



A GLOBAL DEAL FOR OUR PANDEMIC AGE



Financing the
Global Commons for
**PANDEMIC
PREPAREDNESS
AND RESPONSE**

**REPORT OF THE
G20 HIGH LEVEL
INDEPENDENT
PANEL**

A. OVERVIEW

The Challenge

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A. Overview

The Challenge

1. COVID-19 is the biggest setback to lives and livelihoods globally since the Second World War.
 - a. A reported 4 million³ lives have already been lost. Estimates of the full death toll are much higher. Vastly more among those who have survived face grave long-term health impairments.
 - b. The number of people living in extreme poverty is projected to reach about 740 million by end-2021, a quarter more than the pre-COVID-19 trajectory⁴ and the first significant increase in two decades. Progress on the Sustainable Development Goals has been set back many years. The most vulnerable in every population have suffered disproportionately.
 - c. Governments' fiscal costs are large and growing: an estimated US\$10 trillion⁵ up to March 2021. The global economy contracted more sharply in 2020 than it has in the last seven decades, and the IMF has projected cumulative losses by 2025 of US\$22 trillion⁶.
 - d. Welfare losses globally will be substantially larger and more lasting. They include the consequences of the loss of a year or more of education for a significant proportion of the world's young, the scarring due to heightened unemployment and under-employment in many economies, and the effects of 'long-COVID' on both earnings and the quality of lives.
2. **Vaccinating a majority of the population in all countries, and ensuring adequate supply of other medical countermeasures, must be the most urgent goal of the international community today.**
 - a. As of June 2021, the ACT-Accelerator still had a large gap in funding to meet its targets to provide vaccines to cover 20% of the world's population by end-2021, and the needed diagnostics tests, treatments and other critical supplies⁷.
 - b. There is significant scope for supply shortages and mismatches to be addressed. We must also extend global support to countries that cannot afford procurements, and tackle delivery bottlenecks. A recent IMF study proposes ways to vaccinate at least 60% of the population in all countries by mid-2022 and ensure adequate supply of diagnostics, therapeutics and personal protective equipment (PPE), at an additional cost of US\$50 billion — comprising US\$35 billion in donor grants and US\$15 billion from national sources or concessional loans⁸.
 - c. Achieving this immediate goal is essential to reduce the risk of new variants and avoid further escalation of the pandemic. The financing solutions exist, and require the urgent attention of the world's leaders.
3. **We must also plan for the eventuality of an endemic COVID-19⁹, with a long tail of costs for all nations.**
 - a. Even with the major push for global vaccination, it will be a long time before the world achieves the immunity needed to stop the virus from spreading. New and possibly more transmissible variants may continue to emerge in the meantime, while protection among those already vaccinated may also wane.

³ <https://ourworldindata.org/covid-deaths>

⁴ <https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty-looking-back-2020-and-outlook-2021>

⁵ Comprising additional spending and foregone revenue; this does not include another US\$6 trillion in government loans, guarantees, and capital injections. (IMF Apr 2021 Fiscal Monitor)

⁶ <https://blogs.imf.org/2021/01/26/a-race-between-vaccines-and-the-virus-as-recoveries-diverge/>

⁷ For a detailed description of how the COVAX initiative has fallen short, see for example [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)01367-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01367-2/fulltext) dated 19 June 2021.

⁸ <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2021/05/19/A-Proposal-to-End-the-COVID-19-Pandemic-460263>

⁹ <https://www.nature.com/articles/d41586-021-00396-2>

b. An endemic COVID-19 will blur the lines between responding to the current pandemic and preparing for a future new pandemic.

4. **Even as we fight this pandemic, we must face the reality of a world at risk of more frequent pandemics.**

