Antimicrobial Stewardship in the Emergency Department

Opportunities and Challenges
Focus on Rapid Molecular Diagnostics
Future Directions

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Objectives

• Overview of antimicrobial stewardship
• Discuss key strategies for antimicrobial stewardship in the ED
• Review recent studies on the potential role of rapid diagnostics to facilitate delivery of optimal antimicrobial therapy in the ED
• Elicit feedback on future program of research
Disclosures

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Overview of Antimicrobial Stewardship

• Growing problem of antimicrobial resistance
• Inappropriate prescribing in a variety of healthcare settings
• Increased morbidity, mortality and healthcare cost
• Patient safety issue
  • adverse events
Overview of Antimicrobial Stewardship

- Collection of strategies—policies, guidelines, surveillance, data transparency, education, and evaluation
- Optimize antibiotic practices
- Improve healthcare outcomes
- Reduce cost
- Reduce resistance
Overview of Antimicrobial Stewardship: Why the ED?

- Nexus of community and hospital
- “Safety Net”
- 15% of ED visits result in antibiotic prescription
- Treat variety of conditions along the spectrum of severity
Overview of Antimicrobial Stewardship: Why the ED?

- Overuse of antibiotics for common ID problems (URI)
- Overuse of broad spectrum antibiotics (SSTI, UTI)
- Guideline adherence
- Unique challenges to ED necessitate ED tailored solution
Challenges for the ED

- High rates of ED crowding
- Rapid rate of patient turnover
- Quick decision-making
- Large/varied mix of providers working with shift-based scheduling
- Diagnostic uncertainty
- Concern for poor outcomes
- Lack of patient follow-up
- Patient satisfaction
May et al. Multisite Exploration of Clinical Decision Making for Antibiotic Use by Emergency Medicine Providers Using Quantitative and Qualitative Methods

- 1. Survey of 150 ED providers on KAB
- 2. IDI with 21 providers across 8 sites

**Themes:**
- Resource/environmental factors
- Access/quality of care received outside ED
- Patient-provider relationship
- Clinical inertia
- Local knowledge generation
Approaches to AMS in the ED

- Engage ED clinicians in existing ASP
- Multidisciplinary collaboration
- Education
- Guidelines
- Audit and Feedback
- Clinical decision support
- Rapid Diagnostics
Rapid Diagnostics for ASP

- Improving access to rapid diagnostics is cornerstone of IDSA effort to curb resistance
- Expanded laboratory capacity has important role in stewardship
- Rapid molecular tests with TAT ~1 hr
- Could be made available at POC
- Assess performance in ED setting
- Consider CLIA waiver
- Cost effectiveness
Detection of *S. aureus* infection in the ED

Rapid Diagnostics for MRSA for ED outpatients

• CA-MRSA causes 30-65% of abscesses
  • Commonly present to ED
  • Wound cultures not typically sent
    • TAT > 2 days, treatment not changed
    • Useful for epidemiology but not clinical care
• Current practice
  • I & D with MRSA active empiric tx while awaiting culture
  • Rapid molecular assay could enable clinicians to choose narrower spectrum antibiotics