



Preventing and controlling human diseases transmitted by animals saves millions of lives and livelihoods

People are healthier, safer and better off when their livestock and the animals around them are healthy. Detecting zoonotic diseases early and managing them effectively before they jump to people is essential.

Key Messages

Zoonotic diseases, transmitted from animals to humans, are costly, risky and burdensome. They cause illness and death, they keep families and whole communities in dire poverty, and they burden national health and care systems.

The coronavirus disease which emerged in 2019 (COVID-19) and has now killed over 1.5 million people in little more than a year, is just the latest example of a disease jumping from animals to humans - and certainly will not be the last.

Without sustained and targeted investment, zoonotic diseases will jump unchecked, and perhaps unknowingly to us, from wild and domesticated animals to people - causing death, destroying livelihoods and economies in some cases, and robbing the future.

Dealing with such diseases frequently involves bringing together experts from medicine and public health as well as veterinary and wildlife services. Well-directed investments in One Health approaches that tackle all health dimensions are especially critical.

The good news is that we know how to control or minimize the burdens of most of the neglected 'silent' endemic diseases (those that are present in a certain population or region). We have also improved our abilities to predict where new diseases will emerge, understand the risks they pose, and importantly, implement ways to prevent or mitigate their impacts. Investments and political action will save future lives and livelihoods.

Facts

- Just 13 of over 200 zoonotic diseases cause 2.4 billion illnesses and 2.2 million deaths every year (not including COVID-19).
- Each year, just one zoonotic infection—echinococcosis, a parasitic disease transmitted to humans from infected dogs—costs the equivalent of one million years of healthy life worldwide.
- About 70% of the world's 1.4 billion people living in extreme poverty live close to livestock or fresh markets where diseases spread easily.
- In the last two decades, emerging zoonotic diseases have had direct costs of more than USD100 billion. The International Monetary Fund estimates that the pandemic will cost the global economy USD9 trillion over the next two years.



Testing sheep for diseases in Bako, Ethiopia. Photo credit: ILRI/Barbara Wieland.

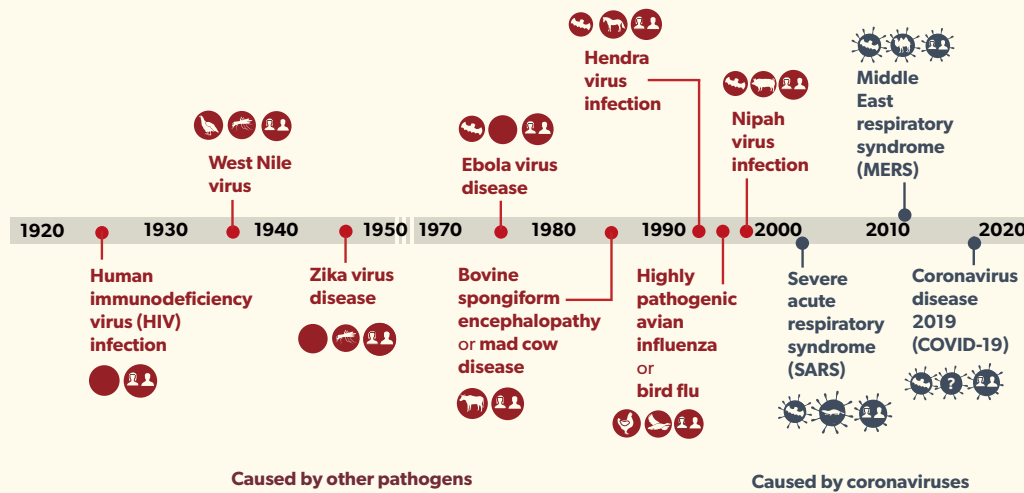
There are more than
200 known
types of zoonotic disease

Poorer countries bear
98.6%
of the global burden of zoonoses

In poorer countries, zoonoses make up
25%
of the infectious disease burden on people

and account for
10%
of total disability-adjusted life years lost

Newly emergent zoonotic diseases in last 100 years



Source: United Nations Environment Programme and International Livestock Research Institute (2020). Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission. Nairobi, Kenya.

