

## Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Sepsis Management

### Sepsis Management

**Sepsis is a medical emergency. For patients with possible septic shock or a high likelihood for sepsis, antibiotics should be administered immediately, ideally WITHIN ONE HOUR of recognition.** The choice of agents should be based on the likely organisms and the likely source of infection based on clinical findings. Appropriate microbiological specimens must be taken to guide antimicrobial therapy. Blood cultures and other appropriate specimens should be obtained prior to administration of antibiotics if possible. Antibiotics recently used in the patient's care should *not* be among the choices for empiric therapy.

Please refer to the HSE Inpatient Sepsis Algorithms in use in the hospital. See also the [National Clinical Guideline on Sepsis Management for Adults \(including maternity\) 2021](#), the [Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock 2021](#) and [International Guidelines for the Management of Septic Shock & Sepsis-Associated Organ Dysfunction in Children \(SSCGC\)](#).

### Sepsis 6 for Adults (except Maternity)

Image reproduced from the [National Clinical Guideline on Sepsis Management for Adults \(including maternity\) 2021](#). Please note there is a separate "Sepsis 6 + 1" protocol for maternity.

Take 3	Give 3
<b>Blood cultures:</b> Take blood cultures using aseptic (non-touch) technique prior to giving antimicrobials unless this leads to a delay > 45 minutes. If a central venous catheter is in situ, take blood cultures through that line. Take other specimens as indicated by history and examination e.g. influenza swabs, wound swabs, sputum, urine etc.	<b>Oxygen:</b> Titrate supplementary oxygen to achieve oxygen saturations 94-96% (88-92% in patients with chronic lung disease).
<b>Blood Tests:</b> Point of care lactate (venous or arterial). Full blood count, Renal Profile, Liver Profile +/- Coagulation screen.  Other tests and investigations as indicated.	<b>Fluids:</b> Patients who present with hypotension should receive up to 30mls/kg of isotonic crystalloid within 1 hour of presentation. <b>Start vasopressors in patients who are fluid unresponsive.</b> Patients with hypoperfusion should receive fluid to restore perfusion using a bolus and review technique. Give 500ml bolus of isotonic crystalloid over 15mins up to 2 litres, reassessing frequently. Boluses may be amended based on clinical context-see fluid resuscitation algorithm.  <b>Call Anaesthesia/Critical Care if hypotensive or not fluid responsive.</b>
<b>Urine output:</b> Assess urinary output as part of volume/ perfusion status assessment. For patients with sepsis/ septic shock start hourly fluid balance charts.	<b>Antimicrobials:</b> Give antimicrobials as per local antimicrobial guideline based on the site of infection, community or healthcare acquired and the patient's allergy status. Assess requirement for source control.

### Sepsis 6+1 for Maternity

Image reproduced from the [National Clinical Guideline on Sepsis Management for Adults \(including maternity\) 2021](#).

Take 3	Give 3
<b>Blood cultures:</b> Take blood cultures using aseptic (non-touch) technique prior to giving antimicrobials unless this leads to a delay > 45 minutes. Take other specimens as indicated by history and examination e.g. influenza swabs, wound swabs, sputum, urine etc.	<b>Oxygen:</b> Titrate supplementary oxygen to achieve oxygen saturations 94-96% (88-92% in patients with chronic lung disease).
<b>Bloods:</b> Check Point of Care lactate (venous or arterial) & full blood count, renal profile, liver profile +/- coag. Other test and investigations as indicated by history and examination.	<b>Fluids:</b> Women who present with hypotension should receive up to 30mls/kg of isotonic crystalloid within 1 hour of presentation. <b>Start vasopressors in women who are fluid unresponsive.</b> Women with hypoperfusion should receive fluid to restore perfusion using a bolus and review technique. Give 500ml bolus of isotonic crystalloid over 15mins up to 2 litres, reassessing frequently. Boluses may be amended based on clinical context- see fluid resuscitation algorithm.  Call Anaesthesia/Critical Care if hypotensive or not fluid responsive.  <b>Caution in pre-eclampsia.</b>
<b>Urine output:</b> : Assess urinary output as part of volume/perfusion status assessment. For patients with sepsis or septic shock start hourly urinary output measurement.	<b>Antimicrobials:</b> Give antimicrobials as per local antimicrobial guideline based on the site of infection, community or healthcare acquired and the patient's allergy status. Assess requirement for source control.
+1 If Pregnant, assess fetal wellbeing  Note: There is no auto-regulation of the feto-placental unit. One of the earlier signs of maternal hypoperfusion may be fetal tachycardia. Resuscitating the mother resuscitates the baby.	

