Preventing, Preparing for, and Responding to Disease Outbreaks and Pandemics

Future Directions for the World Bank Group

A World Bank Group Position Paper
Preventing, Preparing for, and Responding to Disease Outbreaks and Pandemics

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The WBG’s comparative advantage in supporting PPR

**Strong capacity to finance.** The World Bank is well positioned to finance country and regional programs with long-term, predictable resources; a varied set of financing instruments and products; and the ability to operate swiftly, including through surge financing during crises.

**Deep technical expertise and years of experience in PPR and health systems strengthening.** As one of the world’s most significant sources of financing and knowledge for development, the Bank has a track record of more than 20 years of providing financing and conducting analytical work in support of the PPR agenda.

**Country ownership and implementation.** The World Bank’s country-driven model ensures that financial support is tailored to each borrowing country’s needs, performance, and development plans, while providing strong incentives to reduce debt vulnerabilities.

**Decentralized footprint with a significant in-country presence and strong relationships.** The WBG has physical offices and representation in more than 130 locations, which gives the institution contextual knowledge and allows it to maintain strong in-country relationships.

**Comprehensive approach to crisis prevention, mitigation, and response.** The WBG’s strong track record in disaster risk management can bring an integrated approach to risk reduction, preparedness, and responses, building on work in the areas of disaster risk management.

**Multisectoral expertise and approach.** The World Bank engages through multiple sectors, supporting coordinated investments and reforms aimed at building human capital, reducing poverty and inequality, and accelerating climate friendly development.

**Convening and strategic partnerships.** The WBG has the capacity to bring together relevant actors at the global, regional, and country levels and across sectors.

**Ability to work with the private sector.** The IFC offers direct advisory services to governments on private-sector participation and financing to expand private sector capacity in support of the PPR agenda.
The COVID-19 pandemic has demonstrated the disruptive nature of disease outbreaks. Since the first documented case in December 2019, SARS-CoV-2 has reached every country in the world, resulting in significant mortality, overburdened health systems, and wide-scale economic and social disruptions. As of November 2022, more than 6.62 million COVID-19-related deaths have been officially recorded, and the true mortality from COVID-19 is estimated to be approximately three times higher.\(^1\) The combined supply- and demand-side shock resulted in a global recession—the deepest since World War II—with the global economy contracting by 3.0 percent in 2020. The lingering pandemic, combined with Russia’s invasion of Ukraine and multiple crises has led to a sharper-than-expected slowdown in economic growth, with GDP growth slowing from 6% in 2021 to 3.2% (projected) in 2022.\(^2\) Expected economic losses from the pandemic are estimated at nearly US$14 trillion through the end of 2023.\(^3\) The recovery has been highly uneven, leaving behind some of the poorest countries and contributing to an additional 75 to 95 million people living in extreme poverty this year, compared to pre-pandemic projections.\(^4,5\) COVID-19 has also stretched health systems to their limit, resulting in disruption of essential services, exacerbated learning poverty, job losses, displacement, hunger, and gender-based violence.

While the COVID-19 pandemic has been the most significant in recent memory, it is only one of many large-scale disease outbreaks this century with far-reaching social and economic consequences. The 2003 SARS pandemic, which was a modest outbreak relative to COVID-19, led to over 8,000 cases, 774 deaths,\(^6\) and an estimated global economic loss of US$52 billion.\(^7\) The Ebola outbreak in West and Central Africa in 2014–16 caused over 11,000 deaths, a GDP loss of US$2.8 billion, and a sharp rise in unemployment. Furthermore, the 2015–16 Zika outbreak led to over 17,000 infections\(^8\) and an estimated loss of US$3.5 billion in Latin America and the Caribbean.\(^9,10\) While these outbreaks have highlighted the need for increased attention to prevention, preparedness, and containment in order to save lives and avoid macro-economic shocks and costly emergency response efforts, the same cycle of “panic and neglect” has followed each event. At the same time, HIV/AIDS, tuberculosis (TB), malaria, and other communicable and non-communicable diseases remain important drivers of mortality and lead to vast economic costs. Antimicrobial resistance (AMR) has also emerged as a major threat, causing an estimated 5 million deaths per year.\(^11\)

COVID-19 has highlighted stark inequalities between countries in their ability to prevent and address disease outbreaks, reflecting significant underinvestment in pandemic prevention, preparedness, and response (PPR) capacity in poorer countries along with insufficient global solidarity. Many low-income countries (LICs) and lower-middle-income countries (LMICs) struggle with weak frontline health services, insufficient human resource capacity, gaps in disease surveillance and laboratory capacity, weak emergency coordination and management systems, and a lack of trust in government and institutions. These weaknesses have exacerbated the disruption of essential services brought on by the COVID-19 pandemic, including for prenatal care, childhood vaccinations, HIV prevention and treatment, TB, and the prevention and treatment of non-communicable diseases. The result of this has been a “secondary pandemic” and the reversal of decades of gains made in improving health outcomes. Moreover, despite global and regional efforts to increase equitable access to vaccines and other life-saving commodities, LICs and LMICs faced significant delays in accessing...
vaccines and other supplies that saved lives in high-income countries. A lack of financing, supply constraints, manufacturing capacity that is concentrated in a few countries, delays in regulatory approvals, vaccine preferences, low prioritization of COVID-19 vaccination programs, and vaccine hesitancy were all critical barriers to vaccine uptake in LICs and LMICs.

There is now a window of opportunity to build on the global momentum to break the cycle of “panic and neglect.” The catastrophic consequences of the COVID-19 pandemic have generated widespread calls for expanded investment in PPR and for reforms of the global architecture for coordinating and responding to disease outbreaks. Dialogue with countries and development partners shows an increased willingness to prioritize long-term investments in PPR, and a growing recognition that PPR capacity represents a global public good: strong preparedness in one country presents benefits across borders. However, continued progress will depend on collective leadership and accountability, and it will be important to harness the momentum around this agenda while the COVID-19 pandemic is still fresh in the minds of policy makers and development partners.

PPR has been central to the World Bank Group’s (WBG) mission for more than a decade, and the institution is uniquely positioned to do more on this, at all levels. This paper lays out the need for enhanced attention to PPR; describes the World Bank’s longstanding track record in supporting the PPR agenda at country, regional, and global levels; and sets out a broad and ambitious program to strengthen PPR globally. The WBG’s support for PPR over the past few decades has generated important lessons—particularly that PPR efforts should be consistently integrated in the health systems strengthening agenda. Building on these lessons, the WBG is well positioned to use its broad range of instruments, multisectoral expertise, and strong partnerships to meet the PPR commitments under IDA20, support IBRD countries in their efforts to build PPR capacity and contribute to a sustained and scaled-up approach to strengthening PPR in both IDA and IBRD countries.
Box 1: Clarifying Concepts: Prevention, Preparedness, and Response

Disease outbreaks, epidemics, and pandemics

**Disease outbreaks refer to an increase, often sudden, in the number of cases of a disease in a particular area.** Most disease outbreaks with pandemic potential have a zoonotic origin, which means they are caused by a pathogen spilling over from animals into humans. **Epidemics** have a similar definition as outbreaks, but the term is generally used for a wider geographic area. A **pandemic** is defined as “an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people.”

Prevention, preparedness, and response (PPR)

**Prevention encompasses the systems, policies, and procedures to determine, assess, avoid, mitigate, and reduce public health threats and risks.** This definition captures interventions needed to mitigate risk and reduce the likelihood or consequences of spillover events at the human, animal, or ecosystem interfaces. Such interventions frequently occur within the agriculture, food, or environmental sectors—highlighting the importance of a multisectoral, “One Health” approach—but also include some health sector interventions (for example, routine immunization against epidemic-prone diseases).

**Preparedness refers to ex ante actions that help mitigate losses when a disease outbreak occurs.** It includes strengthening the capacities and capabilities at community, country, regional, and global levels to prevent, detect, contain, and respond to the spread of disease, mitigating economic and social impacts. Strong health systems are a part of preparedness, given their role in facilitating detection, providing care for those who fall ill during an outbreak, engaging and building trust with communities, and deploying medical countermeasures.

**Response refers to ex-post actions taken as a result of a disease outbreak to reduce its economic, social, and health impacts.**

Disease outbreaks and broader health emergencies

**While this paper focuses on PPR for disease outbreaks, there are also other forms of health emergencies, including extreme heat events, droughts, flooding, earthquakes, and other natural disasters.** The capacities and investments required to prevent, prepare for, and respond to disease outbreak overlap with those needed for other health emergencies, and both require coordination beyond the health sector. However, other emergencies may require a broader set of investments and capacities that are not considered in this paper.
SARS and Ebola outbreaks, several commissions and reports made recommendations to address PPR gaps, and much of this dialogue has resurfaced in the context of the COVID-19 pandemic. Some important actions were taken following earlier outbreaks, most notably a significant revision of the International Health Regulations (IHR) in 2005 to require that all countries are able to detect, assess, report, and respond to public health events.

Despite progress, significant gaps remain in key domains of PPR capacity. This is true in countries across all income levels, with the most significant gaps in LICs, but with LMICs, upper-middle-income countries, and high-income countries all in need of strengthening. The Global Health Security Index (GHSI) 2021 annual report states that all countries are “dangerously unprepared” for epidemics or pandemics. Figure 1 shows gaps in the key domains of the GHSI, including laboratory capacity, surveillance and reporting, risk communication, and the management of zoonotic disease risks. Management of zoonotic disease risk has the lowest scores, followed by surveillance and reporting. The 2021 GHSI also demonstrated large gaps in available health capacity, measured as available human resources, strategies for growing the health care workforce, and number of hospital beds. All countries scored poorly, with an average of 30 out of 100. LICs and LMICs scored even worse, with averages below 20 out of 100. These findings are broadly consistent with gaps that have been documented in Joint External Evaluations (JEE).

Figure 1: GHSI scores by income level

![GHSI scores by income level](https://example.com/ghsi_scores.png)

- **Laboratory systems strength and quality**
- **Real time surveillance and reporting**
- **Risk communication**
- **Zoonotic disease**

Legend:
- High income
- Upper middle income
- Lower middle income
- Low income

Source: Global Health Security Index Report, 2021
and State Party Self-Assessment Annual Reports (SPAR) that are mandated under the IHR (see Annex 2). Although the COVID-19 pandemic has demonstrated that many broader factors can be critical for an effective response to disease outbreaks, the weaknesses in these “necessary but not sufficient” capacities highlight the risks countries face.

The COVID-19 pandemic has also revealed important shortcomings in the regional and global PPR architecture that can inform future efforts to strengthen PPR capacity and capabilities at the regional and global levels. These include the following:

- **Weaknesses in the global disease surveillance networks contributed to lost opportunities in containing transmission.** Globally, disease surveillance networks—which are essential for preventing, detecting, and tracking emerging infectious disease outbreaks—were characterized by a mix of some early and rapid action, but also by delay, hesitation, and denial. Stronger and more integrated systems, as well as incentives for timely reporting, are needed.

- **Lack of coordination in research and development (R&D) and regulatory approvals hindered the COVID-19 response.** Agencies working on R&D did not sufficiently coordinate efforts, and there were weaknesses in coordination in areas such as scientific exchange; priority setting for the R&D agenda and investments; and technology transfer and management of intellectual property rights that would create competitive markets and the availability of affordable, low-cost products. There was also heterogeneity in terms of regulatory requirements, including approval processes and timelines, and this made it difficult for every country in the world to have access to medicines and vaccines at the same time. Regulatory requirements for manufacturing facilities were also not consistent, which led to delays in scaling up production.

- **Capacity for manufacturing and sourcing of medical countermeasures was highly concentrated in a handful of countries, creating barriers to equitable access.** Vaccine production and export have been concentrated in a few, primarily high-income countries—the top 10 vaccine exporters hold 93 percent of global vaccine export value. Early on, COVID-19 vaccine manufacturers formed more than 150 partnerships with contract manufacturers, yet the footprint in LICs remains limited.

