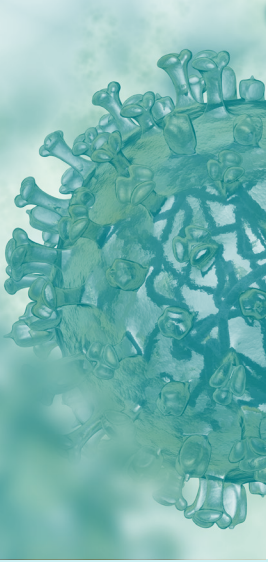


Background

International health institutions are emphasizing an urgency to prioritize prevention and response to pandemics.

Pandemic risk is characterized as an “**existential threat to humanity**” and is being used to justify proposed amendments to the International Health Regulations and a new legally binding Pandemic Agreement. This agenda is supported by unprecedented annual financial requests for **over \$10 billion** in new Overseas Development Assistance and **over \$26 billion** in LMICs investment, with over \$10 billion additional for ‘One Health’ interventions.

The World Health Assembly will vote on the WHO instruments in May–June 2024.



Problem

The urgency and unprecedented scope of this agenda depends on interpretations of evidence claimed to demonstrate increasing pandemic frequency and burden. If these interpretations are poor, or the evidence flawed, then investment may cause net harm, degrading competing health, social and economic priorities.



Method

We analyzed the data and evidentiary material cited within 8 key policy documents used to support these assumptions, including from the **G20 (n=3)**, **World Bank (n=2)** and **WHO (n=3)**. Our analysis included key **secondary citations (n=3)** and academic sources referenced in the policy documents to support these claims. Our analysis focused on reported mortality and outbreak frequency to determine trends in risk and demonstrated harm.

Result

Our analysis found that the data and evidence is poorly supportive of current pandemic risk assumptions.

In contrast, the data suggests that an increase in recorded natural outbreaks could be largely explained by technological advancements in diagnostic testing over the past 60 years, while current surveillance, response mechanisms and other public health interventions have **successfully reduced burden in the past 10 to 20 years**.





Analysis

The G20 report and High-Level Independent Panel (HLIP)

In 2022 the G20 convened the HLIP to review pandemic risk and the budget required to address it. The HLIP's report relies on two main sources for its claims of exponential risks of outbreaks:

An analysis by Metabiota, a former private US-based corporation, and an uncited table of outbreaks from the year 2000 to 2020. Both fail to support HLIP claims.

The Metabiota analysis is claimed by the HLIP to demonstrate an exponential increase in outbreak frequency **from 1960 to 2020**. Yet, the non-influenza increase seen over the past six decades takes no account of the invention and rising use of the core technologies used to detect and report these pathogens, including PCR, antigen tests and digital communications. Most could not be detected in 1960. If Ebola outbreaks are excluded, Metabiota's data shows **a decline in mortality from non-influenza outbreaks over the past 20 years**. The parallel Metabiota claim of influenza outbreaks increasing from near 1 per year in 1995 to 10 per year in 2020 **does not correlate with any known influenza trajectory, and its methodological basis is unclear**.

The other evidence on which the G20 HLIP base their findings is **a list of outbreaks from 2000 to 2020**. Table 1 lists those 13 events, based on WHO and other sources. It is dominated by COVID-19, and the 2009 H1N1 influenza (Swine Flu) outbreak. If COVID-19 and Swine Flu are excluded, the combined burden of all outbreaks listed is **less than 26,000 deaths over 20 years**, with only Ebola Virus and cholera resulting in over 1000 deaths. Swine Flu killed less people than seasonal influenza normally does, and we already have well-established surveillance mechanisms for influenza. In this context, Covid-19 appears as an outlier rather than reflecting a trend.

Table 1: Events considered by G20 to be major outbreaks 2000 to 2020

YEAR	OUTBREAK	MORTALITY
2019	SARS-CoV-2	...
2018	Lassa	114
2017	Zika	362
2017	Ebola	3
2014	Chikungunya	0
2014	Ebola	11,325
2012	MERS	858
2010	Cholera	9,792
2009	H1N1 Influenza	163,000
2004	H1N1 Influenza	32
2003	SARS-CoV-1	774
2001	Enterovirus 71	26
2001	Nipah	54



The World Bank

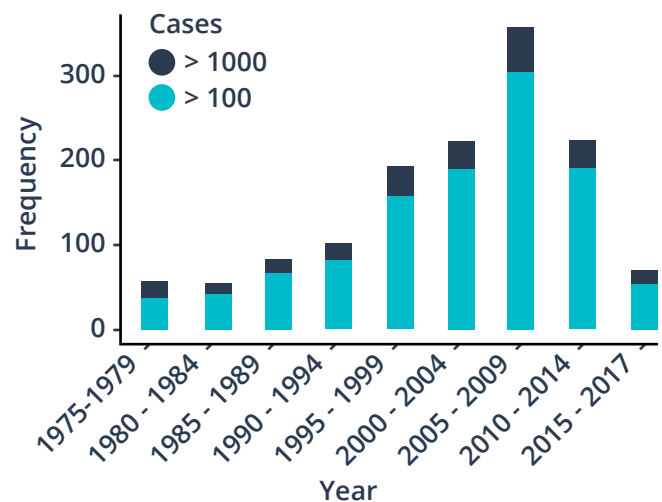
The World Bank 2022 report, *Putting Pandemics Behind Us*, seeks a further **\$10.3 to \$11.5 billion** annually to support ‘One Health’ initiatives to reduce pandemics by reducing zoonotic spillovers. While claiming an exponential increase in risk of disease emergence, the data used actually shows a reduction over the past decade.



