster: (tick as many as apply)

- within a household
- family
- primary school
- social group
- workplace
- nursery
- secondary school
- college/university
- recreational
- other institutional

- Other

Comments:

Please return completed forms to Barbara Denham at SLMPRL email (barbara.denham@nhs.net)
MENINGOCOCCAL INFECTION CONTACT TRACING FORM

Please list the full names and ages of contacts of the index case in the seven days prior to onset of illness including:-(i) family and household contacts who have been living with the index case (ii) close intimate “kissing” contacts (iii) health care workers who gave the case mouth to mouth resuscitation.

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>D.O.B</th>
<th>Relationship to case</th>
<th>GP</th>
<th>Ciprofloxacin arranged</th>
<th>A&amp;C vaccine arranged</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
MODEL LETTER TO PARENTS

Date

Dear Parent/Guardian

MENINGOCOCCAL INFECTION

A pupil attending …………………..school was admitted to Dumfries and Galloway Royal Infirmary on ………………….with meningococcal infection. This was an isolated case.

All close contacts have been identified and appropriate antibiotics have been arranged for them. A close contact is considered to be a person who lives within the same household as the ill person, or who has stayed overnight with them, or has kissed them on the lips the week before they became ill. I would like to stress that ordinary classroom and school contacts of the affected child are not at increased risk of infection.

Meningococcal infection is an uncommon illness but just to remind you for the future, the typical symptoms can include fever, severe headache, the appearance of a blotchy rash, aches and pains, dislike of bright lights and neck stiffness. Not all of these symptoms are necessarily present at the same time.

There is no need for you to be unduly worried and your child should continue to go to school as normal. However, if your child should become ill with any of the above symptoms, please consult your doctor.

If you would like more information about meningococcal infection, the Meningitis Research Foundation can be contacted on Tel No: 0808 800 3344.

Yours faithfully

Dr Nigel Calvert
Consultant in Public Health Medicine
CIPROFLOXACIN INFORMATION LEAFLET
Advice for close contacts (or their parents or guardians)

It is important that you read all of this leaflet before starting your course of Ciprofloxacin

The antibiotic you will be given is called Ciprofloxacin. The meningococcal germs that cause meningitis and septicaemia can be carried in the nose and throat. This antibiotic will kill them.

It comes in tablet or liquid form. You will receive either one or two tablets of Ciprofloxacin or one dose of a liquid. Tablets are taken by mouth as a one-off dose with a glass of water. It is important to drink plenty of fluids for the rest of the day after taking this antibiotic.

Do not take the tablet or medicine if you have taken antacid/indigestion medicines or preparations containing iron or mineral supplements within the last four hours. Please see the doctor or nurse if this is the case.

You should also avoid drinking alcohol with this medication as it may make you drowsy, affecting your ability to drive or operate machinery.

Ciprofloxacin is an antibiotic that is frequently used to treat lots of different conditions. It is recommended in national guidelines for close contacts of someone with meningococcal disease.

The side effects of Ciprofloxacin may include:

- Tummy ache, diarrhoea and nausea.
- Tiredness and headaches.
- Rash and itching.
- Facial swelling - very rarely breathing difficulties may occur with the facial swelling. You should seek medical attention urgently if this occurs.
- Pain and inflammation around the joints.

Please tell the public health doctor or nurse if you are:

- allergic to ciprofloxacin

- have a history of epilepsy or G6PD deficiency so that they can arrange an alternative medicine.

Ciprofloxacin does not interfere with the contraceptive pill.

If you are unclear or would like further information, please contact:-

Health Protection Team
Directorate of Public Health
NHS Dumfries and Galloway
Telephone: 01387 272724
MENINGITIS FACTSHEET

Introduction
Meningococcal disease is a serious illness, which is caused by germs called meningococcal bacteria. At any time, about one in ten of the adult population and up to a quarter of all young people carry meningococcal bacteria in their noses and throats without problem. Indeed the presence of these germs may even encourage resistance in a person to meningococcal disease. However, meningococcal bacteria can seriously affect an individual if that person is, or becomes, susceptible to the germ. Fortunately this is quite a rare occurrence.

In these circumstances, the bacteria overcome the body’s defences and get into the bloodstream, and possibly the brain membranes. This can result in septicaemia (blood poisoning) and/or meningitis (inflammation of the lining of the brain). It is not yet fully understood by doctors exactly why this happens in some people and not in others.

People of all ages can get the infection, but meningococcal disease mainly affects infants and teenagers and is more common during the autumn and winter months. It is also more common among new University students who live ‘in hall’.

