

Thematic Review of Global Health Security (Pandemic Preparedness and Response)

Secretariat-led with TERG oversight

Secretariat-Led Review with oversight from the Technical Evaluation Reference Group: Global Health Security (Pandemic Preparedness and Response)

Global Fund Management Response, Technical Evaluation Reference Group (TERG) Commentary and Final Report.

May 2022

Global Fund Secretariat Management Response - Thematic Review of Global Health Security

Introduction

The Global Fund Secretariat welcomes the Thematic Review of Global Health Security (also referred to as Pandemic Preparedness and Response, or PPR, within this document). The Review was commissioned and managed by the Secretariat with oversight by the Technical Evaluation Reference Group (TERG). The review was not meant to serve as a formal evaluation of the Global Fund performance in this space, i.e., it was not retrospective in nature, but rather it was a broad, forward-looking scoping study to inform the Global Fund's future Strategy on contributing to PPR and subsequent implementation. The review was carried out between April and September 2021 and the scope of work was developed in consultation with TERG and Strategy Committee (SC).

Specifically, the objectives of the review were to:

- Briefly summarize the impact of COVID-19 on HIV, tuberculosis and malaria, and health services, and the Global Fund's response to date to COVID-19, drawing from this experience some early trends and lessons
- Characterize the ideal state of an effective global PPR system and identify the principal gaps in the current system that need to be addressed
- Describe the Global Fund's current core capabilities that can help to fill these gaps, and consider additional capabilities that the Fund might be able to stand up in PPR
- Develop a series of strategic options for the Global Fund covering a range of possible future roles in PPR, from more limited to more fulsome changes
- Assess these options for their feasibility, expected impact, and cost
- Make recommendations among these options
- Elaborate the implications of the recommended strategic direction for the Global Fund's operations and processes, technical roles and capabilities, financing policies and practices, partnerships, and communications
- Suggest further steps that could be taken to refine and analyze these options as a basis for decisions by the Global Fund's leadership.

Through a mixed methods approach, the review utilizes data from a number of sources, including a range of published and unpublished reports, more than 30 global interviews with persons both internal to and outside of the Global Fund, and over 50 interviews with leaders in six countries where case studies were conducted (Cambodia, Colombia, Haiti, Liberia, Malawi, and Nigeria). The Annex of the final report provides detailed findings from each of the six case studies.

The review introduces a number of key findings in the lead up to four high-level recommendations:

- 1. The Global Fund should seize the potential to be a major player in PPR.** *The opportunities before it and the global and country benefits that the Fund can generate to help address the huge and urgent need to build strong and resilient global and country based PPR systems should be harnessed and not squandered. The cost of failing to act would be very large for global health, leading to shortfalls in efforts by LMIC countries to build stronger PPR systems and putting at greater risk the gains in HIV, TB, and Malaria that have taken place over the past two decades. The cost of inaction would also be significant for the Fund itself, potentially reducing its relevance and centrality to global efforts to combat the HTM epidemics as well as new and emerging pandemic disease threats.*
- 2. The Fund should vigorously adopt specific investment choices lying along the continuum between Extend and Extend Plus¹,** *simultaneously reinforcing its work on HTM and accelerating progress toward the 2030 goals and protecting HTM programs against downside effects of future pandemics starting with Covid-19 and including other post-Covid threats. Potential tradeoffs exist but can be managed. This can be done by ensuring that the Global Fund receives adequate supplementary financing for its grants as well as operating budgets to carry out its historic HTM responsibilities and any new PPR tasks it takes on. Internal staffing and systems and other operational modalities must also be adapted to the additional PPR roles assigned to the Fund.*
- 3. To inform the detailed choices about the scope of PPR activities and investments for the Fund, the GF needs to take a more in-depth look at the specific “boundary” issues at the Extend Plus end of the continuum** – *what for example would be the additional grant, staffing and organizational requirements if the Fund moves decisively into areas like pandemic stockpiles, laboratory and infection control infrastructure, and zoonotics prevention? For the more mainstream RSSH investments for PPR, such as surveillance, national procurement and supply chains, lab systems strengthening, HRH, and Community Systems and Responses, what further steps toward integration will be required?*
- 4. Finally, a wider independent comparative analysis of all the major multilateral institutions involved in the same parts of the PPR financing space as the Global Fund, including Gavi and the development banks, is needed** *to be able to assess how the additional pandemic financing should be optimally allocated across these financing organizations.*