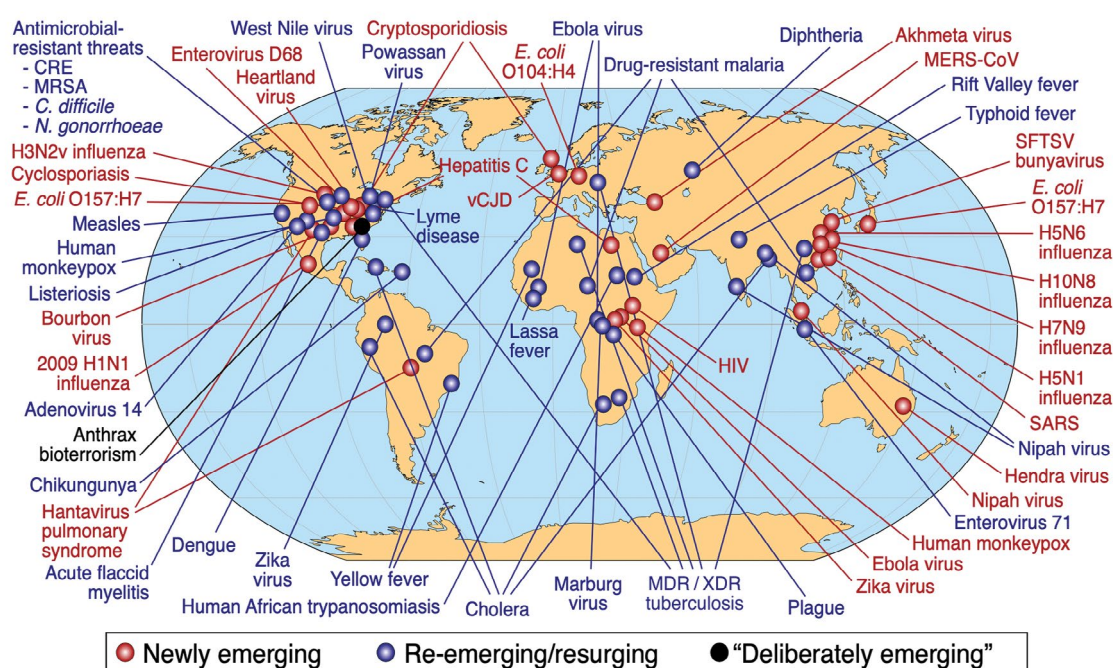
a. The last two decades have seen major global outbreaks of infectious diseases every four to five years, including SARS, H1N1, MERS and COVID-19. (See **Annex D**.) This is besides the ongoing HIV/AIDS pandemic and Ebola, which has seen 29 regional epidemics over the last five decades.

b. **There has been an acceleration of zoonotic spillovers over the last three decades.** (See **Annex E**.) **They account for about three quarters of new and emerging infectious diseases.**

c. Scientists attribute the increased frequency of infectious disease outbreaks to population growth and increased human encroachment on the natural environment; the loss of the world's biodiversity; the growth of the wildlife trade; increasing urbanization, crowded living conditions and increased mobility; and the broader consequences of a warming environment on the life cycle of pathogens and the geographical spread of insect-borne diseases.

d. These assessments also point to the prospect of more frequent and increasingly virulent epidemics and pandemics in future. The Global Preparedness Monitoring Board (GPMB) has warned of the risk of a major pandemic arising from a deadly strain of influenza. Given also other dangerous pathogens that are already known and continuing coronavirus transmissions to human populations, **the next major pandemic can happen anytime. It could come in 20 years, in 10 years, or next year.**

Figure 1: Global Examples of Emerging and Re-emerging Diseases by the Global Preparedness Monitoring Board



Source: Global Preparedness Monitoring Board's 2019 Annual Report on Global Preparedness for Health Emergencies, *A World At Risk*



Epidemic-prone diseases such as influenza, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, Zika, plague, Yellow Fever and others, are harbingers of a new era of high-impact, potentially fast-spreading outbreaks that are more frequently detected and increasingly difficult to manage ... High-impact respiratory pathogens, such as an especially deadly strain of influenza, pose particular global risks in the modern age. The pathogens are spread via respiratory droplets; they can infect a large number of people very quickly and with today's transportation infrastructure, move rapidly across multiple geographies."

—
**GLOBAL PREPAREDNESS
MONITORING BOARD,**

*2019 Annual Report on Global Preparedness for Health
Emergencies: A World At Risk*



COVID-19 is neither the first nor the last health emergency we will face. My fellow scientists estimate that we will face a pandemic or health emergency at least once every five years from here on. There is a chance that this is the optimistic scenario. The reality could be far worse."

—
SALLY DAVIES,

*Former Chief Medical Officer of England, Master of Trinity College,
Cambridge, 26 September 2020*



Without preventative strategies, pandemics will emerge more often, spread more rapidly, kill more people, and affect the global economy with more devastating impact than ever before."