To put this rare but important problem into perspective, it would be expected that around 3 people per 100,000 population might develop meningococcal disease each year. In a typical year this would mean about 10-12 confirmed infections in North Cumbria. Up to 10 people out of every 100 people, who become ill, can die from the disease. Early recognition of the problem, with immediate treatment, can save lives.

What are the signs and symptoms of meningococcal disease?
Someone with meningococcal disease (meningitis and/or blood poisoning) is likely to become very unwell. The illness often develops over one or two days, but cases can become very ill, very quickly - sometimes in a matter of only hours.

Signs & symptoms in CHILDREN and ADULTS may include:

- severe headache
- fever
- vomiting
- aching limbs and joints
- neck stiffness
- dislike of bright lights
- drowsiness tending towards unconsciousness
- shivering and cold feet and hands
- rapid breathing
- severe muscle aches
- abdominal pain and diarrhoea
- rash of red purple spots or bruises
Signs & symptoms in BABIES may include:

- fever
- refusing feeds and/or vomiting
- tense or bulging fontanelle (soft spot on head)
- fretfulness
- difficult to rouse
- staring expression
- shrill or moaning cry
- pale or blotchy skin
- turning away from light
- body stiffening with involuntary movements, arching of the head and neck - or even sometimes a ‘floppy’ body; altered breathing pattern
- rash of red purple spots or blotches

**Important Note:**

**THE ‘CHARACTERISTIC’ RASH OF MENINGOCOCCAL DISEASE IN BABIES, CHILDREN & ADULTS USUALLY DOES NOT FADE OR BLANCHE IF Pressed firmly with a clear drinking glass - it will remain visible. THIS RASH, IN THE PRESENCE OF AN ILL PERSON, IS A SERIOUS DANGER SIGN AND NEEDS IMMEDIATE ACTION TO GET MEDICAL HELP.**

**What should you do if you suspect meningococcal disease?**

If you suspect that a baby, child or adult might have meningococcal disease - you should call the doctor immediately. Explain clearly why you are concerned, describe the patient's signs and symptoms carefully, and ask for advice.

If the doctor is not available, and you are seriously worried that the problem might be meningococcal disease, don’t delay, have the case taken straight to the nearest hospital Accident and Emergency Department. Dial a 999 ambulance, if necessary.

**What if you have been in close contact with a case?**

The bacteria, which cause meningococcal disease, can only live for a few seconds outside the body. These germs can therefore only be passed from one person to another by very close contact indeed (for details of this, see ‘risk category’ contact below).

In the vast majority of cases, when a person acquires ‘new’ meningococcal bacteria, they simply live on for a period in their nose and throat without causing any problems for that person.

In very rare instances (around 4 per 1,000 cases exposed, without treatment), the person acquiring the ‘new’ meningococcal bacteria will be ‘susceptible’ to the germs, which will penetrate into their blood stream etc., and cause meningococcal disease in less than 7 days.
‘Risk category’ contact (that is, contact likely to lead to the passing on of meningococcal bacteria) occurs when a person has, during the 7 days prior to onset of the illness in the case of meningococcal disease:-

- Had mouth-to-mouth kissing with the case (that is, exchanging saliva, not just a ‘peck on the cheek’)
- Lived and slept in the same household as the case (that is, not just ‘visiting’)

If you are considered to be a contact of a case who is in a ‘risk category’, we would suggest that you have a short course of special treatment (called prophylaxis), as a routine precaution.

It is most important to note that this prophylaxis is not designed to ‘cure’ you if you are already developing meningococcal disease – it will not do this. The prophylaxis will, however, get rid of any meningococcal bacteria, which you might have picked up from the case and are currently dwelling in your nose and throat. This will reduce the remote chance that you will pass these germs on to another person who might be ‘susceptible’, and therefore be likely to get the disease.

Those people who have not had this type of ‘risk category’ contact with a case, do not need to take any particular extra precautions. Your family doctor or nurse can advise, if necessary. People who are only contacts of ‘risk category’ contacts do not need to take any special precautions. In any case, whether or not you have been given prophylaxis, it is always wise know about, and be alert for, the signs and symptoms which might indicate meningococcal disease.

Further information, advice and support is available from:-

- Call the National Meningitis Trust (24 hour Helpline): 0845 6000 800 or visit [www.meningitis-trust.org.uk](http://www.meningitis-trust.org.uk)
- Call the The Meningitis Research Foundation (24 hour Helpline): 0808 800 3344 or visit [www.meningitis.org](http://www.meningitis.org)
**Know the Symptoms**

Please keep this for reference

- Meningitis and septicaemia can be hard to recognise at first. Symptoms can appear in any order, but the first symptoms are usually fever, vomiting, headache and feeling unwell, just like many mild illnesses.
- Red ticks ✓ show symptoms that are more specific to meningitis and septicaemia and less common in milder illnesses. Limb pain and cold hands and feet often appear earlier than rash, neck stiffness, photophobia and confusion.
- Not everyone gets all of these symptoms.
- Septicaemia can occur with or without meningitis.
- In some cases of meningitis, a rash may not appear at all.

