NICE National Institute for Health and Care Excellence

NICE Pathways

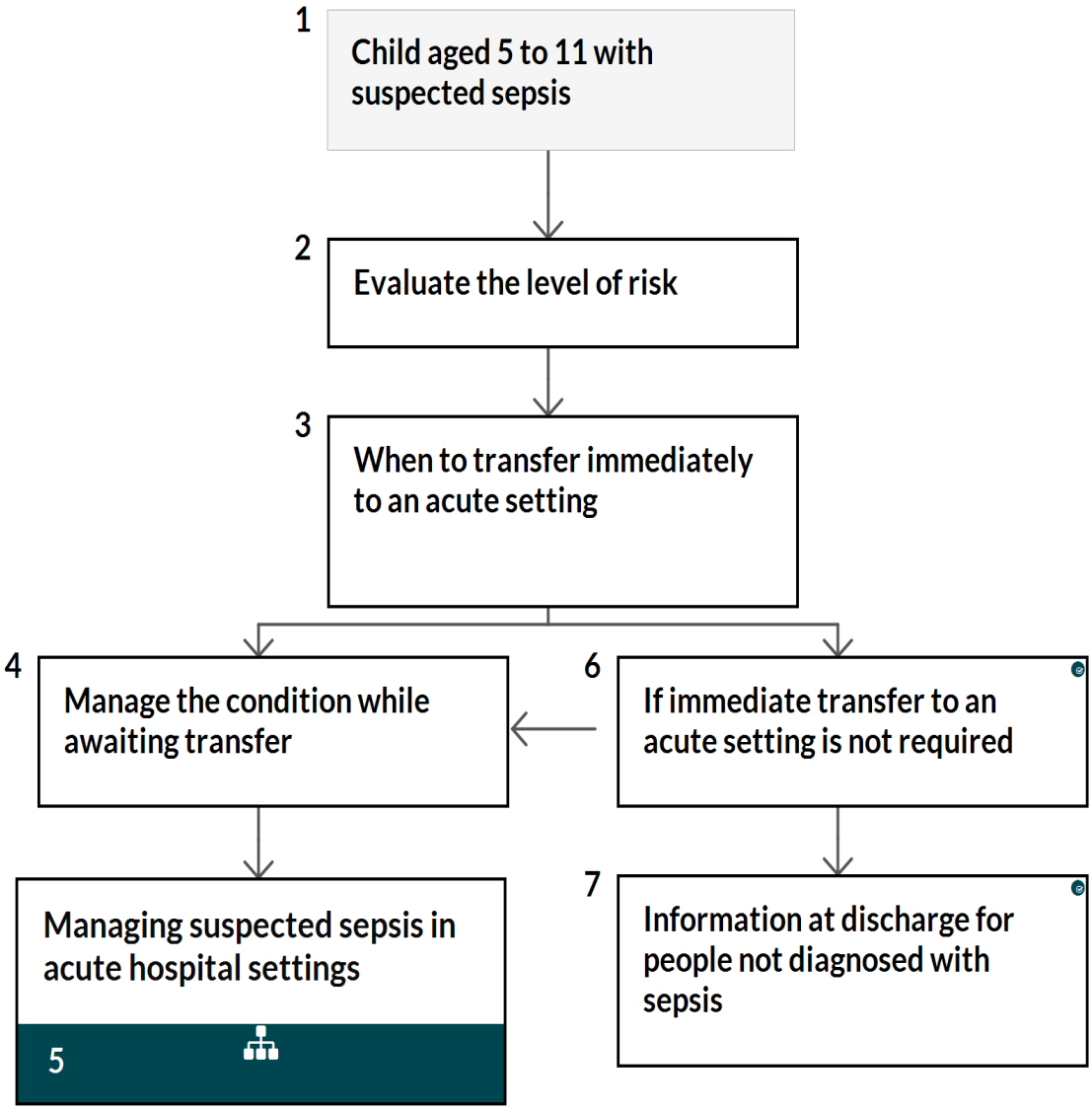
Assessing children aged 5 to 11 with suspected sepsis

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/sepsis
NICE Pathway last updated: 30 April 2019

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



1 Child aged 5 to 11 with suspected sepsis

No additional information

2 Evaluate the level of risk for child aged 5 to 11

Use the person's history and physical examination results to grade risk of severe illness or death from sepsis using criteria based on age (see the table listing signs and symptoms of sepsis by risk level for children aged 5 to 11 [See page 7]).

