Antibiotic use and emerging resistance-how can resource-limited countries turn the tide?

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Abstract
Antibiotic resistance is a global crisis driven by appropriate and inappropriate antibiotic use to treat human illness and promote animal growth. The antimicrobial resistance epidemic continues to spread due to the triple threat of unfettered access, minimal product regulation and oversight of antibiotic prescription, and lack of clinical diagnostic tools to support antibiotic de-escalation in low-resource settings. A systematic review was conducted reviewing published literature on antimicrobial resistance in low- and middle-income countries. Current research and surveillance efforts on antimicrobial resistance and hospital-associated infections in low-resource settings are extremely limited, largely focused intensive care units. In high-resource settings, evidence-based strategies have improved appropriateness of antibiotic use, limiting the spread of drug-resistant organisms and reducing hospital-associated infections, which may also be effective to stop the spread of resistance in resource-poor countries. Many challenges exist to improving antibiotic use and infection control in resource-limited settings, and turning the tide requires intensifying research and surveillance, antimicrobial stewardship, and developing new bedside diagnostic tools for bacterial infections and antimicrobial susceptibility.

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