New Study Links Biological Invasions With Zoonotic Disease Outbreaks

> GIDEON is currently the most comprehensive and frequently updated infectious disease outbreak database reporting epidemics of human infectious diseases at the global scale and has been widely used in global zoonosis studies.
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> **L.Zhang et al. (2022)**

Introducing new species of animals to new surroundings can significantly increase the risk of zoonotic transmission – as many as 5.9 diseases per alien zoonotic host, as a 2022 study by Zhang et al. found. The study is the first to evaluate the role of multiple hosts and parasite taxa globally: 795 established alien hosts. The authors conducted an extensive analysis of all recorded zoonotic outbreaks in the world using the comprehensive GIDEON database of infectious diseases.

Why Is There an Increase in Biological Invasions?

When we hear the word plague, we often think of the infectious 'Black Death,' the scourge of the 14th century – a gruesome pandemic relegated to our history books. But from 2010 to 2015, there were more than 3,000 cases of plague reported in the Democratic Republic of Congo, Madagascar, and Peru. These cases were associated with invasive rats.

The Zhang study found that biological invasions increase the number of zoonosis events according to the richness of the alien hosts. In particular, the research indicated that mammals like Artiodactyla, Carnivora, and Rodentia, and birds like waterfowl, Galliformes, and Passeriformes are the main species that showed a significant connection across space and time.

The Need to Accelerate Research Efforts on Emerging Zoonotic Diseases

What is clear from the Zhang study is that the number of emerging zoonotic diseases is on the rise. The reasons are multi-factorial and need more research on infectious disease prevention, detection, and treatment.

Like the authors of this study, over 500 research publications have used GIDEON for their research.

1

GIDEON data on historical outbreaks go back to 1348 AD, offering researchers unparalleled insight

GIDEON Advantages

✓ **REST API with R wrapper for streamlined data modeling**

GIDEON API is designed to help researchers retrieve data programmatically, especially useful when working with data modeling. Epidemiologists can easily query the database **using a familiar R environment.**

✓ **In-depth analysis of global disease spread**

GIDEON's database contains 120,000+ prevalence and seroprevalence surveys, 26,000 country-specific notes and provides information on **30,000+ historical outbreaks and cross-border events.**

✓ **Updated daily by a team of experts**

GIDEON is curated by a team of highly regarded medical scientists who are **updating the database daily.**

✓ **Millions of quality geospatial data points**

GIDEON's geographical pathogen distribution database documents 370+ Infectious Diseases across 243 countries and territories. Outbreaks data is temporally and spatially resolved.

✓ **Interactive maps**

GIDEON renders interactive maps of vaccine coverage, disease distribution and outbreaks. **There is one for every disease.**