—
**INTERGOVERNMENTAL SCIENCE-POLICY
PLATFORM ON BIODIVERSITY AND
ECOSYSTEM SERVICES (IPBES),**

Workshop Report on Biodiversity and Pandemics, 29 October 2020

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5. **Preventing future pandemics, together with action on climate change, has to be a central obligation of national and global governance.**
 - a. **Both require urgent political commitment, clear recognition of the benefits that all nations share, stronger national and global actions, and larger collective financing.**
 - b. **They are both a race against time.**
 - i. Avoiding the next major pandemic is the race of the decade — and a race measured in days and weeks when an outbreak does emerge.
 6. It is within our means to avoid repeating the large-scale collective failures that led to the damaging pandemic of the last 18 months. **The world has the scientific, technological and financial resources to sharply reduce the risk of a pandemic, and the massive human, social, and economic costs it brings.**
 7. **We must better mobilize and organize these resources,** public and private, and ensure that the world is better equipped — individually and collectively — to detect, prevent and counter another major outbreak.
 - a. We must also ensure the system has the capacity to reach vulnerable populations both globally and within countries.
 8. The world faces other catastrophic risks, besides repeated pandemics and climate change which are clearly on the horizon. A key lesson of COVID-19 should be to plan for catastrophic risks generally. Recommendations on how to do so are outside the scope of this report, and other groups could be convened to examine this. However, since addressing global catastrophic risks has intrinsic global public good characteristics, some of the lessons from this report will apply to them.

Plugging Four Major Global Gaps

9. Great progress in pandemic prevention, preparedness and response (PPR) is within reach in the next five years. It requires **bold and sustained national, regional and global investments and actions in normal times, as well as capacity to respond with speed and force in the event of an emerging pandemic threat.**
10. The investments we propose aim at plugging four major gaps in pandemic PPR. They are set out below, and elaborated in Section B of the report:

(1) Globally networked surveillance and research: to prevent and detect emerging infectious diseases

- i. We can substantially reduce the risk of pathogens spilling over into human populations and causing disease outbreaks.
- ii. We need stronger, internationally coordinated efforts to prevent spillovers at their source — especially by reducing the loss of natural habitats, controlling wildlife trade, and addressing livestock production near to wildlife. **Strengthening One Health approaches is critical to this effort.**
- iii. **A massive scale-up of global surveillance and alert systems is needed** to detect cross-species spillovers, send an early warning to the world, enable swift public health responses and accelerate development of medical countermeasures.¹⁰
 1. We must urgently build a global genomic and epidemiological surveillance program, combining pre-existing and new nodes of expertise at the global, regional, and country levels, with the WHO at the center.
 2. This will also require enhancing foundational public-health surveillance capabilities¹¹ at the national and regional levels, including in partnership with regional CDCs and regulatory bodies. Such efforts bring domestic benefits all the time but are also critical in identifying and stopping emerging outbreaks with cross-border potential.
- iv. **Surveillance at scale has to be integrated with a substantially expanded program of research on known and emerging infectious diseases.** This should include an agenda to fully characterize prototype pathogens that are capable of becoming infectious diseases in human populations, creating the building blocks for early development of medical countermeasures that are cross-protective against a range of pathogens.

(2) Resilient national systems: to strengthen a critical foundation for global pandemic preparedness and response

- i. Resilient national health systems — from healthcare capacity to trained human resources and frameworks for policy decisions in crisis — remain the foundation for stopping an emerging outbreak. National surveillance and preparedness is the bedrock of effective global surveillance and information-sharing.

¹⁰ <https://pubmed.ncbi.nlm.nih.gov/33712471/>

¹¹ For instance, every country must be able to report deaths and disease in a complete, accurate and timely manner.

- ii. **We need significant improvements and whole-of-government health security plans to enable countries to comply with the WHO's International Health Regulations (IHR).** Public health strategies must also be developed to identify those who need care and treatment in a pandemic, and provide a comprehensive and effective response. Countries' capacity to respond using non-pharmaceutical interventions, such as lockdowns, quarantines and social restrictions, also requires adequate welfare safety nets.
- iii. **The International Financial Institutions (IFIs) — the IMF, World Bank and Regional Development Banks — must step up their support** for Low-Income Countries (LICs) and Lower-Middle Income Countries (LMICs) to make the needed investments in preparedness, and be ready to swiftly scale up assistance when a pandemic is triggered.
- iv. **Investments in pandemic preparedness should be integrated with the ongoing efforts and infrastructure to tackle endemic infectious diseases.** Existing global health institutions like the Global Fund to Fight AIDS, Tuberculosis and Malaria (hereafter referred to as the "Global Fund") and Gavi should be given a more explicit mandate and increased funding to invest in system-level preparedness.
- v. **International implementing organizations like UNICEF also play a key role in strengthening domestic systems** for agile, last-mile delivery of essential supplies. This applies not just to vaccines but lifesaving therapeutics and oxygen cylinders and concentrators.