## Sepsis 6 for Paediatrics

Image reproduced from the [International Guidelines for the Management of Septic Shock & Sepsis-Associated Organ Dysfunction in Children \(SSCGC\)](#) .

Figure 5. Sepsis 6 Bundle

Paediatric Sepsis 6 – complete within 1 hour	
<b>TAKE 3</b> <input type="checkbox"/> <b>IV access</b> Time <input type="text"/> or <input type="checkbox"/> <b>IO access</b> Time <input type="text"/> <b>Tick samples taken:</b> <input type="checkbox"/> Blood cultures <input type="checkbox"/> FBC <input type="checkbox"/> Glucose <input type="checkbox"/> Blood gas <input type="checkbox"/> Coag screen incl fibrinogen <input type="checkbox"/> Lactate <input type="checkbox"/> U&E <input type="checkbox"/> LFTs <input type="checkbox"/> CRP <input type="checkbox"/> Urinalysis <input type="checkbox"/> PCRs if available <input type="checkbox"/> <b>Urine output assessment/measurement</b> <input type="checkbox"/> <b>Early senior input (essential) as per local escalation policy</b>	<b>GIVE 3</b> <input type="checkbox"/> <b>Oxygen</b> to achieve saturations $\geq 94\%$ titrating to effect or as appropriate in chronic lung or cardiac disease <input type="checkbox"/> <b>IV/IO fluids</b> - Titrate 10-20mls/kg Hartmann's Solution over 5-10min, 0.9% NaCL is an acceptable alternative – repeat as per clinical response - Call critical care/anaesthesia in haemodynamic collapse - Consider early inotropic support - Assess for fluid overload, monitor for crepitations or hepatomegaly <input type="checkbox"/> <b>IV/IO Antimicrobials</b> according to the site of infection and following local antimicrobial guidelines. Drug name: <input type="text"/> Dose: <input type="text"/> Time given: <input type="text"/> <input type="text"/> <input type="text"/> <b>Time Sepsis 6 completed:</b> <input type="text"/> <b>Name:</b> <input type="text"/> <b>MCRN:</b> <input type="text"/>

## References

- RCPI Hospital Antimicrobial Stewardship Working Group 2012. Start Smart then Focus Antibiotic Care Bundle. Reproduced with permission. Available from [www.rcpi.ie](http://www.rcpi.ie).
- NCEC National Clinical Guideline No. 26 on Sepsis Management for Adults including Maternity. Available from [www.gov.ie/en/collection/c9fa9a-national-clinical-guidelines/](http://www.gov.ie/en/collection/c9fa9a-national-clinical-guidelines/)
- Evans LE, Rhodes A, Alhazzani W, et al. Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2021. Critical Care Medicine: November 2021 - Volume 49 - Issue 11 - p e1063-e1143 doi: 10.1097/CCM.0000000000005337. Available from <https://www.sccm.org/SurvivingSepsisCampaign/Guidelines/Adult-Patients>.
- HSE National Implementation Plan: International Guidelines for the Management of Septic Shock & Sepsis-Associated Organ Dysfunction in Children (SSCGC). 2021. Available from [https://assets.hse.ie/media/documents/ncr/international-guidelines-for-the-management-of-septic-shock-and-sepsis-ass\\_VoOI3j0.pdf](https://assets.hse.ie/media/documents/ncr/international-guidelines-for-the-management-of-septic-shock-and-sepsis-ass_VoOI3j0.pdf).