

Assessment of zoonotic disease risk in small-scale poultry farming: A one health approach.

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Introduction

Small-scale poultry farming plays a pivotal role in providing a sustainable source of protein for millions of households worldwide. However, it also presents a potential hotspot for the emergence and transmission of zoonotic diseases, which are infections that can pass from animals to humans. This intersection between animals, humans, and the environment forms a critical nexus where the One Health approach becomes indispensable. The One Health paradigm recognizes the interconnectedness of human, animal, and environmental health, emphasizing a holistic perspective to address zoonotic disease risks. In this article, we delve into the assessment of zoonotic disease risks in small-scale poultry farming using a One Health lens [1].

Small-scale poultry farming is a widespread practice in both developed and developing countries. It contributes significantly to food security, nutrition, and livelihoods, particularly in rural areas. Families often rely on small flocks of chickens, ducks, or other poultry species for eggs and meat, making it a valuable source of affordable protein. Despite its benefits, small-scale poultry farming is not without challenges. The proximity of humans and animals in such settings creates an environment where zoonotic pathogens can easily cross the species barrier. Common zoonotic diseases associated with poultry include avian influenza, salmonellosis, campylobacteriosis, and even emerging threats like the highly pathogenic H5N1 avian influenza [2].

The One Health approach recognizes that the health of humans, animals, and the environment are interconnected. This approach advocates for collaboration across disciplines to address health issues at the human-animal-environment interface. In the context of small-scale poultry farming, applying the One Health approach involves assessing the risks associated with zoonotic diseases through the integration of veterinary, medical, environmental, and social sciences [3].

Small-scale farms often involve close proximity between animals and humans, increasing the potential for zoonotic disease transmission. Unlike large commercial poultry farms, small-scale operations may lack adequate biosecurity measures, making it easier for diseases to spread. In many small-scale settings, poultry are allowed to scavenge for food, increasing their exposure to potential pathogens in the environment. Surveillance for zoonotic diseases is often limited or absent in small-scale farms, making early detection

and control challenging. Small-scale farmers may have limited access to veterinary care, hindering disease prevention and control efforts. Assessing Zoonotic Disease Risks To effectively manage zoonotic disease risks in small-scale poultry farming, a multifaceted assessment is essential [4].

Providing farmers with training on proper poultry management, biosecurity, and hygiene practices is essential. Developing and implementing vaccination programs for poultry can help reduce disease prevalence. Promoting better waste management and sanitation practices can limit pathogen exposure. Ensuring small-scale farmers have access to veterinary services can aid in disease diagnosis and treatment. Engaging with the community to raise awareness about zoonotic disease risks and the importance of One Health can foster a culture of disease prevention [5].

Conclusion

Small-scale poultry farming is a critical component of food security and livelihoods for many communities worldwide. However, it also presents significant risks for the transmission of zoonotic diseases. The One Health approach offers a comprehensive framework to assess and mitigate these risks by recognizing the interconnectedness of human, animal, and environmental health. By implementing targeted strategies and engaging with local communities, we can work towards safer and more sustainable small-scale poultry farming practices that benefit both animals and humans alike.

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