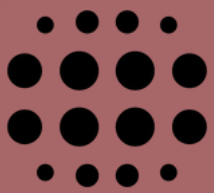
# Closing the Deal?

## An Examination of the 2025 Report of the G20 High Level Independent Panel on Pandemic Preparedness and Response

A report by the Re-Evaluating the Pandemic Preparedness And REsponse agenda (REPPARE) research group at the University of Leeds.

January 2026



REPPARE

UNIVERSITY OF LEEDS

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The REPPARE research group is comprised of Professor Garrett Wallace Brown, Dr David Bell, Dr Blagovesta Tacheva, and Mr Jean von Agris (University of Leeds).

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# Glossary

| | |
|---|---|
| AMC | Advance Market Commitment (AMC) |
| CGD | Center for Global Development |
| CDC | Centres for Disease Control and Prevention |
| CEPI | Coalition for Epidemic Preparedness Innovations |
| G20 | Group of Twenty (governments) |
| GPMB | Global Pandemic Monitoring Board (GPMB) |
| HIC | High income country |
| HLIP | High-Level Independent Panel (of the G20) |
| IFFIm | International Finance Facility for Immunisation |
| IHME | Institute for Health Metrics and Evaluation |
| IHRs | International Health Regulations |
| IHRWG | International Health Regulations Working Group |
| LMIC | Low- and middle-income country |
| IMF | International Monetary Fund |
| MCM | Medical Countermeasures |
| MBDs | Multilateral Development Banks |
| MERS | Middle East Respiratory Syndrome |
| ODA | Official Development Assistance |
| PABS | Pathogen Access and Benefit System |
| PDBs | Public Development Banks |
| PPE | Personal Protective Equipment |

| | |
|---|---|
| PPR | Pandemic Preparedness and Response (often interchanged with PPPR) |
| PPPR | Pandemic Prevention, Preparedness and Response (often interchanged with PPR) |
| REPPARE | Re-Evaluating Pandemic Preparedness And Response (Project of the University of Leeds, UK) |
| SARS | Disease caused by Severe Acute Respiratory Virus -1 |
| VSL | Value of a Statistical Life |
| WEF | World Economic Forum |
| WHO | World Health Organization |

# 1. Background

The High Level Independent Panel (HLIP) of the Group of Twenty (G20) nations was initially convened in 2021 to produce recommendations on financing pandemic prevention, preparedness and response (PPPR).[1] Ahead of the 2022 G20 meeting in Indonesia, it published its main report, titled 'A Global Deal for our Pandemic Age',[2] which estimated an additional annual public funding need of at least US$34 billion for PPPR as a global public good. Through enhancing pathogen surveillance, building resilient health systems, and expanding supply capacity for medical countermeasures (MCM), the G20 HLIP promised a return on investment for government spending of 300 to one. The World Health Organization (WHO) and World Bank prepared their own costing estimate for the same G20 summit, arriving at a similar estimate of a funding gap for PPPR of at least US$31.1 billion annually.[3] This included approximately US$10.5 billion in new official development assistance (ODA), whilst the remainder was to be covered by the budgets of low- and middle-income countries (LMICs) at a cost of US$26.4 billion a year. The G20 leaders endorsed these estimates in their declaration.[4]

Yet, these investments would constitute an unprecedentedly expensive program for international public health. For comparison, annual funding for malaria is estimated to be US$3.9 billion.[5] As shown in two 2024 REPPARE reports, the high return on investment for PPPR claimed by the G20, WHO and World Bank rests on inflated estimates regarding both the risk of pandemics and their economic costs, as well as on highly optimistic assumptions regarding the effectiveness of PPPR efforts.[6]

Since HLIP's first report, the PPPR landscape has changed considerably. A plethora of new PPPR initiatives has been founded by WHO and partners, mainly focusing on surveillance and vaccine development. WHO's new Pandemic Hub collects 'epidemic intelligence'.[7] The '100 Days Mission' is an initiative within the Coalition for Epidemic Preparedness Innovations (CEPI) public-private-partnership promoting a vision for developing and disseminating vaccines, therapeutics and diagnostics within a 100 days after a disease outbreak is detected.[8] The new World Bank-administered Pandemic Fund provides funding to strengthen disease surveillance, laboratory systems and human resources to conduct these two activities in

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1 https://www.mef.gov.it/en/ufficio-stampa/comunicati/2021/The-G20-establishes-a-High-Level-Independent-Panel-on-financing-the-Global-Commons-for-Pandemic-Preparedness-and-Response/

2 https://www.g20.utoronto.ca/2021/G20-HLIP-Report.pdf

3 https://thedocs.worldbank.org/en/doc/5760109c4db174ff90a8dfa7d025644a-0290032022/original/G20-Gaps-in-PPR-Financing-Mechanisms-WHO-and-WB-pdf.pdf

4 https://www.consilium.europa.eu/media/60201/2022-11-16-g20-declaration-data.pdf

5 https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2025

6 https://essl.leeds.ac.uk/download/downloads/id/958/the-cost-of-pandemic-preparedness-an-examination-of-costings-and-the-financial-requests-in-support-of-the-pandemic-prevention-preparedness-and-response-agenda.pdf

7 https://pandemichub.who.int/

8 https://cepi.net/cepi-20-and-100-days-mission

LMICs. Although it has already awarded US$885 million in grants, this only amounts to a fraction of the funding needs identified by the HLIP.[9]

After years of negotiations, the World Health Assembly voted to amend the International Health Regulations (IHR) in 2024,[10] and passed the Pandemic Agreement in 2025.[11] The amended IHR introduced a new level of global alert – a 'pandemic emergency'[12] – that can be declared at the discretion of the WHO Director-General (DG), but has no legal effects beyond a Public Health Emergency of International Concern (PHEIC), which was last declared in response to Mpox in 2024. Earlier proposals to make the DG's recommendations during PHEICs binding for WHO Member States did not make it into the final version of the amended IHR.

At the core of the Pandemic Agreement is the Pathogen Access and Benefit System (PABS), which foresees the transfer of any potentially pandemic pathogens to a WHO-coordinated laboratory network to support the quick production of MCMs, especially vaccines. In exchange, vaccine manufacturers commit to selling a share of their production at discounted prices to LMICs. However, the details of this mechanism are still being negotiated, and thus, the Agreement is not yet finalised for signature.

Amid these protracted negotiation processes, the WHO has lost its largest funder after the United States has now withdrawn from the organization.[13] Argentina gave notice of WHO withdrawal soon after.[14] Both administrations cited mishandling of the Covid-19 pandemic as one reason for their decision. At the same time, a general reduction in funding for ODA by large donors such as the United Kingdom has derailed many anticipated outcomes of the 2022 G20 meeting.[15]

In early 2025, the South African presidency of the G20 requested the HLIP be reconvened to assess progress and provide further recommendations to the November 2025 G20 meeting in South Africa. This was partly in response to the failure to mobilize the level of funding for PPPR measures supported by the previous G20 meeting in Indonesia. The new report was released in November 2025, shortly before the G20 summit.[16] The HLIP reiterate their concern of a growing risk of pandemics and provide a series of recommendations to address what they consider insufficient funding and prioritization.

