

**Antimicrobial stewardship: why, what and how?**

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1. Facts:

Poor adherence to infection control and irrational antibiotic use promotes antimicrobial resistance. There is widespread misuse of antibiotic treatment and prophylaxis for surgery.

2. Interventions to improve antibiotic use:

Quality improvement (QI) approaches are helpful, feasible and low-cost tools (especially in resource-poor countries), in order to improve efficiency in antimicrobial drug management. They should be based on:

- Evidence-based interventions (balanced between sound methodology and pragmatic considerations);
- Center specific strategies (education & management);
- Committed team of people (physicians, microbiologists & clinicians)
- Co-ownership of the project through involvement of relevant opinion leaders;
- Immediate feedback;

Essential medicine programs with evidence-based standard treatment guidelines may further improve compliance and antibiotic use.

3. Recommendations on a local level:

- Monitoring and feedback of antibiotic prescription and antimicrobial-resistant resistance should be performed (at least within large teaching hospitals), in order to identify problem areas and perform targeted interventions
- Dissemination and implementation of priority practices based on already existing knowledge and guidelines, with local enforcement

- QI-based strategies with feedback should be more widely disseminated, published and implemented. Prominent targets for these strategies are:
 - optimize antibiotic prophylaxis (streamlining choices, admit forms & prepared packages, mailing of memos, feedback), in order to enable rational and cost-effective use of antimicrobial drugs for surgical prophylaxis;
 - reduce unnecessary and inappropriate use of empiric treatment;
 - decrease treatment duration for microbiologically proven infections.
- Reduce financial incentives and physician-industry interactions to overprescribe antibiotic agents
- Increase institutional and political commitment (regulatory pressure)

4. Recommendations on a national or international level:

- a) Public education on preventing infection and reducing transmission
- b) Provider education on diagnosis and management of common infections, antimicrobial use, containment of antibiotic resistance, disease prevention, infection control
- c) Development, updating and use of essential medicines lists, clinical guidelines and treatment algorithms
- d) Drug and Therapeutic Committees to ensure the safe effective use of antimicrobials
- e) Restriction of availability of antimicrobials
- f) Granting marketing authorization only to antimicrobials meeting international standards of quality, safety and efficacy
- g) Knowledge transfer between countries: Collaboration and continued networking of people in low-resource countries. Commitment of WHO as exchange platform.