<table>
<thead>
<tr>
<th></th>
<th>Septicaemia</th>
<th>Meningitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever and/or vomiting</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Severe headache</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Limb/joint/muscle pain</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Cold hands and feet/shivering</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Pale or mottled skin</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Breathing fast/breathless</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Rash</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stiff neck</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Dislike of bright lights</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Very sleepy/vacant/difficult to wake</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Confused/delirious</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Seizures (fits) may also be seen</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Know the Symptoms
Please keep this for reference

Other symptoms in babies:
- Tense or bulging soft spot on their head
- Refusing to feed
- Irritable when picked up, with a high pitched or moaning cry
- A stiff body with jerky movements, or else floppy and lifeless

What should I do if I am worried about someone who is ill?
Trust your instincts. Someone who has meningitis or septicaemia could become seriously ill very quickly. Get medical help immediately if you are worried about someone who is ill.

Tumbler Test
If someone is ill and gets a rash, do the ‘Tumbler Test’. Check for spots over the whole body.

If a glass tumbler is pressed firmly against a septicaemic rash, the marks will not fade. You will be able to see the marks through the glass. IF THIS HAPPENS GET MEDICAL HELP IMMEDIATELY.

Remember, a very ill person needs medical help even if there are only a few spots, a rash that fades or no rash at all.

Freefone helpline
080 8800 3344 (UK)
1800 41 33 44 (Republic of Ireland)
This leaflet is about meningococcal meningitis and septicaemia, or meningococcal disease. It answers the most common questions and provides information you may need if someone you know becomes ill. For more information and to find out about other kinds of meningitis, visit our website www.meningitis.org or call our Freephone hotline.

**What are meningitis and septicaemia?**

Meningitis means swelling of the lining around the brain and spinal cord. Septicaemia is blood poisoning caused by the same germs.

They can occur together or separately. Meningitis and septicaemia are caused by many types of germs, but meningococcal bacteria cause the most common serious kind. Meningococcal disease is very dangerous and can come on very quickly.

**Am I at risk?**

The risk of getting the disease is very low. Although meningococcal disease is infectious and can cause outbreaks, 97 out of every 100 cases are isolated, with no link to any other cases.

The bacteria that cause the disease are very common: at any time about one in ten of us has them in our noses and throats without ever knowing they are there, and for most of us this is harmless. We pass the bacteria between each other by close contact (e.g. coughing, sneezing, kissing).

Usually we have to be in very close or regular contact with someone for the bacteria to pass between us. Even when this happens, most of us will not become ill because we have natural immunity.

The bacteria cannot live longer than a few moments outside the human body, so they are not carried on things like clothes and bedding, toys or dishes.

**How do people get it?**

People get the disease when the bacteria move from the nose and throat and invade the body.

**Is there an incubation period?**

Yes. Symptoms normally appear within about five days of picking up the bacteria.
Why do some people get meningitis or septicaemia?

We do not yet fully understand why some people get ill from germs that are harmless to most of us.

Babies and young children are at higher risk than older children and adults, partly because their immune systems are not fully developed.

How common is meningococcal disease?

About three people in every 100,000 will get the disease each year in the UK, and four in every 100,000 in the Republic of Ireland.

Can meningitis and septicaemia be prevented?

Vaccines give excellent protection, but cannot yet prevent all forms. For example there is no available vaccine against meningococcal B disease, the most common form of the disease in the UK & Ireland.

The meningitis vaccines in the routine immunisation programme are:

- The MenC vaccine, against meningococcal C disease. This vaccine is also available to older children and young people who have not already had it
- The Hib vaccine against meningitis and septicaemia caused by the Hib germ. It is given in an injection that also protects against some other childhood diseases
- The pneumococcal vaccine against meningitis and septicaemia and other serious disease caused by the most common pneumococcal germs
- The MMR (measles, mumps, rubella) vaccine. This also protects against meningitis caused by mumps and measles

There are also meningitis vaccines for elderly people, for children and adults with ‘at-risk’ health conditions, and for travellers to certain parts of the world.

To find out more about meningitis vaccines, call the Foundation's helpline.
Can the disease be treated?
Yes. Most people recover, but they need urgent treatment in hospital, and some people are left with disabilities or other after effects.
The charity funds research into diagnosis, treatments and after effects, to help improve the quality of life for people affected. We also fund research into prevention, to put an end to meningitis and septicaemia for good.

