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Sepsis in Children

Information for health visitors and school nurses

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Purpose of this guide

Health visitors and school nurses as public health nurses are leaders of the **Healthy Child Programme: Pregnancy and the first five years of life** and **Healthy Child Programme: 5 to 19 years old** (HCP); they are often the primary health contact point for parents and carers of children aged between 0-19 years. They, together with other health professionals, have a key role in providing advice or support for parents to allay fears or concerns about sepsis.

This short guide sets out what health visitors and school nurses need to know about sepsis; and is designed to **raise awareness** of sepsis locally amongst health visitors and school nurses and their teams.

Parents often have regular contact and an ongoing relationship with health visitors and school nurses; as such they may be the first point of contact for parents who have a concern. Services provided by health visitors and school nurses are not intended to provide a first line treatment or diagnostic service for acutely unwell children, however, when an unwell child attends their service, the practitioner must have the knowledge to support parents to make a decision about the most appropriate course of action and signpost them to the appropriate help based on the child's presenting symptoms.

Health visitors and school nurses should therefore be aware of the clinical signs and symptoms of sepsis in children and of relevant national guidelines. They need to have clarity on actions that need to be taken and be clear about the advice for parents (**NICE CG160, 2013**).

Understanding sepsis

What is sepsis?

- Sepsis is a rare but serious medical condition that results from the body's overwhelming response to an infection.
- Sepsis can occur in anyone at any time and from any type of infection affecting any part of the body.
- Without quick and timely treatment, sepsis can lead to septic shock, multi-organ failure and death.

Causes of sepsis

Sepsis is most often caused by bacterial, viral or fungal infections; sometimes the cause of sepsis is never identified.

Children with pneumonia, urinary tract infections, meningitis and severe skin infections can rapidly deteriorate and develop sepsis.

It is important to **recognise and act quickly on the symptoms of sepsis** in order to reduce morbidity and mortality.

What are the symptoms of sepsis?

Initial symptoms of sepsis are often non-specific and may include fever, cough, sore throat, vomiting and diarrhoea. As the illness progresses, any combination of the following signs and symptoms may develop:

- shivering, fever or feeling very cold
- extreme pain or discomfort
- clammy or sweaty skin
- confusion or disorientation
- shortness of breath
- high heart rate

Early symptoms of sepsis often resemble a viral illness. This makes sepsis difficult to diagnose (Journal of Family Health Care, December 2016). However, if a child develops any of the following “**red flag**” symptoms, then parents, carers and healthcare professionals must take immediate action:

- has mottled, blueish or pale skin
- is lethargic or difficult to wake
- is abnormally cold
- is breathing very fast
- has a rash that doesn't fade when you press it
- has a fit or convulsion

Infants and children are often challenging to assess, as they will compensate physically for a long period until they reach a point where they are overwhelmed and deteriorate rapidly.

Sepsis in children is more common in those under 1 year of age, including:

- pre-term infants (less than 37 weeks)
- infants where there was a prolonged rupture of membranes during labour (more than 24 hours before delivery)
- infants born to mothers who had fever during labour (more than 38°C)
- children with recent trauma or injury or invasive procedure (within the last 6 weeks),
- children who have impaired immunity due to illness or drugs (for example, steroids or receiving chemotherapy)

- children with indwelling lines/catheters, or any breach of skin integrity (for example, cuts, burns, blisters or skin infections)
- children who are not fully immunised according to the nationally recommended schedule

For more detailed information on sepsis in children, including symptoms and signs, as well as early clinical management, please refer to the [NICE Guideline \[NG51\]: Sepsis: recognition, diagnosis and early management](#).

Supporting parents

Health visitors and school nurses are a trusted and valued workforce delivering the Healthy Child Programme; they are ideally placed in the community to work with families promoting awareness, helping parents to recognise early signs of illness and providing advice, including swift referral to appropriate services.

