



## Severity of Antimicrobial Resistance: Bangladesh Perspective

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Antimicrobial resistance (AMR) is a burning issue of Bangladesh. Antimicrobial therapy is essential for treating and preventing bacterial infections. Among these bacterial infections some of which can be life-threatening and is acquired as a result of critical medical interventions. The evolution of drug-resistant pathogens is unavoidable due to random genetic changes in the pathogens. Antibiotic therapy can succeed in killing susceptible pathogens. Each exposure to antibiotics contributes to this process and efforts to restrict antibiotic usage only slow the development of antimicrobial resistance. Ultimately, antimicrobial drugs with diverse mechanisms of action is needed to treat emerging resistant pathogens. Antimicrobial resistance (AMR) is therefore seen as one of the greatest health and public health challenges of our time. The consequences of AMR include increased treatment failure for common infections and decreased treatment options where antibiotics are vital. Antimicrobial stewardship is crucial to combating AMR and is an important element of antibiotic resistant strategy in Bangladesh, which has seven key areas for action, one of which is optimizing prescribing practice.

Inappropriate use of antibiotics contributes significantly to the acceleration of resistance. Furthermore, the overuse of antibiotics has been driven largely by their low cost and clinical effectiveness. Needlessly exposing patients to antibiotics is very important for AMR. The use of overly broad-spectrum antibiotics and suboptimal

doses of appropriate therapy hasten the evolution of resistance. In the absence of a clear diagnostic result, many health care providers prescribe empiric broad spectrum therapy without knowing exactly what they are treating. However, the clinical effectiveness of these drugs decreases over time, as resistance naturally increases, and this process is accelerated with inappropriate use.

Strains of highly drug-resistant tuberculosis, carbapenem resistant Enterobacteriaceae and other resistant pathogens have spread outside their countries of origin within several years of their detection. Educational programmes alone, however, will not be sufficient to lower prescribing rates to recommended levels. Pushing down the inappropriate use of antibiotics also warrants stronger mechanisms that leverage the critical relationships between the stakeholders. Antibiotic prescribing is one area where the forces of prescriber knowledge, patient expectations and the prescriber's perceptions of these expectations, and culture all collide together. Certainly, research has highlighted how difficult it is to capture the complex interactions that contribute to antibiotic prescribing for UTIs. AMR prevention is now a burning issue.

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