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PRESS RELEASE

New NICE guidelines say prompt recognition of signs and symptoms of meningitis is key to saving lives

A new guideline from NICE published today (23 June) says prompt recognition of the signs and symptoms of bacterial meningitis and meningococcal disease is the key to preventing the deaths of children and young people who contract the diseases. The new guideline, jointly developed with the National Collaborating Centre for Women's and Children's Health, will help to save lives by giving frontline healthcare professionals, and families and carers of children and young people, the knowledge and confidence to recognise symptoms and signs of bacterial meningitis and meningococcal septicaemia and to seek appropriate clinical care.

Bacterial meningitis occurs when bacteria, such as meningococcus, pneumococcus, and *Haemophilus influenzae* type b, which are found normally in the upper respiratory tract, infect the lining of the brain (meninges) and the spinal cord. Meningococcal disease is the term used to describe two major illnesses – meningococcal meningitis (one form of bacterial meningitis) and meningococcal septicaemia (blood poisoning). These can occur on their own or more commonly both together. Meningococcal septicaemia is caused when the bacteria multiply rapidly in the bloodstream, leading to damage to blood vessels and, in some cases, multi-organ failure or damage.

There are over 1000 cases of bacterial meningitis each year in England and Wales. Although not very common (there are approximately 1700 reported cases each year in England and Wales), meningococcal disease, with a fatality rate of about 10%, is still the leading infectious cause of death in early childhood making its control and treatment a clinical priority. Long-term complications of bacterial meningitis include neurological damage, loss of hearing, blindness, or epilepsy. Children with meningococcal disease, as well as suffering from the complications of bacterial meningitis, may lose areas of skin, fingers/toes or even limbs, or, rarely, develop kidney failure. There has been a reduction in the incidence of meningococcal disease and bacterial meningitis over the last 20 years, primarily as a result of the introduction of the meningitis C vaccine. However, there is still variation in areas such as initial assessment and initiation of treatment, disease severity assessment and prevention of secondary cases.

The guideline stresses the importance of healthcare professionals being aware of clinical features that can be used to help identify children and young people presenting with possible bacterial meningitis. Identifying infection due to bacterial meningitis is particularly important because prompt recognition and referral for emergency admission are essential in order to initiate antibiotic treatment and therefore prevent unnecessary deaths.

The guideline covers the following areas:

- Symptoms and signs of bacterial meningitis and meningococcal septicaemia
- Management in the pre-hospital setting, including:
    - Transfer of those with suspected bacterial meningitis or suspected meningococcal septicaemia to secondary care as an emergency by telephoning 999.
- Diagnosis in secondary care, including:
    - The use of polymerase chain reaction testing to confirm a diagnosis of meningococcal disease
    - When to perform a lumbar puncture to confirm a diagnosis of meningitis or meningococcal disease
- Management in secondary care, including:
    - Which antibiotics to use for suspected bacterial meningitis or meningococcal disease

    - Which antibiotics to use for specific infections in confirmed bacterial meningitis or meningococcal disease
    - Intravenous fluid resuscitation in suspected or confirmed meningococcal septicaemia
    - Monitoring for deterioration for meningococcal disease
    - Retrieval and transfer to tertiary care
- Long-term management, including review of children and young people for morbidities such as:
    - hearing loss (with the child or young person having undergone an urgent assessment for cochlear implants as soon as they are fit)
    - orthopaedic complications
    - skin complications (including scarring from necrosis)
    - psychosocial problems
    - neurological and developmental problems
    - renal failure

Dr Fergus Macbeth, Director of the NICE Centre for Clinical Practice, said: "Fortunately, bacterial meningitis and meningococcal septicaemia are very rare. But because of the speed with which they can strike, often with little warning that anything serious is amiss, and their life-threatening potential, they are also perhaps the diseases most feared by parents with young children. This guideline addresses the challenges faced by healthcare professionals called upon to identify children and young people who might rapidly progress from early symptoms to a life-threatening state. It will also empower parents of children and young people so that they can work in partnership with healthcare professionals to ensure their child receives the best possible treatment."

Professor Andrew Pollard, a specialist in paediatric infectious diseases and Chair of the Guideline Development Group, said: "The guideline does not direct major changes in clinical practice but builds on and clarifies practice guidelines which have been widely used since the late 1990s. The guideline provides the evidence base for the recommendations and should provide firm and authoritative guidance for junior doctors faced with management of these seriously ill children for the first time."

Professor Simon Kroll, Professor of Paediatrics and Molecular Infectious Diseases at Imperial College, London, and member of the Guideline Development Group, said: “This guideline will save lives by giving healthcare professionals in primary and secondary care settings, and families and carers of children and young people, the knowledge and confidence to recognise symptoms and signs of bacterial meningitis and meningococcal septicaemia and to seek appropriate clinical care.”

