

Bacterial meningitis and meningococcal septicaemia in under 16s overview

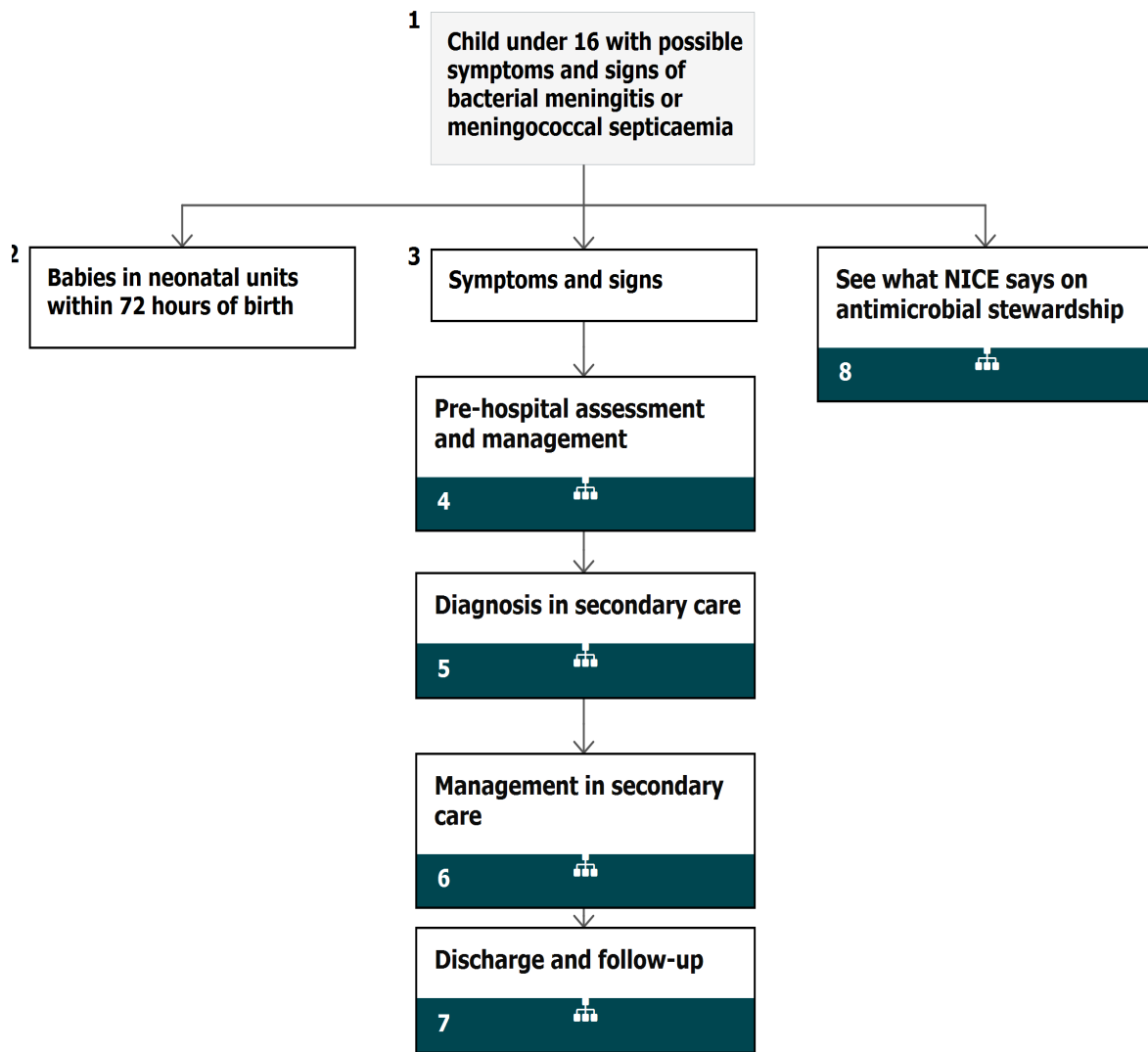
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

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: 29 November 2018

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 Babies in neonatal units within 72 hours of birth

For guidance on antibiotics for preventing and treating bacterial infection in newborn babies within 72 hours of birth in a neonatal unit see NICE's recommendations on [antibiotic treatment and monitoring for suspected meningitis in newborn babies in a neonatal unit](#).