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[9] https://www.thepandemicfund.org/sites/default/files/2024-12/240522_Strategic%20Plan%20visual%20executive%20summary.pdf
[10] https://apps.who.int/gb/bd/pdf_files/IHR_2014-2022-2024-en.pdf
[11] https://apps.who.int/gb/ebwha/pdf_files/WHA78/A78_R1-en.pdf
[12] https://www.who.int/news/item/19-09-2025-amended-international-health-regulations-enter-into-force
[13] https://www.whitehouse.gov/presidential-actions/2025/01/withdrawing-the-united-states-from-the-worldhealth-organization/
[14] https://www.argentina.gob.ar/noticias/comunicado-oficial-numero-76
[15] https://www.oecd.org/en/publications/2025/06/cuts-in-official-development-assistance_e161f0c5/full-report.html
[16] https://nam.edu/wp-content/uploads/2025/12/Closing-the-Deal_final_compressed_final.pdf

In its recent 2025 report, the rationale for the HLIP's investment case remains the same as in 2022. It fundamentally rests on three assumptions – most importantly, that "pandemic risks continue to rise" (p. 9). Second, to estimate economic impact of future pandemics, the authors draw on evidence from the Covid-19 pandemic. They thereby implicitly assume that the economic costs of society-wide lockdowns and associated economic stimulus efforts to be unavoidable in a pandemic, though these had not previously been employed. Lastly, the report assumes that the proposed investments in PPPR can effectively prevent these costs by averting pandemics altogether or by greatly reducing their impact.

As with the original report, the HLIP concentrates almost exclusively on infectious disease outbreaks, and does not venture into wider public health or economic issues that will flow from the report's recommendations due to diversion of resources from other national and international priorities. The HLIP is not, therefore, attempting to provide a public health appraisal of the costs of PPPR in the context of wider public health or economic priorities essential for a country's decision-making, but merely provides an appraisal of issues directly related to potential pathogens and their surveillance and mitigation.

In this report, we review the claims of pandemic risk and return on investment on which the HLIP bases its case. We then review the actual recommendations, and the likelihood that they will produce anticipated results.

# 2. Closing the Deal: Financing Our Security Against Pandemic Threats

## Assumption 1: Pandemic Risk is Increasing

In the foreword, the authors note upfront that countries are pulling back ODA. This heightens the need for care in resource allocation, and so the weight of justification required for funding diversions to PPPR. "And yet…", the authors go on to justify the report's later recommendations through claims that:

> *"pandemic risks continue to rise – fuelled by our connected world, zoonotic spillover, humanitarian crises, and the increasing likelihood of both accidental and deliberate threats. Outbreaks emerge ever more frequently…"* (HLIP, p. 9).[17]

A "connected world" indeed allows pathogens to spread more quickly, although new variants of influenza and other respiratory viruses have routinely spread across the world fairly quickly for well over a century. Global integration also ensures that populations maintain a high level of immunity – there are no large populations naïve to major pathogens as was the case at the time of colonization of the Americas, Australia or the Pacific Islands. Global trade and travel also allow for information and countermeasures to spread more quickly. Connectivity thus spreads pathogens faster but also ensure greater resilience. The net effect must be open for debate, but mass die-offs from diseases like measles and smallpox will no longer occur.

As reported in the 2024 REPPARE report *Rational Policy over Panic*, claims of an increase in emerging infections disease outbreaks in general and zoonotic spillover events in particular are questionable.[18] Although more new viruses have been detected in many studies, this increase is associated with the development of, and subsequent expanded use of, the main techniques used to detect new pathogens and distinguish outbreaks from the background of infectious disease – point of care antigen and serology tests, PCR and gene sequencing. In parallel, improved roads and digital communications have improved surveillance and data access, and funding for outbreak detection has increased.[19] Diseases such as MERS, SARS and Nipah Virus, with mortalities only in the hundreds and clinical overlap with other syndromes, would be highly unlikely to have been distinguished as discreet events of known novel origin in the 1960s or earlier, and even less so in low-resource settings where the background of endemic infectious disease is higher.

In the Introduction to the HLIP report, the authors offer their evidence for rising outbreak frequency, under the statement "Meanwhile, major health emergencies and pandemic risks

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[17] https://nam.edu/wp-content/uploads/2025/12/Closing-the-Deal_final_compressed_final.pdf
[18] https://link.springer.com/article/10.1007/s44197-025-00412-y
[19] https://essl.leeds.ac.uk/download/downloads/id/972/rational-policy-over-panic---reppare-report-version-2---july-2024.pdf

are rising" (p. 12). A reference to a 40% increase in catalogued African outbreaks between 2022 and 2024, an extraordinary increase if real, refers to an Africa Centres for Disease Control and Prevention (CDC) document addressing funding gaps that makes the same statement but offers no evidence to back it.[20]

A following statement: "Pandemic risks are accelerating. Epidemics occurring at higher frequency" is based on three references.

The first reference leads to a report by Madhav et al. (2023), developed by Ginkgo Bioworks for the Center for Global Development (CGD), which produced an estimate of 2.5 million average deaths per year from respiratory pandemics.[21] As the report demonstrates, and as is discussed in a REPPARE analysis of 2025,[22] this is almost entirely driven by very large mortality events that have not happened since the development of modern antibiotics, with most of these estimates being driven by former mass mortalities from bacterial outbreaks such as Medieval bubonic plague. The HLIP discounts all improvements in technology, medicine, nutrition and sanitation since these historical outbreaks. From a public health viewpoint, this is extraordinary. If only outbreaks since the introduction of modern antibiotics a century ago had been considered, then the HLIP's argument would look very different.

The second is a reference to Meadows et al. (2023),[23] also produced by the team of Ginkgo Bioworks, which describes a study that formed the basis of Annex E in the 2021 HLIP report and is discussed in a prior REPPARE report.[24] The authors performed a literature search to identify acute outbreaks due to probable zoonotic spillover with associated mortality from 1963 to 2019, excluding influenza, vector-borne pathogens and outbreaks of less than 100 deaths. They then graphed the number to find a line of best fit for incidence over that period. In total, the 72 non-influenza events amounted to just 17,232 deaths over 57 years, with nearly all of these – 15,771, due to Marburg or Ebola viruses (most from the single 2014-5 West African outbreak). A glance at the graphs in the paper immediately raises concerns. The best fit for non-influenza virus outbreak frequency in Figure 2 of Meadows et al. has just one year with more than one outbreak until the late 1990s, rising to 7 in 2007, and later declining. It would be extraordinary if the increase was not significantly related to increased ability to detect and record, which the Meadows paper only addresses by excluding smaller outbreaks of less than 100 deaths. At the time of their earliest data, there was no PCR, gene sequencing, or antigen and serology field testing, and many regions had no significant laboratory capacity at all and poor clinic networks. The second graph in Figure 2 of Meadows et al. illustrates

[20] https://africacdc.org/news-item/africas-plan-to-fill-health-funding-gaps-amidst-declining-coffers/
[21] https://www.cgdev.org/sites/default/files/estimated-future-mortality-pathogens-epidemic-and-pandemic-potential.pdf
[22] https://essl.leeds.ac.uk/download/downloads/id/995/reppare-report-when-models-and-reality-clash---a-review-of-predictions-of-epidemic-and-pandemic-mortality-october-2024.pdf
[23] https://gh.bmj.com/content/bmjgh/8/11/e012026.full.pdf
[24] https://essl.leeds.ac.uk/download/downloads/id/972/rational-policy-over-panic---reppare-report-version-2---july-2024.pdf

mortality from these outbreaks, showing a more dramatic exponential increase. A glance at the graph shows this is driven by just two points, the 2014-5 West Africa Ebola outbreak and an Ebola outbreak in the Democratic Republic of Congo in 2017. If Ebola is removed, there is a decline in outbreak mortality from 2003 (SARS1) onward.[25]

The third citation to support the above claim is Smith et al. (2014).[26] The paper concludes that outbreaks are increasing, but notes that mortality from outbreaks, contrary to Meadow et al.'s conclusions, is decreasing on a per capita basis. Apart from internet use as a proxy for technological development, this paper also makes no allowance for the invention and roll-out of PCR, gene sequencing, and most point of care antigen tests during the study period – the ways in which we distinguish most outbreaks. However, the authors do include the set of maps, mentioned above, that show recorded outbreaks were highest in technologically advanced countries in 1980, but subsequently caught up in Sub-Saharan Africa and Southeast Asia by 2009. This is highly likely to be an artefact of diagnostic availability, as North America would not be expected to be far more outbreak-prone than sub-Saharan Africa in 1980. The HLIP, in using the citation as they do, indicates that they believe it was.