How would I know if I’ve got it?
In the early stages, it can be very difficult to tell meningitis and septicaemia apart from milder diseases. It is vital to know the symptoms and to get medical help immediately if you are worried that an ill person may have the disease. Symptoms are listed in this leaflet.

Who decides what needs to be done for people who have been in contact with the disease?
All cases of meningitis and septicaemia are reported to the Public Health Doctor, who uses national guidelines to decide what needs to be done to protect the community, and will also advise schools, colleges or nurseries dealing with cases.
This doctor will make sure that anyone at especially increased risk of meningococcal disease is contacted and offered very strong antibiotics, usually ciprofloxacin but sometimes rifampicin (or certain other medicines). This is to kill the bacteria that cause the disease and so help stop it from spreading. As it takes time for them to take effect, even if you are given antibiotics it is still important to look out for the symptoms. Public health action is sometimes also taken in cases of Hib meningitis, but it is not needed after a single case of any other kind of meningitis.

Someone I know has got meningitis. Should I have these antibiotics?
The antibiotics are usually only given to people living in the same household as the patient, and to their boy/girlfriend. Where there have been two or more cases of meningococcal disease within a short period of time in a nursery, school, college or certain other settings, the Public Health Doctor may decide that antibiotics should be given to a wider range of contacts as well, usually to the particular class or school year affected.
This may also happen when there are two or more cases of Hib meningitis, or if there are two or more pneumococcal cases in a nursery or nursing home.
What about vaccines?

If someone gets meningococcal C disease, the same people who got antibiotics will be offered MenC vaccine, if they have not already had it. Even if they have had the MenC vaccine in the past, close contacts may need another dose. If it’s a case of meningococcal A, W or Y disease, those who had antibiotics will get a Men A C W Y vaccine.

As the incubation period for the disease is less than the time it takes for the vaccine to work, it is still vital to know the symptoms.

My sister has the disease. Where can my family get support?

Meningitis Research Foundation offers support to people affected. Please call our Freefone helpline.

My daughter's boyfriend works in a factory where there has been a case of meningitis. Should I stop her seeing him?

There is no need to avoid people who have been in contact with a case. Remember one in ten people carry the bacteria, so we come into contact with them all the time.

Is it safe for my son to play with a boy who has had meningitis?

Yes. It is perfectly safe for your son to play with him. The antibiotics he had in hospital have killed the bacteria, so he’s not infectious any more.
For information and support our Freefone helpline is available 365 days a year
080 8800 3344 (UK)
1800 41 33 44 (Republic of Ireland)
email helpline@meningitis.org
visit our website www.meningitis.org
or download our iPhone app –
visit www.meningitis.org/iPhone

Our vision is a world free from meningitis and septicaemia. That's why we fund vital scientific research into the prevention, detection and treatment of the diseases.

We raise awareness of the symptoms and the need for urgent medical help by campaigns and leaflets like these, and provide resources for health professionals. We offer written and audio information in 22 languages, details of which are on our website. Information is provided free of charge. We also support people affected by meningitis and septicaemia through MeningitisWise, our information and support service.

If you would like to help in the fight against meningitis and septicaemia, please call your local office. Thank you.

Meningitis Research Foundation:
Midland Way  Thornbury
Bristol BS35 2BS
Tel 01454 281811

28 Alva Street  Edinburgh
EH2 4PY
Tel 0131 510 2345

email info@meningitis.org

71 Botanic Avenue
Belfast BT7 1JL
Tel 028 9032 1283

63 Lower Gardiner Street
Dublin 1
Tel 01 819 6931

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USEFUL CONTACT NUMBERS

Outwith office hours, contact with the duty Consultant in Public Health can be made through Dumfries and Galloway Royal Infirmary switchboard (01387 246246).

The following Health Protection Team members can all be contacted via 01387 272724

Consultant in Public Health Medicine (CD/EH)
Nurse Consultant in Health Protection
Health Protection Nurse Specialists
Senior Health Protection Administrator

Director of Public Health 01387 272725

The following can all be accessed via Dumfries and Galloway Royal Infirmary On 01387 246246

Duty Microbiologist
Consultant Microbiologist
Consultant Paediatrician
Consultant Physician
(General Medicine and Infectious Diseases)

Communications 01387 272767

Dumfries and Galloway Council Education Service
Director Schools Services 01387 260427
Quality and Improvement Manager 01387 260432

Out of Hours 03033 333000

Health Protection Scotland
Daytime 0141 300 1100

Out of Hours 0141 211 3600

Scottish Government
Daytime 0131 556 8400
Out of Hours 07699761206