Antimicrobial Stewardship Cheat Sheet
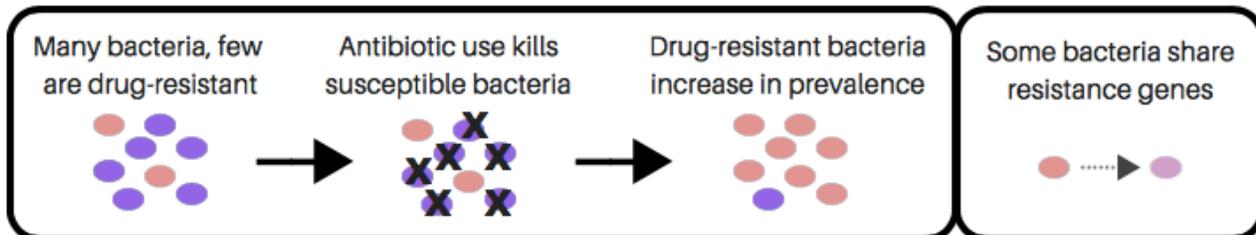
WHAT IS ANTIMICROBIAL STEWARDSHIP?

Antimicrobial = antibacterial, antiviral, antifungal, and antiparasitic drugs
Stewardship = managing use so it is appropriate and safe

• Antimicrobial stewardship goes beyond clinical infectious diseases; it includes elements of education, administration, quality assurance, regulatory compliance, systems optimization, infection control, microbiology, and more

• Antimicrobial stewardship is not about costs, but good stewardship leads to reduced healthcare costs

WHY IS ANTIMICROBIAL STEWARDSHIP NEEDED?

The more we use antibiotics, the more we lose antibiotics. This is true whether or not it is appropriate use.

Many bacteria, few are drug-resistant → Antibiotic use kills susceptible bacteria → Drug-resistant bacteria increase in prevalence | Some bacteria share resistance genes

Reducing unnecessary antibiotic use = less drug-resistance and less chance for toxicity

HOW IS ANTIMICROBIAL STEWARDSHIP DONE?

Core Strategy #1: Prospective Audit with Intervention and Feedback

Cases are reviewed by antimicrobial stewardship program team members and feedback is given to providers in the form of interventions that are geared towards improving antimicrobial use practices

Core Strategy #2: Formulary Restriction

Retrospective: Provider can order and start medication, but requires approval to continue
    Ex: Provider orders ertapenem on Monday afternoon, patient will get first dose Monday afternoon, but the provider will need approval by Tuesday afternoon to continue

Prospective: Provider cannot order medication without approval ahead of time
    Ex: Providers orders ertapenem on Monday afternoon, but must gain approval prior to it being processed

Mixed: Provider must get approval ahead of time during certain hours, but not for others
    Ex: If a provider orders ertapenem between 11 PM and 7 AM it gets reviewed retrospectively, but if it is ordered between 7:01 AM and 10:59 PM it is subject to prospective approval processes

Other Potential Interventions

IV to PO conversion	Renal dose adjustment	Streamlining therapy
Penicillin skin testing	Dose optimization	Education
Pathways & guidelines	Point of care tests/ rapid diagnostics	Order forms

MONITORING ANTIMICROBIAL UTILIZATION

Metric	How it is Done
Drug expenditures	Summarizes antimicrobial purchasing data
Defined Daily Dose (DDD)	Grams of drug stratified by "average" dose and adjusted by census
Days of Therapy (DOT)	Each day a patient is on an antibiotic for one day is one DOT
Standardized Antimicrobial Administration Ratio (SAAR)	Compares observed to predicted DOTs

OTHER NOTES

• Stealth Prescribing: when a provider prescribes restricted drugs outside the hours of the formulary restriction program
• Squeezing of the Balloon: when restricting the use of one drug leads to an increase in the use of another drug
• Defining "appropriate" can be a major challenge as many things within infectious diseases are not black and white
• Antimicrobial stewardship is a team sport that requires involvement from a variety of healthcare professionals including: physicians, pharmacists, nurses, microbiology laboratory staff, administrators, quality officers, and others
• The Joint Commission has antimicrobial stewardship Medication Management standards for hospitals, critical access hospitals, nursing care centers, and ambulatory care
• Some excellent antimicrobial stewardship resources include: IDSA guidelines and the CDC Core Elements documents