(3) Supply of medical countermeasures and tools: to radically shorten the response time to a pandemic and deliver equitable global access

- i. As COVID-19 illustrates: the human and economic costs of a pandemic are driven by the length of time it takes to equip the world with the diagnostic tools, vaccines, therapeutics and PPE to deal with it.
- ii. The global scientific community responded with unprecedented speed to sequence the new virus and develop a portfolio of effective vaccines within a year. We have been far less successful in boosting global supply, ensuring the equitable global distribution of these vaccines and strengthening the capacity of delivery systems to go from vaccines to fully vaccinated people.
- iii. To prevent the major damage caused by highly transmissible and severe diseases, we must develop the capacity to reach the majority of the world's population within a radically shorter timeline — including **a 100-day target** for the development of vaccines, therapeutics and high quality rapid diagnostics.
- iv. We also need substantially larger, **ever-warm capacity** for manufacturing and delivery of critical medical supplies, and modular technologies that allow rapid scale-up of capacity, to meet the surge in demand in a pandemic. This scaled-up capacity is critical to reducing the short-term trade-offs that nations face between meeting domestic and global needs. We also need **greater geographical diversification** of such facilities to ensure resilience of supply chains in a crisis and equitable global access. The facilities should be used as much as possible in inter-pandemic years to address ongoing infectious disease needs.
- v. A **global network of public-private-philanthropic partnerships** must be established to assure such capacity and the delivery mechanisms to reach the world rapidly in a pandemic.
- vi. Both national and global pooling of public sector investments in these partnerships are necessary to ensuring global access to medical countermeasures in a pandemic. **Building on the lessons learned from the ACT-Accelerator initiative** that was launched in the current pandemic, a permanent end-to-end supply ecosystem needs to be created. The lack of proactive public investment for manufacturing and procurement before the pandemic has greatly hampered the response to COVID-19.

(4) Global governance: to ensure the system is tightly coordinated, properly funded and with clear accountability for outcomes

- i. The current global health architecture is not fit-for-purpose to prevent a major pandemic, nor to respond with speed and force when a pandemic threat emerges. As the Global Preparedness Monitoring Board highlights, the system is fragmented and complex, and lacks accountability and oversight of financing of preparedness. We must address this by establishing a governance mechanism that integrates all the key players in the global health security ecosystem, with the WHO at the center.
 - ii. The solution rests not in creating new institutions, but in **introducing a new mechanism of global governance and establishing a tightly networked system of responsibility and accountability among existing institutions**:
 1. A reformed and strengthened WHO¹²; its One Health partners in FAO, OIE and UNEP; the World Bank, the Regional Development Banks (RDBs) and the IMF; the WTO; the specialized global health bodies like Global Fund, CEPI, Gavi, FIND, and Unitaids; and international organizations like UNICEF that address health and humanitarian interventions and delivery mechanisms.
 2. The regional bodies should be integrated in this architecture. The current pandemic has demonstrated the **strengths of regional ownership**, e.g. the major initiatives taken by the African Union and Africa Centres for Disease Control and Prevention (Africa CDC).
 - iii. It must also fully leverage the capabilities of the **private sector and the non-state actors**.
 1. The private sector plays a key and growing role in health service delivery as well as in transport, logistics, communications, data, and other capacities for preparedness and response.
 2. Local-level and non-state actors including **NGOs and the global scientific community** play important roles in detecting emerging threats, strengthening preparedness, and helping communities cope with public health measures in the event of outbreaks. The network of international institutions should continue to have the flexibility to fund these sub-national and non-state actors.
 - iv. A new global governance mechanism is needed to match tightly networked global health governance with financing. We propose **a new Global Health Threats Board**, to provide systemic oversight in enabling proper and timely resourcing of capacities, and to ensure the most effective use of funds. It should join up the efforts of international bodies, with clearly delineated responsibilities that match their comparative strengths, and ensure the system fully leverages the capabilities of the private sector and non-state actors.
11. In plugging these four major gaps, we must recognize above all that **international support for pandemic PPR is fundamentally not about aid, but about investment in global public goods from which all nations benefit**.
- a. Every nation rich and poor benefits when every other nation is equipped and resourced to prevent and respond quickly to disease outbreaks.
 - i. The longer that a part of the world remains without immunity, the greater the scope for new variants of concern to emerge, challenging even previously immunized populations. We have already seen new variants of the SARS-CoV-2 pathogen emerging with higher transmissibility and reducing the efficacy of existing vaccines.