Thus, neither of the citations give solid support to the HLIP's statement of increasing epidemics, while Smith et al. (2014) indicate a reducing risk of mortality. In the same paragraph of the Introduction, the HLIP attributes their poorly supported claim of increasing outbreaks to increased opportunities for zoonotic spillover. This spillover contention is in turn attributed to a citation of Dzau et al. (2025).[27] This recent paper is the report of a meeting aimed at standardizing methods to support pandemic risk. It bases its claim of accelerating pandemic risk on the Meadows et al (2023) paper discussed above[28], which does not demonstrate this on closer analysis.

The reference to 'spillover' as a driver in Dzau et al. (2025) is in turn based on a single citation, Baker et al. (2022), and only mentioned in its introduction. Baker et al. (2022) was published in *Nature Microbiological Reviews*.[29] It incorrectly infers that infectious disease mortality has declined just in the past two decades, and attributes reduction in mortality to vaccination (whereas mass vaccination in developed countries came well after most decline had occurred, with the exception of smallpox).[30] Ten diseases are noted as demonstrating increasing emergence of risk between 2000 and 2020. Of these, only four have over 10,000 deaths; two over 100,000 (Swine flu and Covid-19), with Covid-19 increasingly questioned as an example

[25] Ibid.
[26] https://royalsocietypublishing.org/rsif/article-abstract/11/101/20140950/35255/Global-rise-in-human-infectious-disease?redirectedFrom=fulltext
[27] https://nam.edu/wp-content/uploads/2025/06/Imperative-Global-Pandemic-Risk.pdf
[28] https://gh.bmj.com/content/bmjgh/8/11/e012026.full.pdf
[29] https://www.nature.com/articles/s41579-021-00639-z
[30] https://onlinelibrary.wiley.com/doi/10.1111/ehr.13019

of spillover.[31,32] Cholera, measles and Zika are considered 're-emerging', though long endemic (except for recent Zika expansion), and Ebola as 'emerging'. Spillover risk is said to be increasing based on claims including that humans are moving into previously unoccupied regions (without specifying where) and eating more bushmeat (once a common traditional diet). The HLIP's claim of spillover as driving increasing risk is therefore based on the introduction to a report on another matter, which in turn cites a relatively weak secondary source.

The HLIP then references the Global Pandemic Monitoring Board (GPMB) as defining other drivers of pandemic risk, and that such drivers, including misinformation and farming, are rising.[33] The report of the GPMB, an organization set up jointly by WHO and the World Bank, has been reviewed in a previous REPPARE report.[34] It offers no new evidence and predominantly cites opinion rather than data, acting as an advocacy tool for the WHO's policies on pandemics. It is therefore unclear why it is cited as one of few references to support the HLIP's arguments.

Despite the above, the 2025 HLIP report expands previous claims of rising pandemic risk made in 2022 which, while consistent with similar claims from the World Bank and WHO, have been shown in a previous REPPARE analysis to be poorly supported by the evidence and citations provided by all three organizations.[35]

Recognizing the possibility of a laboratory origin for pandemics, the HLIP now discusses the risk of accidental or deliberate outbreaks from laboratories in addition to natural origins, stating "the very same technologies that advance pandemic preparedness have simultaneously made it easier to misuse biology and cause purposeful harm" (p. 12). This risk of laboratory-derived pathogens is presumably the reason for the Panel suggesting that "in many ways the world is perhaps more vulnerable to biological threats today than it was in 2020…" (p. 12). Nonetheless, major PPPR policy initiatives by WHO and its partners continue to focus on broadscale surveillance to detect naturally occurring viruses rather than enhancing laboratory biosafety.[36]

In the 2024 REPPARE report *Rational Policy over Panic*, we calculated that deaths due to acute epidemics and pandemics over half a century before the Covid-19 pandemic, based on data from Bernstein et al. (2022),[37] averaged about 19,000 a year, scaled to today's world

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[31] https://onlinelibrary.wiley.com/doi/10.1111/risa.14291
[32] https://pmc.ncbi.nlm.nih.gov/articles/PMC9420317/
[33] https://www.gpmb.org/reports/m/item/the-changing-face-of-pandemic-risk-2024-report
[34] https://onlinelibrary.wiley.com/doi/10.1111/1758-5899.70016
[35] https://essl.leeds.ac.uk/download/downloads/id/972/rational-policy-over-panic---reppare-report-version-2---july-2024.pdf
[36] https://essl.leeds.ac.uk/directories0/dir-record/research-projects/1260/re-evaluating-the-pandemic-preparedness-and-response-agenda-reppare
[37] https://www.science.org/doi/10.1126/sciadv.abl4183?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed#

population of 8 billion. This compares with over 600,000 annual malaria deaths,[38] and over 1.2 million due to tuberculosis.[39]

To summarize, pandemics and other infectious disease outbreaks do indeed occur, as the HLIP notes, but in the context of a steady long-term reduction in global infectious disease mortality.[40] The last major acute pandemic generally considered to be of natural origin was the 1918-1919 Spanish Flu pandemic of the pre-antibiotic era, with roughly 50 million deaths thought to have occurred, and with a large share due to secondary bacterial infections.[41] Intermittent substantial influenza outbreaks since then included the pandemics of 1957-8 and 1968-9, which killed just over a million people each, while the H1N1 influenza pandemic of 2009 killed far fewer than the estimated half a million who die from seasonal flu every year.[42,43] SARS (2003) and MERS (2012) killed less than 1000 people each, Ebola outbreaks are geographically confined with the highest outbreak recording less than 12,000 deaths in 2014-5.[44] These numbers are dwarfed by endemic infectious diseases such as tuberculosis (about 1.2 million deaths every year)[45] and malaria (over 600,000 deaths, mostly children).[46]

Covid-19 thus stands out as an outlier, with WHO collating reports of 7.5 million deaths,[47] and the Global Burden of Disease study estimating over 12.5 million deaths based on modelling.[48] At least in higher income countries, Covid-19 deaths were recorded at an average age above that of average life expectancy.[49] By whatever measure used, Covid-19 mortality is dwarfed by the Spanish Flu, even before adjustment to today's global population. Importantly, its source remains controversial.[50]

These considerations underline how crucial the claims of pandemic risk are as a basis of the HLIP's proposals, and predicted return on investment. If these figures are significantly flawed and future burden is likely to remain similar to the numbers above, then the HLIP's investment case appears unfounded.

