# NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

## Guideline

# Suspected sepsis in people aged 16 or over who are not and have not recently been pregnant

## Draft for consultation, November 2023

This update covers management of suspected sepsis in acute hospital settings, for people aged 16 or over who are not and have not recently been pregnant. It does not cover antibiotics, which were covered in a previous update.

This guideline will update NICE guideline NG51 (published July 2016).

**Who is it for?**

- People with sepsis, their families and carers
- Healthcare professionals working in primary, secondary and tertiary care

**What does it include?**

- the new and updated recommendations
- some recommendations that have not been updated, provided for context
- recommendations for research
- rationale and impact sections that explain why the committee made the **[2023b]** recommendations and how they might affect practice
- the guideline context.

Information about how the guideline was developed is on the guideline's webpage. This includes the evidence reviews, the scope, details of the committee and any declarations of interest.

**New and updated recommendations**

We have reviewed the evidence on suspected sepsis in people aged 16 or over who are not and have not recently been pregnant. These are marked as **[2023b]**. We have also made recommendation 1.5.5 and amended recommendation 1.7.3 without an evidence review. All recommendation changes are highlighted in yellow.

We have not reviewed the evidence for the recommendations marked **[2016]** or **[2023a]** (shaded in grey), and we cannot accept comments on these recommendations. In some cases, we have made minor wording changes for clarification.

Full details of the evidence and the committee's discussion on the 2023 recommendations are in the evidence reviews. Evidence for the 2016 recommendations is in the full version of the 2016 guideline.

Details of all the updates to the sepsis guideline are available on the sepsis page on the NICE website.

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# Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

# Could this be sepsis?

## 1.1 When to suspect sepsis

1.1.8 Use the national early warning score (NEWS2) to assess people with suspected sepsis who are aged 16 or over, are not and have not recently been pregnant, and are in an acute hospital setting, acute mental health setting or ambulance. **[2023a]**

# Evaluating risk level in people with suspected sepsis

## 1.5 In acute hospital settings, acute mental health settings and ambulances

The NEWS2 should not be used for women and people who are or have recently been pregnant.

1.5.1 In people aged 16 or over, grade risk of severe illness or death from sepsis using the person's:

- history

- physical examination results (especially symptoms and signs of infection – in line with the recommendations on when to suspect sepsis) and
- NEWS2 score. **[2023a]**

Interpret the NEWS2 scores within the context of the persons' underlying physiology and comorbidities. **[2023a]**

1.5.2 When evaluating the risk of severe illness or death from sepsis in people aged 16 or over with suspected or confirmed infection, use clinical judgement to interpret the NEWS2 score and recognise that:

- a score of 7 or more suggests high risk of severe illness or death from sepsis
- a score of 5 or 6 suggests a moderate risk of severe illness or death from sepsis
- a score of 1 to 4 suggests a low risk of severe illness or death from sepsis
- a score of 0 suggests a very low risk of severe illness or death from sepsis
- if a single parameter contributes 3 points to their NEWS2 score, a medical review should be requested with high priority, for a definite decision on the person's level of risk of severe illness or death from sepsis. **[2023a]**

1.5.3 Consider evaluating the person's risk of severe illness or death from sepsis as being higher than suggested by their NEWS2 score alone if any of the following is present:

- mottled or ashen appearance
- non-blanching rash
- cyanosis of skin, lips or tongue. **[2023a]**

1.5.4 Consider evaluating the person's risk of severe illness or death from sepsis as being higher than suggested by their NEWS2 score alone if

there is cause for concern because of deterioration or lack of improvement of the person's condition since:

- any previous NEWS2 score was calculated
- any interventions have taken place.

This should include taking into account any NEWS2 score calculated or intervention carried out before initial assessment in the emergency department. **[2023a]**

### When to recalculate a NEWS2 score

1.5.5 Recalculate a NEWS2 score and re-evaluate risk of sepsis if there is deterioration or an unexpected change in the person's condition. **[2023b]**

1.5.6 Re-calculate a NEWS2 score and re-evaluate risk of sepsis periodically, in line with the AoMRC statement on the initial antimicrobial treatment of sepsis (2022):

- every 30 minutes, for those at high risk of severe illness or death from sepsis
- every hour, for those at moderate risk of severe illness or death from sepsis
- every 4 to 6 hours, for those at low risk of severe illness or death from sepsis
- when standard observations are carried out, in line with local protocol, for those at very low risk of severe illness or death from sepsis. **[2023a]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on evaluating risk level in people with suspected sepsis.

Full details of the evidence and the committee's discussion are in evidence review A: NEWS2.

# Managing suspected sepsis outside acute hospital settings

## 1.6 When to transfer immediately to an acute hospital setting

1.6.3 For people at high risk of severe illness or death from sepsis who are in an acute mental health setting, follow local emergency protocols on treatment and ambulance transfer. **[2023a]**

### Transfer by ambulance for people with a NEWS2 score of 5 or above

1.6.4 Ambulance crews should consider a time-critical transfer and pre-alerting the hospital for people aged 16 or over with suspected or confirmed infection who **either** have consecutive NEWS2 scores of 5 or above **or** show cause for significant clinical concern. **[2023a]**

1.6.5 When deciding whether a time-critical transfer and pre-alerting the hospital is needed for someone aged 16 or over with consecutive NEWS2 scores of 5 or above and suspected or confirmed infection, take into account:

- local guidelines and protocols in relation to clinician scope of practice
- conveyance agreements
- advanced care planning
- end of life care planning. **[2023a]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis outside acute hospital settings: Transfer by ambulance for people with a NEWS2 score of 5 or above.

Full details of the evidence and the committee's discussion are in evidence review B: antibiotics.

## 1.7 Managing the condition while awaiting transfer

1.7.1 In ambulances and acute hospital settings, on taking over care for someone whose risk of severe illness or death from sepsis has originally been evaluated in the community or in a custodial setting, evaluate their risk of severe illness or death from sepsis using NEWS2**. [2023a]**

1.7.2 In remote and rural locations where transfer time to emergency department is routinely more than 1 hour, ensure GPs have mechanisms in place to give antibiotics to people with high risk criteria in pre-hospital settings. For high risk criteria, see table 1: criteria for stratification of risk from sepsis in people aged 16 or over who are in the community or in a custodial setting). **[2016, amended 2023a]**

1.7.3 In remote and rural locations where combined transfer and handover times to emergency department are greater than 1 hour, ensure:

- ambulance crews who are thinking about giving antibiotics seek advice from more senior colleagues, if needed
- ambulance services have mechanisms in place to give antibiotics to people at high risk of severe illness or death from sepsis if antibiotics have not been given before by a GP (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis). **[2016, amended 2023b]**

  See also the recommendations on choice of antibiotic therapy, in this guideline.