¹² As recommended by the IPPPR in its Main Report: "WHO is and should be the lead health organization in the international system, but it cannot do everything... WHO should focus on providing strategic direction and analysis, and formulating norms, standards and technical advice to ensure that countries have resilient health systems that are prepared with the required response capacities for health emergencies. In the case of emergencies WHO has an important operational role to play providing technical advice and support." It adds in its Institutional Review of the WHO that "WHO's mandate should be focused on activities where it provides true added value, where it makes the most use of its core competencies, and where there is less overlap with the mandate of other actors in the busy and crowded global health space."

- ii. Ensuring widespread global access to tests, vaccines, treatments, and other medical countermeasures is hence both a humanitarian imperative and a scientific and economic necessity everywhere.
- b. We distinguish between two levels of global public goods, with different implications for financing and accountability.
 - i. There are 'pure' global public goods such as **surveillance and R&D**, which require both international- and country-level capacities, but where the benefits are mainly not internalized by countries. In the case of LICs and LMICs in particular, these should be largely financed by collective mechanisms.
 - ii. There are other investments that have a clearer benefit for individual countries or regions, such as **strengthened national capacities** to stop the spread of infectious diseases, but which nonetheless have positive externalities for the global community. Governments have to mobilize domestic resources to develop and maintain these capacities, complemented by external financing support to ensure a strong alignment of incentives.

Financing Pandemic Prevention, Preparedness and Response: the Basic Approach

12. **The broad principles that underpin financing for pandemic PPR flow from its global public good nature. Prevention and preparedness require predictable and sustained funding. Financing of response in a pandemic must be rapid, available to all countries that need it and delivered without complicated, business-as-usual requirements. All funding flows must show clear accountability for outcomes.**
 - a. **Pandemic PPR should be anchored in enhanced, reliable and timely multilateral funding**, complemented by bilateral funding streams and philanthropic contributions.
 - i. A predictable system of pre-agreed contributions and callable capital is needed for reliable funding **in normal times**, and for the swift scale-up of financing needed **in a pandemic**. Both have been badly lacking.
 1. The current experience with ACT-A shows how the absence of a system of pre-agreed commitments leads to considerable underfunding when it is needed.
 2. Without pre-agreed rules of funding, we risk a waiting game in which governments and institutions delay investments because they expect these to be covered by others at some point in the future.
 - ii. We echo the call by the Independent Panel for Pandemic Preparedness and Response (IPPPR) for the **WHO to be more reliably funded for its critical roles** — with assessment-based core contributions from Member States increased to two-thirds of the budget for the WHO base program, and an organized replenishment process for the remainder of the budget.
 - iii. Our recommendations also call for stronger multilateral funding of pandemic PPR through other bodies, including a larger role for the IFIs.
 - iv. **Targeted bilateral funding provides an important complement, and a catalyst for action.** ODA should have a component to help LICs prepare to mitigate the cost of future pandemics, for example through investments in human capital and resilient health systems.
 - v. But an international system that rests heavily on discretion is open to free-riding, and complicates processes for ensuring accountability. Such investments must therefore only be complementary to enhanced multilateral funding.

b. Empower the IFIs to more boldly support the global commons

- i. The IFIs, despite record lending, are not structured to address global threats forcefully. **They should be clearly mandated to support country- and regional-level investments in global public goods, which have both local and global benefits.** They must adjust their business models to meet this sharpened mandate.
 - ii. **The IFIs are uniquely placed to do so:** by their ability to mobilize international resources; leverage capital or guarantees; incentivize countries to invest in global public goods and other enabling spending; and catalyze private investments.
 - iii. Their activities should be more boldly oriented towards supporting countries and regions in meeting the largest global challenges of the 21st century, including climate change and pandemics. While in-country development challenges are still pronounced, poorer countries are also most vulnerable to these challenges to the global commons. Further, both future pandemics and climate change can only be managed if developing countries have the capacities to be fully engaged in the process.
 1. The Bretton Woods institutions have historically had country-focused business models. They were also established at a time when capital markets were much less developed.
 2. **The World Bank and RDBs should move decisively to help countries invest in global public goods to reduce pandemic risks** — including through the strengthening of health systems and core public health capacities that are critical to effective pandemic prevention, preparedness and response.
 - a. To achieve this, they will need a stronger mandate and deep technical capacities in pandemic preparedness, along with more fit-for-purpose instruments that can combine loans with grant buy-downs and other incentives to fund countries and regional initiatives more effectively.
 3. **They should do so without it being at the expense of their current goals on poverty reduction, shared prosperity, and financial stability. This will require new resources.**
 4. **There is also significant scope to optimize the use of their balance sheets so as to augment resources for both global public goods and economic development.** The MDBs should work with countries to move more decisively to leverage private finance. The mechanisms for doing so include appropriately designed risk guarantees, as well as the expanded use of blended finance to catalyze private investments, especially for infrastructure with clear economic returns.
 5. The IMF, World Bank and the other MDBs should also play major roles in helping countries respond to pandemics, including by providing **pandemic response windows that are triggered automatically**, for example, upon the WHO's declaration of a Public Health Emergency of International Concern (PHEIC).
- c. **Provide stronger incentives for LICs and LMICs themselves to invest in global public goods in pandemic PPR, especially through expanded grant support and matching funding for domestic investment, accompanied by accountability for outcomes**
- i. **Failure to prioritize and budget for pandemic prevention and preparedness has been an issue for countries at all income levels¹³.**
 - ii. **LICs and LMICs in particular face more binding budget constraints to make investments that have positive global externalities.** National investments are stymied by uncertainties about the scale of domestic benefits, as well as the hard trade-offs between spending on preparedness for a future event of uncertain timing versus other pressing health and development priorities, given limited resources. The COVID-19 recession has worsened long-standing fiscal constraints on already insufficient public spending on health.