Health visitors and school nurses need to ensure parents know how to respond to illness in children. They should:

- advise parents/carers to watch their child carefully when their child is unwell. Almost all children will recover quickly and without problems
- raise awareness that rarely some children may develop sepsis, which requires immediate medical attention
- always take the parent/carer concern seriously and act on the parent/carers' perception (NICE CG 160, 2013)
- ensure parents are aware of their local health services and know how to contact GP services, call 111 or 999 or attend A&E depending on the seriousness of the child's condition
- make parents and carers aware of the signs and symptoms of sepsis and be advised to seek medical attention immediately if they are concerned

There are a number of resources that Health visitors and school nurses can signpost parents to, including;

- NHS Choices [internet], Sepsis. Available from <http://www.nhs.uk/Conditions/Blood-poisoning/Pages/Introduction.aspx>
- The UK Sepsis Trust [internet], Spotting sepsis in children. Available from: http://sepsistrust.org/wp-content/uploads/2015/08/UST602_DL_6pp_SpottingSepsis_Leaflet_070716.pdf
- The UK Sepsis Trust [internet], What every parent needs to know about sepsis. Available from: <http://sepsistrust.org/wp-content/uploads/2015/07/Sepsis-symptoms-leaflet.pdf>

- The UK Sepsis Trust [internet], Spotting sepsis in children. Available from: http://sepsistrust.org/wp-content/uploads/2015/08/UST602_DL_6pp_SpottingSepsis_Leaflet_070716.pdf

Additional information for parents that may prevent infections leading to sepsis includes:

- cleaning scrapes, scratches and wounds
- practicing good hygiene and hand washing
- ensuring children are fully vaccinated according to the nationally immunisation schedule against vaccine-preventable infections (including Hib, pneumococcal and meningococcal disease)

Parents may have concerns about the long term effects of sepsis, however it is important to reassure them. Many people, especially children, recover from sepsis completely and their lives return to normal ([Life after Sepsis](#)).

Resources for health visitors and school nurses

Health visitors and school nurses can utilise evidence based information and resources to support their knowledge and understanding of sepsis. Valuable resources include:

Centres for Disease Control and Prevention [internet], Sepsis questions and answers. Available from <https://www.cdc.gov/sepsis/basic/qa.html>

NICE [internet], NICE guideline [NG51] Sepsis: recognition, diagnosis and early management, 2016. Available from <https://www.nice.org.uk/guidance/ng51?unlid=28010410720161191735>

Royal College of Physicians [internet], National Early Warning Score (NEWS). Available from <https://www.rcplondon.ac.uk/projects/outputs/national-early-warning-score-news>

Sepsis Alliance [internet], Life after sepsis. Available from <http://www.sepsis.org/life-after-sepsis/>

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National Confidential Enquiry into Patient Outcome and Death [internet], Just say sepsis! A review of the process of care received by patients with sepsis, 2015. Available from http://www.ncepod.org.uk/2015report2/downloads/JustSaySepsis_FullReport.pdf

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Royal College of Paediatrics and Child Health [internet], Situation Awareness for Everyone (SAFE) programme, 2016. Available from <http://www.rcpch.ac.uk/safe>

Sepsis Alliance [internet]. Available from <http://www.sepsis.org/>

Singer, M. et al, The third international consensus definitions for sepsis and septic shock (Sepsis-3), The Journal of the American Medical Association [internet], Vol 315, No 8, 23 February 2016. Available from <http://jamanetwork.com/journals/jama/fullarticle/2492881>

The UK Sepsis Trust [internet], Clinical Toolkit 6: Emergency Department management of Paediatric Sepsis. 2015. Available from <http://sepsistrust.org/wp-content/uploads/2015/08/sepsis-toolkit-FINAL-09151.pdf>

NICE guidance

NICE [internet], Assessment of a child under 5 years with suspected sepsis, 2016. Available from <http://beta.pathways.nice.org.uk/pathways/sepsis/assessment-of-a-child-under-5-years-with-suspected-sepsis>

NICE [internet], Consultation: Sepsis: the recognition, diagnosis and management of sepsis: Methods, evidence and recommendations. 2006. Available from <https://www.nice.org.uk/guidance/GID-CGWAVE0686/documents/draft-guideline-2>

NICE [internet], Risk stratification tool for children aged under 5 years with suspected sepsis. Available from <https://www.nice.org.uk/guidance/ng51/resources/table-3-risk-stratification-tool-for-children-aged-under-5-years-with-suspected-sepsis-2551487007>

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