Suspected sepsis: managing risk of severe illness or death in acute hospital settings with NEWS2

Person aged 16 or over who is not (and has not recently been) pregnant, with suspected or confirmed infection in an acute hospital setting:
Assess risk of severe illness or death from sepsis using NEWS2

High risk

Clinician with core competencies in the care of acutely ill patients to:
- **urgently** assess the person's condition
- think about alternative diagnoses to sepsis

Refer to the senior clinical decision maker (for adults, ST3 or above or equivalent; for under 18s, ST4 or above or equivalent) as soon as possible

Use clinical judgement to decide whether to discuss with a consultant

Do venous blood test, including for:
- blood gas including glucose and lactate measurement
- blood culture
- a clotting screen

Take microbiological samples

Start looking for the source of infection

↓

Give antibiotics **within 1 hour of first NEWS2 score in ED or ward** (if not already given)

↓

Give IV fluid bolus **within 1 hour** (unless contraindicated): see **giving fluids** box for details

↓

Discuss with senior clinical decision maker:
- whether to give vasopressors
- whether to start them peripherally, if central access not available

↓

Recalculate the NEWS2 score **every 30 minutes**

↓

If no response **within 1 hour of any intervention**:
- senior decision maker to attend in person, **and**
- refer to or discuss with critical care specialist or team, **and**
- inform the responsible consultant

Moderate risk

Do venous blood test, including for:
- blood gas including glucose and lactate measurement
- blood culture
- a clotting screen

Clinician with core competencies in the care of acutely ill patients to review **within 1 hour of person being assessed at moderate risk**

Clinician with core competencies in the care of acutely ill patients to consider:
- deferring broad-spectrum antibiotic administration for up to 3 hours
- using this time to gather information for a more specific diagnosis
- discussing with a senior clinical decision maker

Take microbiological samples
Start looking for the source of infection

↓

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**

↓

Give antibiotics **within 3 hours of first NEWS2 score in ED or ward** (if not already given)

↓

Evidence of hypoperfusion (for example, lactate over 2 mmol/L or evidence of acute kidney injury?

Yes → Manage as **high risk**

No ↓

Consider IV fluid bolus: see **giving fluids** box for details

↓

Single parameter contributing 3 points to NEWS2 score of 5 or 6 whose likely cause is the current infection?

Yes → Manage as **high risk**

No ↓

Recalculate the NEWS2 score **every 1 hour**

Low risk

Assessment **within 1 hour of the person being assessed as at low risk** by a registered health practitioner

Clinician with core competencies in the care of acutely ill patients to consider:
- deferring broad-spectrum antibiotic administration for up to 6 hours
- using this time to gather information for a more specific diagnosis

Do blood tests if indicated

Take microbiological samples
Start looking for the source of infection

↓

Give antibiotics **within 6 hours of first NEWS2 score in ED or ward** (if not already given)

↓

Single parameter contributing 3 points to NEWS2 score whose likely cause is the current infection?

Yes → Manage as **moderate or high risk**

No ↓

Recalculate the NEWS2 score **every 4 to 6 hours**

↓

Further cause for concern (such as deterioration or no improvement)?

Yes → Escalate care to a clinician with core competencies in the care of acutely ill patients

No ↓

Manage definitive condition

Before discharge, provide information on:
- managing the definitive condition
- warning signs for sepsis.

Very low risk

Arrange for review by a registered health practitioner

Use clinical judgement to manage the person's condition

Take microbiological samples
Start looking for the source of infection

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Recalculate the NEWS2 score **when standard observations are carried out**, in line with local protocol

↓

Manage definitive condition

Before discharge, provide information on:
- managing the definitive condition
- warning signs for sepsis.

Very low risk

NEWS2 score of 0

Giving fluids

- Use crystalloids (balanced solutions if available, 0.9% saline if not)
- Give an initial bolus of 250 ml, ideally over 10 to 15 minutes
- Give more 250 ml boluses if needed, up to 1000 ml total (including any fluids previously given)
- Reassess after each fluid bolus
- If the person has not improved enough after 1000 ml, get advice from the senior clinical decision maker

Giving oxygen

- For under 18s, give oxygen if they have signs of shock and SpO_2 below 92%
- For 18 and over, give oxygen to achieve SpO_2 of 94% to 98%, or 88% to 92% for people at risk of hypercapnic respiratory failure

High risk

NEWS2 score of 7 or more, **or**
NEWS2 score of 5 or 6, and either a single parameter contributing 3 points or additional cause for clinical concern

Moderate risk

NEWS2 score of 5 or 6, **or**
NEWS2 score of 3 or 4, and a single parameter contributing 3 points or additional cause for clinical concern

Low risk

NEWS2 score of 1 to 4, **or**
NEWS2 score of 0 and additional cause for clinical concern

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This diagram covers only part of the guideline content. For full details, see NG253 Suspected sepsis in people aged 16 or over: recognition, assessment and early management.
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