

# Pre-hospital assessment and management of bacterial meningitis and meningococcal septicaemia

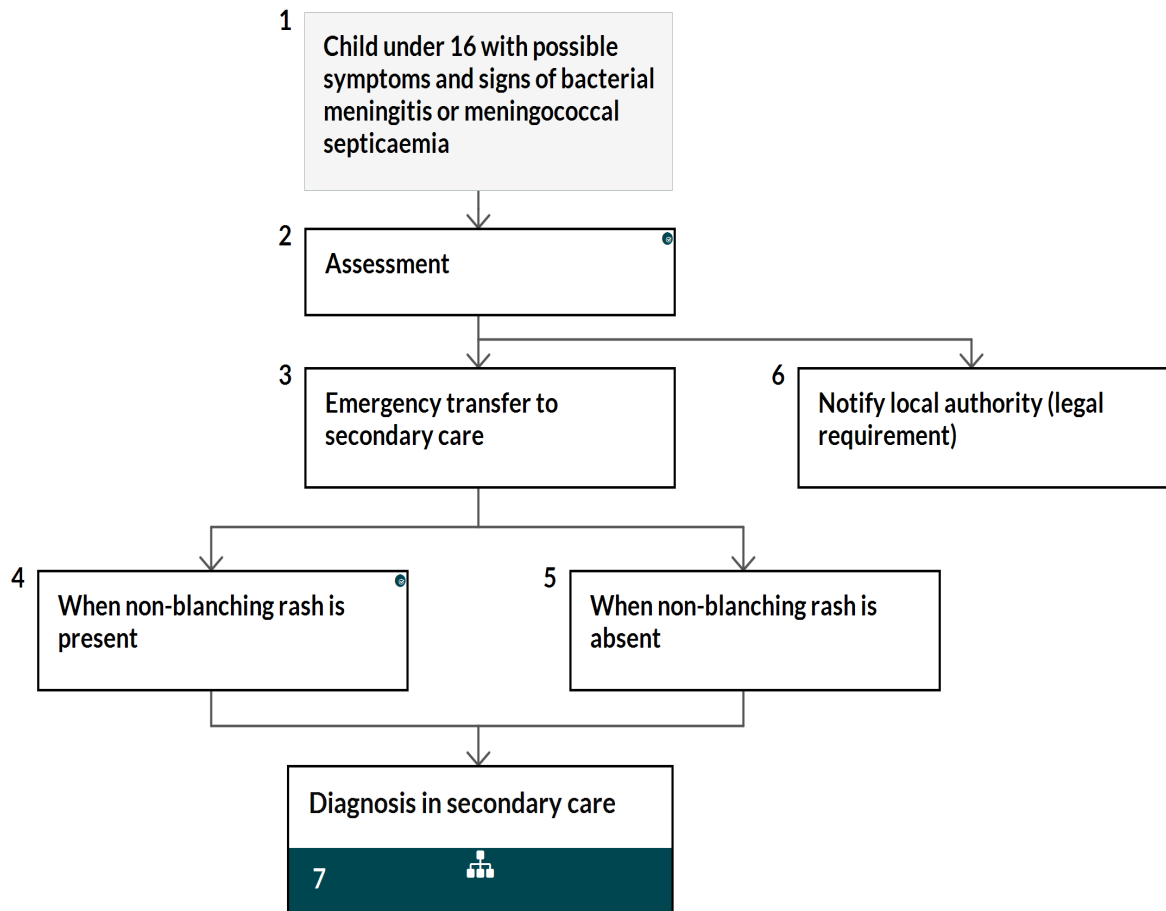
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/bacterial-meningitis-and-meningococcal-septicaemia-in-under-16s>

NICE Pathway last updated: 20 April 2021

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



## 1 Child under 16 with possible symptoms and signs of bacterial meningitis or meningococcal septicaemia

No additional information

## 2 Assessment of a child under 16 with suspected bacterial meningitis or meningococcal septicaemia

Be alert to the possibility of bacterial meningitis or meningococcal septicaemia when assessing children or young people with acute febrile illness.

Healthcare professionals should be aware that classical signs of meningitis (neck stiffness, bulging fontanelle, high-pitched cry) are often absent in infants with bacterial meningitis.

Be aware that children and young people with bacterial meningitis commonly present with non-specific symptoms and signs, including fever, vomiting, irritability, and upper respiratory tract symptoms. Some children with bacterial meningitis present with seizures.

Consider other non-specific features of the child's or young person's presentation, such as:

- the level of parental or carer concern (particularly compared with previous illness in the child or young person or their family)
- how quickly the illness is progressing, and
- clinical judgement of the overall severity of the illness.

In children and young people with suspected bacterial meningitis or meningococcal septicaemia, undertake and record physiological observations of heart rate, respiratory rate, oxygen saturations, blood pressure, temperature, perfusion (capillary refill) and neurological assessment (for example the APVU scale) at least hourly.

Healthcare professionals should be trained in the recognition and management of meningococcal disease.