Further papers cited by the World Bank show similar recent reductions in outbreak frequency, such as Stephens et al. (2021), (Figure 1), indicating that current mechanisms are actually successful in managing and reducing risk.

www.royalsocietypublishing.org/doi/10.1098/rstb.2020.0535

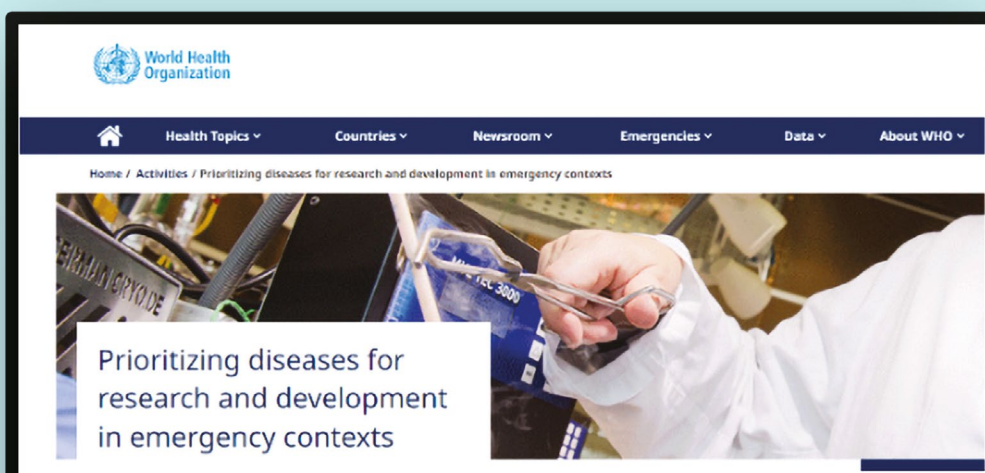
Figure 1: The GIDEON database, basis of the World Bank claims on increasing outbreaks, shows a rise consistent with improving detection from 1975, followed by a reduction in significant outbreaks over the past decade. (Source: Stephens et al. 2021)



The World Bank report further cites a study by Marani et al (2021) to support a claim that large outbreaks “could increase up to threefold in the coming decades”. Marani et al. assessed the frequency of outbreaks over the past 400 years to predict future frequency. They conclude, based on the most recent outbreak data, that a ‘Spanish Flu’-like event may recur every 292 or 877 years, while a COVID-19-like event every 129 years. **This contradicts the World Bank’s main contention of urgency due to accelerating risk, instead indicating that such events, if of natural origin, are relatively rare outliers and unlikely to recur within a short period.**

WHO Priority Disease List and Managing Epidemics

WHO identifies **9 priority diseases for research and development** in an emergency context. This includes **COVID-19** and a hypothetical outbreak; ‘**Disease-X**’. Of the other 7 diseases, only **Ebola virus** has caused an outbreak of over **10,000 deaths** in recorded history. Excluding Lassa fever, which is an endemic West African disease, none have caused over 1000 cumulative recorded global deaths.



Claims of over 3.3. million outbreak deaths per year

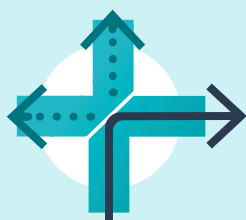
Global institutions have been quoting evidence of an annual outbreak burden of over 3 million deaths per year. These claims are frequently based on analysis in a widely cited study by Bernstein et al (2022), which claims that a global pandemic cost of \$20 trillion per year could be alleviated by 50% with an expenditure of \$10 billion, saving 1.6 million lives with a financial return of 20:1. In fact, the range of costs estimated in the study was **\$350 billion to \$21 trillion**. The authors do not state why \$20 trillion was chosen as representative.

The Bernstein et al. study estimates are driven primarily through inclusion of the pre-antibiotic 1918-19 influenza (Spanish Flu) outbreak in which most deaths are considered to have occurred from secondary bacterial infection. The second driver is HIV/AIDS. Both influenza and HIV/AIDS already have strong global surveillance and response mechanisms in place. The past 50 years of outbreak data considered by the Bernstein study, with HIV/AIDS and COVID-19 excluded, shows **less than 15,000 deaths per year**, globally, from zoonotic outbreaks (**rather than 3.3 million**).

Implications

Outbreaks do occur and it is prudent to have an appropriate and proportionate policy response.

Other diseases such as tuberculosis and malaria continue to dominate infectious disease burdens annually. Both disease burdens are worsening at present. Globally, cancer and cardiovascular diseases have still higher mortality.



A reduction in funding to address these diseases, through diversion of resources to outbreak events, would therefore have major negative health impacts.

The data on which WHO, the World Bank and G20 base their claims regarding pandemic risk indicate that diverting investment to this risk is of lesser urgency than claimed, and risk may be decreasing. This suggests that new investment will need to be carefully weighed against investment in diseases of greater burden, particularly in low-resourced settings.

This raises concern that escalated urgency based on weak evidence could undermine both pandemic preparedness and global health policy coherence.

Recommendations

1. There is a clear need to commission better evidence to accurately determine the scale and urgency of pandemic risk.
2. An appropriate determination of pandemic risk must account for recent advancements in diagnostic capacity, information sharing, and improving disease control mechanisms.
3. Understanding relative disease burden is crucial for identifying the cost-benefit of pandemic investment and how to best select interventions and promote overall public health outcomes.
4. Given the poor evidence underlying risk assessment, it is prudent not to rush into new pandemic initiatives such as the proposed WHO pandemic instruments until underlying assumptions receive proper assessment based on robust evidence, recognized need, and overall benefit.
5. WHO Member States should support proportional pandemic preparedness efforts based on substantiated evidence, careful deliberation, and rational reflection.

The full REPPARE research report is available on our webpage [here](#).

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