

Microbiology Specimen Collection For AMR Surveillance in Children

When should I send a blood culture?

Always send a blood culture when clinical suspicion of severe bacterial infection / sepsis
Take a blood culture before the first dose of parenteral / IV antibiotic

Sepsis

Dysregulated host response to infection
Features to alert suspicion ("red flags"):

- **Abnormal core temperature**
< 36.0°C / > 38.5°C (tympenic) OR
< 35.5°C / > 38.0°C (axillary)
- **Inappropriate tachycardia**
<1y: ≥ 160 /min 1-2y: ≥ 150 /min
3-4y: ≥ 140 /min 5y and above: ≥ 130 /min
- **Altered mental state**
GCS < 15 OR sleepy, irritable, lethargic, floppy
- **↓ peripheral perfusion or ↑ capillary refill time**
Cold feet or hands OR CRT ≥ 3 sec

Neonatal sepsis

Patient < 28 days old **plus** ≥ 1 of:

- | | |
|----------------------|--------------------------|
| RR > 60 /min | T > 37.5°C or T < 35.5°C |
| Respiratory distress | Reduced movement |
| Convulsion | Poor feeding |

Severe febrile illness

Fever (T ≥ 38.0°C) or
hypothermia (T < 36.0 °C)
plus any danger sign:

- Unable to drink or breastfeed
- Vomiting everything
- Convulsions
- Lethargic or unconscious
- Severe malnutrition

Meningitis

Sudden onset fever (T ≥ 38.0°C) **plus** ≥ 1 of:

- Neck stiffness
- Altered consciousness
- Other meningeal sign
(e.g. Kernig / Brudzinski sign)

Severe pneumonia

Cough or dyspnoea **plus** ≥ 1 of:

- Central cyanosis
- O₂ saturation < 90% (in air)
- Severe respiratory distress
- Danger sign

Pyelonephritis / Upper UTI

UTI often present non-specifically in
young children. Consider in children with:

- Fever (T ≥ 38°C) for ≥ 24 hours without clear cause
- Vomiting or poor feeding
- Irritability, lethargy, failure to thrive, abdominal pain, jaundice (neonates)
- Specific symptoms, e.g. increased frequency, pain on passing urine, renal angle tenderness

Skin / Soft tissue infection

Ill-defined diffuse swelling of the skin and
subcutaneous tissues with redness,
tenderness, and warmth **plus** ≥ 1 of:

- Systemically unwell
- Fever (T ≥ 38.0°C)
- Red streaks or tender lymph nodes
- Spread to involve significant body surface area

Which other samples should I send?

Sepsis or Severe febrile illness

For all patients:

Blood culture

Urine

Other relevant cultures, e.g.

- Ascitic fluid, Joint fluid
- Cerebrospinal fluid (CSF)
- Pleural fluid, Sputum
- Pus, Wound swabs
- Stool
- Throat swab

For selected patients:

Malaria film
Viral workup (e.g. dengue)

Meningitis

For all patients:

Blood culture

CSF if no contra-indications

For selected patients:

Malaria film
TB microscopy / culture
Viral workup (e.g. JEV)
Fungal workup

Pneumonia

For all patients:

Blood culture

For selected patients:

Sputum sample

- If productive cough (older children only)

Broncho-alveolar lavage

- If severe or intubated

Tracheal aspirate

- If intubated

Pyelonephritis / Upper UTI

For all patients:

Blood culture

Urine culture

Skin / Soft tissue infection

For all patients:

Blood culture

Pus from abscess / swab from wound

How should I send my sample?

Blood culture



1ml minimum volume
4ml maximum volume

CSF



Send 3 tubes
1ml CSF in each tube

General specimen pot



BAL / ETT aspirate
Pus
Sputum
Sterile fluids
(e.g. ascites, joint fluid)
Stool
Tissue / Biopsy
Urine

General swab



Ear, Eye, Throat
Genital, Skin, Wound

Remember to clean a wound
before taking the swab

HOSPITAL LOGO

Microbiology contact details

ACORN