The Secretariat recognizes there were limitations stemming from the timing of this review as it ran concurrently with the ongoing Board discussions on this topic as part of the post-2022 Strategy development process. Therefore, high-level strategic decision-making on positioning of the Global Fund in this space was already ongoing. In addition, assessing the current system of PPR is challenging given the evolving COVID-19 situation and the ongoing discussions on its future within the G7 and G20, and by expert groups like the Independent

¹ Extend and Extend Plus refer to a “continuum of choices” proposed in the review, which the Global Fund faces between extending its current activities (Extend) and branching into new areas of PPR (Extend Plus). See Chapter 6 of the final report for more information.

Panel on Pandemic Preparedness and Response. Therefore, whilst not necessarily influencing overall strategic direction, the review contains a wealth of information and considerations that will be helpful in preparations for implementation of the Global Fund's 2023-2028 Strategy: *Fighting Pandemics and Building a Healthier and More Equitable World*, particularly in relation to the evolving objective on PPR.

Observations

The Secretariat greatly appreciates the efforts taken to deliver on the expansive and ambitious scope of this review, and strongly agrees with the recommendations, particularly the broad conclusions of recommendations 1 and 2. We believe it is critical for the Global Fund to work with partners to address urgent PPR needs to protect our main mission of fighting HIV, TB and malaria, bring the Fund's inclusive and country-driven and community engaged model to PPR, and build greater preparedness, response and resilience capabilities synergistically and incrementally to ongoing disease and health systems investments.

The review broadly addresses the objectives of the review – it examines the global health landscape and identifies the current strengths and weaknesses of global, regional, and national PPR systems and functions, informed by experiences and learnings from the global response to COVID-19. The review also helpfully highlights areas in which the Global Fund model may have the most direct relevance to a future, strengthened PPR architecture, and other areas which would likely be considered out of scope and fall outside of the Global Fund's current mandate. In addition, it also provides a comparative assessment of a range of Strategic options, opportunities, and implementation implications across the various axes above.

The Global Fund Secretariat welcomes the key findings from the review. The Secretariat agrees that the COVID-19 pandemic has clearly exposed many weaknesses in global, regional, and national PPR systems that are in need of support, investment and improvement. The Secretariat notes the review's finding that many of the areas listed for urgent improvement relate directly to areas that the Global Fund has historically and currently works to strengthen (e.g., surveillance, lab networks, information systems, workforce) through its core grant financing support to HIV, TB, and malaria programs and related health systems. The Secretariat concurs with the review that the Global Fund continues to demonstrate its ability to contribute to building of national capacities for PPR through the COVID-19 Response Mechanism (C19RM) and its broader involvement in the global COVID-19 response, and notes the significant efficiencies associated with making PPR investments incremental and synergistic with existing HIV, TB, malaria and health systems investments.

The Global Fund Secretariat strongly agrees with Recommendation 1² on the urgent need to engage in the COVID-19 response and PPR strengthening and that the potential costs of

² The Global Fund should seize the potential to be a major player in PPR.

failing to act are enormous for our mission of investing to end the AIDS, TB and malaria epidemics. Our new Strategy, *Fighting Pandemics and Building a Healthier and More Equitable World*, is well aligned with this recommendation. The Secretariat agrees with the significant areas identified in the study in which the Global Fund model has direct relevance for the PPR architecture. These include scale, speed, flexibility, and partnership approach. The Secretariat fully agrees that the Global Fund partnership's attention to human rights, equity, and gender dimensions, as well as the engagement of communities, which are often left behind in pandemic threat preparedness efforts and responses, are unique strengths of the Global Fund that can and must be leveraged for PPR. We appreciate that the review acknowledges the Global Fund's experience in the areas of planning, grant investment design, sustainability and transition, and monitoring and evaluation, and that these core competencies have potential for rapid carry over into the area of PPR.