¹³ While existing international benchmarks, including the Joint External Evaluations (JEEs) and Global Health Security Index (GHS Index), have not been very useful predictors of individual country performance in the current pandemic, we have to take seriously the broad-based international preparedness gaps they highlight: the average country 2019 GHS Index score was 40 out of a possible 100.

- iii. Countries have hence historically been reluctant to use their limited borrowing envelopes from the MDBs for this purpose.
 - iv. Grants can be used strategically to incentivize investments in global public goods through co-investments by national governments, **as has been done via Global Fund and Gavi.**
 - v. Contributions by bilateral development partners for pandemic preparedness have also been small, and should be increased. These resources should not be taken from resources for poverty alleviation or aid budgets more generally, as discussed below.
 - vi. Governance and institutional capacities also need strengthening. We need a more robust global mechanism to assess countries' plans and data on pandemic prevention and preparedness, provide technical assistance, encourage countries towards closing any identified gaps, and tie financing to performance on preparedness indicators.
- d. **Maximize complementarities between different funding streams in global health, including private and philanthropic investments**
- i. **New funding for pandemic PPR must add to rather than substitute for existing streams of funding.**
 - 1. It would be short-sighted to bolster our efforts for pandemic prevention and preparedness by reallocating resources from other critical development priorities in poverty alleviation, human capital development, climate, and other priorities.
 - ii. Today's different streams of funding must be tightly coordinated.
 - 1. Internationally, we must tackle the threat from multiple pathogens more effectively and support multiple PPR interventions — instead of a disjointed landscape organized around specific diseases and interventions.
 - 2. Regional and country platforms should bring together multilateral and bilateral partners, as well as philanthropic and private investors, coordinated by national authorities, to ensure a sustained and coherent effort to build up national preparedness.
 - iii. We need a **different construct for public partnerships with the private and philanthropic sectors: with continuous engagement, not only once a pandemic strikes.**
 - 1. Besides the core requirement to enter into such partnerships to scale up end-to-end supply chains for medical countermeasures, the private sector must also be mobilized to boost supply of other critical medical supplies.
 - 2. Pandemic PPR plans must also consider all health providers, and the ways in which people can most readily access care. In most LICs and LMICs, private sector providers are important sources of care and have to be mobilized and properly regulated in support of public policy objectives, even as governments working with external partners seek to build up more resilient national healthcare systems over the longer term.
 - iv. **The major philanthropic foundations have been playing a critical role in supporting investments with high risk and/or low commercial incentives.** However, the major scale-up of research on infectious diseases and countermeasures needed will have to involve stronger partnerships between the public and philanthropic sectors, nationally and globally.
 - 1. These include early-stage investments, e.g. the search for vaccines that can provide broad protection against a range of pathogens; and interventions that can address the rising threat of drug resistance.