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[38] https://www.who.int/news-room/fact-sheets/detail/malaria
[39] https://www.who.int/news-room/fact-sheets/detail/tuberculosis
[40] https://onlinelibrary.wiley.com/doi/10.1111/ehr.13019
[41] https://pmc.ncbi.nlm.nih.gov/articles/PMC2599911/
[42] https://linkinghub.elsevier.com/retrieve/pii/S0140673617332932
[43] https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001558
[44] https://www.who.int/emergencies/situations/ebola-outbreak-2014-2016-West-Africa
[45] https://iris.who.int/server/api/core/bitstreams/e97dd6f4-b567-4396-8680-717bac6869a9/content
[46] https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2025
[47] https://data.who.int/dashboards/covid19/deaths
[48] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)00367-2/fulltext
[49] https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/singleyearofageandaverageageofdeathofpeoplewhosedeathwasduetoorinvolvedcovid19
[50] https://www.bbc.co.uk/news/articles/cd9qjjj4zy5o

## Assumption 2: Covid-19 as an Estimate of Pandemic Costs

In making their investment case, the HLIP not only relies on an inflated risk of pandemic occurrence but also makes assumptions about their economic impacts. This requires more scrutiny.

The report points out that: "COVID-19-related cumulative output loss is estimated at about $13.8 trillion through 2024 and global working hours lost equivalent to 255 million full-time jobs in 2020" (p.13). There is no doubt that the world experienced a catastrophic economic downturn in 2020 that disproportionately hit the most vulnerable.[51] However, this can hardly be interpreted as part of natural pandemic risk. Instead, it was primarily the effect of lockdowns – an unprecedented policy. Those not acutely disabled from disease continued working even through the far more devastating Spanish Flu pandemic. While a few countries, like New Zealand, managed to postpone large Covid-19 outbreaks, they were ultimately unable to prevent mass infections.[52] While postponing infections long enough to enable widespread vaccination may have prevented some deaths, immunity from vaccination has been shown to wane quickly.[53] Meanwhile, the Nordic countries, particularly Sweden, had a similar excess mortality with much less drastic restrictions.[54] In many settings, particularly in LMICs, lockdowns turned out to be highly ineffective and caused catastrophic collateral damage, not just on livelihoods but equally on population health.[55] These will have long-term impacts that cannot yet be calculated.

The HLIP report goes on:

> "*Combining estimates of pandemic frequency and intensity with estimates of mortality, economic output, and human capital losses from pandemics of varying severities, experts conservatively estimate global losses from future pandemics to be, on average, over $700 billion each year, with ongoing research indicating that losses may be at least several fold higher*" (p.13).

The citation refers to an article published by the International Monetary Fund (IMF) and written by Glennerster et al. (2023).[56] To arrive at the "conservative" estimate of US$700 billion of annual economic losses due to pandemics, the authors operate with several less than conservative assumptions.

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[51] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8823956/
[52] https://www.tandfonline.com/doi/full/10.1080/09581596.2024.2349894
[53] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00089-7/fulltext
[54] https://onlinelibrary.wiley.com/doi/abs/10.1111/ecaf.12611
[55] https://www.mdpi.com/1660-4601/20/7/5223
[56] https://link.springer.com/article/10.1057/s41308-023-00212-z?

For estimating the frequency of pandemics of different intensity, Glennerster et al. turn to an earlier analysis by Marani et al. (2021)[57] that was analysed in detail in the aforementioned 2024 REPPARE report.[58] Marani et al. model the probability distribution of epidemic intensity based on data on epidemics between the years 1600 and 1945. The cutoff date was chosen because the intensity of later epidemics may have been influenced by vaccines or effective treatments. This is reasonable if the goal of the study is to develop an understanding of naturally occurring epidemic risk in historical populations. However, using this model for policy decisions today is consequently inappropriate, as it implicitly assumes we still live in a world without antibiotics or other advances of the past 80 years. Although Marani et al. estimate a pandemic of the same intensity as Covid-19 to occur once in 129 years, Glennerster et al. derive a frequency of once in 105 years. Interestingly, Marani et al. and Glennerster et al. observe that the rate of epidemics has been at a historical low in the past 20 years, thwarting the claim of an increasing risk.

Glennerster et al.'s estimate of pandemic costs has three components. The largest is losses from mortality, based on an estimate of US$1.3 million for the value of a statistical life (VSL). Although putting a price tag on human life may seem distasteful to some, the VSL is a commonly applied method in cost-benefit analysis. Ultimately, such numbers are derived from experiments where respondents are confronted with hypothetical choices to estimate their willingness to pay to prolong their life. While there are limits to the purely monetary approach of the VSL, it is clear that people regularly and willingly take decisions that may shorten their life. What is problematic about Glennerster et al.'s estimation of pandemic risk is not the use of VSL as such, but the assumption that it is the same for everyone. In high-income countries (HICs) like the UK, the majority of deaths from Covid-19 occurred in people over the age of 80 whose VSL is intuitively far lower than that of a young person.[59] An average 80-year old has a very limited remaining life expectancy, even lower in the face of severe comorbidities that most patients with severe Covid had.[60] Additionally, their economic output is typically negative – they cost society financially rather than contributing.

Short-term economic output losses form the second component of Glennerster et al.'s estimations. They include a table of "the five major pandemics over the previous century for which we could find a credible estimate of economic-output losses." [61]Three of these 'major pandemics' were of either low mortality or localized. The effects of the 2002-03 SARS outbreak and the 2015-17 Zika outbreak were both so limited that Glennerster et al. artificially inflate

[57] https://www.pnas.org/doi/10.1073/pnas.2105482118
[58] https://essl.leeds.ac.uk/download/downloads/id/972/rational-policy-over-panic---reppare-report-version-2---july-2024.pdf
[59] https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/singleyearofageandaverageageofdeathofpeoplewhosedeathwasduetoorinvolvedcovid19
[60] https://pmc.ncbi.nlm.nih.gov/articles/PMC9081912/
[61] https://link.springer.com/article/10.1057/s41308-023-00212-z

their death tolls to 1000 each, to meet the lower bound on the observation threshold in Marani et al.'s model. The Ebola 2013-16 outbreak was geographically restricted and had no substantial effect on global economic output. The only two events with significant mortality entering their calculation are the Spanish Flu 1918-20 and Covid-19 2020-22, estimated by the authors to have caused economic output losses of 6% and 14.4%, respectively. Based on these five data points extending from the pre-antibiotic era to Covid, Glennerster et al. then fit a regression line, arriving at an estimate that a 1% increase in epidemic intensity (i.e. mortality) is associated with a 0.46% increase in economic output loss. The adequacy of this exercise is underlined by the fact that the only two events that had a notable global impact do not follow this relationship.

As discussed above, the reason why the economic damage from Covid-19 was more than twice as large as the Spanish Flu despite Covid-19 being much less lethal, particularly in the economically productive population, lies in the extraordinary policy response. Separating the biological effects of SARS-CoV-2 and the fallout from lockdowns is not an easy task. Such biological events can also trigger the sociopolitical response, and a global 'business as usual' scenario may be regarded as unrealistic. Although several countries weathered Covid-19 without far-reaching restrictions on economic life, they were still affected by supply chain disruptions and the global economic downturn. While economists and epidemiologists may understandably treat lockdown as a fait accompli, public health professionals are aware the response has not been previously used, and its impact does not clearly promote future use.[62] Incorporating its effects into predictions of natural future pandemic risks is highly problematic and contributes to the normalisation of such policies.[63]

The third and final component of Glennerster et al.'s pandemic cost estimation involves learning losses. They assume learning losses to be proportional to economic output losses by the ratio observed during the Covid-19 pandemic. As the risk of SARS-CoV-2 to children was not higher than for other endemic respiratory diseases, the virus did not have to cause any disruption to education. This is also illustrated in the length of school closures during the Covid-19 pandemic ranging from well over a year (e.g., Uganda, Bangladesh, the Philippines) to schools remaining open (e.g., Burundi, Belarus, Tajikistan or lower schools in Sweden).[64]

In summary, Glennerster et al. assume 1) a distribution of epidemic mortality based on pre-antibiotic times; 2) that the young and healthy die with the same probability as the old and frail; and 3) that future pandemics will be met with lockdowns and school closures in the same way that Covid-19 was. Based on these unusual and speculative assumptions, they estimate

[62] https://academic.oup.com/jrsssa/advance-article/doi/10.1093/jrsssa/qnaf092/8180652

[63] https://www.researchgate.net/publication/396987375_WHO's_pandemic_response_recommendations_after_COVID-19_lessons_learned_or_learnings_lost

[64] https://covid19.uis.unesco.org/school-closures-survey/

the expected present value of the future stream of social losses from pandemics to be US$17.8 trillion, equal to US$712 billion per year.

