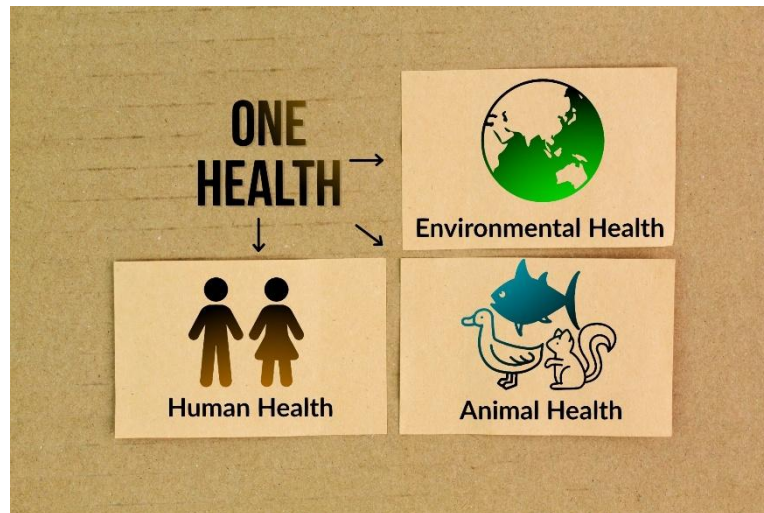


Review Says Foodborne Threats Demand Stronger Pandemic Planning

Researchers applied a holistic One Health lens to examine how public health crises, including pandemics, can undermine [food safety](#) governance. The review examined vulnerabilities exposed during past disease outbreaks and analyzed the potential for severe, asymmetric disruption from future foodborne pandemics.

The review concluded that integrating downstream food safety controls into [national emergency](#) planning is vital to safeguarding global public health and economic stability.



Study

This narrative review synthesized peer-reviewed scientific literature and institutional reports to explore the relationship between [pandemics](#), food safety, and agrifood system resilience through the lens of the One Health framework. The review drew on literature and reports published between 1996 and 2025, identified through targeted searches of bibliographic databases and institutional repositories, with a focus on pandemic drivers and their downstream effects on food governance.

The review subsequently used a conceptual framework built on the intersection of human, animal, and [environmental systems](#), in which both direct and indirect hazards across these domains were systematically evaluated to map their systemic risks.

In parallel, the review sought to elucidate potential future threats from foodborne pathogens, and the authors considered a 2024 World Health Organization (WHO) framework that evaluated 1,652 pathogens and identified 35 as high risk for causing a Public Health Emergency of International Concern or a pandemic based on [virulence](#) and transmission traits. Of the 35 high-risk pathogens, seven, including four bacteria and three coronaviruses, were highlighted as having the greatest potential for food-related introduction and wider spread through human populations.

Finally, the review contrasted the indirect economic impacts of airborne pathogen crises with industry-specific data from historical [foodborne outbreaks](#).

Results

The review described environmental changes as one part of a broader set of interacting factors that transform regional pathogenic spillover events into global pandemics. Deforestation and human land-use change, for example, result in formerly wildlife-restricted pathogens and vectors overlapping with human settlements, a scenario exacerbated by the high density of modern [human communities](#) and the livestock that accompany them.

Concurrently, intensive industrial livestock farming can foster pathogen amplification, reassortment, and evolution, while live animal markets create high-risk interfaces for interspecies transmission. One of the best examples of this is the [H5N1 avian influenza virus](#) (clade 2.3.4.4b), which has spread across bird and mammal populations and has remained infectious in raw dairy products.

When examining the impacts of a potential foodborne pandemic on the global economy and food security, the review argued that the economic fallout of such a pandemic would be targeted, persistent, trust-driven, and arguably more asymmetric than that of [COVID-19](#).

While COVID-19 caused a sharp 12.2% contraction in global goods trade in the second quarter of 2020, food trade remained relatively protected. Conversely, a foodborne pandemic could rapidly erode consumer and regulatory trust, triggering import bans, [precautionary restrictions](#), and sharp demand shocks.

These outcomes were based on severe baseline metrics from historical localized outbreaks, such as the 2008 US [Salmonella outbreak](#), which was erroneously linked to contaminated tomatoes and estimated to have cost the country's tomato industry more than \$100 million.

The 2011 European [E. coli outbreak](#) was documented to result in even greater losses. To mitigate the pathogen's dispersal, export bans, trade restrictions, and retail pullbacks followed, resulting in a peak loss of €417 million per week for the region's producers.

Conclusion

The review concludes that ensuring food safety is a critical foundation for global food security and emphasizes that unless international policy shifts from viewing food safety as a secondary issue to a core pillar of [health infrastructure](#), our food supply will remain an Achilles' heel during the next pandemic crisis. However, the authors also emphasize that food safety is necessary but not sufficient for food security, which also depends on access, availability, affordability, infrastructure, and broader socio-economic conditions.

The authors recommend five measures aimed at mitigating these challenges: 1. Integrated food safety and pandemic planning, 2. Multisectoral surveillance and [early warning](#), 3. Stronger laboratory testing capacity, 4. The formation of rapid-response workforces and regulatory teams, and 5. Modernized regulatory frameworks and policies.

Source:

<https://www.news-medical.net/news/20260702/Foodborne-threats-demand-stronger-pandemic-planning-review-says.aspx>