2. Governments should develop strong partnerships with philanthropies to enable research for interventions where commercial interest is low, including many ongoing regional epidemics for which global demand is weak.
- e. **Improved policy-making and regulatory processes are critical complements to enhanced financing of global health security**
- i. The experience of the last 18 months has shown the importance of international and national leadership, collaboration, and policy-making in determining the effectiveness of responses to the pandemic.
 - ii. Internationally: we must create incentives for countries to **keep supply chains open — especially for critical medical supplies, and their components and raw materials**. WTO has a key role in monitoring and surveillance of member countries' trade practices, to ensure export restrictions and trade facilitation issues are quickly tackled.
 - iii. Domestically: even financially-equipped countries have not always pursued the policies needed to contain the damage brought by the pandemic.
 1. As highlighted by the IPPPR, too many governments took a wait-and-see approach, while international agencies were slow to act, constrained by their limited mandates, capacities and silos.
 2. Getting policies right based on science and evidence, and taking actions early and **mobilizing capabilities and resources on a whole-of-country basis**, can suppress the spread of a pandemic and buy precious time for medical countermeasures to be developed and procured.
 - iv. Governance, communication and behavioral science tools have also been important in **shaping social adherence to public health measures**, and minimizing distrust of science and medical professionals.
 - v. Rigorous, quantitative **research on the causal impact and efficacy of various non-pharmaceutical interventions**, building on countries' varied responses to COVID-19, is also necessary to guide policy responses.

The Scale of Investments Required

13. **We can only avoid future pandemics if we invest substantially more resources than we have been willing to spend in the past, and which the world is now paying many times over in dealing with COVID-19's damage.**
14. Greater domestic investments by national authorities in the key capacities are needed to prevent and contain future pandemics. These investments, specifically for pandemic prevention and preparedness, must be part of broader national efforts for healthcare and public health system strengthening. **Together, these efforts would require low- and middle-income countries to add about 1% of GDP to public spending on health over the next five years.**
15. However, domestic actions alone will not prevent the next pandemic. **We must collectively commit to expanding international financing by US\$75 billion over the next five years — or US\$15 billion each year.** This will comprise funding for both global-level functions and the support needed for LICs and LMICs to invest in the country-level global public goods needed for pandemic PPR.
16. The scale of investments required reflects the need to catch up from a long period of underfunding. Investing upfront in the next five years is critical to lowering the growing risks of pandemics.

17. **The Panel believes that US\$15 billion per year is the absolute minimum in the new international investments required in global public goods that are at the core of effective pandemic prevention and preparedness.** This estimate excludes the cost of other complementary investments that will contribute to resilience against future pandemics, while providing benefits to countries in normal times.
- It excludes the costs of containing antimicrobial resistance (AMR),** which is a growing threat to health security nationally and globally. AMR may worsen the impact of future epidemics and pandemics by rendering ineffective the treatment of such infections and associated co-infections, as evidenced in previous influenza pandemics¹⁴. Countering AMR is estimated to cost US\$9 billion annually¹⁵. Since AMR containment measures have benefits well beyond pandemic PPR and operate through ongoing programs for more rational use of antimicrobials in health and agriculture, we have not included these costs in our estimates.
 - The estimated costs would also be much higher if they included **upstream environmental investments** for prevention and a **more extensive scope for One Health** including upgrading of veterinary services; **basic and pre-clinical research**; and the **broader strengthening of healthcare systems and delivery infrastructure** beyond that directly related to pandemic PPR. These actions provide continuous benefits to countries, and have therefore been excluded from our strict estimates of costs specific to pandemic PPR.
 - Further, the estimated minimum investments required are based on conservative assumptions on the scale of at-ready manufacturing capacity required for medical countermeasures¹⁶.
18. We set out in Section C of the report several key financing proposals to help close the major gaps in pandemic PPR:
- Adopt a systemic approach to ensure enhanced and predictable global financing for pandemic PPR.** The Global Health Threats Board should provide financial oversight to ensure adequate funding across the system and effective use of funds. Two-thirds of the total additional international financing needed, i.e. US\$10 billion per year, should be pooled in a new, multilateral funding mechanism (Proposal 2 below), with the remaining US\$5 billion going directly towards strengthening funding to WHO and other existing institutions.
 - Establish a Global Health Threats Fund.** This would be a dedicated fund amounting to US\$10 billion per year, based on pre-agreed contributions, to support and catalyze investments in global public goods for pandemic PPR. The new multilateral mechanism will enable effective and agile deployment across institutions and networks.
 - Develop resilient domestic finances for prevention and preparedness.** Governments working with international institutions must embark on a major agenda of reforms to mobilize domestic resources on a sustained basis so as to enable investments in the key capacities required to avoid future outbreaks and to strengthen national health systems, while enabling their economies to return to durable growth. Low- and middle-income countries will need to add about 1% of GDP to public spending on health over the next five years.
 - Strengthen financing for the WHO and One Health, and put it on more predictable footing.** Greater and more predictable funding is necessary for the WHO to perform its critical functions and ensure that there are no gaps in the surveillance-to-action loop, and to strengthen the integrated One Health approach.

