ESCP
European Society of Clinical Pharmacy

General Guide for Antimicrobial Prescribing

Antimicrobial Stewardship

Special Interest Group

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General Guide for Antimicrobial Prescribing

Core principles[1, 2]

- Confirm there is strict indication for antimicrobial agent
- Define likely source if possible (e.g. urinary, respiratory, intra-abdominal) and severity to guide empiric spectrum and route
- Check patient specific modifiers that change empiric choices (e.g. penicillin allergy, immune compromise, renal function recent antibiotic exposure, prior culture history)
- Use local guidance whenever possible

Microbiology and diagnostics

- Obtain cultures from suspected sites before antibiotics when feasible
- Obtain two sets of blood cultures before antibiotics when bacteremia is suspected[3]
- Document relevant sepsis parameters and baseline labs

Empiric therapy selection

- Choose empiric regimen that is active against most likely pathogens for the syndrome and illness severity, while avoiding unnecessary broad-spectrum agents
- If there are multiple similarly effective options, make your selection based on safety, cost, convenience and local formulary availability
- Favor narrow-spectrum "ACCESS" agents when appropriate and reserve broader-spectrum agents for higher-risk situations, using the WHO Access/Watch/Reserve (AWaRe) framework as practical checklist for spectrum and resistance risk[4, 5, 6]
- Avoid prescribing agents with overlapping spectra (e.g. double anaerobic coverage)[7]

Dosing and safety

- Prescribe dose and interval according to guidelines and adjust renally eliminated antibiotics according to renal function
- For patients with hepatic impairment, assess safety and whether dose adjustment is required prior to prescribing an antimicrobial agent
- Ensure allergy status is documented and incorporated into antibiotic selection, and avoid beta-lactams when there is a history consistent with anaphylaxis unless appropriately evaluated

- Use guideline-based therapeutic drug monitoring for agents with narrow therapeutic indices and high toxicity risk (e.g. vancomycin[8],[9] or aminoglycosides) and document levels and dose adjustments
- Check for drug-drug interactions, review them and take appropriate action for any significant interactions (e.g. meropenem and valproate, macrolides and statins, or rifampicin and DOACs)
- Consider the appropriateness of an antibiotic in line with comorbidities and blood cultures (e.g. avoid certain antibiotics in patients with myasthenia gravis, or avoid quinolones in patients with epilepsy or at risk of dissections)

Reassessment, de-escalation, and stopping rules

- Reassess antibiotic therapy at 48 – 72 hours (or when microbiology report returns) and then every 24 – 48 hours until a course length is established
- De-escalate from broad-spectrum empiric therapy to pathogen-directed therapy as soon as susceptibilities are available, and discontinue therapy if infection is not secured
- Stop antibiotics when there is lack of clinical evidence of infection, rather than completing arbitrary courses
- Review and modify antibiotic choices based on clinical response

Route and IV-to-oral switch

- plan IV-to-oral conversion when oral therapy is adequate and bioavailability is reliable, as it can reduce length of stay and line-associated complications[10]
- actively assess IV-to-oral switch around day 3 – 4 of parenteral therapy, or within 48 – 72 hours based on clinical condition and appropriateness of oral therapy[11, 12]

Duration of therapy

- use guideline-concordant durations and avoid unnecessary prolonged courses
- shorter courses can reduce adverse effects, costs, and selection pressure without compromising outcomes[13, 14]
- consider procalcitonin as an adjunct to support duration decisions when there is clinical uncertainty[15]

Documentation checklist

- document an antibiotic plan at initiation including indication, drug name, dose, route, interval, and intended duration, and update plan at assessment
- document susceptibility results when available and explicitly record de-escalation and stop decisions and rationale

System level practices that improve prescribing

- implement facility-specific guidelines, order sets, and dissemination strategies (education, audit, feedback) to improve appropriateness, narrow spectrum, earlier IV-to-oral switch, and shorter durations without harming outcomes
- use agreed stewardship quality indicators (e.g. antibiotic plan documentation, timely review at day 3, de-escalation when culture return) to monitor and improve practice

References

[1] Antimicrobial prescribing and stewardship competency framework - GOV.UK

[2] Start smart then focus: antimicrobial stewardship toolkit for inpatient care settings - GOV.UK

[3] B0686-improving-the-blood-culture-pathway-executive-summary-v1-1.pdf.pdf

[4] WHO Antibiotics Portal

[5] The WHO AWaRe (Access, Watch, Reserve) antibiotic book

[6] UK Access, Watch, Reserve, and Other classification for antibiotics (UK-AWaRe antibiotic classification) - GOV.UK

[7] Avoid Duplicative Anaerobic Coverage

[8] vanc-pulsed-dosing-guidelines-250506.pdf

[9] VancomycinDosingandMonitoringProtocolForAdults.2025.pdf

[10] National antimicrobial intravenous-to-oral switch (IVOS) criteria for prompt switch for adults - GOV.UK

[11] IV-to-oral-switch-policy-_2023-FINAL.pdf

[12] Intravenous Antibiotic - Oral Switch Therapy (IVOST) Protocol

[13] Shorter versus longer-duration antibiotic treatments for immunocompetent patients with bloodstream infections: a systematic review and meta-analysis - eClinicalMedicine

[14] Short-course antibiotics for common infections: what do we know and where do we go from here? - ScienceDirect

[15] Guidelines for the Use of Procalcitonin for Rational Use of Antibiotics - PMC