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# Editorial: Wildlife-related zoonotic infections: major threat to public health

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## Editorial on the Research Topic

Wildlife-related zoonotic infections: major threat to public health

## Introduction

The emergence of zoonotic diseases, particularly those originating from wildlife, poses a significant threat to global public health (1). These infections, which are transmitted from animals to humans, account for ~75% of all emerging infectious diseases, with 70% of these originating from wildlife (1–5). The increasing frequency and impact of these diseases underscore the urgent need for comprehensive research and proactive measures to mitigate their spread.

## Aims and objectives

The primary aim of this editorial is to highlight the critical research contributions that address the complex dynamics of wildlife-related zoonotic infections. By examining various studies, we aim to provide a broader context for understanding the mechanisms driving these infections and the strategies necessary for their prevention and control.

## Broader context

The interaction between wildlife, domestic animals, and humans creates a complex web of pathogen transmission. Human activities such as deforestation, urbanization, and agricultural expansion disrupt natural habitats, increase the likelihood of zoonotic spillover events. The COVID-19 pandemic has starkly illustrated the devastating potential of zoonotic diseases, emphasizing the need for a One Health approach that integrates human, animal, and environmental health.

## Key research contributions

The contribution from Roque et al. provides a valuable perspective regarding the biodiversity and land use change. The study explores how changes in land use impact biodiversity and the emergence of zoonotic diseases. The research underscores the importance of preserving biodiversity to prevent the emergence of new zoonotic pathogens. It highlights the need to incorporate biodiversity responses into land use change scenarios to prevent emerging zoonotic diseases in areas with unknown host-pathogen interactions. Incorporating biodiversity responses to land use change scenarios for preventing emerging zoonotic diseases in areas of unknown host-pathogen interactions. The contribution from Kabzhanova et al. provides a detailed analysis of rabies spread in Kazakhstan. This study highlights the spatial and temporal patterns of rabies, offering insights into effective control measures. The research done by Azat et al. examines the factors driving the spread of avian influenza. This study is crucial for understanding the spatio-temporal dynamics and drivers of highly pathogenic avian influenza H5N1 in Chile, and for developing strategies to mitigate its impact. The prevalence and diversity of Blastocystis in wild rodent populations was investigated in the study done by Gao et al. This research provides valuable data on the potential zoonotic risk posed by wild rodents. It examines the prevalence and subtypes of Blastocystis in wild rodents from three provinces in China. Liene et al. explored the toxinogenic potential and antibiotic resistance of *Staphylococcus aureus* in wild ungulates. This study highlights the public health risks associated with wildlife reservoirs of antibiotic-resistant bacteria and the high toxinogenic potential of *Staphylococcus aureus* from wild ungulates in Brandenburg, Germany with a low level of antibiotic resistance. Lukina-Gronskaya et al. provide insights into the viral diversity in hedgehogs and the potential zoonotic threats they pose. This study emphasizes the need for continuous surveillance of wildlife to detect emerging pathogens early.

## Conclusion

The studies highlighted in this editorial underscore the critical need for a multidisciplinary approach to understanding and mitigating wildlife-related zoonotic infections. By integrating ecological, epidemiological, and molecular research, we can

develop more effective strategies to predict, prevent, and control these diseases. The One Health approach, which recognizes the interconnectedness of human, animal, and environmental health, is essential for addressing the complex challenges posed by zoonotic diseases.

As we continue to encroach on natural habitats and alter ecosystems, the risk of zoonotic spillover events will likely increase. Therefore, it is imperative to invest in research, surveillance, and public health infrastructure to safeguard against future outbreaks. The contributions to this Research Topic provide valuable insights and pave the way for future studies aimed at protecting global health from the threat of wildlife-related zoonotic infections.

## Author contributions

JP: Conceptualization, Writing – original draft, Writing – review & editing. FA: Writing – original draft, Writing – review & editing. MB: Writing – original draft, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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