In response to Recommendation 2³, while the review of the Global Fund's strategic options in PPR ran concurrently with Board discussions on this topic as part of Strategy development process, we feel that the options and framing, i.e., between Extend and Extend Plus, are broadly helpful and well aligned with the content of the Board discussions, while also requiring additional Board and implementation discussions. The Secretariat agrees with the seven areas of substantial and growing capabilities that were identified, including supply chains, data and surveillance, laboratories, frontline healthcare workers, community engagement and leadership, and financing. These areas are well reflected in the new Global Fund Strategy, in part due to early feedback from this review. The Secretariat agrees with the practical and strategic importance of more robustly linking programs focused on the three diseases to PPR programs and global discussions. The Secretariat underlines the need for substantial incremental investment, e.g., to create multi-pathogen capabilities, surge capacity, and fill critical gaps, beyond what is required for the three diseases.

The Secretariat agrees that there would be significant implications for the Global Fund to take on a more deliberate and substantial role in financing pandemic preparedness, in particular, at country level. These include but are not limited to: the way in which the Global Fund enters into grantmaking and execution of its grants by recipients, carries out its financing and resource allocation activities, is organized and staffed, manages relationships and governance at country level (especially through country coordination mechanisms), forges and manages partnerships, and develops communications activities. See Chapter 7 for more information.

In response to Recommendation 3⁴, the Global Fund recognizes the need for further consideration to better understand and inform the scope of the Global Fund's PPR activities going forward. It notes the review's finding that this is particularly important for investment areas that fall along the continuum towards 'Extend Plus', e.g., global stockpiling; zoonotics prevention, etc. The Secretariat is currently working to estimate the costs associated with PPR investment areas within the scope of the new Strategy as part of a PPR costing

³ The Global Fund should vigorously adopt specific investment choices lying along the continuum between Extend and Extend Plus

⁴ The Global Fund needs to take a more in-depth look at the specific "boundary" issues at the Extend Plus end of the continuum

analysis. Further discussion and decisions will likely need to be taken by the Board to incorporate pandemic preparedness into the next cycle of grants.

In response to Recommendation 4, which relates to the need for a wider independent comparative analysis of all the major multilateral institutions involved in the same parts of the PPR financing space, the Global Fund agrees that such analyses can be useful. The Secretariat notes the recently disseminated “objective baselining analysis” commissioned by the Gates Foundation, which helps to fill some of this information gap. The analysis is intended for multilateral institutions and outlines the current state of PPR financing, the key roles of global/ regional players, and the most significant funding and capability gaps in the PPR ecosystem. This analysis may serve as a useful input for guiding a more coordinated approach to PPR. The Secretariat highlights that it is actively working with partners through ACT-A and C19RM, such as WHO, UNITAID, FIND, the World Bank and UNICEF. The Global Fund will continue to actively monitor and coordinate with other actors in the space given that the ecosystem is subject to dramatic change in relation to PPR.

Conclusions

Through the introduction of an evolving objective on PPR, the new Global Fund Strategy includes an explicit recognition of the role the Global Fund partnership can and should play in PPR. The review has been helpful for identifying areas where the Global Fund has capabilities and comparative advantages (and areas out of scope) that are essential for PPR progress, if additional funding is available. Many of these areas, such as those related to surveillance, data and information systems, and laboratories, are well reflected in the new Strategy. The Secretariat is also appreciative of the case studies, which provide a very helpful country perspective on potential areas for Global Fund support to PPR including in areas such as response capacity. The Secretariat notes that the forthcoming TERG evaluation on COVID-19 (C19RM 2020) is an opportunity to explore more deeply the impact of the Global Fund’s response to date on COVID-19, which was limited due to the scope and timeline of this review.

