# Top Ten Ways for Emergency Physicians to Improve Antibiotic Choices

1. **Post-prescription culture review.**
   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.**
   Institutions have successfully implemented strategies using written forms and, in some cases, computerized physician order entry to streamline the selection of empirical antibiotics in the ED. Ideally, such systems should be tailored to the patient based on data obtained during the evaluation (e.g., risk factors, comorbidities, etc)
3. **A multidisciplinary, antibiotic usage, quality improvement process.**
   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/stewardship topics and may empower individual clinicians to utilize 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, especially 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.
7. **Think twice before prescribing a macrolide for lower respiratory tract infection.**
   Macrolide (azithromycin) resistance in Midwest is around 50%. Consider a single agent regimen like doxycycline 100 mg BID x 5 days .
8. **Think twice before prescribing ciprofloxacin.**
   Fluoroquinolones are a major driver of *Clostridium difficile* outbreaks. They are less useful than ever with Midwest E. Coli resistance to ciprofloxacin averaging 82%. 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 ondontogenic 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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