

Strategies for Antibiotic Stewardship: Stopping Superbugs in their Tracks

Blog Posting

Antibiotic resistance is one of the most significant threats of modern time to public health. The US Centers for Disease Control and Prevention (CDC) has been carefully monitoring the situation of drug resistant pathogens globally. Many prescriptions of antibiotics have been identified as not medically necessary, and as such increase the risk for antibiotic resistance.

The CDC has defined four core actions to fight antibiotic resistance:

- 1) **Preventing Infections and Preventing the Spread of Resistance:** Avoiding the infections in the first place reduces the amount of antibiotics that have to be used and reduces the likelihood that resistance will develop during therapy. There are many ways that drug-resistant infections can be prevented through immunizations, safe food preparation, handwashing, and using antibiotics as directed and only when medically indicated.
- 2) **Tracking:** CDC gathers data on antibiotic-resistant infections, causes of infections and whether there are particular reasons that caused some people to get a resistant infection.
- 3) **Improving Antibiotic Prescribing/Stewardship:** Perhaps the single most important action needed to greatly slow down the development and spread of antibiotic-resistant infections is to change the way antibiotics are used.
- 4) **Developing New Drugs and Diagnostic Tests:** Because antibiotic resistance occurs as part of a natural biological process, it can be slowed but not stopped. This requires pharmaceutical development of new antibiotics to keep up with the resistant bacteria as well as new diagnostic tests to track the development of resistance and alert clinicians about high risk patients.

The CDC has recently released Core Elements of Hospital Antibiotic Stewardship Programs which include:

- **Leadership Commitment:** Dedicating necessary human, financial and information technology resources
- **Accountability:** Appointing a single leader responsible for program outcomes. Experience with successful programs show that a physician leader is effective
- **Drug Expertise:** Appointing a single pharmacist leader responsible for working to improve antibiotic use.

- **Action:** Implementing at least one recommended action, such as systemic evaluation of ongoing treatment need after a set period of initial treatment (i.e. “antibiotic time out” after 48 hours)
- **Tracking:** Monitoring antibiotic prescribing and resistance patterns
- **Reporting:** Regular reporting information on antibiotic use and resistance to doctors, nurses and relevant staff
- **Education:** Educating clinicians about resistance and optimal prescribing

To learn more about antibiotic resistance, please visit www.cdc.gov/drugresistance.

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