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings: when to count time from (time zero).

Full details of the evidence and the committee's discussion are in evidence review B: antibiotics.

## 1.8 If immediate transfer is not required

1.8.3 In acute mental health settings, assess people aged 16 or over who are at moderate risk of severe illness and death from sepsis (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis) to:

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

If a definitive diagnosis is not reached or the person's condition cannot be treated safely outside an acute hospital setting, follow local emergency protocols on treatment and ambulance transfer. **[2023b]**

1.8.4 In acute mental health settings, provide information about the following to people aged 16 or over who are at low or very low risk of sepsis:

- symptoms to monitor and
- how to access medical care if they are concerned.

Also see information at discharge for people assessed for suspected sepsis, but not diagnosed with sepsis, in this guideline. **[2023b]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis outside acute hospital settings: when immediate transfer is not required.

Full details of the evidence and the committee's discussion are in evidence review B: antibiotics.

# Managing suspected sepsis in acute hospital settings

The NEWS2 should not be used for women and people who are or have recently been pregnant.

## 1.10 High risk of severe illness or death from sepsis

A person is at high risk of severe illness or death from sepsis if they have suspected or confirmed infection and a NEWS2 score of 7 or above.

A person is also at high risk of severe illness or death from sepsis if they have suspected or confirmed infection, a NEWS2 score of 5 or 6, and:

- a single parameter contributes 3 points to their NEWS2 score and a medical review has confirmed that they are at high risk (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis) or
- there are any other clinical reasons for concern (see recommendations 1.5.3 and 1.5.4 on taking causes for clinical concern into account when evaluating risk of severe illness or death from sepsis).

1.10.1 For people aged 16 or over who are at high risk of severe illness or death from sepsis:

- arrange for the senior clinical decision maker to urgently assess the person's condition and think about alternative diagnoses to sepsis
- carry out a venous blood test, including for:
  - blood gas including glucose and lactate measurement
  - blood culture
  - full blood count
  - C-reactive protein
  - urea and electrolytes
  - creatinine
  - a clotting screen
- give antibiotics in line with recommendation 1.10.2 and the recommendations on choice of antibiotic therapy, in this guideline
- discuss with a consultant. **[2023b]**

For a short explanation of why the committee made the 2023 recommendation and how it might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

## Antibiotics

1.10.2 Give people aged 16 or over who are at high risk of severe illness or death from sepsis broad-spectrum intravenous antibiotic treatment, within 1 hour of calculating the person's NEWS2 score on initial assessment in the emergency department or on ward deterioration. Only give antibiotics if they have not been given before for this episode of sepsis (see recommendations 1.7.2 and 1.7.3 on managing the condition while awaiting transfer).

Also see the recommendations on finding the source of infection, taking microbiological samples and choice of antibiotic therapy, in this guideline. **[2023a]**

For a short explanation of why the committee made the 2023 recommendation and how it might affect practice, see the rationale and impact section on managing suspected sepsis: type and timing of antibiotics.

Full details of the evidence and the committee's discussion are in evidence review B: antibiotics.

## Intravenous fluids, inotropes and vasopressors

1.10.3 For people aged 16 or over with a high risk of severe illness or death from sepsis and **either** lactate over 2 mmol/litre **or** systolic blood pressure less than 90 mmHg, give intravenous fluid bolus without delay (within 1 hour of

identifying that they are at high risk) in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline. **[2023b]**

1.10.4 For people aged 16 or over with a high risk of severe illness or death from sepsis and lactate of 2 mmol/litre or lower, consider giving an intravenous fluid bolus (in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline). **[2023b]**

### Monitoring and when to alert a consultant

1.10.5 Recalculate the NEWS2 score periodically, in line with the recommendations on when to recalculate a NEWS2 score. **[2023b]**

1.10.6 If a person aged 16 years or over who is at high risk of severe illness or death from sepsis does not respond within 1 hour of intravenous fluid resuscitation:

- alert a consultant and
- refer to or discuss with a critical care specialist or team so they can review the management of the person's condition, including their need for central venous access and initiation of inotropes or vasopressors. **[2023b]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

## 1.11 Moderate risk of severe illness or death from sepsis

A person is at moderate risk of severe illness or death from sepsis if they have suspected or confirmed infection and a NEWS2 score of 5 or 6.

A person is also at moderate risk of severe illness or death from sepsis if they have suspected or confirmed infection, a NEWS2 score of 1 to 4, and

- a single parameter contributes 3 points to their NEWS2 score, and a medical review has confirmed that they are at moderate risk (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis) or
- there are any other clinical reasons for concern (see recommendations 1.5.3 and 1.5.4 on taking causes for clinical concern into account when evaluating risk of severe illness or death from sepsis).

1.11.1 For people aged 16 or over with moderate risk of severe illness or death from sepsis:

- carry out a venous blood test, including for:
  - blood gas, including glucose and lactate measurement
  - blood culture
  - full blood count
  - C-reactive protein
  - urea and electrolytes
  - creatinine
  - a clotting screen
- arrange for a clinician with core competencies in the care of acutely ill patients to review the person's condition and venous lactate results within 1 hour of the person being assessed as at moderate risk. **[2023b]**

For a short explanation of why the committee made the 2023 recommendation and how it might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

1.11.2 For people at moderate risk of severe illness or death from sepsis, a clinician with core competencies in the care of acutely ill patients should consider:

- deferring administration of a broad-spectrum antibiotic treatment for up to 3 hours after calculating the person's first NEWS2 score on initial assessment in the emergency department or on ward deterioration and
- using this time to gather information for a more specific diagnosis (see recommendations on finding the source of infection and choice of antibiotic therapy, in this guideline)
- discussing with a senior clinical decision maker.

Once a decision is made to give antibiotics, do not delay administration any further. **[2023a]**

1.11.3 For someone with a NEWS2 score of 5 or 6 and a single parameter contributing 3 points to their total NEWS2 score, use clinical judgement to determine the likely cause of the 3 points in one parameter. If the likely cause is:

- the current infection, manage as high risk and give broad-spectrum antibiotic treatment in line with recommendation 1.10.2
- something else (such as a pre-existing condition), manage as moderate risk and follow recommendation 1.11.2. **[2023a]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis: type and timing of antibiotics.

Full details of the evidence and the committee's discussion are in evidence review B: antibiotics.