For further information see [table 1 symptoms and signs of bacterial meningitis and meningococcal septicaemia](#) [See page 6].

## Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

### 2. Monitoring

#### 3 Emergency transfer to secondary care

Primary care healthcare professionals should transfer children and young people with suspected bacterial meningitis or suspected meningococcal septicaemia to secondary care as an emergency by telephoning 999.

#### 4 When non-blanching rash is present

Give parenteral antibiotics (intramuscular or intravenous benzylpenicillin) at the earliest opportunity, either in primary or secondary care, but do not delay urgent transfer to hospital to give the parenteral antibiotics.

Withhold benzylpenicillin only in children and young people who have a clear history of anaphylaxis after a previous dose; a history of a rash following penicillin is not a contraindication.

## Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

### 4. Initiation of antibiotics

#### 5 When non-blanching rash is absent

Transfer children and young people with suspected bacterial meningitis without non-blanching rash 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), administer antibiotics to children and young people with suspected bacterial meningitis.

## **6 Notify local authority of suspicion of meningitis or meningococcal septicaemia**

Notify a proper officer of the local authority urgently on suspicion of meningitis or meningococcal septicaemia. This is a legal requirement under the [Health Protection \(Notification\) Regulations 2010](#).

Be aware of [guidance for public health management of meningococcal disease in the UK](#).

## **7 Diagnosis in secondary care**

[See Bacterial meningitis and meningococcal septicaemia in under 16s / Diagnosis of bacterial meningitis and meningococcal septicaemia in secondary care](#)

**Table 1 Symptoms and signs of bacterial meningitis and meningococcal septicaemia**

<b>Common non-specific symptoms / signs</b>			
<b>Symptom / sign</b>	<b>Bacterial meningitis (meningococcal meningitis and meningitis caused by other bacteria)</b>	<b>Meningococcal disease (meningococcal meningitis and/or meningococcal septicaemia)</b>	<b>Meningococcal septicaemia</b>
Fever <sup>a</sup>	Y	Y	Y
Vomiting / nausea	Y	Y	Y
Lethargy	Y	Y	Y
Irritable / unsettled	Y	Y	Y
Ill appearance	Y	Y	Y
Refusing food / drink	Y	Y	Y
Headache	Y	Y	Y
Muscle ache / joint pain	Y	Y	Y
Respiratory symptoms / signs or breathing difficulty	Y	Y	Y

<b>Less common non-specific symptoms / signs</b>			
<b>Symptom / sign</b>	<b>Bacterial meningitis (meningococcal meningitis and meningitis caused by other bacteria)</b>	<b>Meningococcal disease (meningococcal meningitis and/or meningococcal septicaemia)</b>	<b>Meningococcal septicaemia</b>
Chills / shivering	Y	Y	Y
Diarrhoea, abdominal pain / distension	Y	Y	Not known
Sore throat / coryza or other ear, nose and throat symptoms / signs	Y	Y	Not known
<b>More specific symptoms / signs</b>			
<b>Symptom / sign</b>	<b>Bacterial meningitis (meningococcal meningitis and meningitis caused by other bacteria)</b>	<b>Meningococcal disease (meningococcal meningitis and/or meningococcal septicaemia)</b>	<b>Meningococcal septicaemia</b>
Non-blanching rash <sup>b</sup>	Y	Y	Y
Stiff neck	Y	Y	Not known

Altered mental state <sup>c</sup>	Y	Y	Y
Capillary refill time more than 2 seconds	Not known	Y	Y
Unusual skin colour	Not known	Y	Y
Shock	Y	Y	Y
Hypotension	Not known	Y	Y
Leg pain	Not known	Y	Y
Cold hands / feet	Not known	Y	Y
Back rigidity	Y	Y	Not known
Bulging fontanelle <sup>d</sup>	Y	Y	Not known
Photophobia	Y	Y	N
Kernig's sign	Y	Y	N
Brudzinski's sign	Y	Y	N
Unconsciousness	Y	Y	Y
Toxic / moribund state	Y	Y	Y



Paresis	Y	Y	N
Focal neurological deficit including cranial nerve involvement and abnormal pupils	Y	Y	N
Seizures	Y	Y	N

Y: symptom or sign present;

N: symptom or sign not present;

Not known: not reported in the evidence.

<sup>a</sup> Not always present, especially in neonates;

<sup>b</sup> Be aware that a rash may be less visible in darker skin tones – check soles of feet, palms or hands and conjunctivae;

<sup>c</sup> Includes confusion, delirium and drowsiness, and impaired consciousness;

<sup>d</sup> Only relevant in children under 2 years.

## Glossary

### APVU

Alert, voice, pain, unresponsive.

## Sources

[Meningitis \(bacterial\) and meningococcal septicaemia in under 16s: recognition, diagnosis and](#)

management (2010 updated 2015) NICE guideline CG102

## Your responsibility

### Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

### Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with

the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

### **Medical technologies guidance, diagnostics guidance and interventional procedures guidance**

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.