- **Disruptions in supply chains and international trade highlighted the need for more robust agreements and resilient systems.** Nearly every sector faced challenges with supply chains, but in the health sector this led to widespread shortages of personal protective equipment and other commodities, which resulted in health care providers either rationing use, paying high prices, or compromising on quality. New models for ensuring resilient supply chains and facilitating cross-border trade for commodities will be an essential component of PPR.

- **Lack of pre-positioned (at-risk) financing to purchase vaccines and other critical medical countermeasures was a constraint, particularly for LICs and LMICs.** This was
partly addressed through the COVAX pillar of the Access to COVID-19 Tools Accelerator (ACT-A), although a recent external evaluation of the ACT-A noted that while the COVAX pillar was one of the strongest parts of ACT-A, the effort was hampered by a lack of early financing.20 There is now extensive dialogue among partners and countries on how the global community can ensure that funding to secure medical countermeasures for LICs and LMICs can be made available on day zero of the next pandemic.

Active participation by regional institutions in the COVID-19 response demonstrated the role these institutions can play in strengthening PPR capacity. A recent evaluation of the multilateral response to COVID-19 noted that regional organizations provided countries with supply chain support and centralized purchasing capacity for diagnostics, tests, clinical management equipment, and vaccines.24 This allowed countries to obtain critical supplies on more favorable terms than if they had been working alone. In the area of vaccine procurement alone, several regional institutions played an important role, including the Pan American Health Organization (PAHO),25 which began procuring additional COVID-19 vaccines through its established Revolving Fund; the African Vaccine Acquisition Trust (AVAT),26 which pooled the procurement of vaccines for its member states and Caribbean countries; and the ASEAN COVID-19 Response Fund, which was set up to pool procurement of medical supplies and equipment as well as support member states with vaccines through UNICEF. These experiences have highlighted the potential of regional institutions to coordinate access to critical countermeasures and other dimensions of PPR.27

Inadequate public financial management (PFM), procurement arrangements,
institutional capacity, and broader governance arrangements undermined the ability of countries to act quickly, coordinate, provide accountability, build trust, and ensure that increased spending on PPR led to results. For example, some countries’ PFM and procurement systems prevented rapid reprogramming of budgets or the quick release of funds during an emergency. Rigid budget systems also prevented providers from being able to quickly access necessary resources and then allocate them in a flexible manner. A lack of clarity regarding roles and responsibilities across levels of government also contributed to delays or a lack of accountability in producing results.

Collective action to contain and mitigate the COVID-19 pandemic was inadequate. There was a lack of harmonization across multiple dimensions, such as in the application of public health and social measures, regulatory protocols, and travel restrictions. Ongoing efforts to improve collective action will need to prioritize timely sharing of information at global, regional, national, and subnational levels. Improvements in coordination across levels will also require clear roles and responsibilities, governance processes, trust, and possibly implementation of global results frameworks that enhance accountability and transparency. Most importantly, global coordination mechanisms need to build national ownership and strike the right balance between global goals and national needs and priorities.

COVID-19 has been a stark reminder of the chronic underfunding of PPR and the need to significantly scale up investments. Despite broad agreement concerning the importance of the PPR agenda, past financing for PPR at both domestic and international levels has been modest. At the domestic level, PPR has been estimated to account for between just 1 to 3 percent of total government spending on health, which translates into US$0.10 to US$0.30 per capita in LICs and US$0.40 to US$1.10 per capita in LMICs. At the international level, funding is similarly lacking. Development assistance dedicated to strengthening PPR amounted to roughly US$0.5 to $1 billion per year prior to the COVID-19 pandemic, which makes up only 1 to 2 percent of total development assistance for health. A key reason for the persistent underinvestment in PPR is that, outside the context of a crisis, governments tend to prioritize pressing short-term needs over investments in PPR that have uncertain and distant returns and long-term strengthening of health systems. While COVID-19 helped to build political will for investing in PPR, there are still many competing priorities, including funding needed to address multiple crises, such as natural disasters, extreme climatic events, famine, and conflict. However, preparedness is a global public good that requires the use of public financing, including from donors and governments. Breaking the cycle of “panic and neglect” will require incentivizing governments to increase domestic financing—for example, by using grant financing to leverage domestic financing and strengthening collective accountability.

Fortunately, there is an emerging consensus that significant increases in both domestic and international financing for PPR are needed. The G20 High-Level Independent Panel estimated that at least US$15 billion in international financing is needed every year for five years to address current gaps globally, and that this would need to complement significant increases in domestic spending. More recently, a WHO/World Bank report to the G20 Finance and Health Task Force (March 2022) estimated that the total annual global financing needed for the future PPR system is US$31.1 billion, of which, US$10.5 billion per year in international financing would be required. These and other estimates of financing needs differ due to how the scope of PPR is defined,
specifics of how costs are assigned to activities, and assumptions regarding future trajectories of PPR financing by countries and existing donors and institutions (some of which are currently seeking replenishment). However, notwithstanding these differences, all recent costing exercises convey an important point: even with increases in domestic financing, successful replenishments for existing institutions, and increases in financing for the WHO, large financing gaps will remain, and the outlays required to improve PPR are dwarfed by the potentially catastrophic costs of being unprepared for yet another pandemic.

COVID-19 has also demonstrated the need to reinforce the multiple actors that provide international financing for PPR and enhance coordination. Multilateral development banks, through their core funding mechanisms, are today the largest source of external financing for PPR in developing countries. Other key actors include the WHO and other specialized UN agencies engaged in PPR activities, global health institutions (such as the Global Fund to Fight AIDS, Tuberculosis and Malaria; Gavi, the Vaccine Alliance (Gavi); and the Coalition for Epidemic Preparedness Innovations), bilateral donors, and philanthropic institutions. One part of the solution to strengthening PPR is to reinforce existing institutions and bolster coordination, including through agreements that ensure accountability. This would include adequate funding for the WHO and other key institutions; expanded coordination, particularly at the country level; and increased efforts to enhance the governance of the wider global health security and PPR ecosystem.

The international community has already shown a strong willingness to act on these lessons—the newly established financial intermediary fund (FIF) for PPR (the “Pandemic Fund”) is one of the most significant demonstrations of this to date. The idea of establishing a FIF at the World Bank to support PPR financing was originally put forward by the G20 High-level Independent Panel.15 The proposal was developed with the close involvement of the G20 and in collaboration with the World Health Organization (WHO). The World Bank’s Board approved the creation of the new FIF, hosted by the Bank, on June 30, 2022, and it was formally established on September 8–9, 2022 and launched at the margins of the G20 Finance and Health Ministers Meeting in Bali on November 13, 2022. The Pandemic Fund will provide a dedicated stream of additional, long-term financing to strengthen PPR capacities and address critical gaps in low- and middle-income countries through investments and technical support at the national, regional, and global levels. Furthermore, the Pandemic Fund seeks to incentivize countries to prioritize the PPR agenda and increase their own efforts. It can also promote a more coordinated approach to PPR investments and, by convening key stakeholders, serve as a platform for discussion and advocacy around strengthening PPR. The new Fund must, however, be viewed as one part of the solution to increase financing for PPR.

There have also been other examples of a willingness to act on lessons from the COVID-19 pandemic, including the following:

- The global health architecture and its governance is now shifting. In addition to launching the process in December 2021 to draft a new pandemic treaty, the WHO has begun a consultation process with member states to strengthen the health emergency preparedness, response, and resilience architecture and is currently working on revising the IHR norms and benchmarks. Moreover, a G20 Joint Finance and Health Task Force, which the World Bank and WHO have been actively supporting, was established under the G20 Indonesian Presidency to enhance dialogue, promote collective action, improve global
coordination on PPR, and encourage effective stewardship of resources for pandemic PPR.

- **The WHO, the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and the United Nations Environment Programme (UNEP) developed a One Health Joint Plan of Action (2022–2026).** The objectives of this plan are to enhance countries’ capacity to strengthen health systems under a One Health approach; reduce risk from emerging or re-emerging zoonotic epidemics and pandemics; control and eliminate endemic zoonotic, neglected tropical, or vector-borne diseases; strengthen the assessment, management, and communication of food safety risks; curb AMR; and better integrate the environment into the One Health approach.

- **Efforts have been made to strengthen global surveillance—for example, through the establishment of the WHO Hub for Pandemic and Epidemic Intelligence in Berlin and a proposed WHO “Pandemic Radar” based in the United Kingdom.**

- **Numerous initiatives, including public-private partnerships, have been launched to expand globally diversified manufacturing capacity for vaccines and other medical countermeasures.** For example, PAHO launched the “Regional Platform to Advance the Manufacturing of COVID-19 Vaccines and other Health Technologies in the Americas.”\(^{34}\) In Africa, the Partnerships for African Vaccine Manufacturing was launched by the African Union (AU) with eight ambitious programs to scale up vaccine development and manufacturing on the continent.\(^{35}\) Additionally, the African Medicine Agency, which aims to improve coordination and capacity of medicine regulation across the continent, was ratified by the required 15 countries in October 2021.\(^{36}\)
The need for enhanced attention to PPR

Preventing, Preparing for, and Responding to Disease Outbreaks and Pandemics
3.0 WBG support to disease outbreak prevention, preparedness, and response: A retrospective

Strengthening prevention and preparedness

Pandemic prevention, preparedness and response have long been important priorities for the WBG and have gained increased prominence in the context of COVID-19. Following the Ebola outbreak in West and Central Africa (2014-16), pandemic preparedness was incorporated as an explicit policy commitment in IDA18. Since then, PPR commitments were expanded in IDA19 and are front and center in IDA20, which was negotiated during COVID-19. The IDA20 Human Capital Special Theme takes a dual-track approach to address the challenges facing IDA countries, including the need to support countries to progress towards universal health coverage and expand human capital investments (essential elements for accelerating green, resilient, and inclusive development), while strengthening preparedness in all IDA countries and helping to advance a One Health approach in at least 20 countries. The Human Capital theme complements a broader set of commitments on crisis preparedness and response, reflecting the need for IDA countries to build greater resilience in a world where shocks occur more frequently with compounded effects (see Annex 4). The World Bank monitors progress against these commitments, drawing from the pipeline and active portfolio of financing as well as analytical and advisory products under IDA20. The World Bank also reports on progress at regular meetings with Deputies as well as at the IDA20 Mid-Term Review.

The World Bank’s sustained commitment to PPR has accompanied a significant scale-up of health system strengthening, which provides a critical foundation for improved preparedness. The Bank’s active Health, Nutrition and Population (HNP) portfolio tripled between fiscal years 2017 and 2022. Combining IBRD and IDA, the World Bank is the largest provider of financing for PPR-specific and supportive operations, with an active portfolio of US$34 billion in over 100 countries to support health system strengthening (see Annex 1). While COVID-19 response financing partly accounts for this, non-COVID HNP commitments have remained significant in the last two years, given the growing needs of the health sector, for example for mitigating the secondary impact of the pandemic on disruption of services in the short-term and for supporting core long-term system strengthening including strong primary health care systems and public health systems that can serve as the first line of defense for future outbreaks.

Regional, multi-country projects have been at the heart of World Bank financing specifically focused on strengthening disease outbreak and health emergency preparedness over the past decade, with a strong focus on Sub-Saharan Africa. The first large-scale project focused on PPR was the East Africa Public Health Laboratory Networking Project, approved in 2010, which strengthened regional coordination of laboratory capacity for TB and broader public health challenges. Later, the 2014-2016 Ebola outbreak in West Africa exposed the need for multisectoral
engagement and cross-country collaboration to prevent, detect, and respond to disease outbreaks. This led to the launch of the Regional Disease Surveillance Systems Enhancement (REDISSE) program in 2016, which initially focused on Guinea, Senegal, and Sierra Leone before expanding to cover 16 countries. REDISSE has established national and regional cross-sector coordination structures, built human resource capacities, and strengthened surveillance, testing, border screening, case management, and infection prevention and control—all competencies that were tapped during the COVID-19 response (see Annex 3). Other regional projects have supported the Africa CDC and other subregions by bolstering their disease surveillance and response to infectious disease outbreaks in cross-border areas and strengthening laboratories (The Southern Africa TB and Health Systems Support Project, approved in fiscal year 2016, and the Africa CDC Regional Investment Financing Project, approved in fiscal year 2020). The experience with regional PPR projects in Africa has stimulated similar approaches elsewhere, including the Organization of Eastern Caribbean States (OECS) Regional Health Project, which was approved in 2019 and invests in health facilities and laboratory capacities, public health surveillance and emergency management, and institutional capacity building for preparedness.