1.11.4 For people aged 16 years or over at moderate risk of severe illness or death from sepsis:

- recalculate the NEWS2 score periodically, in line with the recommendations on when to recalculate a NEWS2 score
- if there is deterioration or no improvement, escalate care to a clinician with core competencies in the care of acutely ill patients. **[2023b]**

1.11.5 For people aged 16 or over with a moderate risk of severe illness or death from sepsis and **either** lactate over 2 mmol/litre **or** evidence of acute kidney injury, treat their condition as if they were at high risk of severe illness or death from sepsis.

For definition of acute kidney injury, see NICE's guideline on acute kidney injury. **[2023b]**

1.11.6 For people aged 16 years or over with a moderate risk of severe illness or death from sepsis, lactate of less than 2 mmol/litre and no evidence of acute kidney injury, and in whom a definitive condition or infection can be identified and treated:

- manage the definitive condition
- discharge them if it is safe to do so
- before discharge, provide information on the management of their definitive condition and warning signs for sepsis (see information at discharge for people assessed for suspected sepsis but not diagnosed with sepsis, in this guideline). **[2023b]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

## 1.12 Low risk of severe illness or death from sepsis

A person is at low risk of severe illness or death from sepsis if they have suspected or confirmed infection and a NEWS2 score of 1 to 4 (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis) **or** a NEWS2 score of 0 and cause for clinical concern (see recommendations 1.5.3 and 1.5.4 on taking causes for clinical concern into account when evaluating risk of severe illness or death from sepsis).

1.12.1 For people aged 16 or over at low risk of severe illness or death from sepsis:

- arrange for clinician review within 1 hour of the person being assessed as at low risk
- perform blood tests if indicated.

A 'clinician' should be a medically qualified practitioner or equivalent who has antibiotic prescribing responsibilities. **[2023b]**

For a short explanation of why the committee made the 2023 recommendation and how it might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

1.12.2 For people at low risk of severe illness or death from sepsis, request assessment by a clinician with core competencies in the care of acutely ill patients for them to consider:

- deferring administration of a broad-spectrum antibiotic treatment for up to 6 hours after calculating the person's first NEWS2 score on initial assessment in the emergency department or on ward deterioration and
- using this time to gather information for a more specific diagnosis (see recommendations on finding the source of infection and choice of antibiotic therapy, in this guideline).

Once a decision is made to give antibiotics, do not delay administration any further. **[2023a]**

1.12.3 For someone with a NEWS2 score of 3 or 4 and a single parameter contributing 3 points to their total NEWS2 score, use clinical judgement to determine the likely cause of the 3 points in one parameter. If the likely cause is:

- the current infection, manage as moderate or high risk and:
  - for moderate risk, give broad-spectrum antibiotic treatment in line with recommendation 1.11.2
  - for high risk, give broad-spectrum antibiotic treatment in line with recommendation 1.10.2
- something else (such as a pre-existing condition), manage as low risk and follow recommendation 1.12.2. **[2023b]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis: type and timing of antibiotics.

Full details of the evidence and the committee's discussion are in evidence review B: antibiotics.

1.12.4 For people aged 16 years or over at low risk of severe illness or death from sepsis:

- recalculate the NEWS2 score periodically, in line with the recommendations on when to recalculate a NEWS2 score

- if there is deterioration or no improvement, escalate care to a clinician with core competencies in the care of acutely ill patients. **[2023b]**

1.12.5 For people aged 16 or over at low risk of severe illness or death from sepsis and in whom a definitive condition can be identified and treated:

- manage the definitive condition
- discharge them if it is safe to do so
- before discharge, provide them with information on the management of their definitive condition and warning signs for sepsis (see information at discharge for people assessed for suspected sepsis but not diagnosed with sepsis, in this guideline). **[2023b]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

## 1.13 Very low risk of severe illness or death from sepsis

A person is at very low risk of severe illness or death from sepsis if they have suspected or confirmed infection and a NEWS2 score of 0 (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis).

1.13.1 For people who are at very low risk of severe illness or death from sepsis:

- arrange for clinician review
- use clinical judgement to manage their condition
- recalculate the NEWS2 score periodically, in line with the recommendations on when to recalculate a NEWS2 score.

A 'clinician' should be a medically qualified practitioner or equivalent who has antibiotic prescribing responsibilities. **[2023b]**

For a short explanation of why the committee made the 2023 recommendation and how it might affect practice, see the rationale and impact section on managing suspected sepsis in acute hospital settings.

Full details of the evidence and the committee's discussion are in evidence review C: non-antibiotic early management of suspected sepsis in NEWS2 population.

# Antibiotic therapy, intravenous fluid and oxygen for people with suspected sepsis

## 1.14 Choice of antibiotic therapy for people with suspected sepsis

### Everyone

1.14.1 When the source of infection is confirmed or microbiological results are available:

- review the choice of antibiotic(s) and
- change the antibiotic(s) according to results, using a narrower-spectrum antibiotic, if appropriate. **[2023a]**

# Terms used in this guideline

### Critical care specialist or team

An intensivist or intensive care outreach team, or a specialist in intensive care or paediatric intensive care.

### Not responding to intravenous fluid resuscitation

Indicators of resuscitation failure include:

- increasing (or non-resolving) tachycardia
- worsening level of consciousness

- decreasing blood pressure
- increasing respiratory rate
- increasing blood lactate
- reduced urine output
- worsening peripheral perfusion
- deteriorating blood gases.

### Recently pregnant

Someone is considered to have recently been pregnant:

- in the 24 hours following a termination of pregnancy or miscarriage
- for 4 weeks after giving birth.

Clinical judgement is needed after miscarriage (particularly in the second trimester) or termination (particularly in the second or third trimester), because it is not clear how quickly people return to pre-pregnancy levels in these situations.

### Sepsis

Sepsis is a life-threatening organ dysfunction due to a dysregulated host response to infection.

### Suspected sepsis

Suspected sepsis is used to indicate people who might have sepsis and require face-to-face assessment and consideration of urgent intervention.

### Senior clinical decision maker

A 'senior clinical decision maker' for people under 18 is a paediatric or emergency care qualified doctor of grade ST4 or above or equivalent.

A 'senior clinical decision maker' for people aged 18 years or over is a clinician with core competencies in the care of acutely ill patients.

## Recommendations for research

The guideline committee has made the following recommendations for research.

