

## Popular Article

# Zoonoses: An introduction

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Zoonoses are defined as 'Infectious diseases that can be transmitted between animals and humans, and may give problems in humans but not necessarily in animals. In an obligate zoonotic disease, such as anthrax, transmission occurs only from animal to human, whereas in facultative zoonoses, infections are mostly transmitted among humans. Animal-based food may harbor the etiological agent which has infected its living host. Zoonoses can also cause disruptions in the production and trade of animal products for food and other uses.

Zoonoses comprise a large percentage of all newly identified infectious diseases as well as many existing ones. Some diseases, such as HIV, begin as a zoonosis but later mutate into human-only strains. Other zoonoses can cause recurring disease outbreaks, such as Ebola virus disease and salmonellosis. Still others, such as the novel coronavirus that causes COVID-19, have the potential to cause global pandemics.

## Risk factors

Zoonotic pathogens can spread to humans through any contact point with domestic, agricultural or wild animals. Markets selling the meat or by-products of wild animals are particularly high risk due to the large number of new or undocumented pathogens known to exist in some wild animal populations. Agricultural workers in areas with a high use of antibiotics for farm animals may be at increased risk of pathogens resistant to current antimicrobial drugs. People living adjacent to wilderness areas or in semi-urban areas with higher numbers of wild animals are at risk of disease from animals such as rats, foxes or raccoons. Urbanization and the destruction of natural habitats increase the risk of zoonotic diseases by increasing contact between humans and wild animals.

## **Prevention and control**

Prevention methods for zoonotic diseases differ for each pathogen; however, several practices are recognized as effective in reducing risk at the community and personal levels. Safe and appropriate guidelines for animal care in the agricultural sector help to reduce the potential for foodborne zoonotic disease outbreaks through foods such as meat, eggs, dairy or even some vegetables. Standards for clean drinking water and waste removal, as well as protections for surface water in the natural environment, are also important and effective. Education campaigns to promote handwashing after contact with animals and other behavioural adjustments can reduce community spread of zoonotic diseases when they occur.

Antimicrobial resistance is a complicating factor in the control and prevention of zoonoses. The use of antibiotics in animals raised for food is widespread and increases the potential for drug-resistant strains of zoonotic pathogens capable of spreading quickly in animal and human populations.