

High antibiotic prescription rates in low- and middle-income countries may indicate misuse

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Inappropriate use of antibiotics is an important driver of antimicrobial resistance, yet the extent of antibiotic prescribing in outpatient primary care settings across low- and middle-income countries (LMICs) is unknown. A study published in *PLOS Medicine* by Giorgia Sulis and Madhukar Pai at McGill University, Montreal, Canada and colleagues found that approximately 50% of patients at primary care clinics in LMICs received at least one antibiotic, possibly suggesting widespread overprescribing.

To assess the magnitude and patterns of antibiotic prescribing in [primary care](#) settings across LMICs, the researchers systematically reviewed over 10,000 published studies, focusing on 48 cross-sectional studies in their final analyses. Using available data from individual studies, they calculated the proportion of patients who received an [antibiotic prescription](#) from a LMIC healthcare facility and the proportion of all drug [prescriptions](#) containing any antibiotic. While the researchers were able to quantify widespread prescribing of [antibiotics](#) in primary care settings, most analysed

studies did not evaluate the appropriateness of prescriptions. The authors also conducted a subgroup analysis of 16 studies that reported details on prescriptions and found that 60% of antibiotics were commonly used drugs with a low potential for selecting resistance.

According to the authors, "this is the first comprehensive analysis of antibiotic prescriptions in primary care in LMICs". More high-quality studies are needed to collect data on the types, clinical reasons for prescribing, and appropriateness of antibiotics prescribed. "The inappropriate use of antibiotics comes with serious risks to patients and communities in terms of toxicity, adverse events and selection of resistant microorganisms. For this reason, a better evaluation of the patterns of inappropriate antibiotic prescribing is critical", said Giorgia Sulis, an infectious diseases physician who led the study. However, having an initial estimation of antibiotic prescription rates may help LMICs implement effective policies and interventions to improve rational prescribing practices.

More information: Sulis G, Adam P, Nafade V, Gore G, Daniels B, Daftary A, et al. (2020) Antibiotic prescription practices in primary care in low- and middle-income countries: A systematic review and meta-analysis. *PLoS Med* 17(6): e1003139. doi.org/10.1371/journal.pmed.1003139

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