

One Health: Antimicrobial Resistance

Antimicrobial resistance is a public health crisis, where fungal, bacterial, or viral pathogens acquire genes that resist antibiotics, ensuring their pathogenicity upon humans and animals. The One Health approach recognizes that people, plants, animals, and the environment are interconnected (CDC, 2024). This dynamic relationship compels us to work across disciplines and coordinate efforts to improve human, animal, and environmental health (CDC, 2024). When successful, the One Health approach prevents and manages outbreaks of zoonotic disease in animals and people, and reduces antimicrobial-resistant infections (CDC, 2024). Besides public health and the sciences, other sectors, including pharmacy, agriculture, finance, trade, education, healthcare systems, government, and organizations at national and international levels are necessary for moderating broad-spectrum antibiotic use among humans and animals (Salam, 2023).

Strengths of the One Health approach include interdisciplinary experts that collaborate together to produce comprehensive solutions to a multifaceted problem, such as antimicrobial resistance. Weaknesses of this approach include the extensive amount of time, investment, and effort required to collaborate across disciplines to agree on solutions to antimicrobial resistance. One Health highlights health disparities within underdeveloped and developing countries that lack antibiotic policies, standard treatment guidelines, adequate diagnostic facilities, ethical practices for prescribing antibiotics, and a supply of high-quality antibiotics (Salam, 2023). Furthermore, antibiotic abuse is difficult

to reverse in resource-limited and education-poor settings because providers and patients are not aware of how antibiotics work and when they should be used for the purpose of preventing antimicrobial resistance (Salam, 2023). Antimicrobial resistance is also an issue outside of healthcare provider systems, where illegally marketed antibiotics exist and some pharmacies do not require a drug prescription; this is especially true for low-income, low-resource areas (Salam, 2023). That said, antibiotic abuse is a monumental issue that impacts a range of sectors, including healthcare, education, finance, economics, pharmacy science, and governmental policies. The One Health approach involves every specialty to enable lasting improvement and change towards a better future, where antimicrobial resistance is no longer a crisis.

As a future public health practitioner, I can incorporate the One Health approach by learning interdisciplinary subjects at an introductory level before I understand and listen to experts on those subjects. Then, we can bring our strengths together toward a common goal of achieving equitable and long-lasting health for humans, animals, and the environment.

References

Centers for Disease Control and Prevention. (2024, October 30). *About One Health*. One Health. <https://www.cdc.gov/one-health/about/index.html>

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