## 1 Epidemiological study on presentation and management of sepsis in England

What is the incidence, presentation and management of sepsis in the United Kingdom? **[2016]**

### Why this is important

The lack of robust UK based epidemiological studies on the incidence and outcomes from sepsis have been clear throughout the guideline development process. A large epidemiological study to collect information about where sepsis is being treated, patient interventions and patient outcomes would provide population based statistics on epidemiology of sepsis which are necessary to support evaluation of interventions, planning of services and service redesign. The mortality and morbidity and service complexity associated with severe infection and sepsis, and the need to use broad spectrum antimicrobials to treat sepsis, justifies the cost required to set up such a study.

## 2 Association between NEWS2 bands (0, 1 to 4, 5 to 6, 7 or above) and risk of severe illness or death

In adults and young people (16 and over) with suspected sepsis in acute hospital settings, ambulance trusts and acute mental health facilities, what is the association between NEWS2 bands (0, 1 to 4, 5 to 6, 7 or above) and risk of severe illness or death? In adults and young people (16 and over) with suspected sepsis in acute hospital settings, ambulance trusts and acute mental health facilities, what is the association between the NEWS2 score of 3 in a single parameter and risk of severe illness or death? **[2023a]**

### Why this is important

The NEWS2 has been introduced in 2017 and is widely used across the NHS prehospital and acute care settings. However, evidence on the NEWS2 was not found. It is important to investigate, over a 5- to 10-year period, the success, safety and possible implications on people with suspected sepsis and clinical staff of using the NEWS2 to stratify the risk of severe illness or death from sepsis.

Lack of data to stratify risk of severe illness or death from sepsis and estimate possible risk of deterioration in people with a single parameter contributing 3 points to their NEWS2 score is also of great concern. Data relating to this is scarce and its interpretation contradictory.

### 3 Derivation of clinical decision rules in suspected sepsis

Is it possible to derive and validate a set of clinical decision rules or a predictive tool to rule out sepsis which can be applied to patients presenting to hospital with suspected sepsis? **[2016]**

#### Why this is important

In primary care and emergency departments people with suspected sepsis are often seen by relatively inexperienced doctors. Many of these people will be in low and medium risk groups but evidence is lacking as to who can be sent home safely and who needs intravenous or oral antibiotics. The consequences of getting the decision making wrong can be catastrophic and therefore many patients are potentially over-investigated and admitted inappropriately. Current guidance is dependent on use of individual variables informed by low quality evidence.

## Rationale and impact

These sections briefly explain why the committee made the updated recommendations and how they might affect practice.

### Evaluating risk level in people with suspected sepsis in acute hospital settings, acute mental health settings and ambulances

Recommendations:

- 1.1.8
- 1.5.1 to 1.5.6

## Why the committee made the recommendations

### Using the NEWS2 to evaluate risk from sepsis

Evidence showed an increased risk of ICU admission and mortality in people with suspected sepsis aged 16 and over associated with a NEWS2 score of 5 or more. This supports the findings of the 2022 AoMRC statement on the initial antimicrobial treatment of sepsis. It is also in line with the clinical experience of the committee.

The committee agreed, based on their knowledge and experience, that:

- the 4 NEWS2 score bands outlined in the 2022 AoMRC statement on the initial antimicrobial treatment of sepsis should be used to determine the level of risk from sepsis for someone in any of the settings where NEWS2 has been endorsed by NHS England (acute hospital settings, acute mental health settings and ambulances) **[2023a]**
- a person's risk level should be re-evaluated each time new observations are made, in line with observation frequencies in the AoMRC report **[2023a]**
- a person's risk level should be re-evaluated when there is deterioration or an unexpected change. **[2023b]**

### Interpreting NEWS2 scores

The committee discussed the importance of clinical judgement when interpreting the NEWS2 scores. They agreed that the NEWS2 should be used as a tool to support clinical decision making, not to replace clinical judgement. A NEWS2 score should thus be interpreted within the context of the patient's history and physical examination results.

The committee also acknowledged that NEWS2 can be less accurate in people with certain conditions, such as people with spinal injury or heart or lung disease, because of their altered baseline physiology.

The committee also highlighted that mottled or ashen appearance, non-blanching rash or cyanosis of skin, lips or tongue can be signs of meningococcal disease. **[2023a]**

**NEWS2 score of 0**

The committee discussed the care for someone with a NEWS2 score of 0. They were concerned that a score of 0 may be interpreted as indicating that there was no risk and no action was needed. They emphasised that people with a possible or confirmed infection and a NEWS2 score of 0 are still at risk of sepsis and should receive routine NEWS2 score monitoring in line with local practice.

They also agreed that acute illness is a dynamic state and treatment priorities must be adjusted over time. They agreed to highlight that deterioration or lack of improvement in the person's condition might indicate the need to take more urgent actions than suggested by their NEWS2 score alone, depending on any previous NEWS2 score or action already taken. **[2023a]**

**Single parameter contributing 3 points to a NEWS2 score**

In the NEWS2 framework as defined by the Royal College of Physicians for the assessment of acute illness severity (that is, not specific to sepsis), specific attention is given to a NEWS2 score of 3 in a single parameter, which is classified as low-medium risk. The AoMRC report on the initial antimicrobial treatment of sepsis uses the NEWS2 to evaluate risk of severe illness or death from sepsis. It does not support systematic use of a single parameter contributing 3 points to a NEWS2 score to escalate care but does state that 'abnormal single parameters should be used to alert clinicians to the need for more detailed observation and investigation'.

The committee considered this issue at length. Despite the lack of evidence, and based on their clinical expertise, they agreed that:

- a single parameter contributing 3 points to a NEWS2 score is an important red flag suggesting an increased risk of organ dysfunction and further deterioration and
- in the presence of such a parameter, clinical judgement is key to carefully consider the likely cause of its extreme value and whether the person's condition needs to be managed as per a higher risk level than that suggested by their NEWS2 score alone. **[2023a]**

### How the recommendations might affect practice

Because the NEWS2 is already in use in most NHS acute care settings, Emergency Departments, ambulance services and mental health facilities in England, the committee agreed that recommending its use to evaluate risk of severe illness or death from sepsis in these settings would further improve consistency in the detection of and response to acute illness due to sepsis (for people for whom the NEWS2 can be used), at no further cost. **[2023a]**

Return to recommendations

## Outside acute hospital settings: when to transfer immediately

Recommendations:


- 1.6.4 and 1.6.5
- 1.8.3 and 1.8.4


## Why the committee made the recommendations

### Transfer by ambulance for people with a NEWS2 score of 5 or above

The committee considered:

- settings and situations where a clinician with core competencies in the care of acutely ill patients may not be present, such as ambulances and mental health facilities.
- important issues faced in rural areas, where transport to the nearest appropriate acute setting might take longer than in urban areas.
- existing local and personal arrangements.