While much of the focus has been on Sub-Saharan Africa, one of the World Bank’s earliest projects on pandemic preparedness was in Latin America. As part of the Global Program for Avian Influenza Control and Human Pandemic Preparedness and Response (GPAI) project, the World Bank provided a grant to Argentina, Bolivia, Brazil, Chile, Paraguay, and Uruguay to strengthen the Consejo Agropecuario del Sur for Avian Flu Preparedness in fiscal year 2007. The project focused on improving regional interagency collaboration on preparedness and building regional capacity for surveillance.

More recently, the significant COVID response financing that the WBG has committed to countries have included some elements of investments in preparedness. Between fiscal years 2020 and 2022, the World Bank committed more than 15 billion of the HNP portfolio to the COVID-19 health response through the Strategic Preparedness and Response Program (SPRP). This includes $7.6 billion for IDA and $8.2 billion of IBRD. This financing has supported health systems strengthening, including the investment in PPR infrastructure and capacities (see Annex 1).

Overall, there has been a substantial increase in World Bank financing for preparedness over the last decade. Focusing only on projects specifically designed to support preparedness, the World Bank committed an average of US$133 million per year to strengthen preparedness in the period from FY2015 to FY2019 (see Annex 1). However, in subsequent years (from FY2020-FY2022), preparedness financing increased more than six-fold, reaching US$882.2 million per fiscal year on average. This increase reflects both financing for dedicated preparedness projects and investments in preparedness through the COVID-19 response and includes approximately US$ 445 million of IDA and 438 million of IBRD (see Annex 1). This figure is likely to underestimate investments in preparedness given that some activities categorized as response, such as infection prevention and control, training, testing, vaccine deployment strengthening, contribute to preparedness strengthening.
The World Bank has also supported the preparedness agenda through operations outside the health sector as part of a One Health approach. In Vietnam, for example, the Livestock Competitiveness and Food Safety Project introduced good animal husbandry practices to smallholders of livestock production. Through enhanced biosecurity measures and improved sanitation in slaughterhouses and wet markets, the project has contributed to significant advances in food safety along the food value chains for pork and poultry, reducing the impact of foodborne zoonoses and risks related to AMR. Similarly, the Emerging Infectious Diseases Prevention, Preparedness and Response Project in China (US$300 million approved for fiscal year 2020) brings together responses from public health, agriculture, and food, as well as the environment and wildlife sectors. The project's aim is to support piloting improvements in risk-based surveillance systems for emerging infectious disease and antibiotic use in the human health and animal health sectors, as well as to promote data sharing across sectors to improve risk mapping and early warning systems and encourage proactive reporting. The One Health approach also includes a focus on unsafe food, which has been estimated to cost US$110 billion in lost productivity and medical expenses each year.41

In addition to projects that support PPR directly, the World Bank is also financing various projects that seek to address AMR. This includes 56 projects in 35 countries that address AMR by upgrading surveillance systems; strengthening laboratory capacity; enhancing institutional and capacity building; improving water, sanitation, and hygiene in health care facilities; and working to prevent, detect, and treat TB.42

The WBG has supported policy and institutional reforms related to PPR through Development Policy Financing (DPF), including Catastrophe Deferred Drawdown Option operations (Cat DDO). DPF supports a country's program of policy and institutional actions that promote growth and sustainable poverty reduction. Examples include efforts that strengthen PFM, improve the investment climate, address bottlenecks to improve service delivery, or that help countries prevent or respond to health emergencies. DPF also helps countries meet financing requirements through general budget financing that is subject to the borrower's own implementation processes and systems. Such financing can provide critical flexibility in times of crisis, in particular when coupled with measures to address urgent needs—for example, during the COVID-19 pandemic DPF supported the emergency health response and social protection system in Haiti, the establishment of a special health insurance scheme for health care workers in India, and emergency subsidy and cash transfer programs for the poor and informal sectors in Philippines, Costa Rica, Ecuador, and Dominican Republic.43 More recently, Cat DDO operations, which provide contingent financing lines that countries can secure to be financially prepared in the event of a shock related to a natural disaster (and may include public health-related events), have been widely used as part of disaster risk financing and are well-suited to support PPR. An example is the recently approved Third Disaster Risk Management Development Policy Loan (P176650) for Colombia for US$250 million, which includes a broad set of policy actions on climate and forest policy, fiscal resilience, disaster risk management, housing legislation, and public health risks. The project will create a 10-year public health plan that incorporates health risks and emergencies, with mapping of public health risks (including dengue and malaria) at the subnational level.
Trust funds managed by the Bank have played a key role in supporting preparedness by building evidence for decision-making, convening stakeholders, and co-financing World Bank projects. Trust funds supported by the Government of Japan, Resolve to Save Lives, the Bill and Melinda Gates Foundation, Gavi, the Global Fund, the Australian Department of Foreign Affairs and Trade, and other partners have supported analytic work, technical assistance, operations, and other engagements at country and regional levels, including the REDISSE program in West and Central Africa. The Health Emergency Preparedness and Response Trust Fund Umbrella Program (HEPR Program) was established to provide incentives to countries to increase investments in preparedness. A year since its approval by the World Bank’s Board, the HEPR Program has mobilized US$181 million in resources and awarded grants of more than US$100 million in 28 countries for health emergency preparedness, with an average processing timeline of just over two months. More recently, the Food Systems 2030 Umbrella Trust Fund, with support from Germany, has helped lay the foundation of One Health. The fund supports establishing coordination mechanisms across sectors and One Health platforms, assessing national capacities and optimizing institutional arrangements, developing regional cross-sectoral strategies, strengthening integrated surveillance systems for diseases in humans and animals, and performing risk assessment and scenario-based modeling.

In addition to the recently established Pandemic Fund, the World Bank has been instrumental in establishing and supporting other FIFs that have helped strengthen preparedness. The Bank, in its role as a trustee, manages the contributions, investment management, cash transfer, accounting, and financial reporting for some of the key FIFs in the global health space, including the Coalition of Epidemic Preparedness Innovations (CEPI) to support vaccine development; the International Finance Facility for Immunization (IFFIm) to support Gavi; the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM); and the Advance Market Commitment for Pneumococcal Vaccines (AMC). CEPI has dramatically reduced the time needed to develop vaccines; the AMC has helped spur vaccine development in developing countries; IFFIm has helped finance Gavi’s vaccine programs; and GFATM has supported the strengthening of key health systems functions that are essential for preparedness, as well as for response.
Responding to disease outbreaks

The WBG has a strong track record in financing the response to disease outbreaks. The Bank was a vital member of the global coalition that fought the Ebola outbreak in West Africa (2014–16), committing US$1.62 billion for Guinea, Liberia, and Sierra Leone for emergency response and longer-term preparedness.45 Similarly, for the 9th and 10th Ebola virus outbreaks in the Democratic Republic of Congo in 2018 and 2019, the IDA Crisis Response Window provided US$258 million in financing. The Pandemic Emergency Financing Facility (PEF)—a financing mechanism housed at the World Bank—complemented these resources by making available US$61.4 million to support
the Ebola response in the Democratic Republic of Congo; PEF funding was made available within days and could go directly to governments and qualified responding agencies such as the WHO and UNICEF. The Bank has also provided support in response to other outbreaks, including Avian Flu (covering more than 50 countries), SARS, Swine Flu, and Zika. For example, the Bank’s Global Program for Avian Influenza Control and Human Pandemic Preparedness and Response (GPAI) comprised 72 projects in 60 developing countries in all regions and received $1.3 billion in financing from the World Bank as part of its $4 billion global response from 2006–13 to avian and pandemic influenza threats.

Prior experience with disease outbreaks provided the basis for a rapid and large-scale WBG health response to the COVID-19 pandemic. The WBG’s COVID response package has been the largest and fastest crisis response in our history, reaching clients across the income spectrum with unprecedented speed and scale while maintaining focus on long-term goals. The health response alone has committed over US$15 billion through the COVID-19 Strategic Preparedness and Response Program (SPRP) as of November 2022, out of which US$7.6 billion was from IDA, with around one-third on grant terms. This financing reached more than 100 countries within the

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first 100 days of the COVID-19 pandemic and has been the largest crisis response in the World Bank’s history. The program continues to support vaccine acquisition and deployment, therapeutics, infection prevention and control, testing, and other aspects of systems strengthening that are critical for an effective response (see Annex 1 for breakdown of COVID-19 expenditures). Through a combination of PPR specific projects and COVID-19 financing, the Bank’s annual average commitments for outbreak response has increased 63-fold since the period 2015-2022, reaching US$9.5 billion per year on average between 2020-2022. This includes US$ 4.4 billion of IDA and US$ 5.1 billion of IBRD (see Annex 1).

The World Bank’s broader response package has been unprecedented. In the first two calendar years of the COVID-19 crisis (FY2020–21), the World Bank delivered $204 billion in financial support to public and private sector clients, of which $135 billion derives from IBRD/IDA, $60 billion from the IFC, and $9 billion from the Multilateral Investment Guarantee Agency (MIGA). This financing helped countries strengthen pandemic preparedness and response, protect the poor and jobs, and jump-start a climate-friendly recovery. The World Bank (IBRD/IDA) accounted for almost half of the roughly $279 billion delivered by seven major multilateral development banks in calendar years 2020 and 2021. World Bank commitments represented a surge of nearly US$50 billion compared to the two years before the crisis, including an 86 percent increase in health and a 135 percent increase in social protection. Early results show the wide reach of the WBG’s COVID-19 response, with 1 billion people supported by social protections across regions.

The World Bank has also supported countries in their work to strengthen response capacity by addressing critical governance and PFM issues. When large-scale disease outbreaks do happen, rapid mobilization of financing at scale is critical to support response activities at the country level. Many LICs and LMICs are limited in their ability to mobilize resources due to fiscal and borrowing constraints and budget systems that fail to provide the flexibility needed to quickly adjust spending priorities and direct funds to decentralized spending units and programs that are critical in responding to a disease outbreak. These changes need to be balanced with the right amount of control that will ensure transparency and accountability. In these contexts, the Bank—in coordination with the IMF, other international financial institutions, and bilateral donors—has supported countries to ensure that their PFM systems are ready and can facilitate a response to disease outbreaks and emergencies.

The IFC and MIGA have played a key role in the COVID response, reinforcing the importance of public-private partnerships for PPR. At the beginning of the COVID-19 pandemic, the IFC put in place a three-year, US$4 billion Global Health Platform that was designed to increase the private sector’s capacity to provide essential products and services, including vaccines, and to build resilience in low and middle income countries to future pandemics. As of October 2022, US$1.8 billion has been committed, including financial support to private sector providers, capacity strengthening for manufacturing supplies, technical assistance, and knowledge sharing. MIGA also has financed $9 billion to support private sector investors and lenders in tackling the pandemic. Additionally, the IFC has forged sustainable partnerships with the CEPI, the WHO, development finance institutions and other multilateral and bilateral donors, and private companies. The IFC also supports the expansion of health services and diagnostic capacity in emerging markets, development and deployment of integrated digital health tech platforms offering virtual services, supply chain optimization (e-pharma), digitally enabled outpatient chains, e-diagnostics, and genomics.
The WBG and PPR: A forward look

The Bank has unique comparative advantages in supporting the PPR agenda. Key strengths that can be further leveraged include the following:

- **Strong capacity to finance.** The World Bank is well positioned to finance country and regional programs with long-term, predictable resources; a varied set of financing instruments and products; and the ability to operate swiftly, including through surge financing during crises. The huge surge in Bank financing for COVID-19 was enabled by several key aspects of its financial structure. These include IBRD and IFC capital increases, the IBRD's crisis buffer, which was explicitly designed to respond to crises, and IDA's ability to front-load its support and accelerate its access to global capital markets. With strong support from members, the Bank moved quickly to bring forward IDA19 resources and accelerate the IDA20 replenishment, which includes funding from the capital markets. For example, in FY2022, IDA issued seven different Sustainable Development bonds, including 10, 15 and 20-year euro-denominated bonds that raised Euros 2 billion each and were oversubscribed.