Through these calculations, Glennerster et al. argue for massive upfront investment in vaccine production capacity and supply chains with the goal of vaccinating 70% of the global population against a new virus within six months. The cost-effectiveness of this proposal therefore also rests on assumptions regarding vaccine effectiveness and uptake as will be discussed further in the next section. Nonetheless, Glennerster et al. is the only reference explicitly relied on by the HLIP for the social costs of future pandemics.

## Assumption 3: The Effectiveness of PPPR Gap Analysis

Based on their claim of increasing pandemic risk costing humanity over US$700 billion every year, the HLIP proposes that five major funding gaps be addressed. We present and respond to each in turn:

1. Domestic resource mobilization to increase non-ODA funding devoted to PPPR, including security and private funding. While the underlying calculations are not clear, the HLIP 2025 authors suggest (p. 22) these aims should be supported by US$15 billion annually to fight regional and global threats, an additional 0.1 to 0.2% of Gross Domestic Product (GDP) of each country for in-country PPPR spending, and a further 0.5% to 1.0% of security and defence budgets from G20 and other HICs toward biosecurity, biosurveillance and the 100 Days Mission.

   This raises several concerns. First, the request for countries to spend 0.1 to 0.2% of GDP exclusively on PPPR assumes that these countries face the same risk, have similarly vulnerable populations, and have similar health system resilience. As demonstrated during Covid-19, context, demographics and chosen policy response matter greatly, meaning a 'one size fits all' policy will produce sub-optimal or harmful results. Second, the obvious aim for these financial requests is to stimulate 'in-country' spending by LMICs (the World Bank and WHO estimated the LMIC need to be US$26.4 billion a year).[65] Committing these funds to PPPR will divert resources away from other known and persistent health needs (not to mention other development needs). In fact, a recent ODA analysis by the OECD demonstrates that considerable funding shifts to PPPR away from basic health assistance has already occurred (see discussion below).[66] This constitutes an unprecedented opportunity cost, which as outlined above, is based on weak, generalized and inflated risk and return on investment assessments. Third, the HLIP's proposal to intensify the relationship between defence budgets, the military, and public health will only accelerate what is already a concerning biomedical

[65] https://thedocs.worldbank.org/en/doc/5760109c4db174ff90a8dfa7d025644a-0290032022/original/G20-Gaps-in-PPR-Financing-Mechanisms-WHO-and-WB-pdf.pdf
[66] https://www.oecd.org/en/publications/smart-spending-to-combat-global-health-threats_166d7c57-en.html

securitization in health. As reported by REPPARE elsewhere,[67] global health policy has increasingly been characterized by a form of biomedical reductionism that has come at the cost of traditional public health interventions. As is often noted, securitization often drives limited and siloed programming,[68] an overwhelming focus on pharmaceutical interventions,[69] and disproportionate prioritization of scarce resources to low burden diseases.[70]

2. Support to provide increased medical countermeasure (MCM) access for vaccines and medicines, and surge manufacturing capacity for vaccines, using innovative financing mechanisms.

   As argued by REPPARE elsewhere, innovative financing is not a panacea to fill PPPR funding gaps.[71] Funding mobilised through prominent innovative financing mechanisms in the past is underwhelming, with a view to making a significant contribution to the estimated PPPR financing needs of US$10.5 billion a year, as outlined in the WHO / World Bank report.[72] The funding generated by major PPPR financing mechanisms reviewed by REPPARE amounts to US$28 billion in total, including the Pandemic Emergency Facility (US$500 million), the Gavi Ebola Advance Purchase Commitment (US$5.8 billion), the International Finance Facility for Immunisation (US$9.7 billion), and the Gavi COVAX Advance Market Commitment (US$12 billion).[73] While in theory the total amount raised by these four mechanisms would cover just short of three years of PPPR ODA financing proposed by the HLIP, this is unlikely to happen at the speed required to make a significant contribution to bridging their financing gap year on year. To put this in perspective, the International Finance Facility for Immunisation (IFFIm) managed to raise to raise US$9.7 billion over roughly 17 years (from its launch in 2006 to March 2023),[74] while the Gavi COVAX Advance Market Commitment (AMC) raised only US$3.43 billion per year from June 2020 to its closure in December 2023 (a total of US$12 billion over 3.5 years).[75] These figures suggest that innovative financing mechanisms show limited promise to raise funds at the scale proposed. Innovative financing represents a policy condition of hope before reality, but while still consuming undue policy bandwidth. Yet, more

[67] https://essl.leeds.ac.uk/directories0/dir-record/research-projects/1260/re-evaluating-the-pandemic-preparedness-and-response-agenda-reppare
[68] https://pmc.ncbi.nlm.nih.gov/articles/PMC9107590/
[69] https://link.springer.com/article/10.1186/s12992-023-00915-y
[70] https://muse.jhu.edu/book/59674
[71] https://link.springer.com/content/pdf/10.1186/s12992-025-01103-w.pdf
[72] https://thedocs.worldbank.org/en/doc/5760109c4db174ff90a8dfa7d025644a-0290032022/original/G20-Gaps-in-PPR-Financing-Mechanisms-WHO-and-WB-pdf.pdf
[73] Ibid.
[74] https://iffim.org/donors
[75] https://www.gavi.org/sites/default/files/programmes-impact/our-impact/apr/Gavi-Progress-Report-2022.pdf

importantly, innovative financing for PPPR has so far delivered mixed results and comes with considerable downsides, as detailed in the next section.

Moreover, the HLIP's proposed approach is in essence a subsidy for pharmaceutical companies to build extra capacity (capital) while again channelling scarce resources into a single response measure (vaccines) for an unknown disease of unknown risk. A key implication of this approach is that 'uncertainty' becomes equated as known 'risk', absorbing scarce resources and political bandwidth.

3. Incentives and emergency access to MCMs through rapidly available loans from the World Bank and other multilateral development banks (MDBs) and public development banks (PDBs).

   The HLIP recommends these be available for pre-purchase agreements before regulatory approval is completed, allowing LMICs to increase debt rapidly to finance access to unregistered products. By doing so, the HLIP is effectively providing a captured market for pharmaceutical 'products' based on increasing sovereign debt to be expanded further by pandemic-related inflation. The damage is twofold. First, according to the Institute for Health Metrics and Evaluation (IHME), debt servicing for Covid-19 loans alone has reduced LMIC health budgets by 8.9% annually, draining scarce resources from already challenged health systems.[76] Second, there is excellent evidence suggesting that sovereign debt ratios are dangerously high in many LMICs, which threaten financial collapse.[77] Furthermore, a study by the G20 estimated that freezing debt servicing in 76 of the poorest countries during Covid-19 (between 2020 and 2021) would have freed up US$300 billion for response efforts.[78] If 'rapid' response is the goal, as well as responses that are tailored to local needs, then it is surprising that HLIP fails to address the use of debt suspension, debt reduction, and/or forgiveness as potential mechanisms when confronting such an 'existential threat'.