Because evidence shows a higher risk of acute deterioration in people with suspected sepsis and a persistent NEWS2 score of 5 or more, which would require timely management and treatment, they agreed that time-critical transfer and pre-alerting the hospital should be considered for these people. **[2023a]**

**If immediate transfer is not required**

There was no evidence identified for acute mental health settings, so these recommendations have been developed by consensus based on the experience and expertise of the committee. The committee recommended, based on consensus, that people at the highest risk in the acute mental health setting are considered for treatment and transfer to an acute hospital setting. **[2023b]**

### How the recommendations might affect practice

The committee carefully considered the threshold at which to prompt immediate transfer, to avoid an excessively high volume of referrals, that would put undue pressure on emergency departments and acute hospital wards, while also avoiding geographical inequalities associated with transfer time. The committee strived to create a better balance whilst avoiding a negative impact on current practice. **[2023a]**

Return to recommendations

## Managing suspected sepsis in acute hospital settings

Recommendations:

- 1.7.2 and 1.7.3 (amended)
- Recommendations 1.10.1 to 1.10.6
- 1.11.1 to 1.11.6
- 1.12.1 to 1.12.5
- 1.13.1

### Why the committee made the recommendations

#### Type and timing of antibiotics

**Timing of antibiotics**

Given the lack of direct evidence, the committee decided, by consensus, to recommend adopting the initial antimicrobial treatment of sepsis outlined in the 2022 AoMRC statement. That is, antibiotics should be offered to people with low, moderate and high risk of severe illness or death from sepsis, within a timeframe that

depends on risk level. They should also be offered to people at very low risk, on a need for basis, in line with local practice.

The committee highlighted that:

- the purpose of deferring antibiotic delivery is not to delay treatment, but to have extra time to gather information for a more specific diagnosis, allowing for more targeted treatment
- the 1-, 3- and 6-hour time limits are a maximum (rather than an aim) for each risk level
- clinical judgement is key when considering someone's specific care needs.

This explains why they also recommended that once a decision is made to give antimicrobials, administration should not be delayed any further.

The committee agreed that basing the risk evaluation and antibiotic delivery time on the NEWS2 would ensure due consideration is given to both patient safety and antimicrobial stewardship. **[2023a]**

**Single parameter contributing 3 points to a NEWS2 score**

The committee agreed that a single parameter contributing 3 points to a person's NEWS2 score may be suggestive of organ dysfunction. The dysfunction may be caused either:

- by something other than the current infection or
- by the body's dysregulated response to the infection leading to organ failure (that is, by sepsis).

Based on their clinical expertise, the committee concluded that, if the likely cause of the 3 points in 1 parameter is the current infection, the person's risk of severe illness or death from sepsis is higher than that indicated by their NEWS2 score alone and the timeframe for antibiotic treatment should be adjusted accordingly. **[2023a, amended 2023b]**

**When to count time from (time zero)**

To guide the appropriate timing for delivering antibiotics, the committee discussed what constitutes time zero. After careful consideration, they agreed to define it as 'a first NEWS2 score calculated on initial assessment in the emergency department or on ward deterioration' and accompanied by suspected or confirmed infection. This is in line with the AoMRC report.

However, the committee raised concerns about possible inequalities and delays in clinical assessment and subsequent reviews that may be due to:

- geographical variability in transfer time and
- the high influx of patients and already strained NHS system. **[2023a]**

They recognised that a long time might elapse between the moment a patient is first deemed to be at high risk and that of initial assessment in an emergency department, so they also agreed to make recommendations to address this issue. To this end, they wrote a new recommendation and amended, by consensus, an existing recommendation from NICE's guideline on suspected sepsis (2016) to ensure that, in situations where not only transfer time but also possible delays between arrival and initial assessment in the emergency department take more than 1 hour, GPs and ambulance services should have mechanisms in place to give antibiotics to people with high risk of illness or death from sepsis. This will allow ambulance crews to give antibiotics to the most seriously ill patients, if needed, with advice from more senior colleagues available if the ambulance crew are unsure of the decision. **[2016, amended 2023b]**

**Type of antibiotics**

As part of giving due consideration to both patient safety and antimicrobial stewardship, the committee agreed that:

- for people with suspected sepsis for whom the source of infection is unknown, broad-spectrum antibiotic treatment should be given within the recommended timeframe for the person's risk category.
- once the source of infection is confirmed, source specific antibiotics should be used instead. **[2023a]**

### Initial management

There was no evidence on using NEWS2 to guide initial management of suspected sepsis in acute hospital settings, so the committee made recommendations based on their knowledge and experience. They amended the existing recommendations to match the NEWS2-based risk stratification system used in other sections of the guideline.

The committee made other minor changes to reflect changes in practice since the 2016 guideline:

- They removed the requirement to refer everyone at high risk to critical care if they have lactate over 4 mmol/litre or systolic blood pressure below 90 mmHg. Critical care referral is only needed if people do not respond after initial management.
- They amended the requirement to refer people at high risk to a consultant and critical care if they are not responding within 1 hour, so that it only applies to a lack of response to intravenous fluid resuscitation. The original recommendation included antibiotics, but it would not be clear if the person was responding to antibiotics after only 1 hour.
- They changed the recommendation on monitoring and track and trigger systems to incorporate NEWS2 and align with the recommendations on evaluating risk.
- They removed the recommendation on monitoring the mental state of people with suspected sepsis, because this is included as part of NEWS2 assessment.
- They added clotting screen to the list of blood tests for people at moderate risk of severe illness or death from sepsis. This was already recommended for people at high risk, but it can also be useful for people at moderate risk, and it is routinely used in current practice.
- They made new recommendations on care escalation for people at moderate and low risk.
- They removed the recommendation on reviewing care for people at moderate risk in whom a definite condition cannot be identified because it is now superseded by parts of 2 of the new recommendations.