3 Symptoms and signs

Consider bacterial meningitis and meningococcal septicaemia in children and young people who present with the symptoms and signs (see Table 1 Symptoms and signs of bacterial meningitis and meningococcal septicaemia below).

- Be aware that:
 - some children and young people will present with mostly non-specific symptoms or signs, and the conditions may be difficult to distinguish from other less important (viral) infections presenting in this way
 - children and young people with the more specific symptoms and signs are more likely to have bacterial meningitis or meningococcal septicaemia, and the symptoms and signs may become more severe and more specific over time.
- Recognise shock and manage urgently in secondary care (see Table 2 Signs of shock below).

Table 1 Symptoms and signs of bacterial meningitis and meningococcal septicaemia

Common non-specific symptoms / signs

Symptom / sign	Bacterial meningitis (meningococcal meningitis and meningitis caused by other bacteria)	Meningococcal disease (meningococcal meningitis and/or meningococcal septicaemia)	Meningococcal septicaemia
Fever ^a	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
Less common non-specific symptoms / signs			

Symptom / sign	Bacterial meningitis (meningococcal meningitis and meningitis caused by other bacteria)	Meningococcal disease (meningococcal meningitis and/or meningococcal septicaemia)	Meningococcal septicaemia
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
More specific symptoms / signs			
Symptom / sign	Bacterial meningitis (meningococcal meningitis and meningitis caused by other bacteria)	Meningococcal disease (meningococcal meningitis and/or meningococcal septicaemia)	Meningococcal septicaemia
Non-blanching rash ^b	Y	Y	Y
Stiff neck	Y	Y	Not known
Altered mental state ^c	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 ^d	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.

^a Not always present, especially in neonates;

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

^c Includes confusion, delirium and drowsiness, and impaired consciousness;

^d Only relevant in children under 2 years.

Table 2 Signs of shock

Signs of shock include:

- capillary refill time more than 2 seconds
- unusual skin colour
- tachycardia and/or hypotension
- respiratory symptoms or breathing difficulty
- leg pain
- cold hands/feet
- toxic/moribund state
- altered mental state/decreased conscious level
- poor urine output

4 Pre-hospital assessment and management

See Bacterial meningitis and meningococcal septicaemia in under 16s / Pre-hospital assessment and management of bacterial meningitis and meningococcal septicaemia

5 Diagnosis in secondary care

See Bacterial meningitis and meningococcal septicaemia in under 16s / Diagnosis of bacterial meningitis and meningococcal septicaemia in secondary care

6 Management in secondary care

See Bacterial meningitis and meningococcal septicaemia in under 16s / Management of bacterial meningitis and meningococcal septicaemia in secondary care

7 Discharge and follow-up

See Bacterial meningitis and meningococcal septicaemia in under 16s / Discharge and follow-up for bacterial meningitis or meningococcal septicaemia

8 See what NICE says on antimicrobial stewardship

[See Antimicrobial stewardship](#)

APVU

Alert, voice, pain, unresponsive.

CRP

C-reactive protein

CSF

Cerebrospinal fluid

CT

Computed tomography

EDTA

ethylenediaminetetraacetic acid

H influenzae

Haemophilus influenzae

L monocytogenes

Listeria monocytogenes

N. meningitidis

Neisseria meningitidis

PCR

polymerase chain reaction

SPC

summary of product characteristics

_S pneumoniae

Streptococcus pneumoniae

WBC

white blood cell

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.