- **Deep technical expertise and years of experience in PPR and health systems strengthening.** As one of the world’s most significant sources of financing and knowledge for development, the Bank has a track record of more than 20 years of providing financing and conducting analytical work in support of the PPR agenda and health systems strengthening, more broadly. The World Bank’s 2007 Health, Nutrition, and Population strategy shifted toward a focus on strengthening health systems and since then, the Bank has increased its financing of activities that further this mission, including health financing, health information and management systems, human resources, procurement and supply chain logistics, and policy reform and institutional capacity.

- **Country ownership and implementation.** The World Bank’s country-driven model ensures that financial support is tailored to each borrowing country’s needs, performance, and development plans, while providing strong incentives to reduce debt vulnerabilities.

- **Decentralized footprint with a significant in-country presence and strong relationships.** The WBG has physical offices and representation in more than 130 locations, which gives the institution contextual knowledge and allows it to maintain strong in-country relationships with local public and private stakeholders, as well as respond quickly on the ground.

- **Multisectoral expertise and approach.** The World Bank engages through multiple sectors, supporting coordinated investments and reforms aimed at building human capital, reducing poverty and inequality, and accelerating climate friendly development. By leveraging expertise and engagement across health, agriculture, and environment sectors, the World Bank is well positioned to implement a One Health approach.
Comprehensive approach to crisis prevention, mitigation, and response. The WBG has a strong track record in disaster risk management and can bring an integrated approach to ex ante risk reduction, preparedness measures, and ex post responses, building on work in the areas of natural and climate disaster risk management.

Convening and strategic partnerships. The WBG has the capacity to bring together relevant actors at the global, regional, and country levels and across sectors. The Pandemic Fund is a recent example of how the Bank has helped convene sovereign and philanthropic donors, potential beneficiary (“co-investor”) countries, civil society actors, MDBs, the WHO and other UN agencies, and global health institutions like CEPI, Gavi and the Global Fund, around a strategic financial partnership to strengthen PPR in LICs and MICs. Within countries, the WBG brings together sectors and Ministries of Finance and works closely with concerned international partners, including the WHO, Gavi, CEPI, the Global Fund, UNICEF, the IMF, the Bill and Melinda Gates Foundation, Wellcome Trust, and others. The World Bank’s close relationship with Ministries of Finance is particularly important in helping countries prioritize investments in PPR and health systems in adverse macroeconomic and fiscal contexts. Given low levels of spending on PPR, policymakers will need to make bold choices to increase revenues, give greater priority to PPR in budgets, improve the efficiency and equity of public spending, and identify new sources of development financing.

Ability to work with the private sector. The IFC offers direct advisory services to governments on private-sector participation and financing to expand private sector capacity in support of the PPR agenda, while also creating the conditions and incentives needed to boost the production and supply of countermeasures in developing countries.

Lessons from past outbreaks (e.g., Avian Flu, SARS, Ebola) and other crises are shaping the Bank’s support for the PPR agenda. These lessons have been documented elsewhere and include the following:

Early interventions and sustained efforts are needed to reduce the spread and impact of outbreaks. Over 2003–04, there were initial outbreaks of avian influenza in Asia spreading across poultry, which then subsequently spread to other continents in the following years. The international community acted quickly, knowing that without swift and sustained action the virus could mutate and become transmissible between humans, triggering a pandemic. The World Bank mobilized financing from donors and established the Avian and Human Influenza Facility (AHIF) and GPAI to minimize the threat of avian influenza to humans and to prepare, control, and respond to infectious disease emergencies. This experience has informed the Bank’s response to subsequent disease outbreaks.

Cross- and within-country collaboration and coordination with the WHO and other organizations play a critical role in disease outbreak response. Ebola and other outbreaks have provided important models for partnership and collaboration with the WHO and other organizations. These crises have also highlighted the critical role that cross- and within-country collaboration and coordination play in responding to disease outbreaks. Recognizing this, the Bank developed the Global Crisis Response Platform in 2016 to provide scaled-up, systematic, and better-coordinated support for crisis prevention, preparedness,
response, and recovery.\textsuperscript{56} By strengthening IDA's Regional Window, the WBG has also enhanced its capacity to support global public goods.\textsuperscript{57}

- **Effective PPR depends on a multisectoral approach.** The avian influenza outbreak, which began in birds and then spilled over to humans, demonstrated the need for a One Health approach to PPR. Within the World Bank, animal health experts in the Agriculture and Rural Development sector worked closely with human health experts in the Health, Nutrition, and Population sector to create, establish and manage the GPAI and AHIF.

- **Regional initiatives play an important role in preparedness.** The REDISSE program has established national and regional cross-sector coordination structures, built human resource capacities, and strengthened surveillance, testing, border screening, case management, and infection prevention and control in West and Central Africa. This network and its competencies were successfully leveraged during the COVID-19 response.

- **Strengthening health systems and supporting universal health coverage (UHC) agendas are synergistic to preparedness.** The World Bank provided key support to restore health services, stop the spread of infection, and restart the economy during the Ebola virus outbreak in West Africa. From this outbreak, it became clear that countries need health systems with adequate staff, personal protective equipment, laboratory capacity, and surveillance systems to respond effectively to health crises. Countries that have low capacity within their public health systems, combined with a lack of access to those health services for the population, are most at risk of not being able to effectively manage health crises.

The Bank’s future work in PPR will also build on the lessons from the design and implementation of the COVID-19 support package, including the Strategic Preparedness and Response Program (SPRP), which aligns with the new WBG Global Crisis Response Framework. These lessons include the need for an agile approach to learning, internal knowledge-sharing on both technical and operational issues, higher frequency engagement with clients and partners, and a solutions-oriented approach to operational processing. The Bank’s COVID-19 response was unprecedented in scale and speed, and it will be important to draw on lessons from teams and countries regarding processing of financing, achieving project effectiveness, and accelerating procurement and disbursement. To this end, the Bank will draw on both internal and external evaluations of the COVID-19 response. The new WBG Global Crisis Response Framework sets out a framework for US$170 billion of new commitments from April 2022 to June 2023, which serve as the WBG’s operational response to support crisis response and long-term development. Future work in PPR will align with the last two pillars of the framework—namely, strengthening resilience and bolstering policies, institutions, and investments for rebuilding better.

Looking ahead, the WBG will support strengthening of PPR through actions in three key domains: 1) financing; 2) global engagements and partnerships; and 3) analytics, evidence, and dialogue (See Figure 2). Additional details of possible financing by the WBG as part of the PPR program are outlined in Box 2. Furthermore, World Bank support will continue to take a multisectoral approach to PPR based on the principles of One Health and also by recognizing that effective PPR depends on key "PPR adjacent" health system capabilities.
PPR financing through IDA and IBRD
- Regional projects based on OneHealth Approach
- Systematic integration of PPR in HSS
- Support to PPR through projects in agriculture and environment sectors
- Support to PPR reforms through DPOs, CAT-DDOs & contingent response financing
- Global PPR Multi-Phased Approach (MPA) (potential)

Trust funds (FS2030, HEPR)
- The Pandemic Fund
- IFC Global Health Platform and MIGA

PPR Analytics, Evidence and Dialogue
- Global and regional reports, studies and convening
- Dedicated PPR country diagnostics
- Systematic coverage of PPR in core diagnostics (e.g. SCDs, CPFs, CCDRs)
- Partnerships to strengthen data and PPR capacity and financing assessments

Engagement in global fora and convening
- G20 Joint Health and Finance Task Force
- G7 Pandemic Preparedness Partnership
- Global Preparedness Monitoring Board (GPMB) with WHO

Partnerships with global and regional organizations
- WHO, OIW, FAO, UNEP
- ACT-A, AU, Africa CDC, AVAT
- Global Fund and Gavi

Fiduciary services and governance
- CEPI
- Gavi (board and governance committees)
- GFATM
- IFFIm
- Pneumococcal AMC

The Pandemic Fund as an instrument to strengthen coordination and partnerships

Figure 2: World Bank Group global program on pandemic prevention, preparedness, and response

AgGP = Agriculture Global Practice; ENB = Environmental, Natural Resources & Blue Economy Global Practice; HEPR = Health Emergency, Preparedness and Response Trust Fund; SCD=Systematic Country Diagnostic; CPR = Country Partnership Framework; GPMB=Global Pandemic Monitoring Board
Box 2: Possible areas of financing

A recent G-20 paper on the costs and financing of emergency preparedness, written by the World Bank and WHO, proposes five critical areas of investment for health emergency preparedness:

- **Surveillance**: Collaborative intelligence and early warning
- **Communities**: Public health, social measures, and resilient populations
- **Countermeasures**: Prioritized research and equitable access to medical countermeasures and essential supplies
- **Care**: Lifesaving, safe, and scalable health interventions, as well as resilient health systems
- **Coordination**: Pandemic preparedness strategies and emergency operations

These areas are closely aligned with the financing priorities that have been identified in the Program Framework for the potential PPR Multiphased Programmatic Approach (MPA): 1) commodities, equipment, and facilities (for example, laboratory and surveillance networks, pooled regional procurement, regional genomics surveillance networks, and global supply chain networks); 2) information and coordination (for example, intragovernmental emergency communication protocols, risk communication protocols, legislation for rapid Emergency Operations Centers, and community networks’ misinformation and disinformation strategies); and 3) human resources (for example, simulations, training, surge capacity preparedness planning, and development of clinical guidelines). In addition, knowledge of preexisting gaps informed by the SPAR and GHSI assessments and global experiences in gaps in emergency preparedness not previously foreseen were also considered.
The World Bank is taking action to expand PPR financing through both IDA and IBRD. The WBG financing model is based on country ownership, multisectoral engagement, strong fiduciary and safeguards oversight, and a broader macro-fiscal engagement in coordination with the IMF. This approach has proven effective in providing the long-term, predictable financing needed to support investments in country systems and regional coordination, and to build the necessary country ownership for sustained investments.

Leveraging this financing model, IDA and IBRD financing for PPR will be expanded through multiple approaches:

1. **Regional projects based on a One Health approach.** IDA’s Regional Window has been a useful instrument to strengthen PPR at the country level and through regional institutions to support cross-country collaboration and continental capacities. These efforts will be expanded in both IDA and IBRD contexts, building on lessons from past projects that supported disease surveillance, laboratory capacity, and regional coordination, such as the REDISSE program in West and Central Africa and the East Africa Public Health Laboratory Network project (see Annex 3).

2. **Systematic integration of PPR in health system strengthening projects.** There are opportunities to enhance synergies between efforts to strengthen health systems and PPR through the Bank’s country operations. This can include dedicated components to bolster public health institutions or laboratories, or explicit integration of PPR strengthening in support of information systems, community platforms, primary health care and prevention, and other areas of health system strengthening. This form of “mainstreaming” PPR will be pursued in new operations, as well as through restructuring and additional financing for existing projects.