- They amended recommendations on discharge for people at moderate and low risk, to make it clear this should only be done when safe and to ensure that people are given appropriate safety information. **[2023b]**

### How the recommendations might affect practice

Mapping the NEWS2 risk strata onto the initial management strategies creates a more cohesive pathway, where risk of illness or death from sepsis is defined by NEWS2, and people are then managed appropriately in hospital depending on their risk level. The other changes to these recommendations add greater clarity, update them in line with current practice and align them with other national guidance from the AoMRC. **[2023b]**

The committee agreed that for ambulance services, mental health facilities, and acute hospitals that are already using the NEWS2, the recommendations would not have a major impact on practice. They also highlighted that risk stratification and antibiotic delivery time based on the NEWS2 ensure due consideration is given to patient safety, antimicrobial stewardship and resource capacity constraints. **[2023a]**

Return to recommendations

## Context

Sepsis is a clinical syndrome caused by the body's immune and coagulation systems being switched on by an infection. Sepsis with shock is a life-threatening condition that is characterised by low blood pressure despite adequate fluid replacement, and organ dysfunction or failure. Sepsis is an important cause of death in people of all ages. Both a UK Parliamentary and Health Service Ombudsman enquiry (2013) and a UK National Confidential Enquiry into Patient Outcome and Death (NCEPOD, 2015) highlighted sepsis as being a leading cause of avoidable death that kills more people than breast, bowel and prostate cancer combined.

Sepsis is difficult to diagnose with certainty. Although people with sepsis may have a history of infection, fever is not present in all cases. The signs and symptoms of

sepsis can be very non-specific and can be missed if clinicians do not think ‘could this be sepsis?’. In the same way that healthcare professionals consider 'could this pain be cardiac in origin?' when presented with someone of any age with chest pain this guideline aims to make 'could this be sepsis?' the first consideration for anyone presenting with a possible infection.

Detailed guidelines exist for the management of sepsis in adult and paediatric intensive care units, and by intensive care clinicians called to other settings. To reduce avoidable deaths, people with sepsis need to be recognised early and treatment initiated. This guideline aims to ensure healthcare systems in all clinical settings consider sepsis as an immediate life-threatening condition that should be recognised and treated as an emergency. The guideline outlines the immediate actions needed for those with suspicion of sepsis and who are at highest risk of morbidity and mortality from sepsis. It provides a framework for risk assessment, treatment and follow-up or ‘safety-netting’ of people not needing immediate resuscitation. The intention of this guideline is to ensure that all people with sepsis due to any cause are recognised and initial treatment initiated before definitive treatment on other specific pathways is instituted.

At the time of writing (2016), the terminology around sepsis is changing and new international consensus definitions have been published. Previous terminology included terms SIRS (systematic inflammatory response syndrome), severe sepsis and septic shock but new terminology suggests using terms sepsis and septic shock only. Sepsis is defined as a life-threatening organ dysfunction due to a dysregulated host response to infection and septic shock as persisting hypotension requiring vasopressors to maintain a mean arterial pressure (MAP) of 65 mmHg or more and having a serum lactate level of greater than 2 mmol/l despite adequate volume resuscitation. Neither of these definitions are useful in early identification of people at risk and the guideline recommends actions according to clinical parameters that stratify risk of severe illness or death from sepsis.

There is significant overlap between this guideline and other NICE guidance, in particular the care of acutely ill patients in hospital, the assessment and initial management of fever in under 5s, bacterial meningitis and meningococcal

septicaemia (Meningitis (bacterial) and meningococcal septicaemia in under 16s), neutropenic sepsis, antibiotics for prevention and treatment of neonatal infection, and pneumonia in adults.

## Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE topic pages on sepsis and antimicrobial stewardship.

For details of the guideline committee, see the committee member list.

# Update information

### November 2023

We have reviewed the evidence on early management of suspected sepsis in acute hospital settings for people aged 16 and over who are not and have not recently been pregnant. This update did not cover antibiotics, which were covered in a previous update.

Recommendations are marked **[2023b]** if the evidence has been reviewed. Changes are highlighted in yellow.

Recommendations marked **[2023a]** and shaded in grey were updated earlier in 2023. There was a public consultation in March 2023. We cannot accept new comments on these recommendations.

### New, updated and deleted recommendations

Table 1 sets out the new, updated and deleted recommendations, and explains the changes.

See also the previous NICE guideline and supporting documents.

**Table 1 Recommendations that have been updated or deleted**

| Recommendation in March 2023 update | Recommendation in November 2023 update | Rationale for change |
|---|---|---|
| No previous recommendation. | 1.5.5 Recalculate a NEWS2 score and re-evaluate risk of | To emphasise that the NEWS2 score |

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| | sepsis if there is deterioration or an unexpected change in the person's condition. | should also be calculated if there is an unexpected change or deterioration in the person's condition. |
| 1.7.1 In locations where time before admission to the emergency department (including any transfer time) is more than 1 hour, ensure GPs and ambulance services have mechanisms in place to give antibiotics to people with high risk criteria in pre-hospital settings. | 1.7.3 In remote and rural locations where combined transfer and handover times to emergency department are greater than 1 hour, ensure:<br>• ambulance crews who are thinking about giving antibiotics seek advice from more senior colleagues, if needed<br>• ambulance services have mechanisms in place to give antibiotics to people at high risk of severe illness or death from sepsis if antibiotics have not been given before by a GP (see recommendation 1.5.2 on evaluating risk of severe illness or death from sepsis). | Updated to specify that ambulance crews should have access to advice on when to give antibiotics. |
| 1.10.1 For people aged 16 or over with suspected sepsis and 1 or more high-risk criteria:<br>• arrange for the senior clinical decision maker to immediately assess the person's condition and think about alternative diagnoses to sepsis<br>• carry out a venous blood test for the following:<br>○ blood gas including glucose and lactate measurement<br>○ blood culture<br>○ full blood count<br>○ C-reactive protein<br>○ urea and electrolytes<br>○ creatinine<br>○ a clotting screen | 1.10.1 For people aged 16 or over who are at high risk of severe illness or death from sepsis:<br>• arrange for the senior clinical decision maker to urgently assess the person's condition and think about alternative diagnoses to sepsis<br>• carry out a venous blood test, including for:<br>○ blood gas including glucose and lactate measurement<br>○ blood culture<br>○ full blood count<br>○ C-reactive protein<br>○ urea and electrolytes<br>○ creatinine<br>○ a clotting screen<br>• give antibiotics in line with recommendation 1.10.2 and the recommendations | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk.<br><br>Changed assessment for senior clinical decision maker to 'urgent', as immediate assessment is not practical.<br><br>Examples of appropriate consultants removed, to avoid being too restrictive. |

