

Antimicrobial Stewardship Backgrounder

The "Day 3 Bundle": Tailoring Empiric Antimicrobial Therapy for Inpatients on Day 3

BOTTOM LINE: An early review of empiric antimicrobial therapy is essential

In a study of six US hospitals, 66% of empiric antimicrobials were not modified within the first few days of therapy. In cases with negative urine or blood cultures, only 37% and 50%, respectively, had their regimens discontinued/ narrowed. 1

Stabilization of the overall medical condition often occurs on the third to fourth day after the initiation of antimicrobials. A formal reassessment of empiric antimicrobial therapy on Day 3 is an effective method of antimicrobial stewardship.²

If we can reduce unnecessary antimicrobial use, we can reduce collateral damage including drug reactions, allergic responses, antibiotic associated diarrhea, *C. difficile* colitis, the selection of drug resistant microbes and, more of our patients will be alive, less ill and will have shorter hospital stays.³

Incorporate the "Day 3 Bundle" into your practice. Prescribers and pharmacists need to make it a habit. Use a systematic approach early, and every time: The four key steps are as follows:

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1.	Reassess initial diagnosis of	 □ Assessment [how does the patient look, physical findings, catheters] □ Nursing flowsheets [vitals, oxygen, temp] □ Diagnostic Imaging □ Specialist consults & other MD notes
	infection	
2.	Microbiology & Laboratory	 ☐ Microbiology, Virology: Gram stain vs culture - Consider quality of sample, typical contaminants depending on sample type (blood, urine, sputum) vs. pathogen, and time to positivity. ☐ Total WBCs, neutrophils, platelets ☐ Pathology
	Assessments	
3.	Tailor Antibiotics	 ☐ Stop any antibiotics if not indicated ☐ Narrow the spectrum of activity to target particular organism(s) ☐ Optimize the dose for organ function and site of infection ☐ Determine a plan for duration or reassessment and add a stop date, if possible.
4.	Consider oral route	\square Use highly bioavailable oral antimicrobials, as appropriate to the indication

References

- 1. Braykov NP, Morgan DJ, Schweizer ML, et al. Assessment of empirical antibiotic therapy optimisation in six hospitals: an observational cohort study. Lancet Infect Dis 2014; 14:1220-27.
- 2. Pulcini C, Defres S, Davey P, et al. Design of a "day 3 bundle" to improve the reassessment of impatient empirical antibiotic prescriptions. JAC 2008; 61:1384-1388.
- 3. Dellit TH, Owens RC, McGowan JE, et al. IDSA and the SHEA Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship. CID 2007; 44:159-77.