Caroline Haines, **Nurse Consultant in Paediatric Intensive & High Dependency Care and member of the Guideline Development Group** said: “Health professionals have a desire to achieve optimal outcomes for these children and young people, but their anxiety levels are often high due to their understanding of the speed of presentation, potential severity of illness and a need for timely and appropriate recognition and treatment. This guideline provides clear direction in the recognition and management of these children and therefore will allow for a collaborative, team approach to the care and treatment of each child.”

Linda Glennie, Head of Research and Medical Information, Meningitis Research Foundation and member of the Guideline Development Group said: “At the Meningitis Research Foundation we help families affected by meningitis and septicaemia, and since the late 1990s have been producing widely used protocols to help health professionals, so we are delighted the NICE guidelines will now provide authoritative recommendations on recognition and early management. This new guidance highlights the importance of early assessment for after effects, and we hope this will improve the wellbeing of children who survive these deadly diseases.”

Sue Davie, Chief Executive of the Meningitis Trust, commented: “As an organisation that sees first-hand the devastation that meningitis can cause, we are delighted with the recommendations – particularly for the long-term management of patients affected by the disease – that have been put forward in this guideline. With nearly 2000 cases of meningococcal disease reported in England and Wales every year, this guideline will play an important role in recognising the disease, managing the care and ensuring quality of life following meningitis.”

Dr Jan Dudley, Chair of the Clinical Standards Committee, Royal College of Paediatrics and Child Health, said: "This comprehensive guidance will be an invaluable resource for health professionals faced with this life-threatening condition."

Kate Rowland, Head of Development at Meningitis UK, said: “While we feel prevention by vaccination is the only way to eradicate the disease, especially given that there can be few or no symptoms at all, these guidelines are an excellent step forward to improve the speed and quality of treatment. Unfortunately we’re still seeing cases each week where symptoms are being missed so we welcome this comprehensive guidance for medical professionals, which if embraced will hopefully help to save precious lives.”

Ends

Notes to Editors:

About bacterial meningitis and meningococcal septicaemia

1. Bacterial meningitis is an infection of the surface of the brain (meninges) by bacteria that have usually travelled there from mucosal surfaces via the bloodstream. The meningococcal organism can cause both meningitis and septicaemia and is still a significant cause of mortality in children and young people.
2. Septicaemia (blood poisoning) is caused when bacteria enter the bloodstream and multiply uncontrollably. Although a successful vaccine against the ‘C’ form of meningitis exists, there is currently no licensed vaccine in the UK against the ‘B’ form of the disease.
3. The organism causing meningococcal disease (*N. meningitidis)* is carried in the nose by up to 40% of the population and is usually asymptomatic. However, in a small minority of those who encounter the organism for the first time, meningitis, septicaemia or both can occur.
4. Children younger than 9 years are the most at risk of contracting bacterial meningitis and meningococcal septicaemia and it is the most common infectious cause of death in children aged between 1 and 5 years.
5. Up to 20% of the children who contract severe meningococcal septicaemia die, usually within 24 hours of the first symptoms appearing, frequently before the patient receives specialist care. This poses a challenge to those in the healthcare system to identify children and young people who will rapidly progress from early symptoms to a life-threatening state.
6. Typical presentations of meningitis vary depending on age. Common features in children and young people include fever, vomiting, headache, neck pain, photophobia, confusion, drowsiness and fits. Young babies may present with irritability and refusal to feed. Children and young people with septicaemia present with fever, vomiting, cold hands and feet, shivering, pale or mottled skin, fast breathing, rash, confusion and drowsiness.
7. The rash associated with meningococcal disease ranges from a non-specific macular rash to the characteristic purpuric (raised, non-blanching, bluish purple) rash. This purpuric rash is mostly seen with septicaemia but is not always present initially.

About the guideline

1. The NICE guideline on the management of bacterial meningitis and meningococcal septicaemia in children and people younger than 16 years in primary and secondary care, including a version for patients and carers, and corresponding implementation tools are available from the NICE website at: www.nice.org.uk/guidance/CG102

About NICE

1. The National Institute for Health and Clinical Excellence (NICE) is the independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health.
2. NICE produces guidance in three areas of health:
    - **public health –** guidance on the promotion of good health and the prevention of ill health for those working in the NHS, local authorities and the wider public and voluntary sector
    - **health technologies –** guidance on the use of new and existing medicines, treatments and procedures within the NHS
    - **clinical practice –** guidance on the appropriate treatment and care of people with specific diseases and conditions within the NHS.