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| • give antibiotics in line with recommendations 1.10.2 and 1.10.3 and the recommendations on choice of antibiotic therapy, in this guideline<br>• discuss with an appropriate consultant (this may be the consultant under whom the patient is admitted or a consultant covering acute medicine, anaesthetics). | on choice of antibiotic therapy, in this guideline<br>• discuss with a consultant. | |
| 1.10.3 For people aged 16 or over with suspected sepsis, any high-risk criteria, and **either** lactate over 4 mmol/litre **or** systolic blood pressure less than 90 mmHg:<br>• give intravenous fluid bolus without delay (within 1 hour of identifying that they are at high risk of severe illness or death from sepsis) in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline **and**<br>• refer to critical care specialist or team for them to review the management of the person's condition, including their need for central venous access and initiation of inotropes or vasopressors.<br><br>Referral may be a formal referral process or discussion with specialist in intensive care or | 1.10.3 For people aged 16 or over with a high risk of severe illness or death from sepsis and **either** lactate over 2 mmol/litre **or** systolic blood pressure less than 90 mmHg, give intravenous fluid bolus without delay (within 1 hour of identifying that they are at high risk) in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline. | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk.<br><br>Removed requirement to refer to critical care for all people with lactate over 4 mmol/litre or systolic blood pressure below 90 mmHg. Critical care referral is only needed if people do not respond after initial management and this is covered in recommendation 1.10.6.<br><br>Merged recommendations for people with lactate over 4 mmol/litre and people with lactate over 2 mmol/litre, as these recommendations were otherwise identical now that the requirement to |

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| intensive care outreach team. | | refer to critical care has been removed. |
| 1.10.4 For people aged 16 or over with suspected sepsis, any high-risk criteria and lactate between 2 and 4 mmol/litre, give an intravenous fluid bolus without delay (within 1 hour of identifying that they meet any high-risk criteria in an acute hospital setting) in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline. | Merged with 1.10.3 above. | Merged recommendations (1.10.3 and 1.10.4 in this table) for people with lactate over 4 mmol/litre and people with lactate over 2 mmol/litre, as these recommendations were otherwise identical now that the requirement to refer to critical care has been removed. |
| 1.10.5 For people aged 16 or over with suspected sepsis, any high-risk criteria and lactate below 2 mmol/litre, consider giving an intravenous fluid bolus (in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline). | 1.10.4 For people aged 16 or over with a high risk of severe illness or death from sepsis and lactate below 2 mmol/litre, consider giving an intravenous fluid bolus (in line with recommendations on intravenous fluids for people with suspected sepsis, in this guideline). | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk. |
| 1.10.6 Monitor people aged 16 or over who meet any high-risk criteria continuously, or a minimum of once every 30 minutes depending on setting. Physiological track and trigger systems should be used to monitor all adult patients. [This recommendation is adapted from NICE's guideline on acutely ill patients in hospital.] | 1.10.5 Recalculate the NEWS2 score periodically, in line with the recommendation on when to recalculate a NEWS2 score. | Monitoring system changed to incorporate NEWS2 and align with recommendations on evaluating risk. |
| 1.10.7 Monitor the mental state of adults, children and young people aged 12 years and over with suspected sepsis. Consider using a scale such as the Glasgow Coma Scale (GCS) or | Deleted | Deleted as monitoring mental state is included as part of NEWS2 assessment. |

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| AVPU ('alert, voice, pain, unresponsive') scale. | | |
| 1.10.8 Alert a consultant to attend in person if a person aged 16 years or over with suspected sepsis and any high-risk criteria does not respond within 1 hour of initial antibiotic, intravenous fluid resuscitation, or both. Not responding is indicated by any of:<br>• systolic blood pressure persistently below 90 mmHg<br>• reduced level of consciousness despite resuscitation<br>• respiratory rate over 25 breaths per minute or a new need for mechanical ventilation<br>• lactate not reduced by more than 20% of initial value within 1 hour. | 1.10.6 If a person aged 16 years or over who is at high risk of severe illness or death from sepsis does not respond within 1 hour of intravenous fluid resuscitation:<br>• alert a consultant and<br>• refer to or discuss with a critical care specialist or team so they can review the management of the person's condition, including their need for central venous access and initiation of inotropes or vasopressors. | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk. Indicators of not responding removed and replaced with a link to the glossary definitions for internal consistency in the guideline.<br><br>Removed reference to antibiotics, because it is not possible to tell if a person is responding to antibiotics after only 1 hour.<br><br>Removed requirement for consultant to attend in person, because this was too restrictive. |
| 1.11.1 For people aged 16 or over with suspected sepsis and **either** 2 or more moderate- to high-risk criteria **or** systolic blood pressure 91 to 100 mmHg, carry out a venous blood test for the following:<br>• blood gas, including glucose and lactate measurement<br>• blood culture<br>• full blood count<br>• C-reactive protein<br>• urea and electrolytes<br>• creatinine<br><br>Arrange for a clinician to review the person's condition and venous | 1.11.1 For people aged 16 or over with moderate risk of severe illness or death from sepsis:<br>• carry out a venous blood test, including for:<br>○ blood gas, including glucose and lactate measurement<br>○ blood culture<br>○ full blood count<br>○ C-reactive protein<br>○ urea and electrolytes<br>○ creatinine<br>○ a clotting screen<br><br>• arrange for a clinician with core competencies in the care of acutely ill patients to review the person's | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk.<br><br>Removed 'systolic blood pressure 91 to 100 mmHg' as an alternative indicator of risk, because blood pressure is included in NEWS2.<br><br>Added clotting screen to the list of tests. This was already recommended for |

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| lactate results within 1 hour of meeting criteria.<br><br>A 'clinician' should be a medically qualified practitioner or equivalent who has antibiotic prescribing responsibilities. | condition and venous lactate results within 1 hour of the person being assessed as at moderate risk. | people at high risk, but it can also be useful for people at moderate risk, and it is routinely used in current practice.<br><br>Changed the definition of 'clinician' for consistency with other recommendations. |
| No previous recommendation. | 1.11.4 For people aged 16 years or over at moderate risk of severe illness or death from sepsis:<br>• recalculate the NEWS2 score periodically, in line with the recommendation on when to recalculate a NEWS2 score<br>• if there is deterioration or no improvement, escalate care to a clinician with core competencies in the care of acutely ill patients. | New recommendation, added to make the need for NEWS2 recalculation clear and to provide guidance on escalating care. |
| 1.11.4 For people aged 16 or over with suspected sepsis who meet 2 or more moderate- to high-risk criteria and have **either** lactate over 2 mmol/litre **or** evidence of acute kidney injury, treat their condition as if they were at high risk of severe illness or death from sepsis.<br><br>For definition of acute kidney injury, see NICE's guideline on acute kidney injury. | 1.11.5 For people aged 16 or over with a moderate risk of severe illness or death from sepsis and **either** lactate over 2 mmol/litre **or** evidence of acute kidney injury, treat their condition as if they were at high risk of severe illness or death from sepsis.<br><br>For definition of acute kidney injury, see NICE's guideline on acute kidney injury. | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk. |
| 1.11.5 For people aged 16 or over with suspected sepsis who meet 2 or more moderate- to high-risk criteria, have lactate of less than 2 mmol/litre and no evidence of acute kidney injury, and in whom | Merged with 1.11.2 and 1.11.4. | Merged with earlier recommendations to make the care pathway easier to follow. |

