CATHETER-RELATED BSI

Central-line bloodstream infection (CLABSI)

PULL THE *line*

MANAGEMENT PATHWAY

1. Resuscitate (sepsis bundle)
2. Paired blood cultures
3. Empiric antibiotics
4. REMOVE line if indicated
5. Echo + repeat cultures
6. Duration by organism

REMOVE THE LINE IF

Always remove for:

S. aureus · Pseudomonas · Candida · severe sepsis / shock · suppurative thrombophlebitis · endocarditis · persistent bacteraemia > 72 h. Don't 'treat through' a line for these.

DIAGNOSE

- Sepsis + central line ≥ 48 h, no other source
- PAIRED cultures (peripheral + hub) before antibiotics
- Same organism; catheter positive ≥ 2 h earlier (DTP)
- Send catheter-tip culture if removed

EMPIRIC THERAPY

cover gram-positives, then tailor

Component	Agent & dose	When
Gram-positive	Vancomycin (25-30 mg/kg load → AUC 400-600)	ALWAYS (MRSA, coag-neg staph)
+ Gram-negative	Antipseudomonal β-lactam (cefepime / pip-tazo / meropenem)	Severe sepsis, neutropenia, femoral line
+ Antifungal	Echinocandin (caspofungin 70 → 50 mg)	TPN, prolonged broad abx, femoral, malignancy

MONITOR RESPONSE

- Repeat blood cultures to document clearance
- Echo for S. aureus & candidaemia (endocarditis)
- Count duration from the FIRST negative culture

PERSISTENT BACTERAEMIA?

- **Line still in -** REMOVE it - source not controlled
- **Endocarditis / thrombus -** echo, imaging; extend to 4-6 weeks
- **Metastatic foci -** seed to bone, joints, eye - image & drain

Duration (from 1st negative culture): coag-neg staph 5-7 d · S. aureus ≥ 14 d (4-6 wk if complicated) · Gram-negative 7-14 d · Candida 14 d.

PREVENTION & LINE SALVAGE: PREVENT - full-barrier insertion, chlorhexidine skin prep, avoid femoral, review the line daily and remove early. SALVAGE (only if removal impossible and NOT S. aureus / Pseudomonas / Candida) - antibiotic lock + systemic therapy; remove if not improving by 72 h.

PEARLS & PITFALLS

- S. aureus, Pseudomonas or Candida in the blood = remove the line, every time.
- Echo every S. aureus and Candida bloodstream infection - endocarditis changes the duration.
- Take paired peripheral + catheter cultures before antibiotics - it proves the source.
- Persistent bacteraemia? The commonest reason is a line that has not been removed.

References: IDSA Intravascular Catheter Infection 2009 · IDSA S. aureus bacteraemia · Surviving Sepsis Campaign 2021.

Educational aid; verify doses against local protocol and patient factors.