Recognise that children with suspected sepsis and any of the symptoms or signs below are at high risk of severe illness or death from sepsis:

- has objective evidence of altered behaviour or mental state, or appears ill to a healthcare professional, or does not wake (or if roused, does not stay awake)
- respiratory rate:
  - aged 5 years, 29 breaths per minute or more
  - aged 6–7 years, 27 breaths per minute or more
  - aged 8–11 years, 25 breaths per minute or more
  - oxygen saturation of less than 90% in air or increased oxygen requirement over baseline
- heart rate:
  - aged 5 years, 130 beats per minute or more
  - aged 6–7 years, 120 beats per minute or more
  - aged 8–11 years, 115 beats per minute or more
  - or heart rate less than 60 beats per minute at any age
- mottled or ashen appearance
- cyanosis of the skin, lips or tongue
- non-blanching rash of the skin

Recognise that children with suspected sepsis and any of the symptoms or signs below are at moderate to high risk of severe illness or death from sepsis:

- not responding normally to social cues or decreased activity, or parent or carer concern that the child is behaving differently from usual
- respiratory rate:

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  - aged 5 years, 24–28 breaths per minute
  - aged 6–7 years, 24–26 breaths per minute
  - aged 8–11 years, 22–24 breaths per minute
  - Oxygen saturation of less than 92% in air or increased oxygen requirement over baseline
- heart rate:
  - aged 5 years, 120–129 beats per minute
  - aged 6–7 years, 110–119 beats per minute
  - aged 8–11 years, 105–114 beats per minute
  - or capillary refill time of 3 seconds or more
- reduced urine output or for catheterised patients, passed less than 1 ml/kg of urine per hour
- tympanic temperature less than 36°C
- have leg pain or cold hands or feet.

Consider children with suspected sepsis who do not meet any high or moderate to high risk criteria to be at low risk of severe illness or death from sepsis.

3 When to transfer immediately to an acute hospital setting

Refer all people with suspected sepsis outside acute hospital settings for emergency medical care by the most appropriate means of transport (usually 999 ambulance) if:

- they meet any high risk criteria (see the table listing signs and symptoms of sepsis by risk level for children aged 5 to 11 [See page 7]), or
- they are aged under 17 years, and their immunity is impaired by drug or illness and they have any moderate to high risk criteria.

Pre-alert secondary care (through GP or ambulance service) when high risk criteria are met in a person with suspected sepsis outside of an acute hospital, and transfer them immediately.

4 Manage the condition while awaiting transfer

Ensure GPs and ambulance services have mechanisms in place to give antibiotics for people with high risk criteria in pre-hospital settings in locations where transfer time is more than 1 hour.

If meningococcal disease is specifically suspected (fever and purpuric rash) give appropriate doses of parenteral benzyl penicillin in community settings and intravenous ceftriaxone in hospital settings.

See what NICE says on bacterial meningitis and meningococcal septicaemia in under 16s.

5 Managing suspected sepsis in acute hospital settings

See Sepsis / Managing suspected sepsis in children aged 5 to 11 in acute hospital settings

6 If immediate transfer to an acute setting is not required

Assess all people with suspected sepsis outside acute hospital settings with any moderate to high risk criteria to:

- make a definitive diagnosis of their condition
- decide whether they can be treated safely outside hospital.

If a definitive diagnosis is not reached or the person cannot be treated safely outside an acute hospital setting, refer them urgently for emergency care.

See manage the condition while awaiting transfer [See page 4] and managing suspected sepsis in children aged 5 to 11 in acute hospital settings.

Provide people with suspected sepsis who do not have any high or moderate to high risk criteria information about symptoms to monitor and how to access medical care if they are concerned.

If sepsis is definitely excluded, see other NICE guidance.