3. **Support to PPR through projects focused on the agriculture and environment sectors.** As a complement to One Health approaches that underpin regional projects such as REDISSE, there is also a growing portfolio that supports prevention and preparedness through entry points in the agriculture and environment sectors. The WBG is committed to expanding financing, leveraging ongoing analytic work to support awareness raising, and advancing policy dialogue. The Human Capital theme in IDA20 includes a policy commitment to strengthen health security by improving pandemic preparedness and prevention at the nexus of human, animal, and ecosystem health, including zoonotic diseases and AMR, as well as to support at least 20 IDA countries to mainstream One Health.
4. **Support to PPR–related reforms through Development Policy Operations (DPOs) and Cat DDOs, and contingent response financing.** Existing pre-arranged financing products—like Development Policy Operations, Cat DDOs, and Contingent Emergency Response Components (CERCs), offered through IDA and IBRD—can bolster country-level preparedness by supporting institutional or policy reforms. These products have played a key role in the Bank’s work on natural disasters, and their use in relation to PPR will continue to be expanded.

5. **A global PPR MPA** may also be considered to increase the Bank’s support to PPR. Building on the experience with the COVID-19 response MPA, this approach could help streamline the processing of new financing, facilitate learning and coordination, and accelerate the scale-up of financing for PPR based on a One Health approach.

**Trust funds will continue to play a critical role in enhancing and expanding World Bank support to PPR.** In particular, the HEPR Program has co-financed IDA investments in health emergency preparedness, provided funds to countries not eligible for IDA resources, supported regional efforts to strengthen cross-border health emergency preparedness, and created a global effort to build the evidence needed to identify the most impactful health emergency preparedness and response efforts. Going forward, the HEPR Program will continue to mobilize resources to play this catalytic and complementary role, particularly through health sector innovations that strengthen health system resilience. The Food Systems 2030 Umbrella Trust Fund also has had a catalytic effect on PPR and will continue to do so: recently, the fund awarded $12 million in grants to four regions for analytical work and technical assistance to One Health initiatives. The PROGREEN Multi-Donor Trust Fund also finances projects that address the main drivers of emerging infectious diseases. By addressing such issues as deforestation and land use changes, these efforts help reduce spillover from wildlife and pandemic risk as well as improve livelihoods of the poor in affected areas. The WBG will also pursue other strategic trust fund partnerships to support its ambitious agenda, which includes analytic work, technical assistance, convening, and other key activities to complement financing and for required external support.

**The new World Bank–hosted Pandemic Fund** aims to provide a dedicated stream of additional, long-term funding for critical PPR functions at country, regional, and global levels. To date, US$1.6 billion in donor funding has already been mobilized for the Pandemic Fund, and the first call for proposals is targeted to be issued in the next couple of months. The World Bank now hosts the Secretariat, which includes technical staff seconded from the WHO, and also serves as trustee and one of the implementing entities (See Box 3). Beyond financing, the Pandemic Fund will support the other two domains of the WBG’s PPR program—1) global engagements and partnerships and 2) analytics, evidence, and dialogue.
The Pandemic Fund (formerly known as the “Pandemic Preparedness and Response Financial Intermediary Fund” or “PPR FIF”)

The Pandemic Fund adds value, along several dimensions, for contributors, recipients, and implementing entities.

The Pandemic Fund brings **additionality** in financial resources for PPR, including through the mobilization of non-ODA resources—for example, from philanthropic entities and donors.

Financing from the Pandemic Fund will **incentivize** countries to invest more in PPR, including through blending of multilateral development bank resources to further increase concessionality and matching of domestic resources.

By bringing together key institutions engaged in PPR and health system financing, the Pandemic Fund will help promote a more **coordinated and coherent approach to PPR** enhancement by linking financing with existing, country-level planning and prioritization processes, thereby bolstering the alignment and complementarity of efforts to strengthen both PPR and health systems while reducing transaction costs for client countries. More coordinated support also creates conditions for a more systematic dialogue about domestic financing for PPR.

**The following key principles underpin the Pandemic Fund’s design:** First, it **complements** the work of existing institutions that provide international financing for PPR, drawing on their comparative advantages. Second, it **catalyzes** funding from private, philanthropic, and bilateral sources that can leverage domestic financing. Third, it **integrates** functions and systems across the health system, and across sectors, without contributing to further fragmentation or verticalization. Fourth, it provides **flexibility** to work through a variety of existing institutions and adjust over time as needs and the institutional landscape evolve. Fifth, it promotes **inclusivity while ensuring streamlined and efficient governance and operating arrangements.** Sixth, it operates with high standards of **transparency and accountability.**
Although the Pandemic Fund will channel funding through a broad range of implementing entities that are currently engaged in supporting the PPR agenda, it can play a catalytic role on the Bank side. Specifically, the Pandemic Fund can co-finance World Bank projects and make financing terms more concessional, thereby incentivizing country take-up and investments. The Pandemic Fund will be able to complement other instruments, including the HEPR Program, because of its flexibility to work through existing institutions engaged in PPR financing, its ability to adjust over time as needs and the institutional landscape evolve, and its more flexible and streamlined governance and operating procedures. The Pandemic Fund will also aim to provide catalytic investments for PPR innovations.

The IFC and MIGA will support the PPR agenda through complementary financing, technical assistance, and other instruments. After early calls in support of diversified manufacturing, the IFC has played a key role in supporting this mission, including by launching a US$4 billion Global Health Platform to increase production and supply of critical health care products for developing countries. In advancing this agenda, the WBG will work with countries, regional entities, and partners to strengthen planning and coordination of plans and to address critical issues related to regulatory capacity, sources and extent of long-term demand for different products, supply logistics, and other factors. The World Bank Group also provides complementary financial support to the platform. In Africa, the IFC is currently supporting all front-running upstream vaccine manufacturing projects including with the Rwanda Development Bank and Institut Pasteur de Dakar. Additionally, the World Bank is providing technical assistance for regulatory strengthening and skills building. The IFC will continue its ongoing engagements to finance manufacturing, in coordination with World Bank support, to strengthen the regulatory environment, develop the skill base, and
establish the long-term public sector demand from governments, regional institutions, and international bodies, such as Gavi. MIGA also has an important role to play in strengthening the resilience of private financing for PPR through guarantees and structuring of financial instruments.

PPR global and regional engagements and partnerships

The WBG will continue to shape the evolving PPR agenda and financing landscape through engagement in global fora and by convening stakeholders. Over the past year, the Bank has actively participated in the G20 Joint Finance and Health Task Force, collaborating with the WHO to prepare two papers that informed and influenced key decisions around PPR financing needs and modalities and that have shaped the PPR agenda, including on global governance. The Bank has also engaged with the G7 on its Pandemic Preparedness Partnership. The Bank will remain engaged in these fora to shape the global PPR dialogue and, together with the WHO, will continue to co-convene the Global Preparedness Monitoring Board (GPMB), an independent monitoring and accountability body that assesses progress made on disease outbreak and other health emergency preparedness and response capacity issues.

The WBG will build on and deepen existing partnerships on PPR, including with the WHO and other institutions. In the context of the COVID-19 pandemic, many of these partnerships have already deepened, and others have been formed, including with WHO, Gavi, CEPI, Global Fund, Unitaid, the Foundation for Innovative New Diagnostics, the Wellcome Trust, and the Bill & Melinda Gates Foundation and COVAX. The IFC and WHO have been engaged on the WHO’s regulatory and normative frameworks and on integrating them into the enabling environment to leverage private sector support to expand LMIC manufacturing capacity and strengthen health systems. The WBG is also collaborating with the WHO on the Pandemic Fund, where the WHO brings knowledge and technical expertise—and serves as an implementing partner. The World Bank will also continue to strengthen PPR through a One Health approach in coordination with other partners including OIE, FAO, and UNEP. The WBG is committed to working toward aligned and coordinated action, both in the response to COVID-19 and in strengthening PPR for the long term at regional and global levels.

The World Bank has also worked in collaboration with the IMF, WHO, and World Trade Organization (WTO) to convene the Multilateral Leaders Task Force on COVID-19 (MLTF) and host its secretariat. The MLTF has used an evidence-based approach to identify, track, and solve global, regional, and country level bottlenecks to vaccine access and deployment, as well as to other critical countermeasures. Per the request of the G20 Finance Ministers and Central Bank Governors, and in collaboration with the COVID-19 Vaccine Delivery Partnership, in April 2022 the MLTF prepared a report on accelerating vaccine deployment, with a focus on a country-driven, country-led push supported by the international community. A recent independent evaluation of the multilateral response to COVID-19 has noted that “the MLTF provides an important example of how coordination across the multilateral system can be used to bring evidence together from diverse sources to monitor progress achieved against collective goals, enhancing transparency and accountability while providing an evidence-based platform to advocate for supportive actions from
other stakeholders such as national governments. Further, the report notes that “one of the MLTF’s key contributions has been to enhance public availability of data to track progress towards the global targets for equitable access to COVID-19 vaccines, treatments, tests, and PPE. The MLTF’s activities increased transparency and accountability around vaccine contracts, agreements financing and delivery to help advocate for actions necessary to achieve equitable access.”

The World Bank will deepen its collaboration with regional institutions and support capacity building and strengthening of regional response mechanisms. The World Bank has longstanding partnerships on PPR with the AU, Africa CDC, PAHO, and other regional institutions, relationships the World Bank will continue to deepen. A recent example is a new US$100 million support program for the Africa CDC. The project will contribute to cultivating regional preparedness capabilities by building a robust public health workforce across countries’ health systems; enhancing continental research and development as well as the manufacturing agenda for vaccines, diagnostics, and therapeutics; and expanding and strengthening Africa CDC’s institutional footprint to provide tailored support to member states through its Regional Collaborating Centers in coordination with Regional Economic Communities and partners.

The COVID-19 pandemic also provided an opportunity to form new regional partnerships, including with the African Vaccine Acquisition Trust. The World Bank will continue to strengthen regional coordination on health security with regional development banks and international organizations. For example, the World Bank has worked closely with the Asian Development Bank, the WHO’s regional offices for the Western Pacific and Southeast Asia, and ASEAN on a regional health security partnership.

The World Bank will continue to collaborate with the Global Fund and Gavi, which have long supported dimensions of PPR, to expand and align support to countries. These organizations are part of the Sustainable Financing Accelerator arm of the Global Action Plan for Healthy Lives and Well-being for All, which supports countries as they work to mobilize more resources for health and spend resources efficiently, including on primary health care and other essential health services. Collectively, these agencies are already supporting laboratory strengthening and the health workforce, as well as vaccination and commodity procurement and delivery systems. These agencies are committed to leveraging future support for PPR more systematically. Therefore, strong alignment and coordination with these partners will be essential. World Bank–funded projects provide a platform for global partnerships like Gavi and the Global Fund to align their support to countries in ways that increase efficiency and ensure that the most vulnerable populations are being reached. Given Gavi and the Global Fund’s plans to expand support for PPR, there are opportunities to deepen existing partnerships, including through co-financing arrangements, to provide coordinated support to countries.

The World Bank will continue to provide fiduciary services to global health finance partnerships that are involved in PPR and engage on the boards of global entities. The Bank supports several international partnerships and entities focused on strengthening global health security—like the Global Fund, CEPI, IFFIm, and the Advance Market Commitment for Pneumococcal Vaccines—through FIFs for which the Bank provides fiduciary and/or treasury management services, serving as FIF trustee. Furthermore, the Bank participates on the boards of these entities, which provides opportunities to shape the PPR agenda.
Through our involvement in the new Pandemic Fund—including as trustee, host of the secretariat, and implementing entity—the World Bank expects to contribute to improved coordination of PPR financing. The Pandemic Fund is designed to help strengthen PPR capacities not only by injecting additional international financing but also by helping countries better align support from different stakeholders with key PPR priorities. This will be achieved through country-driven processes, underpinned by the IHR, and shaped by a strong Technical Advisory Panel and a diverse and inclusive governing board that brings together different stakeholders involved in PPR. These processes are expected to help establish shared commitments, strengthen in-country partnerships, and expand financing from both international and domestic sources.

