

The AMR Global Health Academy

AMR in Practice #1: Decision Point

"Blood Culture Positive: Contaminant or True Infection?"

Learning Pathway: Diagnostics & Laboratory Decision-Making



The Scenario

A 32-year-old man presents to the emergency department with fever and malaise. Two blood culture sets are collected. On day two, the laboratory reports that one of two bottles is positive for gram-positive cocci in clusters. The patient has no prosthetic devices and no indwelling lines. The clinician starts vancomycin while awaiting further identification. The patient remains febrile.

The Decision Point

Is this true bacteremia requiring continued treatment — or a blood culture contaminant that should prompt reassessment?

How To Think It Through

Single-bottle growth of gram-positive cocci in clusters most commonly represents coagulase-negative *Staphylococcus*, a frequent skin contaminant. Clinical context is essential: absence of prosthetic material, absence of intravascular devices, and only one positive bottle lower the likelihood of true infection.

Escalating treatment without reassessment risks unnecessary toxicity and contributes to antimicrobial resistance. Clear laboratory reporting — including labeling likely contaminants and avoiding automatic susceptibility testing — prevents misinterpretation and inappropriate escalation.

This is not only a clinical judgment issue — it reflects system quality: specimen collection practices, contamination monitoring, and effective communication between laboratory and clinicians determine whether diagnostic data improve care or distort it.

Key Takeaway

Not every positive culture is infection — diagnostic stewardship requires interpreting results in clinical context before escalating therapy.

Why This Matters

Failure to recognize contamination leads to unnecessary antibiotic exposure, avoidable adverse effects, increased costs, and distorted AMR surveillance data. Strong laboratory–clinician communication systems protect both patients and antimicrobial effectiveness.