Quality standards

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

5. Information for people at low risk of severe illness or death

7 Information at discharge for people assessed for possible sepsis, but not diagnosed with sepsis

Give people who have been assessed for sepsis but have been discharged without a diagnosis of sepsis (and their family or carers, if appropriate) verbal and written information about:

- what sepsis is, and why it was suspected
- what tests and investigations have been done
- instructions about which symptoms to monitor
- when to get medical attention if their illness continues
- how to get medical attention if they need to seek help urgently.

Confirm that people understand the information they have been given, and what actions they should take to get help if they need it.

Quality standards

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

5. Information for people at low risk of severe illness or death

Signs and symptoms of sepsis by risk level for children aged 5 to 11

Category	Age	High risk criteria	Moderate to high risk criteria	Low risk criteria
Behaviour	**Any**	Objective evidence of altered behaviour or mental state Appears ill to a healthcare professional Does not wake or if roused does not stay awake	Not behaving normally Decreased activity Parent or carer concern that the child is behaving differently from usual	Behaving normally
Respiratory	**Any**	Oxygen saturation of less than 90% in air or increased oxygen requirement over baseline	Oxygen saturation of less than 92% in air or increased oxygen requirement over baseline	No high risk or moderate to high risk criteria met
	Aged 5 years	Raised respiratory rate: 29 breaths per minute or more	Raised respiratory rate: 24–28 breaths per minute	
	Aged 6–7 years	Raised respiratory rate: 27 breaths per minute or more	Raised respiratory rate: 24–26 breaths per minute	
	Aged 8–11 years	Raised respiratory rate: 25 breaths per minute or more	Raised respiratory rate: Aged 8–11 years, 22–24 breaths per minute	
Circulation	**Any**	Heart rate less than 60	Capillary refill time of 3	No high risk

and hydration		beats per minute	seconds or more Reduced urine output For catheterised patients, passed less than 1ml/kg of urine per hour Oxygen saturation of less than 92% in air or increased oxygen requirement over baseline	or moderate to high risk criteria met
	Aged 5 years	Raised heart rate: 130 beats per minute or more	Raised heart rate: Aged 5 years, 120–129 beats per minute	
	Aged 6–7 years	Raised heart rate: 120 beats per minute or more	Raised heart rate: 110–119 beats per minute	
	Aged 8–11 years	Raised heart rate: 115 beats per minute or more	Raised heart rate: 105–114 beats per minute	
Temperature	**Any**		Tympanic temperature less than 36°C	
Skin	**Any**	Mottled or ashen appearance Cyanosis of skin, lips or tongue Non-blanching rash of		

		skin		
Other	**Any**		Leg pain Cold hands or feet	No high or moderate to high risk criteria met

A downloadable version of this table is also available.

Glossary

Acute kidney injury

for a definition of acute kidney injury, see what NICE says on acute kidney injury)

Clinician

a medically qualified practitioner who has antibiotic prescribing responsibilities

Critical care

an intensivist or intensive care outreach team, or specialist in intensive care or paediatric intensive care

Emergency medical care

emergency care requires facilities for resuscitation to be available and depending on local services may be emergency department, medical admissions unit and for children may be paediatric ambulatory unit or paediatric medical admissions unit

Senior clinical decision maker

a senior decision maker for people aged 18 years or over should be someone who is authorised to prescribe antibiotics, such as a doctor of grade CT3/ST3 or above or equivalent, such as an advanced nurse practitioner with antibiotic prescribing responsibilities, depending on local arrangements; a senior clinical decision maker for people aged under 17 years is a paediatric or emergency care qualified doctor of grade ST4 or above or equivalent

Senior clinical decision maker for children

(a senior clinical decision maker for people aged under 17 years is a paediatric qualified doctor of grade ST4 or above or equivalent)

Sepsis

sepsis is a life-threatening organ dysfunction due to a dysregulated host response to infection; 'suspected sepsis' is used to indicate people who might have sepsis and require face to face assessment and consideration of urgent intervention

Sources

Sepsis: recognition, diagnosis and early management (2016) NICE guideline NG51

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.