The World Bank is also in discussion with the IMF on affordable, longer-term financing for PPR through the Resilience and Sustainability Trust (RST). The RST was approved by the IMF Executive Board in April 2022 and helps low- and middle-income countries develop their resilience to external shocks while still ensuring growth and balance of payments stability. The World Bank is working with the IMF to develop country cases for arrangements through the RST, which are focused on pandemic preparedness.
PPR analytics, evidence, and dialogue

Knowledge, data, and dialogue are critical elements of the PPR agenda. The WBG has an extensive track record of leading or coordinating studies, research, and dialogue, including to distill lessons, shape policy and reform agendas, and provide data to support decision-making. Knowledge, data, and dialogue will remain a mainstay of the WBG's work on preparedness, with a focus on 1) global and regional flagship reports and studies; 2) country studies and diagnostics; and 3) strengthening data for PPR.

Analytical work and the preparation of flagship reports will continue to shape the PPR agenda. In the wake of the Ebola crisis, the World Bank convened an International Working Group to identify lessons and recommend actions to strengthen preparedness. The resultant report, titled “From Panic and Neglect to Investing in Health Security,” made 12 recommendations that foreshadowed proposals that have emerged in the context of the COVID-19 pandemic. Forthcoming and newly released flagship reports from the World Bank, including on COVID-19 and Human Capital, Resilient Health Systems, and One Health (see Annex 5), will help inform the PPR agenda and shape policy dialogue at the country level. The Bank has also produced an analysis to project government spending to 2026 through the “Double Shock Double Recovery” series, which shows that the majority of developing countries will face major challenges in mobilizing the resources necessary to invest in preparedness while also maintaining the financing needed to make progress toward achieving UHC, and that bold actions must be taken.

This analysis is part of a broader work program with the IMF's Department of Fiscal Affairs, which aims to strengthen the collaboration between the two agencies to more effectively support countries as they work to develop health financing policies that accelerate progress toward UHC while also ensuring fiscal sustainability and continued and inclusive economic growth. The analysis produced under this work program also feeds into global, regional, and national dialogue regarding options for revenue-raising (including health taxes), efficiency gains, and prioritization of health and PPR. There are also ongoing regional analytic efforts, including recently launched work to prepare a White Paper on the nexus of health financing, UHC, and PPR in West and Central Africa.

At the country level, dedicated PPR diagnostics and PPR–informed core products will help shape policy dialogue and country engagement. Since 2020, the World Bank has conducted core “Pandemic Preparedness Diagnostics” to help countries identify the need for critical investments in capacity building. There are currently 19 assessments in the PPR Diagnostics portfolio, and the World Bank will continue to develop and expand PPR diagnostics (See Annex 5). The World Bank will also strengthen coverage of PPR in core policy engagement frameworks, including Country Climate and Development Reports, Systematic Country Diagnostics, and Country Partnership Frameworks. Consideration could also be given to incorporating PPR into the Country Policy and Institutional Assessment exercise.

The World Bank will work with partners to strengthen data and assessments for PPR capacity and financing. Monitoring PPR capacities and financing (international and domestic) will be key to strengthening priority investments and supporting mechanisms for collective accountability. To this end, the WBG will remain engaged in efforts to revise the International Health Regulations and the associated approaches to assess country capacities and develop prioritized and costed plans. Moreover, commitments by countries and institutions to spend more and better on PPR must be accompanied by more robust arrangements to monitor both domestic and international
financing for PPR. This will require consensus on how to determine clear definitions and “boundaries” for PPR and leverage existing systems for tracking financing, including National Health Accounts and the Creditor Reporting System. Building on ongoing partnerships with the WHO and OECD in the area of health financing, as well as prior work to assess PPR financing at the country level, the WBG will help strengthen the systematic collection of data and reporting on PPR financing.\(^68\)

**Mainstreaming PPR across sectors**

**World Bank support will continue to take a multisectoral approach to PPR based on the principles of One Health and also by recognizing that effective PPR depends on key “PPR adjacent” health system capabilities.** The World Bank will aim to mainstream its contribution to PPR by supporting projects, activities, and initiatives with relevant PPR components in non-health sectors. For example, the World Bank could support building resilient supply chains and facilitating cross-border trade\(^69\) to ensure all countries have access to sufficient medical countermeasures; building and strengthening education systems that are resilient and can continue to operate during crisis situations; supporting social development projects that provide assistance to households and small businesses during emergencies; and improving the availability of safely managed drinking water and handwashing facilities as well as strengthening wastewater testing systems to detect pathogens.

**Recognizing the critical role that efficient, open, inclusive, and accountable institution—as well as strong PFM and procurement systems—play in PPR, governance will be a key pillar of the Bank’s engagement.** Governance reforms benefit countries in many ways that will enhance PPR investments—for example, by building trust among citizens, improving whole-of-government coordination, and strengthening accountability in delivery of health and other public services. To make PFM systems “pandemic-ready,” the governance global practice, together with the IMF, have been working to reform budget and procurement modalities to enable swift, flexible financing during pandemics. This requires advising Ministers of Finance on budget reforms that ensure timely fund disbursement and flexible use of funds at the frontlines. Opportunities to support policy reform will also be pursued through partnership with the IMF in operationalizing the recently approved Resilience and Sustainability Trust.
This paper has outlined an ambitious agenda for the WBG to support PPR enhancement at country, regional, and global levels as part of a broader approach to strengthen health systems. It is an agenda that not only seeks to deliver on the Bank’s IDA commitments related to disease outbreaks and crisis response but also to respond to demands from all our shareholders, clients, and other stakeholders for the Bank to play a key role in strengthening PPR capacities at country and regional levels through a wider health system strengthening agenda. Policy commitments from IDA’s Human Capital Special Themes support the building of resilient health systems that can provide core essential health services and have the capacity to prevent, detect, and respond to disease outbreaks and other health emergencies—an approach that will ensure sustainability, efficiency, and effectiveness.
The paper has highlighted that PPR is an inherently multisectoral agenda. There is broad agreement that prevention and preparedness must be based on a One Health Approach. But the experience with COVID-19 has also taught us that PPR is a cross-government and whole-of-society endeavor, which the WBG is uniquely positioned to support.

Further, the paper has argued that there are large financing gaps to fill, particularly in LICs and MICs. To this end, external financing must be complemented by domestic investments, and financing needs to be accompanied by technical assistance, analytics, and better data, including in support of mobilizing and incentivizing domestic financing for PPR.

Looking forward, the WBG will support strengthening of PPR through actions in three interconnected domains: 1) financing; 2) global engagements and partnerships; and 3) analytics, evidence, and dialogue. The World Bank will continue to expand PPR financing through both IDA and IBRD and existing Trust Funds. This financing will support countries and regional institutions to respond to future outbreaks, leveraging the full set of Bank instruments and lessons learned in the context of COVID-19 and other response programs. Furthermore, the new World Bank-hosted Pandemic Fund will provide dedicated and complementary external financing for PPR and incentivize country investments while also helping to strengthen partnerships and coordination at all levels, serving as a platform for evidence-based advocacy. The IFC and MIGA will also continue to support the PPR agenda through complementary financing, technical assistance, and other instruments. On the second domain of global engagement and partnerships, the World Bank will continue to shape the evolving PPR agenda and financing landscape through its engagement in global fora and by convening stakeholders, including in the context of the new Pandemic Fund. In addition, it will build on and deepen its existing partnerships and collaborations with WHO, regional institutions, Gavi, the Global Fund, and others, as well as continue to provide fiduciary services to global health finance partnerships and engage on the boards of global entities. Finally, in the area of PPR analytics, evidence and dialogue, the World Bank will continue to shape the global and regional PPR agenda through analytical work and the preparation and dissemination of flagship reports. At the country level, the World Bank will prioritize dedicated PPR diagnostics and PPR-informed core products. In addition, the World Bank will work with partners to strengthen data and assessments of PPR capacity and financing.

The WBG is uniquely placed to support this agenda, given the institution’s financing model and capacity, multisectoral expertise and engagement, and track record in supporting PPR. However, the WBG also recognizes that success will depend on strong and effective partnerships with technical and financing institutions and, most importantly, on the strong leadership of countries and regional institutions.
References and endnotes


25 The Pan-American Health Organization (PAHO) has coordinated pooled procurement support for all routine vaccines and medical equipment and goods through its Strategic Fund for many decades and has played a key role in helping to manage COVID-19 in the region. Based on this and prior experience, PAHO is expected to play a critical part in supporting countries to prepare for, and respond to, future outbreaks.

26 During the COVID-19 pandemic, the African Union and the Africa CDC established the Africa Vaccine Acquisition Trust and partnered with Africa EXIM Bank to secure COVID-19 vaccines on behalf of countries on the continent. Looking ahead, the AU has proposed to establish the African Pandemic Preparedness and Response Authority to carry out critical functions in the context of a disease outbreak (for example, facilitate access to financing, make emergency arrangements for expanded manufacturing of medical countermeasures, coordinate procurement, and provide technical and...
operational response support to countries), while also taking on operational functions during “peace time”.

27 For example, the EU established the Health Emergency Preparedness and Response Agency, which will complement existing institutions like the European CDC and European Medicines Agency, to anticipate threats and potential health crises through intelligence gathering and support production and distribution of medicines, vaccines, and other medical countermeasures that were often lacking during the first phase of the response to the COVID-19 pandemic. The AU has indicated interest in establishing an institution with a similar mandate. In East Asia, the COVID-19 pandemic triggered expanded collaboration on the PPR agenda, including through the ASEAN Strategic Framework on Public Health Emergencies to enhance preparedness, detection, response, and resilience to public health emergencies and bolster regional health security; the ASEAN Public Health Emergency Coordination System to accelerate joint research and strengthen health system capacity and develop the next generation of human capital in health; and the ASEAN Emergency Operation Centre Network, which provides platform for information sharing to strengthen.


30 This range is consistent with a review by McKinsey & Company. Similarly, in the context of Vietnam, a comprehensive estimate of domestic health security expenditures at both national and sub-national levels accounts for only around 3 percent of total government health expenditures. The 2021 GHISI found that, in the past three years, over 75 percent of countries, including high-income countries, have not allocated domestic funds to strengthen capacity to address epidemic threats.

31 Overall, development assistance for health (DAH) has been estimated at nearly $40 billion per year in the period prior to COVID. Although DAH is substantial, only a small share, estimated at around 1-2.5 percent (approximately US$0.5-1 billion), is directed at supporting core PPR functions at the global and country levels, with the remainder going to disease-specific programs (nearly 75 percent) and broader health system strengthening. For details, see Kraus, Jessica, et al. 2020. “Measuring Development Assistance for Health Systems Strengthening and Health Security: An Analysis Using the Creditor Reporting System database.” F1000Research 9, no. 584: 584; and Micah, Angela E., et al. 2021. “Tracking Development Assistance for Health and for COVID-19: A Review of Development Assistance, Government, Out-of-pocket, and Other Private Spending on Health for 204 Countries and Territories, 1990–2050.” The Lancet 398.10308: 1317-1343.

32 The G-20 High-Level Independent Panel (HLIP) estimates build on bottom-up costing studies by the WHO and McKinsey and focus on financing needs related to 1) strengthening the global network for surveillance and early warning of disease threats; 2) increasing investment in preparedness at country and regional levels; 3) rapid development, manufacturing, and delivery of medical countermeasures (including vaccines, therapeutics, and diagnostics); and 4) research and breakthrough innovations to prevent and contain future pandemics. The G-20 HLIP estimates are significantly higher than previous ones, reflecting both a more ambitious approach to country and global preparedness and significantly expanded investments in research and development and manufacturing capacity for medical countermeasures. Specifically, the G-20 HLIP report estimates that $34 billion of public financing per year is needed over the next five years. This reflects some frontloading to address urgent needs, but financing at similar levels will need to be sustained in the medium to long term. The report assumes
that $15 billion out of the $34 billion will be donor financed, including most of the investments in LICs (88 percent of total LIC investments) and some of the investment in MICs (24 percent of total MIC investments); and that all global investments in surveillance and investments in supply capacity and medical countermeasures.


37 Examples of regional projects include: East Africa Public Health Laboratory Network (EAPHLN, US$128.66 million). The EAPHLN project has supported the strengthening of 32 laboratories, enhanced cross-border disease surveillance, helped in the training of over 10,000 laboratory workers and health personnel, and increased access to laboratories for poor vulnerable population in East Africa Community States of Burundi, Kenya, Rwanda, Tanzania, and Uganda.