4. Increased investments in tests, treatments, and personal protective equipment (PPE), which the HLIP observes to be under-prioritised compared to vaccines. Like MCMs, this capacity to manufacture and stockpile is to be supported in all Regions (of WHO).

   Although HLIP should be commended for providing space for non-vaccine-based strategies, tests and treatments still favour biomedical solutions, which fail to address alternative approaches that also include building health system resilience and strengthening, population resilience via better primary care, and addressing

[76] https://www.healthdata.org/research-analysis/library/financing-global-health-2023-future-health-financing-post-pandemic-era
[77] https://darajapress.com/wp-content/uploads/2024/12/GHW_CH_D3.pdf
[78] https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/2020-04/Debt%20media%20briefing%20ahead%20of%20G20.pdf

corresponding upstream social determinants. Moreover, a survey of the emerging global PPPR policy landscape reveals that prioritization is exclusively on surveillance, diagnostics (Pandemic Fund), identification (WHO Pandemic Hub) and the production of vaccine countermeasures (100 Days Mission). Despite some lip-service to the importance of incorporating other strategies, this has not played out in practice.[79]

5. Increased funding for the Pandemic Fund, which is administered by the World Bank to fund country preparedness initiatives. The HLIP argues that the Pandemic Fund should increase its focus on assisting countries to build PPPR into national budgets (presumably via grant conditionalities).

   This raises several concerns. First, the Pandemic Fund only finances three PPPR capacities: surveillance, dialogistic and human resources for these two activities. This again promotes a biomedicalized and securitized strategy that ignores other strategies related to promoting healthier systems and populations. Second, the Pandemic Fund requires significant additionality as a condition of its grants, redirecting scarce resources to a narrow set of capacities that may not be well aligned with local priorities and needs. Third, the use of loan conditionalities to mobilize PPPR financing from LMICs risks the perpetuation of neo-colonial and imperialistic modalities in global health financing.[80] Fourth, the spirit of this recommendation is counter-productive to meaningful national ownership, particularly as articulated in the recent 2025 Accra Reset.[81]

As a result, there remain serious concerns with the HLIP PPPR gap analysis. Yet, to address the identified issues, the HLIP provides five equally problematic recommendations, introduced as “levers to take pandemic threats off the table” (p. 19). We now examine each recommendation below in turn.

[79] https://essl.leeds.ac.uk/directories0/dir-record/research-projects/1260/re-evaluating-the-pandemic-preparedness-and-response-agenda-reppare
[80] https://darajapress.com/wp-content/uploads/2024/12/GHW_CH_D3.pdf
[81] https://www.devex.com/news/the-accra-reset-time-s-up-for-the-legacy-aid-system-110845

## Recommendation One

The HLIP explicitly recommends that defence budgets be tapped for the 100 Days Mission (rapid vaccine development and manufacturing in all Regions). This presumably assumes that, in the event of an accidental or intentional release of a pathogen, the country would accept offshore manufacturing and have supported preparations for this eventuality. It is unusual for public health panels to give defence-related advice, and it seems unlikely that defence budgets would be invested offshore with potential geopolitical rivals.

Recommendation One also envisions 'radically' scaling up private finance for pandemic preparedness, incentivized through public sector financing by way of advance purchase commitments and 'blended financing' public-private mechanisms, particularly the use of innovative finance. As noted above, a recent review of the use of innovative financing for PPPR found that such mechanisms are not well-placed to fill funding gaps. They have delivered mixed results and generated a series of negative extraneities.[82] For example, the IFFIm, launched by Gavi in 2006, has since gained prominence for fast-tracking funding (through 'frontloading') for the development of vaccines for Gavi's child vaccination programs, Covid-19 vaccines, with its support for the COVAX Advance Market Commitment (frontloading approximately US$1 billion), and a new mandate to back CEPI in developing new vaccines.[83] The IFFIm's frontloading approach has been lauded by the World Economic Forum (WEF) as a PPPR financing solution that would perform well in the current economic climate, as it "could improve global pandemic preparedness now, while allowing donor governments to spread the cost" in the future.[84] However, an in-depth analysis of the IFFIm reveals that the mechanism's claim to effectiveness and 'value for money' are ultimately undermined by a lack of transparency around "who benefits and by how much," which conceals excessive private sector profiteering at the expense of donors and beneficiaries.[85] Similarly to the IFFIm, the COVAX AMC failed to deliver on its promise to greatly expand access to Covid-19 vaccines to LMICs.[86]

In addition, there are known disincentives for a country to report pathogens and consequently lose trade or tourist income. To counter this phenomenon, the HLIP proposes this could be addressed by MDBs, PDBs and philanthropists, by contributing to a mechanism (undefined) which will offset such losses. However, such an offsetting measure would seem extremely challenging to develop and administer, given the difficulty in costing such impacts and given the reluctance of these institutions to provide open-ended funds.

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[82] https://link.springer.com/content/pdf/10.1186/s12992-025-01103-w.pdf
[83] https://iffim.org/; https://iffim.org/impact/how-has-iffim-made-difference-gavi
[84] https://www.weforum.org/agenda/2022/04/pandemic-preparedness-innovative-finance/
[85] https://www.tandfonline.com/doi/full/10.1080/00130095.2021.2020090
[86] https://www.somo.nl/wp-content/uploads/2023/02/SOMO-Pharmas-Pandemic-Profits.pdf

This reality should seriously temper this HLIP recommendation, especially in the aftermath of the Covid-19 pandemic, whose massive social cost is used to justify the responses laid out by HLIP. Increased domestic resource mobilisation for addressing low-likelihood future events may come at real opportunity costs to population health today, and thus further weaken preparedness for any future health emergencies. Long-standing commitments to achieving universal access to healthcare have still not materialised in many countries. After decades of increase, coverage of essential health services has stagnated at around two thirds of the world population for the past decade.[87] Long-term declines in the incidence of tuberculosis and malaria have recently reversed. [88,89] Irrespective of whether the return on investment is positive for increasing vaccine production capacity or disease surveillance networks, any dollar spent on PPPR is one not spent on primary healthcare, clean water and sanitation and basic healthcare access – determinants of health outcomes in pandemic and 'interpandemic' times alike.

The 2025 HLIP report also fails to address serious errors in their PPPR cost assumptions and return on investments from their 2021 report.[90] For example, the new HLIP report continues to assume that the total economic cost of Covid-19 (US$13.8 trillion) was a direct and necessary cost associated with responding to SARs-CoV-2. This continues two fallacies from the first report. First, it perpetuates the assumption that pandemic preparedness can mitigate nearly the full economic cost associated with a pandemic. Second, the report assumes that the cost 'damage' associated with Covid-19 was a direct result of SARS-CoV-2 and should not be attributable to the negative effects resulting from certain policies employed in the public health response. As noted earlier, this inflates the 'true' cost of the pandemic without determining whether all responses were necessary or appropriate. As one example, the UK government implemented a "dine out to help out" scheme in August 2020 to encourage people to return to restaurants and support the hospitality industry, covering 50% of each bill. The logic was that lockdowns had severely harmed the hospitality industry and thus it required stimulus to recover (US$1.1 billion was spent on the scheme). Yet, there has been no attempt to establish whether the intervention itself was effective.

