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Letter to Editor (Pages: 57-59)

Antimicrobial Resistance in Tajikistan: A Global Challenge and an Opportunity to Strengthen Health-System Resilience

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Abstract,

Antimicrobial resistance (AMR) is widely recognized as one of the most pressing public health challenges of our time, compromising the effectiveness of standard treatments and imposing substantial human and economic costs. If not addressed proactively, AMR may gradually weaken health systems' ability to control infections and sustain the achievements of modern medicine. In countries such as Tajikistan, however, where health-sector reform and international cooperation are advancing, AMR can also be understood as a strategic entry point for strengthening laboratory capacity, surveillance, rational prescribing, and multisectoral coordination. Adopting a One Health approach, improving monitoring and reporting systems, and integrating stewardship principles into ongoing reforms can support a more effective national response. This letter argues that addressing AMR is not only a scientific and clinical necessity, but also an important opportunity to reinforce health security and long-term health-system resilience in Tajikistan.

Key Words*:* Antimicrobial Resistance, Health Policy, Public Health Challenge, Tajikistan, One Health, Surveillance.

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Dear Editor,

Antimicrobial resistance (AMR) is increasingly recognized as one of the most serious public health challenges worldwide. By reducing the effectiveness of antibiotics and other antimicrobial agents, AMR can make the treatment of common infectious diseases substantially more difficult and can threaten the safety and continuity of modern medical care (1). In this context, AMR should not be viewed solely as a microbiological or pharmaceutical issue, but rather as a multidimensional challenge with implications for clinical outcomes, patient safety, healthcare expenditure, and national health security (1, 2).

At the same time, this global challenge may also represent an important opportunity for countries such as Tajikistan to further strengthen health-system capacity and preparedness. In recent years, Tajikistan has continued to pursue health-sector reforms and cooperation with international partners, creating a favorable environment for integrating AMR into broader national health priorities (2, 3). The *Tajikistan: Health System Summary 2025* highlights the country's ongoing efforts to improve service delivery, coordination, and progress toward universal health coverage, all of which provide a valuable foundation for a more structured response to AMR (3).

One of the key reasons AMR deserves particular policy attention is its intersectoral nature. Antimicrobial resistance is not confined to hospitals or clinical prescribing alone; it is also linked to infection-prevention practices, pharmaceutical regulation, animal health, food systems, and environmental conditions. For this reason, the One Health approach remains especially relevant (1,4). By encouraging coordinated action across human, animal, and environmental health domains, this framework enables countries to address AMR more comprehensively. For Tajikistan, where strengthening cross-sector collaboration remains an important element of health-system development, the One Health perspective may provide a practical and forward-looking basis for national planning (3, 4).

Strengthening laboratory capacity and surveillance systems is another essential component of an effective response. In many settings, the absence of reliable and systematic data on resistance patterns limits evidence-informed decision-making and weakens timely intervention (1). In Tajikistan, continued investment in microbiological diagnostic capacity, reporting quality, and the integration of laboratory findings into clinical and public-health decision-making could significantly improve national preparedness and response (3). Expanding surveillance structures may also help identify emerging trends earlier, guide treatment protocols more accurately, and support a more efficient use of limited health resources (3, 4).

In addition, antimicrobial stewardship programs and infection prevention and control (IPC) measures are among the most cost-effective strategies for slowing the emergence and spread of resistance (1). Their implementation in hospitals, outpatient settings, and primary care can improve the quality of prescribing, reduce unnecessary antimicrobial use, and contribute to better health outcomes. For Tajikistan, the support of the World Health Organization and development partners offers a valuable opportunity to expand such measures within the framework of ongoing health reforms and system-strengthening initiatives (2, 3). From an economic perspective, early investment in AMR containment is also aligned with broader national efforts to improve efficiency, preserve health-system resources, and reduce avoidable financial pressure on households, all of which remain important within the country's wider development trajectory (2, 5).

From a public-health perspective, AMR therefore requires a national response that is both globally informed and locally adapted. In Tajikistan, aligning AMR-related action with broader goals such as health security, universal health coverage, and system resilience may help ensure that the response is both sustainable and strategically embedded within long-term reform efforts (2, 3). In this sense, addressing AMR should be understood not merely as a reaction to an emerging threat, but as a constructive and future-oriented investment in the strength and resilience of the health system.

In conclusion, antimicrobial resistance is an important and growing global health challenge, but it also presents a meaningful opportunity for Tajikistan to further reinforce its health system. Emphasizing

surveillance, laboratory strengthening, rational antimicrobial use, infection prevention, and the One Health approach can support a gradual, coordinated, and effective national response. Such an approach is consistent not only with public-health priorities, but also with the country's broader trajectory of health-sector development and resilience-building.

CONFLICT OF INTEREST: None.

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