Regional Disease Surveillance Systems Enhancement Program (REDISSE, $657 million). REDISSE was the first regional operation to adopt a One Health approach toward pandemic preparedness.

It is aimed at strengthening national and regional cross-sectoral capacity for collaborative disease surveillance and epidemic preparedness in 16 countries in Central and West Africa. The program has five components: 1) cross-sectoral surveillance and information systems; 2) laboratory capacity; 3) epidemic preparedness and rapid response; 4) workforce training, deployment, and retention; and 5) institutional capacity building for project management, coordination, and advocacy.

Southern Africa Tuberculosis Health Systems Strengthening (SATBHSS, $122 million). The SATBHSS project was designed to address the challenges of TB (including AMR) and TB/HIV in Southern Africa (Lesotho, Malawi, Mozambique, Zambia) but also supports investments in strengthening of disease surveillance and response to infectious disease outbreaks in cross-border areas, as well as strengthening of laboratory capacity.

Africa CDC Regional Investment Financing Project (ACDCP, $250 million + $100 million for new project). ACDCP supports Ethiopia, Zambia, and the African Union to combat epidemics and advance critical public health priorities by financing the establishment of laboratories, transnational surveillance networks, emergency-response mechanisms, and other public health assets designed to manage diseases on a regional and continental scale.


39 These commitments include all projects under the Strategic Preparedness and Response program, as well as other HNP projects that are tagged as COVID-19 projects (including those that restructured to address COVID-19).
For example, in Ghana, the US$35 million operation covers support for strengthening national laboratories to provide real time disease surveillance and outbreak reporting systems. Similarly, in Mongolia, the US$26.9 million operation is helping to strengthen capacity for a multisectoral response, at the interface of environmental, veterinary, and public health services, to contain the future spread of new viruses of animal origin at their source; while, in Ethiopia, the US$82.6 million project has helped boost laboratory and testing capacity and other preparedness-related infrastructure and supported the development of a Risk Communication and Community Engagement Strategy.


The lending portfolio, which includes current commitments as of February 2021, is estimated to be between US$0.62 and $2.32 billion with $0.62 billion in financing being specifically allocated for AMR investments and an additional $1.7 billion having been tagged as addressing AMR in operations aimed at strengthening agriculture, health, and water, sanitation, and hygiene systems.


The Health Emergency Preparedness and Response Multi-Donor Fund was approved by the World Bank Board on June 17, 2020, as a multidonor trust fund umbrella program in response to the short-term COVID-19 pandemic and future health emergencies, and to help countries with catalytic, upstream, and incentive financing for future health emergency preparedness.

This included over US$1 billion of commitments from IDA (of which, US$420 million was from the Crisis Response Window). In addition, US$450 million from the IFC supported continuity of trade, investment, and employment in the three countries.

In response to the Ebola crisis, the WBG set up a FIF, the Pandemic Emergency Financing Facility (PEF), in 2016 to provide response financing in the face of a cross-border, large-scale disease outbreak. The PEF provides financing through two windows: a cash window and an insurance window, which are triggered in different ways and complement one another. Through contracts with private insurers, the PEF was able to scale $181 million in donor contributions to $258 million in payout, including in response to the Ebola outbreak in the Democratic Republic of Congo. However, fundraising was more challenging than anticipated. An important lesson is that the insurance window cannot be triggered for disease outbreaks that are recurrent, such as Ebola and, therefore, only the cash window (funded by donor support) was an option. In the case of the COVID-19 pandemic, the PEF insurance window facilitated a net transfer from private investors to the public sector: the total premium paid on PEF insurance bonds and swaps was $107 million; the payout related to COVID-19 was approximately $196 million, implying a substantial return on donor funds. PEF funds were available on April 27, 2020, which was ahead of many other funding sources. The PEF was closed in April 2021, but the results of the PEF suggest that parametric insurance shows promise to leverage funds and deliver resources in disease outbreaks and that more can be learned from further experimentation with this type of instrument.


The World Bank’s Strategic Preparedness and Response Project (SPRP) has made available up to $26 billion and committed over $15 billion to over 100 countries, including in over 30 countries impacted by fragility, conflict, and violence. It included the COVID-19 emergency response and included financing for the vaccine roll-out (including financing of vaccines and deployment) as well as health systems strengthening. The Multi-phased Programmatic Approach (MPA) is the main financing
program under the Strategic Preparedness and Response Program. An MPA allows countries to structure a long, large, or complex engagement as a set of smaller linked operations (or phases), under one program.


57 A strong commitment to global public goods (GPG) through IDA’s Regional Window (RW) provides critical foundations for the WBG’s engagement on PPR. When launched, the RW largely targeted regional infrastructure and connectivity investments. During subsequent IDA cycles, the RW has increasingly targeted operations that support regional public goods or GPGs or address negative ones—for example, by protecting or developing shared natural resources, environmental commons, and public health with cross-border impacts, while addressing regional and global “bads” like climate change and communicable disease. The share of GPG-focused projects in the RW continues to increase (33 percent of IDA RW commitments in fiscal year 2021 had a GPG focus). Of RW-financed commitments for public goods, 37 percent contributed to regional knowledge and research capacities, 32 percent to regional public health, 18 percent to climate change and environmental preservation, 12 percent to regional financial architecture, and 2 percent to regional trade.

58 A possible global PPR Multiphased Programmatic Approach (MPA) could provide an operational vehicle to rapidly process PPR operations in standardized and quality assured ways. A potential MPA could support priority investments to strengthen future health emergency preparedness and response (HEPRP), including 1) commodities, equipment, and facilities; 2) information and coordination; and 3) human resources.


60 Additional examples: The Africa Medical Equipment Facility was launched with a $300 million IFC injection and partnership with Philips, Co-operative Bank of Kenya, GE Healthcare, and NSIA to strengthen medical equipment financing across Africa. IFC has also mobilized more than US$955
million to increase existing vaccine manufacturing capacities for emerging markets with projects in Africa, China, and India. IFC has also made several investments in expanding fill and finish capacities for last-mile vaccine manufacturing including for Aspen, Africa’s only partner for the Johnson & Johnson COVID-19 vaccine.


62 The Global Action plan for Healthy Lives and Well-being for All brings together 13 multilateral health, development, and humanitarian agencies to better support countries to accelerate progress toward the health-related Sustainable Development Goals (SDGs). The 13 agencies include: Gavi, the Vaccine Alliance; the Global Financing Facility for Women, Children and Adolescents (GFF); the International Labour Organization (ILO); the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund); the Joint United Nations Programme on HIV/AIDS (UNAIDS); United Nations Development Fund (UNDP); United Nations Population Fund (UNFPA); United Nations Children’s Fund (UNICEF); Unitaid; United Nations Entity for Gender Equality and the Empowerment of Women (UN Women); the World Bank Group; World Food Programme (WFP) and the World Health Organization (WHO).


67 Core ASAs Pandemic Preparedness Diagnostics ongoing or planned for Ghana, East Asia & Pacific, Malaysia, Myanmar, Sierra Leone, Cambodia, Caucasus, Central America, Mexico, Afghanistan, Maldives, Pakistan, Turkey, Bolivia, El Salvador, Dominican Republic, Mexico, West Bank & Gaza, Sri Lanka

68 The World Bank, with support from the Australian Department of Foreign Affairs and Trade, has developed the Health Security Financing Assessment Tool, which has been implemented in Indonesia and Vietnam.

69 A forthcoming joint World Bank–WTO report on Trade and Health describes how trade and trade-related policies can improve prevention, preparedness, and response to health crises.
Annexes


Figure A1.1: HNP Active IDA Portfolio FY17-FY22 (Commitments) $US billions

<table>
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<tr>
<th>Year</th>
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<th>2019</th>
<th>2020</th>
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</tr>
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<td>Value</td>
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<td>8.9</td>
<td>10.0</td>
<td>11.4</td>
<td>9.3</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Legend: ● COVID-19 tagged ● Non-COVID

Notes: COVID-19 commitments are broader than the Strategic Preparedness and Response (SPRP) Project and include any HNP commitments that have been tagged as supporting COVID-19.


Figure A1.2: HNP Active IBRD Portfolio FY17-FY22 (Commitments) $US billions

<table>
<thead>
<tr>
<th>Year</th>
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<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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</thead>
<tbody>
<tr>
<td>Value</td>
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<td>6.0</td>
<td>7.0</td>
<td>7.3</td>
<td>7.7</td>
<td>9.2</td>
</tr>
</tbody>
</table>

Legend: ● COVID-19 tagged ● Non-COVID

Notes: COVID-19 commitments are broader than the Strategic Preparedness and Response (SPRP) Project and include any HNP commitments that have been tagged as supporting COVID-19.


Figure A2: Breakdown of COVID-19 disbursements that have been tracked using World Bank Operations Policy and Country Services (OPCS) thematic coding

- Vaccines: 48%
- Therapeutics: 18%
- IPC: 12%
- Testing: 8%
- Vaccine deployment and vaccine-specific strengthening: 3%
- Public Health and Pandemic Preparedness: 3%
- Strengthening of health services: 1%
- Strengthening of non-health services: 2%
- Training: 0%
- Others*: 5%
- System Support: 6%

*Other includes transport, non-medical equipment and supplies; administration and monitoring and evaluation; and risk communication and community engagement.

Source: World Bank analysis from procurement portal using OPCS thematic coding
In the wake of SARS in 2003, the International Health Regulations (IHR) were put in place in 2005 to better coordinate disease outbreak detection, assessment, reporting, and response. The 2005 IHR eventually led to the development of the PPR assessment and planning framework that remains in place today: the Joint External Evaluation (JEE) program and the framework for costed National Action Plans for Health Security (NAPHS). In addition, an annual self-review process—the State-Party Assessment Review (SPAR) tool—was also put in place to facilitate more regular assessments. The IHR is currently being revised. The JEE/SPAR approach measures country-specific status and progress in achieving the targets in preparedness and response. The 18 technical areas in the WHO Benchmarks for IHR capacities are 1) national legislation, policy, and financing; 2) IHR coordination, communication and advocacy, and reporting; 3) antimicrobial resistance; 4) Zoonotic disease; 5) food safety; 6) immunization; 7) national laboratory system; 8) biosafety and biosecurity; 9) surveillance; 10) human resources; 11) emergency preparedness; 12) emergency response operations; 13) linking public health

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**Annex 2: Assessing PPR capacity through the JEE, SPAR, and GHSI**

In the wake of SARS in 2003, the International Health Regulations (IHR) were put in place in 2005 to better coordinate disease outbreak detection, assessment, reporting, and response. The 2005 IHR eventually led to the development of the PPR assessment and planning framework that remains in place today: the Joint External Evaluation (JEE) program and the framework for costed National Action Plans for Health Security (NAPHS). In addition, an annual self-review process—the State-Party Assessment Review (SPAR) tool—was also put in place to facilitate more regular assessments. The IHR is currently being revised. The JEE/SPAR approach measures country-specific status and progress in achieving the targets in preparedness and response. The 18 technical areas in the WHO Benchmarks for IHR capacities are 1) national legislation, policy, and financing; 2) IHR coordination, communication and advocacy, and reporting; 3) antimicrobial resistance; 4) Zoonotic disease; 5) food safety; 6) immunization; 7) national laboratory system; 8) biosafety and biosecurity; 9) surveillance; 10) human resources; 11) emergency preparedness; 12) emergency response operations; 13) linking public health
and security authorities; 14) medical countermeasures and personnel deployment; 15) risk communication; 16) points of entry; 17) chemical events; and 18) radiation emergencies. The JEE scope and methodology is currently being revised to consider initial countries’ experience and the COVID-19 pandemic. The IHR Benchmarks, which are the actions countries must take in order to attain the next JEE score, are also under revision.

