



How to control antibiotic abuse in the clinical practice?

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The emergence of antimicrobial resistance has made the appropriate use of antimicrobials an essential part of patient safety. Given the strong correlation between antimicrobial use and the selection of resistant organisms, the frequency of inappropriate antimicrobial use has been used as a surrogate marker for the high consequence but avoidable impact of antimicrobial resistance. The combination of effective antimicrobial stewardship with a comprehensive infection control program has been shown to reduce the emergence and transmission of antimicrobial-resistant bacteria as well as limiting the ever increasing healthcare costs.

A comprehensive evidence-based stewardship program to address antimicrobial resistance in clinical practice includes elements from among the following recommendations based on local antimicrobial use and resistance problems and on available resources that may differ, depending on the profile of the institution.

A high-level multidisciplinary antibiotic stewardship team is often the cornerstone of these programs at hospital level. It is imperative the team members are knowledgeable in and committed to the ideals and principles of antibiotic stewardship. They often comprises infectious diseases trained physicians, microbiologists and pharmacists, who are answerable to the top-level hospital administration. There are 2 core strategies, both proactive, that provide the foundation for an antimicrobial stewardship program. They are prospective audit with intervention and feedback as well as formulary restriction and preauthorization.

Other components maybe considered and prioritized as supplements to the core active antimicrobial stewardship strategies based on local practice and resources. These include; education activities, development of antibiotic guidelines and clinical pathways, antibiotic order

forms, antibiotic stop orders as well as de-escalation or streamlining of antibiotics. Healthcare information technology in the form of electronic medical records and computer based surveillance can facilitate good stewardship by efficient targeting of antimicrobial interventions, tracking of antimicrobial resistance patterns, drug utilization and identification of nosocomial infections.

Consensus building with support of administration and local providers is absolutely essential. The emphasis of collaboration must be focused on the safety and care of patients rather than that of a policing role. Numerous reports have consistently demonstrated a decrease in antimicrobial use (up to 22%–36%) and annual savings of USD 200,000–900,000, which adequately finances these programs in hospitals. Quantifying a long-term impact on resistance can be more difficult and further studies are necessary to determine the optimal processes by which goals of improved clinical outcomes and containment of resistance can be realized.