The burdens of endemic diseases

Most zoonotic diseases, unlike COVID-19, do not quickly spread to become epidemics (which affect one part of the world) or pandemics (affecting most of the world) but rather remain endemic (continually circulating in a given area). With sufficient resources, these endemic zoonoses and their burdens can be well managed or even eliminated entirely from a region.

Brucellosis, for example, a bacterial infection transmitted from animals to humans usually via unpasteurized dairy products, is widespread in many poor countries causing chronic fever, joint pains and potentially life-threatening illness. Difficulty obtaining a diagnosis, leading to inappropriate treatment, further exacerbates the burden of this disease, whilst livelihoods are also affected due to illness in livestock. Appropriate investment in control programs has eliminated this disease from many rich countries.

“ We need to find ways to reduce the risks and burdens of zoonoses so people and animals can live healthier lives together.

The risks of emerging diseases

Emerging infectious diseases include infections that are new, have increasing incidence, or are spreading to new geographical areas. Examples include COVID-19, Ebola, Middle East respiratory syndrome (MERS) coronavirus and highly pathogenic avian influenza (HPAI). These emerging zoonoses and their risks are difficult to deal with and require reliable prediction, preparation and well-coordinated responses. Prediction benefits from good knowledge of the patterns and drivers of such diseases, while tools and capacities for surveillance, early detection and information sharing are key 'for preparedness' and response.

Why women matter

For all zoonotic diseases, rural women are most burdened and most at risk as they rear most of the developing world's livestock. When such diseases hit, their livelihoods and families are often most threatened. These factors mean that women are especially likely to take up and adopt practices likely to reduce the spread of such diseases and they can play vital roles in early detection. (see brief 7 on Gender).

Nature and wildlife matter

As well as cats and dogs-themselves potential carriers of zoonotic diseases - many wildlife also co-exist intimately with people in the domestic environment, for example rats, bats and birds. Expansion of agricultural land brings people and their livestock closer to wildlife, increasing the risks that new diseases emerge and jump to humans. (see brief 6 on Environment).

Africa in particular could be a source of future outbreaks. The continent is home to a large portion of the world's remaining intact rainforests and other wild lands. It also has the world's fastest-growing human population, expanding settlement into nature and increasing encounters between people, livestock and wildlife which often trigger wildlife agro-crimes and consumption of 'bush meat'. Such interfaces between nature and people are some of the likely hottest spots for new zoonotic disease emergence.

Human health challenges require animal as well as human health solutions

Medical treatments are often costly and hard to access in low-income countries. Preventing and controlling zoonoses in domestic and wild animal populations is a cost-effective way to ensure such diseases do not spread to human populations.

Studies suggest that every one dollar invested in One Health practices - which unite human, animal and environment health expertise - generates five dollars' worth of benefits.



A dog gets a rabies vaccine in Machakos County, Kenya. Photo credit: ILRI/ Geoffrey Njenga.

What can be done

1. Manage and reduce the heavy burden of common, neglected diseases transmitted by animals

Many diseases transmitted from wild animals and livestock to people go undiagnosed or misdiagnosed. Fevers caused by zoonoses, for example, are frequently mis-attributed to malaria in some areas.

Better ways to detect, prevent and stop diseases in their animal hosts include:

- Implementing smarter and wider livestock surveillance programs
- Strengthening livestock sanitation practices
- Promoting timely livestock vaccination campaigns

2. Prepare for and prevent new diseases transmitted by animals from spreading

Reducing the risk of emerging zoonoses spreading requires implementing innovative disease surveillance programs that help experts to detect disease outbreaks rapidly and pinpoint exactly where the diseases emerge.

These programs must involve scientists, local extension agents, community members and civil society agencies. Community-based interventions are critical as communities are in the best position to provide reliable information and timelines about disease outbreaks.

References

To view all the references for this brief visit whylivestockmatter.org

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Investing in One Health directly tackles the wicked problems facing our health and the health of the animals and planet around us. One Health integrates and guides the collaborative efforts of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and our environment. This series of briefs provides evidence-based information on how One Health can support development efforts.

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