More recently, the Global Heath Security Index (GHSI) has emerged as an alternative source of information. It is a measure of health security and related capabilities across 195 countries. It assesses countries across six categories, 37 indicators, and 171 questions using extensive publicly available information. The GHSI benchmarks health security in the context of other factors critical to fighting outbreaks, including political and security risks, the broader strength of the country’s health system, and country adherence to global norms. Capacities are assessed every two to three years and aim to create a transparent picture of a national level health security gaps and stimulate political will and action to prioritize addressing these identified gaps.

However, there is some concern regarding a disconnect between the GHSI and JEE scores. In Figure A4: Comparison of GHSI and SPAR scores, GHSI scores are significantly lower relative to the SPAR scores, which suggests a degree of “over-confidence” in countries’ self-assessment of capacity.

At this point, the JEE has been completed in 111 countries, with good coverage in Africa, but gaps in other regions (for details, see: https://extranet.who.int/sph/jee). GHSI data are available for 196 countries.

**Figure A4: Comparison of GHSI and SPAR scores**

![Comparison of GHSI and SPAR scores](image-url)

Legend: 
- High income
- Upper middle income
- Lower middle income
- Low income

Source: World Bank analysis based on GHSI and SPAR
Annex 3: Preliminary findings from IEG evaluation on REDISSE

Created in the aftermath of the 2014–16 Ebola crisis, the Regional Disease Surveillance Systems Enhancement (REDISSE) project aims to strengthen national and regional cross-sectoral collaborative surveillance preparedness capacities in West and Central Africa and provide immediate and effective response in case of emergency.

The REDISSE project was reviewed by the Independent Evaluation Group (IEG) to assess the project’s added value in the countries’ response to the COVID-19 crisis. This was done by collecting detailed information from verified outcome statements in reports and aide-memoires to identify key findings and lessons to be drawn.

Regional projects such as REDISSE provided support to critical health services for the COVID-19 response. The project greatly impacted the following areas:

Regional coordination to facilitate rapid country responses for COVID-19. Support of coordination between ministerial committees, public health institutes, and other project leaders greatly contributed to rapid COVID-19 responses in the REDISSE-covered regions. The project allowed for sharing of real-time information and best practices for detection of cases. The assessment showed that cooperation structures established prior to COVID-19 through REDISSE allowed for quick political and technical coordination during the crisis.

Human Resource Capacities to Implement the COVID-19 Response. The project contributed to human capacity development and accelerated the deployment of epidemiology trainees, leveraged capacities developed before COVID-19, and engaged in simulation and team development for a more rapid response.

Expansion of Surveillance, Testing, Border Screening, Case Management, and Infection Prevention and Control (IPC) for COVID-19 Response. Support from REDISSE helped participating countries to introduce screening and testing, as well as to quarantine at their borders. By October 2020, most of the first 11 REDISSE countries had put in place effective surveillance, contact tracing, screening at points of entry, quarantine, laboratory testing and diagnosis, IPC, case management, and risk communication. Under the project, the countries had community networks in place, which allowed for information to flow from community and district levels to the national level.

Lessons learned: The evaluation’s results indicate that regional projects such as REDISSE were able to play a crucial role because of the efficiencies gained from cooperation in pandemic responses across covered countries, particularly in regions with limited capacity or resources. Regional networks supported implementation learning and leadership at different levels in the country and region. The project also had its limitations. It was less prepared to support risk communication, citizen engagement, gender, urban risk, and essential services. Furthermore, access to real-time data on COVID-19 response was limited.
The IDA20 polity architecture builds on the strong foundation of IDA19 and adapts to address today’s challenges: delivering on long-term priorities while addressing countries’ emergency needs. Building back better will require intensified support not only for hastening recovery from the pandemic but also strengthening core systems and preparedness to face future health emergencies and other crises. As such, preparedness is a theme across the IDA20 Policy Package, building upon prior commitments for pandemic preparedness incorporated in IDA18 and IDA19.

Under the new Human Capital Special Theme, two policy commitments promote health emergency preparedness directly:

**Human Capital Policy Commitment 1:** To strengthen health security and advance inclusive health systems and universal health coverage, IDA will support all IDA countries to 1) contain the COVID-19 pandemic through vaccine rollout, preventive measures, testing, care, and treatment; and 2) strengthen pandemic preparedness, including through prevention, detection, and response efforts.

**Human Capital Policy Commitment 7:** To strengthen health security by improving pandemic preparedness and prevention at the nexus of human, animal, and ecosystems health, including zoonotic diseases and antimicrobial resistance, IDA will support at least 20 IDA countries to mainstream One Health approaches.

These policy commitments support building resilient health systems that are able to provide core essential health services and functions and that have the capacity to prevent, detect, and respond to disease outbreaks and other health emergencies. They form part of a broad set of commitments on crisis response and preparedness under other IDA20 special themes including improving crisis preparedness and response capacity in countries facing natural hazards and food crises (Climate Change 8), regional crisis risk preparedness in key FCV hotspot regions (FCV 4).

The Strengthening Crisis Preparedness cross-cutting issue provides technical and financial support to strengthen crisis preparedness as per below:

**Strengthening crisis preparedness:** WBG country programs in all IDA countries will provide technical and financial support to strengthen crisis preparedness. Such support will be informed by appropriate crisis preparedness assessments, such as the Crisis Preparedness Gap Analysis (CPGA) and other relevant diagnostic tools.

Additional policy commitments under the Human Capital Special Theme will also indirectly support the PPR agenda by building resilient health systems, increasing coverage of key health interventions. These include:

**Human Capital Policy Commitment 2:** To promote child development, restore and expand access to quality early years services, including maternal and nutrition services, in at least 30 IDA countries, of which 15 countries are among those IDA countries with the lowest Human Capital Index (HCI).
**Human Capital Policy Commitment 3:** To address gaps exacerbated by the COVID-19 crisis, in at least 40 IDA countries, of which 10 are FCS, support access to core, quality, inclusive social services focused on: (i) social protection systems with a particular focus on vulnerable and underserved informal workers, and/or (ii) students’ return to school and accelerated recovery of learning losses, with a special focus on addressing constraints faced by girls, and/or (iii) children’s immunizations.


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**Annex 5: Overview of Pandemic Preparedness Diagnostics and Flagship reports**

Core Advisory Services and Analytics (ASAs): Pandemic Preparedness Diagnostics

In 2020, core ASAs called Pandemic Preparedness Diagnostics were introduced to help countries identify the need for critical investments in capacity building. There are currently 19 assessments in the PPR Diagnostics portfolio, including completed diagnostics in Honduras, Afghanistan, Sri Lanka, Turkey, and West Africa (Liberia, Ghana, and Sierra Leone).

The diagnostics used a mixed methods approach, which combined quantitative and qualitative methods including measurement of performance gaps in public health, review of key policy documents, and interviews of key informants to complement information available. This included using, when available, JEE and SPAR tool results. Results illustrated an in-depth map of gaps in preparedness across several domains, reflecting weak infrastructure, lack of trained health professionals, and inadequate public health financing for countries such as Liberia and Sierra Leone. On the other hand, Ghana proved to have a resilient health system during COVID-19 due to its sound testing capacities, efficient response, and preexisting infrastructure for management, logistics, surveillance, diagnostics, and research.

**Flagship report:** *Collapse and Recovery: How COVID-19 Eroded Human Capital and What to Do About It* (forthcoming)

The COVID-19 pandemic has had a catastrophic impact on human capital development around the world. While the sharp decline in global GDP growth during 2020–21 grabbed headlines, the long-term implications for human capital are no less significant. The terrible death toll – an estimated 15 million excess deaths globally during 2020-21- is the most obvious outcome. But human capital investments have been severely undermined at all stages of the lifecycle. Examples include malnutrition and essential service delivery disruptions affecting early childhood, school closures having a devastating impact on learning and enrolment, and declining labor market participation (especially among women) affecting younger and older adults alike. Across most dimensions, the poor and vulnerable have been the most affected.
A forthcoming World Bank report “Collapse and Recovery: How COVID-19 Eroded Human Capital and What to Do About IT” - explores these impacts and the policy agenda to reverse the losses across the health, education, and social protection and jobs sectors. In health, the immediate task is to stop transmission by redoubling the progress of vaccine campaigns and sustaining behavior change, while restoring priority service delivery via catch-up campaigns and investing in mental health support. Beyond COVID-19, the far-reaching human capital impacts add even greater urgency to the pandemic preparedness agenda to mitigate the risk of a repeat event.

The report takes stock of the COVID-19 pandemic response and highlights key vulnerabilities to be addressed from a human development systems perspective. Countries will face a continued risk of systemic shocks in the future – due to health or climate emergencies, natural disasters, or macroeconomic crises – and need to design systems that can protect human capital come what may. The report argues that to be effective, such systems should have three key characteristics:

- They should be agile, resilient, and adaptive and have the ability to expand and contract quickly during crises to reach vulnerable groups
- They should have a mandate and authority to coordinate across sectors and identify interventions that are complementary
- They should be data-driven, effectively use technology, and identify problems as a crisis unfolds

Collapse and Recovery will be launched in January 2023.

**Flagship report:** *Change Cannot Wait: Building Resilient Health Systems in the shadow of COVID-19.*

**COVID-19 has exposed gaps in health systems worldwide.** In many settings, health service delivery is fragmented, and investments in health security are siloed and inadequate. Today, countries recognize the need to invest in transformed, resilient health systems. The World Bank’s Flagship Report on Resilient Health Systems identifies key policy directions and interventions to strengthen health system resilience. Some of the key policy actions identified include the following:

**Tackle risk drivers and incorporate risk analysis in planning.** Global processes like urbanization, population aging, and climate change have exposed countries to new threats. Changing risk patterns—which play out differently in each country—underscore the need to address risk drivers and ensure that a country’s health strategies and planning consider the changing risk drivers.

**Build resilience during normal times by strengthening foundational and integrated investments in preparedness and service delivery.** Efforts to bolster resilience must look beyond strengthening surge response and invest in core public health capacities and routine health service delivery. A priority is strengthening public health capacities in countries’ primary health care networks and at the community level—the frontline settings where people have their main contact with the health system. Examples include investments in community disease surveillance, specimen referral and transport, community engagement to educate people about health risks and how they can protect themselves, and training community health workers and frontline providers in contact tracing and infection prevention and control.
Governance is key. The core ASAs have shown the value of close engagement with country counterparts in collecting information to promote the self-reflection and ownership of the Ministry of Health’s strengths and weaknesses with respect to PPR capacities. While the health sector’s governance, decision-making, and coordination are often cited as important for preparedness and resilience, these capacities are often neglected in investment plans. Clarity in decision-making and accountability, whole-of-government response, community engagement, and the presence of empowered and connected public health agencies (such as the Center for Disease Control) are some key interventions critical to enabling a resilient response by the health system.

Cross-sectoral collaboration and partnership with the private sector can strengthen resilience of health systems. Multisectoral collaboration and partnerships with nonstate actors are critical for resilience both between and during crises. Areas for strategic investments include the presence of a multisectoral platform to facilitate coordination and joint planning, strong regional and cross-sectoral partnerships, and collaboration with nonstate actors and the private sector. Countries like Nigeria and Rwanda have mobilized substantial private sector investment for their COVID-19 response, suggesting what can be achieved through partnerships.

**Flagship report: ***Putting Pandemics Behind Us: Investing in One Health to Reduce Risks of Emerging Infectious Diseases*

This global SD Practice Group Flagship report informs policies and investments for pandemic risk to be addressed via prevention, incorporating risk reduction and consilience of human, animal, and wildlife health. The report has two main objectives: 1) to provide a better empirical understanding of how drivers for emerging infectious diseases are interacting with, and aggravating, other stresses on humans, animals, and the ecosystems they share, making likelihood for spillover and pandemic risks higher; and 2) to inform policies and propose an investment framework for an effective implementation of the One Health approach toward zoonotic disease prevention and pandemic risk reduction. The report comes with three country case studies, in Vietnam, Liberia, and Assam state (India).
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