Implementing ASPs decreases Antimicrobial Resistance and reduces Antibiotic Consumption

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A recent retrospective observational study measured the impact of antimicrobial stewardship programs (ASPs) on antibiotic consumption and antimicrobial resistance (AMR) in four Colombian healthcare institutions.

The study was conducted in the general wards and intensive care units (ICUs) of four high-complexity hospitals in two Colombian cities over 48 months from 2009 to 2012. Trends in antibiotic consumption and AMR were measured 24 months before and 24 months after ASP implementation, using interrupted time series analysis.

ASPs varied per hospital and depended on available resources in each hospital. Nevertheless, before ASP implementation, all four institutions showed a trend towards an increased use of broad-spectrum antibiotics, and after implementation, all institutions decreased their antibiotic consumption.

A significant decrease in meropenem, cefepime, and ceftriaxone consumption was shown in all institutions. The use of ertapenem and meropenem decreased in general wards. In the ICUs, ceftriaxone, cefepime, piperacillin/tazobactam, meropenem, and vancomycin use was decreased.

Prior to ASP implementation, an upward trend for oxacillin-resistant *Staphylococcus aureus*, meropenem-resistant *Pseudomonas aeruginosa*, and ceftriaxone-resistant *Escherichia coli* was observed. This trend was reversed through ASP implementation.

This study showed that it is possible to implement ASPs in hospitals in low-to-middle income countries (LMICs), and that interrupted time series analysis may help demonstrate the success of such ASPs.

Five strategies for successful ASP implementation

- **Constitute a multi-disciplinary team** comprised of infectious disease physicians, hospital pharmacists, general practitioners and nursing staff
- **Discuss antimicrobial guidelines with prescribers** prior to ASP implementation and use appropriate tools to monitor antibiotic consumption
- **Adapt interventions to available human resources** and provide salary support for ASP teams
- **Allocate specific working hours** dedicated to ASP implementation for team members
- **Ensure hospital administration buy-**in to facilitate governance of the ASP team

"In our study, we showed that ASPs are a key strategy in tackling the emerging threat of AMR and have a positive impact on antibiotic consumption and resistance." the study authors concluded.