

Antimicrobial Stewardship Programs Reduce Antibiotic Consumption in Hospital and Nonhospital Settings



Zay Ya K, Win PTN, Bielicki J, Lambiris M, Fink G.
[Association Between Antimicrobial Stewardship Programs and Antibiotic Use Globally: A Systematic Review and Meta-Analysis.](#)
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A recent systematic review and meta-analysis aimed to develop current evidence regarding the association between antimicrobial stewardship programs (ASPs) and antibiotic consumption globally.

Methods:

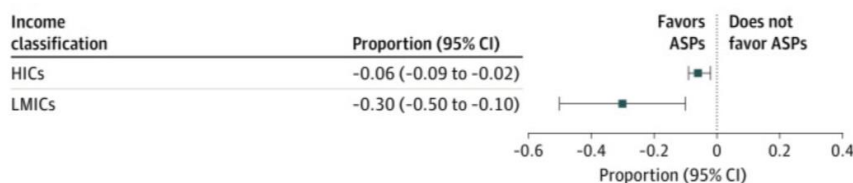
- Data sources included PubMed, Web of Science, Scopus databases searched from August 1, 2010 to August 1, 2020
- **Study selection:** original studies of the association of ASPs with antimicrobial consumption across health care and income settings (excluding animal/ environmental studies)
- The pooled association of targeted ASPs with antimicrobial consumption was measured using multilevel random-effects models
- The main outcome measures were **proportion of patients receiving an antibiotic prescription** and **defined daily doses per 100 patient-days**

Results:

- A total of **52 studies with 1.7 million participants** were included
- 40 studies were conducted in high-income countries, and 12 in low-and middle-income countries
- ASPs were associated with a reduction by:
 - 10% in antibiotic prescriptions
 - 28% in antibiotic consumption
 - 21% in antibiotic consumption in pediatric hospitals
 - 28% in the WATCH group antibiotics within the AWARE WHO categorization

In conclusion, ASPs were found to be **effective in reducing antibiotic consumption in both hospital and nonhospital settings.** However, the impact assessment of ASPs in resource-limited settings is limited and the performance of ASPs might vary in different income settings (**Figure 1**). Further research is needed to determine the impact of ASPs in these settings.

Figure 1. Change in Antibiotic Prescription After vs Before Intervention Stratified by Income Classification



“ASPs were associated with reduced consumption of antibiotics overall as well as of antibiotics in the World Health Organization WATCH group. [...] The findings of this study support the use of ASPs to reduce antibiotic use in both hospital and nonhospital settings,” the study authors concluded.