

The AMR Global Health Academy

AMR in Practice #2: Decision Point

"When AST Changes the Plan"

Learning Pathway: Diagnostics & Laboratory Decision-Making



The Scenario

A 68-year-old woman is admitted with hospital-acquired pneumonia and is started on empiric broad-spectrum antibiotics. Two days later, the microbiology laboratory identifies the causative organism and reports antimicrobial susceptibility testing (AST) results demonstrating susceptibility to a narrower-spectrum antibiotic. The patient is clinically improving.

The Decision Point

Should therapy be continued as initially prescribed — or should treatment be narrowed based on the antimicrobial susceptibility testing results?

How To Think It Through

Antimicrobial susceptibility testing provides the evidence needed to move from empiric therapy to targeted treatment. Once the pathogen has been identified and susceptibility results are available, clinicians should reassess whether the current antibiotic remains the most appropriate choice.

Continuing unnecessarily broad-spectrum therapy increases selective pressure for antimicrobial resistance (AMR), exposes patients to avoidable adverse effects, and may increase the risk of secondary infections. De-escalating therapy when supported by laboratory evidence is a core principle of antimicrobial stewardship.

Effective laboratory-clinician communication is essential. Antimicrobial susceptibility testing results have the greatest impact when they are delivered promptly, interpreted correctly, and incorporated into clinical decision-making alongside the patient's condition and source of infection.

Key Takeaway

Antimicrobial susceptibility testing should guide the transition from empiric to targeted therapy whenever clinically appropriate.

Why This Matters

Appropriate use of antimicrobial susceptibility testing results improves patient outcomes while reducing unnecessary broad-spectrum antibiotic exposure, limiting the emergence of antimicrobial resistance, and strengthening antimicrobial stewardship across the health system.
