While the QAS has attempted to contact all copyright owners, this has not always been possible. The QAS would welcome notification from any copyright holder who has been omitted or incorrectly acknowledged.

All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

Disclaimer

The Digital Clinical Practice Manual is expressly intended for use by QAS paramedics when performing duties and delivering ambulance services for, and on behalf of, the QAS.

The QAS disclaims, to the maximum extent permitted by law, all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs incurred for any reason associated with the use of this manual, including the materials within or referred to throughout this document being in any way inaccurate, out of context, incomplete or unavailable.


This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives V4.0 International License

You are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute the State of Queensland, Queensland Ambulance Service and comply with the licence terms. If you alter the work, you may not share or distribute the modified work. To view a copy of this license, visit http://creativecommons.org/licenses/by-nc-nd/4.0/deed.en

For copyright permissions beyond the scope of this license please contact: Clinical.Guidelines@ambulance.qld.gov.au
Meningococcal meningitis and septicaemia

**Meningococcal disease (MD)** is a serious infection caused by Neisseria meningitidis bacteria. There are 13 serogroups, but it is currently most commonly caused by serogroups A, B, C, W, and Y. 

Meningococcal bacteria live harmlessly in the throat and nose of up to 20% of the population at any given time and only become a concern when dangerous strains become invasive, causing meningitis and/or septicaemia.[1,3]

Meningitis and septicaemia are two types of invasive meningococcal disease that can cause serious illness or death.

**Meningococcal meningitis** is a medical emergency that occurs when meningococcal bacteria infect the membranes covering the brain and spinal cord. The death rate from meningococcal meningitis is around 5%. Some patients may be left with permanent disabilities such as cerebral palsy and deafness.[4]

**Meningococcal septicaemia** occurs when meningococcal bacteria enter the bloodstream and rapidly multiply uncontrollably. This is the most serious and deadly type of meningococcal disease. Meningococcal septicaemia can lead to death within a few hours. The death rate from meningococcal septicaemia is around 10%, and around 20% will be left with permanent disabilities, including amputations of fingers, toes, arms or legs due to severely compromised perfusion of the extremities.

---

**Clinical features**

**Meningitis/septicaemia symptoms: babies and young children**
- Fever
- Food refusal
- Irritability
- Grunting/moaning
- Lethargy/floppiness
- ALOC/drowsiness
- Light sensitivity
- Vomiting
- Diarrhoea
- Convulsions/twitching
- Blotchy skin
- Petechial (pinpoint) or purpuric rash

**Meningitis/septicaemia symptoms: older children and adults**
- Fever
- Headache
- General malaise
- Loss of appetite
- Light sensitivity
- Neck stiffness & joint pains
- Aching/sore muscles
- Nausea/vomiting
- Diarrhoea
- Drowsiness/confusion
- Difficulty walking
- Moaning/unintelligible speech
- Collapse
- Petechial (pinpoint) rash or bruising
Risk Assessment

- Although it is relatively rare, people of any age can contract meningococcal disease.
- Those most at risk are babies and children up to 5 years of age (due to their immature immune system and high disease communicability at this age) and teenagers to young adults (primarily because of their socially interactive lifestyle).
- Meningococcal bacteria are not easily spread and do not survive well outside the human body. They can be passed between people through airway secretions but generally requires close and prolonged contact.
- The petechial or purpuric rash commonly associated with meningococcal illness is an advanced sign of the disease.
- Early hospital pre-notification MUST occur with any patient presenting with 2 or more altered vital signs, based on the following criteria:

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th>&lt; 1 yr</th>
<th>1–4 yrs</th>
<th>5–11 yrs</th>
<th>12–15 yrs</th>
<th>≥ 16 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>≤ 35.0°C or ≥ 38.5°C</td>
<td>≤ 35.0°C or ≥ 38.5°C</td>
<td>≤ 35.0°C or ≥ 38.5°C</td>
<td>≤ 35.0°C or ≥ 38.5°C</td>
<td>≤ 35.0°C or ≥ 38.5°C</td>
</tr>
<tr>
<td>Respiration Rate</td>
<td>&lt; 20 or &gt; 50</td>
<td>&lt; 15 or &gt; 40</td>
<td>&gt; 40</td>
<td>&gt; 30</td>
<td>&gt; 25</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>&lt; 90 or &gt; 170</td>
<td>&lt; 80 or &gt; 160</td>
<td>&lt; 70 or &gt; 150</td>
<td>&lt; 45 or &gt; 130</td>
<td>&lt; 40 or &gt; 110</td>
</tr>
<tr>
<td>Systolic BP</td>
<td>≤ 65</td>
<td>&lt; 70</td>
<td>&lt; 75</td>
<td>&lt; 85</td>
<td>≤ 90</td>
</tr>
<tr>
<td>AVPU</td>
<td>Pain</td>
<td>Pain</td>
<td>New Confusion</td>
<td>New Confusion</td>
<td>New Confusion</td>
</tr>
</tbody>
</table>

Additional information

- The definitive non-blanching rash may be difficult to detect in pigmented skin.
- Meningococcal septicaemia is not specific to children or young people and can present in healthy people of any age.[1]
- The bacteria is shed in droplets from the nose or throat, and close or prolonged contact with a carrier is required to transmit the bacteria.
- PPE (gloves, face mask and eye protection) reduces transmission risk, especially during advanced airway management and suctioning.[3]
- Post exposure prophylaxis is only indicated in specific circumstances[5] and will be directed by the Queensland Health public health unit. (See QAS Infection Control Framework)
- Because the bacteria that cause meningococcal disease have several serogroups, each requiring a different vaccine, a history of vaccination does not negate the possibility of disease.
- If meningococcal disease (meningitis or septicaemia) is strongly suspected in the absence of a petechial rash, initiate early transport, call the QAS Clinical Consultation and Advice Line regarding possible administration of ceftriaxone.
CPG: Clinician safety
CPG: Standard cares

Meningococcal septicaemia OR meningococcal meningitis suspected?

Y

Continually reassess for:
• Deterioration
• Evidence of rash
• Signs of shock

N

Evidence of rash present?

Y

Administer:
Ceftriaxone

Consider:
IV fluid

N

Transport to hospital
Pre-notify as appropriate

Note: Clinicians are only to perform procedures for which they have received specific training and authorisation by the QAS.

Contact the QAS Clinical Consultation and Advice Line