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| a definitive condition cannot be identified:<br>• repeat structured assessment at least hourly<br>• ensure a senior clinical decision maker reviews the person's condition and need for antibiotics within 3 hours of meeting 2 or more moderate- to high-risk criteria. | | |
| 1.11.6 For people aged 16 years or over with suspected sepsis who meet 2 or more moderate- to high-risk criteria, have lactate of less than 2 mmol/litre and no evidence of acute kidney injury, and in whom a definitive condition or infection can be identified and treated:<br>• manage the definitive condition<br>• if appropriate, discharge with information depending on the setting (see information at discharge for people assessed for suspected sepsis but not diagnosed with sepsis). | 1.11.6 For people aged 16 years or over with a moderate risk of severe illness or death from sepsis, lactate of less than 2 mmol/litre and no evidence of acute kidney injury, and in whom a definitive condition or infection can be identified and treated:<br>• manage the definitive condition<br>• discharge them if it is safe to do so<br>• before discharge, provide information on the management of their definitive condition and warning signs for sepsis (see information at discharge for people assessed for suspected sepsis but not diagnosed with sepsis, in this guideline). | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk.<br><br>Amended wording on discharge to make it clear this should only be done when safe to do so, and when people have been given appropriate safety information. |
| 1.12.1 For people aged 16 or over with suspected sepsis who meet only 1 moderate- to high-risk criterion:<br>• arrange clinician review within 1 hour of meeting criterion for clinical assessment<br>• perform blood tests if indicated.<br><br>A 'clinician' should be | 1.12.1 For people aged 16 or over at low risk of severe illness or death from sepsis:<br>• arrange for clinician review within 1 hour of the person being assessed as at low risk<br>• perform blood tests if indicated.<br><br>A 'clinician' should be a medically qualified practitioner or equivalent who has antibiotic | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk. |

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| a medically qualified practitioner or equivalent who has antibiotic prescribing responsibilities. | prescribing responsibilities. | |
| 1.12.3 If someone has a NEWS2 score of 1 to 4, a single parameter contributing 3 points to their NEWS2 score, and is deemed to be at moderate to high risk of severe illness or death from sepsis, use clinical judgement to decide whether:<br>• they need antibiotics within the time limit for people at moderate to high risk (3 hours) or<br>• giving them antibiotics within the time limit for people at moderate to low risk (6 hours) would be safe. | 1.12.3 For someone with a NEWS2 score of 3 or 4 and a single parameter contributing 3 points to their total NEWS2 score, use clinical judgement to determine the likely cause of the 3 points in one parameter. If the likely cause is:<br>• the current infection, manage as moderate or high risk:<br>○ for moderate risk, give broad-spectrum antibiotic treatment in line with recommendation 1.11.2<br>○ for high risk, give broad-spectrum antibiotic treatment in line with recommendation 1.10.2<br>• something else (such as a pre-existing condition), manage as low risk and follow recommendation 1.12.2. | Updated to include the possibility of moving from low risk directly to high risk, based on a 3 points in one parameter. |
| 1.12.4 For people aged 16 or over with suspected sepsis who meet only 1 moderate- to high-risk criterion, have lactate of less than 2 mmol/litre and no evidence of acute kidney injury, and in whom a definitive condition cannot be identified:<br>• repeat structured assessment at least hourly<br>• ensure a senior clinical decision maker reviews the person's condition and need for antibiotics within 3 | Deleted. | Deleted as population covered by 1.12.1 and the new recommendation 1.12.4. |

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| hours of meeting moderate criterion. | | |
| No previous recommendation. | 1.12.4 NEW For people aged 16 years or over at low risk of severe illness or death from sepsis:<br>• recalculate the NEWS2 score periodically, in line with the recommendation on when to recalculate a NEWS2 score<br>• if there is deterioration or no improvement, escalate care to a clinician with core competencies in the care of acutely ill patients. | New recommendation, added to make the need for NEWS2 recalculation clear and to provide guidance on escalating care. |
| 1.12.5 For people aged 16 or over with suspected sepsis who meet only 1 moderate- to high-risk criterion and in whom a definitive condition can be identified and treated:<br>• manage the definitive condition<br>• if appropriate, discharge with information depending on setting (see recommendations on information at discharged for people assessed for suspected sepsis but not diagnosed with sepsis). | 1.12.5 For people aged 16 or over at low risk of severe illness or death from sepsis and in whom a definitive condition can be identified and treated:<br>• manage the definitive condition<br>• discharge them if it is safe to do so<br>• before discharge, provide them with information on the management of their definitive condition and warning signs for sepsis (see information at discharge for people assessed for suspected sepsis but not diagnosed with sepsis, in this guideline). | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk.<br><br>Amended wording on discharge to make it clear this should only be done when safe to do so, and when people have been given appropriate safety information. |
| 1.13.1 Arrange clinical assessment of people aged 16 years or over who have suspected sepsis and do not meet any high-risk or moderate-risk criteria, and use clinical judgement to manage their condition.<br><br>Clinical assessment should be carried out by a medically qualified practitioner or equivalent who has antibiotic | 1.13.1 For people who are at very low risk of severe illness or death from sepsis:<br>• arrange for clinician review<br>• use clinical judgement to manage their condition<br>• recalculate the NEWS2 score periodically, in line with the recommendation on when to recalculate a NEWS2 score.<br><br>A 'clinician' should be a medically qualified practitioner or equivalent | Risk classification changed to incorporate NEWS2 and align with recommendations on evaluating risk.<br><br>The two recommendations within this section were merged to provide clarity for users. |

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| prescribing responsibilities. | who has antibiotic prescribing responsibilities. | |
| 1.13.2 [NEW] For people with suspected or confirmed infection and a very low risk of severe illness or death from sepsis:<br><br>continuing routine NEWS2 score monitoring and manage in line with local practice. | Merged into 1.13.1 above | The two recommendations within this section were merged to provide clarity for users. |

## March 2023

See the list of changes made to NG51.