Acute Management of Suspected Meningococcal Disease Clinical Pathway

Signs and Symptoms suggestive of meningococcal disease on presentation may or may not include (tick as appropriate):

- Photophobia
- Neck stiffness
- Headache
- Depressed consciousness
- Fever
- Hypotension
- Petechial non-blanching rash (may not be present)

Early Management

- Move to appropriate resuscitation room
- Perform Primary Survey (ABCD)
- Document vital signs - temp, HR, RR, BP, SpO₂, central capillary refill time
- Notify senior medical officer immediately
- Gain IV or IO access using aseptic technique
- Collect blood for the following tests:
  - Meningococcal PCR: Adult: collect 4mL in a mauve top tube, Child: collect 1mL in a paediatric EDTA pink top tube
  - FBC, coagulation tests, LFT, UE, glucose
  - Collect blood cultures using an aseptic technique
- Commence fluid resuscitation as appropriate within 30 minutes
- Commence recommended antibiotics within 30 minutes (see table below)
- If clinical picture is suggestive of meningitis, follow meningitis flowchart (see page 2) (note contraindications to a lumbar puncture)
- If clinical picture is suggestive of meningococcal sepsis seek senior medical advice immediately
- For retrieval, contact RSQ (Retrieval Services Queensland) 1300 799 127
- Notify public health unit (PHU) within 6 hours (see PHU contact details below)

For clinical advice

Child: If facility is level 6 contact ICU or ≤ level 5 call RSQ if unavailable and pt likely to require retrieval contact RSQ 1300 799 127

Recommended Early Empirical Antibiotic Treatment

- Start antibiotic therapy within 30 minutes
- This should not be delayed awaiting results of diagnostic tests or fluid resuscitation
- Discuss antibiotic choice with senior clinician

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Drug</th>
<th>Route</th>
<th>Dose / Frequency</th>
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</thead>
<tbody>
<tr>
<td>Neonates and infants less than 3 months</td>
<td>Ampicillin plus</td>
<td>IV</td>
<td>50mg/kg, 6 hourly</td>
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<tr>
<td></td>
<td>cefTRIAXONE</td>
<td>IV</td>
<td>50mg/kg, 6 hourly</td>
</tr>
<tr>
<td>Children 3 months or more</td>
<td>cefTRIAXONE</td>
<td>IV</td>
<td>50mg/kg (up to 2g), 12 hourly</td>
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<tr>
<td></td>
<td>cefOTAXIME</td>
<td>IV</td>
<td>50mg/kg (up to 2g), 6 hourly</td>
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<tr>
<td>Adults</td>
<td>cefTRIAXONE</td>
<td>IV</td>
<td>2g, 12 hourly</td>
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</tbody>
</table>

Signature Log

Every person documenting in this pathway must supply a sample of their initials and signature below

<table>
<thead>
<tr>
<th>Initials</th>
<th>Signature</th>
<th>Print Name</th>
<th>Role</th>
<th>Initials</th>
<th>Signature</th>
<th>Print Name</th>
<th>Role</th>
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</thead>
</table>

Public Health Unit Phone Numbers


Business hours only. After hours contact local hospital switchboard and ask for the public health physician on call.

- Brisbane North: 3624 1111, Darling Downs: 4631 9888, Moreton Bay (Redcliffe): 3142 1800
- Brisbane South: 3000 9148, Gold Coast: 5668 3700, Mt Isa & Gulf: 4744 9100
- Cairns: 4226 5555, Logan: 3412 2989, Rockhampton: 4920 6989
- Central Queensland (Rockhampton): 4920 6989, Longreach: 4911 0400, Sunnise Coast: 4150 2780

Clinical Pathways never replace clinical judgement. Care outlined in this Pathway must be varied if it is not clinically appropriate for the individual patient.
Emergency Management of Children with Meningitis

**Clinical features of meningitis**
- Fever
- Vomiting and/or nausea
- Lethargy or irritability
- Photophobia and/or headaches
- Anorexia
- Nuchal rigidity (often not present, especially in young children and infants)
- Positive Kernig's or Brudzinski's sign
- Altered mental status
- Shock
- Seizures
- Meningeal signs
- Focal neurological deficit
- Petechial rash

**Additional clinical features of meningitis**
- Bulging fontanelle
- High pitched cry
- Poor feeding
- Apnoea
- Seizures

*Consider HSV meningoencephalitis if a history of maternal HSV infection and predominance of lymphocytes in the CSF*

**Assessment**

- Child presents to emergency service with clinical features suggesting meningitis

**Assess Severity**
- Consider pre-hospital management given

**STABLE**

- Is an LP contraindicated?*
  - Y
- Can LP be performed within 30 mins?
  - Y

**Perform LP**
- Add viral studies depending on clinical suspicion
- Blood cultures
- Meningococcal PCR (CSF + blood) if meningococcal disease suspected

- Administer Dexamethasone plus empirical IV antibiotics
- Add IV Acyclovir if clinical suspicion of HSV meningoencephalitis*

**Delay LP**
- Within 30 mins of assessment:
  - Call emergency &/or paediatric senior doctor
  - Blood cultures and if meningococcal disease suspected perform meningococcal PCR
  - Administer Dexamethasone plus empirical IV antibiotics
  - Add IV Acyclovir if clinical suspicion of HSV meningoencephalitis*

**UNSTABLE**

- altered level of consciousness or obtundation
- signs of shock
- coagulopathy
- refactory seizures

**Emergency Management (Resuscitate using ABCD)**

- Call emergency &/or paediatric consultant
  - A: Provide high-flow oxygen
  - B: Support ventilation (BVM)
  - C: Obtain IV or IO access
  - D: Check BSL and give IV 10% Dextrose (2ml/kg) as required

**Other treatment**
- Blood cultures
- Meningococcal PCR (blood) if meningococcal disease suspected
- Administer Dexamethasone plus empirical IV antibiotics
- Add IV Acyclovir if clinical suspicion of HSV meningoencephalitis*

**Is an LP contraindicated?**

- N

**Review CSF results**
- Negative
- Positive

**Is an LP contraindicated?**
- Y

**Review**

- Continue observation in ED or SSU

**Improvement?**

- Y

**Meets discharge criteria?**

- Y

**Disposition**

- Discharge
- Admit to children's inpatient service
- Arrange transfer to PICU (Level ≤ 5 call RSQ)

**Medications**

- Dexamethasone (IV)
  - Children ≥ 3 months: 0.15mg/kg (up to 10mg), 6 hourly
  - Neonates: 20mg/kg, 8 hourly
  - Children: 10mg/kg, 8 hourly
  - Adults: 10mg/kg, 8 hourly
- Acyclovir (IV)
  - If HSV meningoencephalitis suspected
  - Neonates: 20mg/kg, 8 hourly
  - Children: 10mg/kg, 8 hourly
  - Adults: 10mg/kg, 8 hourly

**Clinical features of meningitis (at any age)**
- Consider HSV meningoencephalitis if a history of maternal HSV infection and predominance of lymphocytes in the CSF

**Reference:** Children’s Health Services: Meningitis Clinical Procedure Working Group 2011