¹⁴ See, for example, ReAct network's briefing note circulated ahead of the 74th World Health Assembly: <https://www.reactgroup.org/wp-content/uploads/2021/05/ReAct-Briefing-Pandemic-Preparedness-and-Antibiotic-Resistance.pdf>

¹⁵ <https://documents1.worldbank.org/curated/en/323311493396993758/pdf/final-report.pdf>

¹⁶ Our costings for incentivizing supply capacity for **all medical countermeasures** are about half of the costs estimated for vaccines alone by the Accelerating Health Technologies (AHT) group (comprising economists and statisticians, including G20 HLIP member Michael Kremer). The AHT group estimates that investments in needed production capacity and supply chain inputs for **vaccines alone require US\$60 billion in public funding** to enable the capacity to be installed over a period of years, and about US\$2 billion per year thereafter to maintain this capacity. Their estimates take into account that most vaccine candidates fail, and in order to repurpose capacity in parallel with clinical trials, any vaccine capacity would need to be split between many candidates. There is therefore a need for significantly larger vaccine capacity. However, the added investments generate far greater benefits in future and far higher returns than a small scale of investments would.

- (5) **Make financing of global public goods part of the core mandate of World Bank and other MDBs.** The MDBs should incentivize investments in pandemic prevention and preparedness at the country and regional levels, with grants and greater concessionality that complement existing results-based and programmatic lending. They should draw first on their existing financial resources. However, shareholders must support timely and appropriately sized replenishments of their concessional windows and capital replenishments over time to ensure that the greater focus on global public goods is not at the expense of poverty reduction and shared prosperity.
 - (6) **Enable fast-tracked surge financing by the IFIs in response to a pandemic.** The MDBs and IMF should institute pandemic response windows that are automatically triggered to provide swift, scaled-up access to funds, with relaxed rules on country borrowing and automatic access for pre-qualified countries. Appropriately designed **debt service relief** by other creditors will be an important complement to surge lending from the IFIs in responding to future pandemics.
 - (7) **Ensure complementarity between multilateral and targeted bilateral funding.** Multilateral efforts should leverage and tighten coordination with ODA and other bilateral funding streams, which continue to play an important role. Better coordination within country and regional platforms will generate greater impact in pandemic PPR, and better integration with other critical development needs.
 - (8) **Leverage the capabilities and resources of the private and philanthropic sectors.** There is significant scope to catalyze private sector participation in pandemic PPR. This must foremost involve installing adequate capacity for manufacturing and supply of medical countermeasures and other critical supplies through public-private partnerships. (See also Item 2 above.) Further, a much bolder shift in government and MDB strategies is needed to mobilize and augment private finance for infrastructure, so as to optimize official balance sheets for investments in both global public goods and economic development. We must also build strengthened and continuous public sector partnerships with philanthropic foundations to meet the needs of an expanded research agenda for pandemic PPR.
 - (9) **Develop insurance solutions for adverse compensation events associated with use of medical countermeasures.** The MDBs should work with countries and private insurers to enable risk financing solutions to better protect LIC governments from the liability of adverse compensation events, particularly in the form of no-fault compensation schemes or an explicit compensation fund with pre-determined compensation awards. These schemes can be pooled internationally, including amongst G20 governments, and could be put in place in the inter-pandemic period, supported by international financing.
19. The reforms and investments we proposed are critical to future global security. With contributions apportioned equitably, they are affordable to all nations. They are also miniscule compared to the enormous costs the world will incur if we fail once again to invest ahead of the next pandemic.
- a. **They provide immense social returns, both nationally and globally.**
 - b. They will materially reduce the risk of events whose costs to government budgets alone are 700 times as large as the additional international investments per year that we propose, and 300 times as large as the total additional investments if we also take into account the domestic spending necessary.
 - c. The next major pandemic may come at any time. Even if it occurs only 10 or 20 years from now, the costs to governments will still be 10 to 25 times the cumulative additional investments in prevention and preparedness over the years until then, in present value terms¹⁷.
 - d. The full damage of another major pandemic, with its toll on lives and livelihoods, will be vastly larger. Based on estimates by Metabiota, there will be 4 million expected deaths in the next decade from the three pathogen groups — pandemic influenza, epidemic coronaviruses and viral hemorrhagic fever — which is roughly equivalent to the losses to date in today's pandemic.

¹⁷ Even if we assume the investments in prevention and preparedness only reduce the probability of a pandemic by 50%, and reduce the cost of any resulting pandemic by 50% — hence saving 75% of the costs of a COVID-19-scale pandemic — the cost savings to government budgets are 8 to 18 times the cumulative additional investments over the next 10 to 20 years, in present value terms.