## Recommendation Two

The HLIP propose that MCM readiness be built on a regional basis, and maintained with public funds, including support for manufacturing test exercises for product scaleups (to be unused) to ensure facilities are working ('live fire exercises'). A new permanent secretariat or advisory council is proposed to guide this process and assign surge financing in the event of need, in

[87] https://ourworldindata.org/grapher/healthcare-access-quality-un?tab=line&country=~OWID_WRL
[88] https://data.worldbank.org/indicator/SH.TBS.INCD
[89] https://data.who.int/indicators/i/B868307/442CEA8
[90] https://essl.leeds.ac.uk/downloads/download/234/the-cost-of-pandemic-preparedness-an-examination-of-costings-and-the-financial-requests-in-support-of-the-pandemic-prevention-preparedness-and-response-agenda

addition to the various oversight bodies already in place within the emerging post-Covid PPPR policy landscape.

The recommendation is justified on page 48 by the assertion that Covid-19 outcomes were worse due to delays in the availability and equity of access to MCMs (vaccines), and that the lack of vaccines caused increased disease spread, viral variant evolution and overall health outcomes. No evidence is provided to back these claims, and clearly, they are controversial with the existence of creditable counterfactuals. In broad terms, the initial trials of mRNA vaccines of Moderna and Pfizer failed to show a reduction in all-cause mortality, with the Pfizer/BioNTech vaccine group having a non-significant increase in mortality compared to controls.[91,92] Secondly, total excess mortality increased in years 2 and 3 of the pandemic, despite increasing vaccine availability.[93] Thirdly, several studies demonstrate (1) low to negative efficacy regarding transmission after several months,[94,95] and (2) an increasing Covid-19 episode associated with an increasing number of boosters received.[96] This puts in question the reduction in overall morbidity and mortality due to vaccination, whilst variant development could theoretically be increased due to continued transmission with selection for immunologically novel (non-vaccine strain) variants. At a minimum, the HLIPs claims are poorly supported.

To date, modelling studies have suggested very high reductions in mortality through vaccination, but these are not supported in widescale real world data. While REPPARE is not assessing vaccine effectiveness, we note that If vaccines are not highly and consistently efficacious in all-cause morbidity and mortality, and in transmission reduction, then the argument for extensive investment in these MCMs evaporates. Certainly, major reduction in transmission reduction by systemic vaccines is immunologically unlikely.[97]

Lastly, known contextual moderators in PPPR response have been seemingly ignored by HLIP. For example, an overreliance on vaccine strategies is undermined in densely-inhabited low-income settings, making it unlikely that any policy can effectively prevent close contact and transmission as HLIP assumes, even for the envisaged 100 days.[98,99] As current trends in urbanization continue, alternative strategies in public health gain saliency.

Lastly, by focusing on pharmaceutical R&D, manufacturing, and pooled procurement via a MCM surge financing facility, the HLIP is effectively subsidizing the pharmaceutical industry

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[91] https://www.nejm.org/doi/suppl/10.1056/NEJMoa2113017/suppl_file/nejmoa2113017_appendix.pdf
[92] https://www.nejm.org/doi/suppl/10.1056/NEJMoa2110345/suppl_file/nejmoa2110345_appendix.pdf
[93] https://ourworldindata.org/covid-deaths
[94] https://www.medrxiv.org/content/10.1101/2021.12.20.21267966v3
[95] https://www.sciencedirect.com/science/article/pii/S0140673622000897
[96] https://academic.oup.com/ofid/article/10/6/ofad209/7131292
[97] https://www.cell.com/cell-host-microbe/fulltext/S1931-3128(22)00572-8
[98] https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30467-8/fulltext
[99] https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1004107

while creating a captured market for their 'products'. As outlined above regarding innovative financing, there are serious questions about profiteering and whether these schemes are good investments, but the manufacturers bear little or no risk.

## Recommendation Three

The third recommendation is to accelerate financing before regulatory approvals. This is intended through public money including loans from MDBs etc. These products should be within the WHO prequalification pipeline but may not have completed assessment. Thus, HLIP are proposing a taxpayer funding or increased indebtedness at considerable risk, as the product funded may not reach sufficient safety, consistency or efficacy standards for use. As a result, countries may be diverting funds or increasing sovereign debt for unusable products.

In addition, under this mechanism, manufacturers will be paid for a product even if it fails, making their role essentially zero-risk. Further, the HLIP recommends (p. 60) that manufacturers be indemnified with liability protection ultimately supported by public money, based on the COVAX No Fault Compensation Program. This will support insurance companies to compensate patients.

Similar issues were raised with regards to the Gavi COVAX AMC, which faced criticisms for the lack of transparency surrounding its inner workings and ultimate cost.[100] Notably, the COVAX advance purchase agreements that de-risked pharmaceutical companies' investment in developing vaccines for Covid-19 were shrouded in secrecy and omitted "provisions for supply disruptions and guaranteeing indemnification against liability by the buyers, allowing vaccine manufacturers to evade accountability."[101] Such arrangements come with potentially high conflict of interest risks as they allow the private sector, involved in decision making through the public-private partnerships (PPPs), to profit at the cost of donors and the wider public.[102]

## Recommendation Four

This recommendation covers non-vaccine countermeasures including drugs, PPE and tests, to be produced in 'hubs' established in each Region (WHO has 6). The regional hubs will conduct test evaluations of diagnostics. The HLIP recommends (p. 67) that manufacturers be funded to maintain idle capacity to enable a surge when requested.

A new PPP is proposed to support development of medicines. This would have a new taskforce to mobilize venture capital and private equity, which will need some sort of public funding guarantees to ensure return on investment.

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[100] https://link.springer.com/content/pdf/10.1186/s12992-025-01103-w.pdf
[101] Ibid.; https://www.somo.nl/wp-content/uploads/2023/02/SOMO-Pharmas-Pandemic-Profits.pdf
[102] https://link.springer.com/content/pdf/10.1186/s12992-025-01103-w.pdf

This entire recommendation is based on the assertion that PPE made a major impact on Covid-19 reduction. As shown elsewhere, this is highly spurious for specific actions (e.g., masking and distancing),[103,104] while the impact of test and trace strategies, previously advised against by WHO, is not clear.[105] Others, such as the installation of air filters in schools (p. 69) would be impossible in many lower income countries due to a general lack of air conditioning.

## Recommendation Five

This final recommendation is to increase funding for the existing Pandemic Fund and change its approach from discreet calls for proposals to a rolling model with a requirement for costed national PPPR plans and matching investment.

While this suggests a reformed version of how the Pandemic Fund currently operates with theoretical potential for wider capacity building outside its three areas of focus (surveillance, diagnostics and related human resources), the underpinning logic does not address the fact that most states will alter their national strategies to meet World Bank and other donor expectations. As is well known within the global health financing literature, low-resource countries must chase available funds and adjust their national health strategies to increase the possibility of external funding.[106] As a result, it is not clear how effective this reformed Pandemic Fund will be in assuring better alignment between actual need on the ground, having to comply with externally devised funding indicators (and their conditionalities). Furthermore, the requirement for matching investment may simply redeploy needed resources from greater priorities. This will not only pose opportunity costs but undermine the development of balanced, self-sustaining health systems.

[103] https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006207.pub6/full
[104] https://academic.oup.com/jrsssa/advance-article/doi/10.1093/jrsssa/qnaf092/8180652
[105] https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1664330/full
[106] https://doi.org/10.1002/jid.3985; https://www.sciencedirect.com/science/article/pii/S0277953625008664?via%3Dihub; https://www.effectivecooperation.org/blog_earmarked_aid_ownership#:~:text=While%20much%20attention%20has%20been,for%20effective%20and%20sustainable%20development.

