

Editorial

One Health, One World: Tackling Antimicrobial Resistance Through Integrated Action

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Antimicrobial resistance (AMR) is a well recognized threat to humanity in recent times. The severity of the issue is highlighted by WHO statistics showing that in 2023, one in six confirmed bacterial infections worldwide was resistant to standard antibiotics.

Among the major reasons for this global rise in AMR are the inadequate diagnostic capabilities of low-income countries, inappropriate antibiotic use, and weak governance in both agricultural and human health sectors, where antimicrobial overuse remains a persistent problem.^{1,2} Additionally, pharmaceutical manufacturing effluents and untreated human sewage make significant contributions to the spread of resistance yet these sources receive little attention from regulatory authorities and researchers.³

To effectively address this issue, interventions must target not only human use of antimicrobials but also their use in animals and environmental sources. This integrated perspective is embodied in the One Health approach, which seeks to achieve a sustainable balance between human health, animal health and the ecosystem. Although the importance of the One Health approach is widely acknowledged, critical implementation gaps persist.⁴

Moving from rhetoric to tangible results requires three key strategic shifts. First, comprehensive surveillance of antimicrobial usage and resistance data across human, animal, food and environmental sectors must be ensured, with the integration of technology to detect emerging resistance patterns and transmission hotspots. Second, antimicrobial stewardship should be strengthened across all sectors. Third, research into diagnostics and alternative treatments, such as vaccines must be consistently supported.⁵

Pakistan developed its National Action Plan (NAP) in 2017 to combat antimicrobial resistance. Currently, NAP 2.0 is being implemented, focusing on improving awareness, optimizing antimicrobial use and investing in research for new vaccines and diagnostic tools. This National Action Plan aligns with the United Nations General Assembly Global Action Plan.⁶

In conclusion, the One Health approach, emphasizing integrated surveillance, stewardship, and awareness across human, animal, agricultural and environmental domains remains the only viable path forward.

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