



# Top 10 Ways for Emergency Physicians to Improve Antibiotic Choices

## 1. Post-prescription culture review (antibiotic time out)

Ensuring that antibiotic coverage is sufficient limits adverse outcomes related to treatment failure, while narrowing coverage based on culture results enhances stewardship and reduce adverse medication reactions. We recommend utilizing non-physician staff for all aspects except antibiotic selection decisions.

## 2. Antibiotic order sets and clinical decision support systems

Successfully institutions have implemented strategies either written or computerized (e.g., physician order entry) to streamline the selection of empirical antibiotics in the Emergency Department (ED). Systems should be tailored to the data obtained during patient evaluation (e.g., risk factors, comorbidities)

## 3. A multidisciplinary, antibiotic usage, and quality improvement process

Utilize your organization's experts - Pharmacists and infection disease specialists can provide invaluable feedback and guidance on the optimal use and appropriate dosing of antibiotics in the ED.

## 4. An antibiotic stewardship champion

An ED Antibiotic Stewardship Champion can coordinate continuing education on antibiotic resistance or stewardship topics to empower individual clinicians to use evidence-based guidelines rather than prescribe under pressure.

## 5. An ED-specific antibiogram

If your ED has sufficient volume, ED-based antibiograms can provide ED physicians with a comprehensive resource for clinical decision-making. This especially true with the development of more rapid molecular based testing for drug resistance.

## 6. Consider cultures when initiating antibiotic therapy

While the results of cultures obtained from blood, urine and other potential infection sites are unlikely to return in the course of an ED stay, they play an important part in confirming infection and assuring that the causative microorganism is susceptible to the empiric antibiotic regimen initiated in the ED. The primary provider can utilize the results to determine if a change in agent, dose, or duration is necessary.

## 7. Think twice before prescribing a macrolide for lower respiratory tract infection

Macrolide (azithromycin) resistance in Midwest is around 50 percent. Consider a single agent regimen like doxycycline 100 mg BID x five days.

## 8. Think twice before prescribing ciprofloxacin

Fluoroquinolones are a major driver of *Clostridium difficile* outbreaks. They are less useful than ever with *E. Coli* resistance to ciprofloxacin averaging eighty-two percent in the Midwest. Detrimental side effects include tendonopathies, neuropathies and QT prolongation.

## 9. Avoid combination therapy for ventilator-assisted pneumonia

The use of two antibiotics against gram-negative infections is not routinely required, especially if empiric therapy involves an antipseudomonal penicillin, cephalosporin or carbapenems.

## 10. Use penicillin for dental infections

Penicillin is the first choice for treating uncomplicated early odontogenic infections. Coverage of anaerobes in these infections is only indicated with longer standing moderate to severe dental infections with adjacent space involvement.

## References

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