# 3. What is missing from the HLIP report

The HLIP report's justification is based entirely on poorly supported, though broadly repeated, claims of a rapidly increasing risk of pandemics, particularly arising from zoonotic spillovers. The impact of development and increasing use of the very technologies we use to distinguish such events from background disease is ignored, as is the continuing overall steady reduction in infectious disease mortality over the last century which undoubtedly also translates into resilience against outbreaks. A reliance on plagues from several hundred years ago to estimate current risk exacerbates these weaknesses. The unquestioning assumption that all costs of the Covid-19 pandemic response were justified and would be repeated as necessary interventions is poorly supported. As noted, the HLIP does not disaggregate direct costs of responding to the virus from indirect costs generated from those responses, thus inflating the total cost of what a response to a pandemic would be. The HLIP's assumptions then inflate subsequent return on investment.[107] The assumption of highly efficacious vaccines dramatically changing the direction of a pandemic is not consistent with the Covid-19 experience, or with orthodox understandings of respiratory virus immunology.[108]

The strategy proposed relies very heavily on diversion of public finance, ultimately people's taxes, to private corporations which are then given a captured market while being protected from liability. Private sector partners will incur almost no risk. Taxes are not derived from surplus money – they are from income streams that people use to buy medicines, nutritious food, gain education, and invest in economy-building activities. Any health policy requiring new public funds, and this one requires considerable funds, will accumulate broad negative impacts across other areas which are real but difficult to quantify.

The complete absence of any discussion of, and allowance for, opportunity cost is perhaps the most pressing problem with the HLIP's report from a public health viewpoint. Public health policy development should always address such considerations, as funding for one intervention inevitably reduces opportunity for another. Costs accrue in health, economic development, or personal disposable income. As *Figure 1* below shows, ODA has already shifted toward PPPR and away from other health priorities in recent years. For example, annual funding for basic, primary, paramedical and nursing care declined by nearly 15% since 2019, equating to over US$1 billion. Basic nutrition funding dropped by nearly 2% annually on average. Similar trends have been experienced outside the immediate health sector, with ODA diminished for water supply and sanitation, which reduced by US$500 million, representing a decrease of 2.3% annually on average. Thus, an increase in PPPR funding appears to be contributing to a decline in support for the major health determinants of

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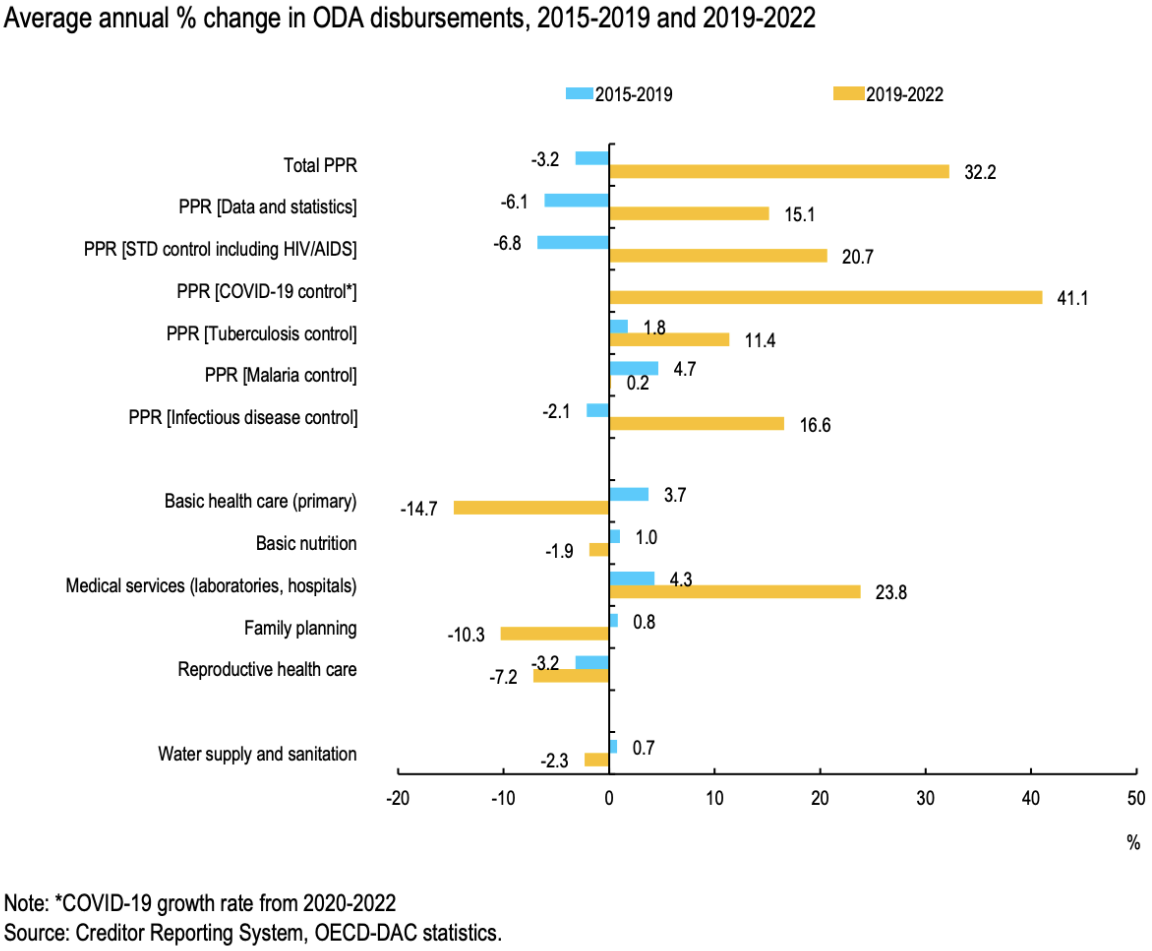
[107] https://essl.leeds.ac.uk/downloads/download/234/the-cost-of-pandemic-preparedness-an-examination-of-costings-and-the-financial-requests-in-support-of-the-pandemic-prevention-preparedness-and-response-agenda

[108] https://www.cell.com/cell-host-microbe/fulltext/S1931-3128(22)00572-8

resilience and longevity, raising risks for both pandemic mortality and that of far higher-burden endemic infectious diseases.

***Figure 1. Average annual % change in ODA disbursements, 2015-2019 and 2019-2022. Source: OECD Smart spending to combat global health threats.[109]***




[109] https://www.oecd.org/en/publications/smart-spending-to-combat-global-health-threats_166d7c57-en.html

# 4. Conclusion

The PPPR investment rationale of the HLIP remains largely the same as in 2022 and thus subject to its prior deficiencies, which included the lack and/or spurious use of evidence and the use of problematic assumptions to guide its reasoning. The 2025 HLIP report continued its unsubstantiated claim that "pandemic risks continue to rise," its inflated estimate of economic impact from future pandemics, and unevidenced assumptions that investments in PPPR can effectively prevent outbreak costs by averting pandemics altogether or by significantly reducing their impact.

As with the original report, the 2025 HLIP report fails to consider wider public health or economic issues that will logically follow from the report's recommendations due to the diversion of resources from other national and international priorities. The HLIP is not, therefore, attempting to provide a public health appraisal of PPPR in the context of wider public health or economic priorities essential for a country's decision-making, but merely provides parts of such an appraisal, directly related to potential pathogens and their surveillance and mitigation. Consequently, the 2025 HLIP report ultimately undermines global public health by advocating for the redeployment of scarce and needed resources to a narrow set of PPPR interventions. This will diminish routine health capacities and health outcomes.