The review presents in Chapter 7 suggestions related to performance monitoring and accountability⁵, as well as an array of implementation aspects for delivering on a more explicit focus on PPR. Rigorous monitoring and evaluation is critical to this area of work, and these suggestions⁶ have already been used to inform preparations for the development of the Global Fund’s M&E Framework and materials for the Global Fund’s 7th Replenishment. For example, informed by the review, a costing analysis has been conducted looking at aspects of the IHR capacities which are not or only partially reflected in the JEE framework,









⁵ Specifically, the suggestion for “the Fund’s current efforts to define outcomes, outputs, and inputs and measure them accurately and report them in a timely manner needs to carry over to all future PPR-related investments ... an example: if the Fund invests in national systems to detect and investigate infectious disease outbreaks via field surveillance personnel, testing, and enhanced HMIS, the key performance results (KPIs) could take the form of: dangerous new pathogens are identified within X days of being detected (output), as a result of training and supervising Y front line surveillance workers and installing and maintaining Z HMIS modules for pandemic reporting (inputs); as a consequence, the dangerous outbreak was limited to A cases (outcome). Such results focus and use of HMIS to measure and report could be adapted to incorporate the new 7-1-7 goals that are being espoused by some leaders in the PPR global community. Other necessary changes in the Fund’s performance management system would potentially have to come into alignment with the overall requirements of any new global pandemic financing facility if the latter is established....”

⁶ For example, the review’s suggestion to develop indicators for PPR around areas such as timeliness and HMIS, are being explored as part of the ongoing Strategy performance measurement consultations.

such as community health worker roles in epidemic preparedness, and digital health investments which underpin effective early warning and disease surveillance systems. The Secretariat notes that further work on PPR requires additional funding, further discussion and analyses, endorsement, and support from the Board, which will continue to be a focus of the Secretariat's efforts in 2022.

With the new Strategy officially starting in 2023, 2022 offers a critical window of opportunity for the Global Fund to prepare for operationalizing of the new evolving objective in the next cycle of grants. Suggestions from this review (e.g., around potential partnerships, governance arrangements, communications, etc.) will serve as a useful starting point for informing discussions around how the Global Fund can best leverage its core strengths to deliver on the evolving objective. The Secretariat notes that further consensus is needed across key policymakers within the global health architecture in relation to PPR. The Secretariat is committed to working with partners and the G7/G20 about future roles and responsibilities, financing arrangements and how to build a better system to prepare for and respond to pandemics.

Summary of Recommendations

Review Recommendations	Level of Agreement	Level of Control
Recommendation 1: The Global Fund should seize the potential to be a major player in PPR.		
Recommendation 2: The Fund should vigorously adopt specific investment choices lying along the continuum between Extend and Extend Plus		
Recommendation 3: To inform the detailed choices about the scope of PPR activities and investments for the Fund, the Global Fund needs to take a more in-depth look at the specific "boundary" issues at the Extend Plus end of the continuum		
Recommendation 4: A wider independent comparative analysis of all the major multilateral institutions involved in the same parts of the PPR financing space as the Global Fund, including Gavi and the development banks, is needed		

The Technical Evaluation Reference Group (TERG) Report

Quality assessment of the evaluation

Name of evaluation: **Evaluation of Global Fund's role in Global Health Security.**

Year of report: 2021.

a). The Technical Evaluation Reference Group (TERG) rated this report as:

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> | Fully met or exceeded TERG's quality standards |
| <input checked="" type="checkbox"/> | Met TERG's quality standards with minor shortcomings |
| <input type="checkbox"/> | Partially met TERG's quality standards with some shortcomings |
| <input type="checkbox"/> | Did not meet TERG's quality standards with major shortcomings |

b). General comments

Context

In October 2020 the Technical Evaluation Reference Group (TERG) and Secretariat proposed that, in addition to separate TERG-managed and Secretariat-managed evaluations, Secretariat-managed evaluations with TERG oversight be introduced. This approach was introduced as an interim arrangement while the details of the M&E Framework, including the revised arrangements for independent evaluations, were developed.

In 2020, both the Board and the TERG recommended a thematic review (TR) of Global Health Security (GHS). The GHS TR is the first independent review that was commissioned and managed by the Secretariat with TERG oversight.

The TERG welcomes the Thematic Review of Global Health Security (now referred to as Pandemic Preparedness and Response, or PPR).

After reviewing the final report, the TERG felt that the report met the TERG's quality standards with minor shortcomings, as detailed below.

Strengths of report

The TERG emphasizes that this was a high-level review of the range of potential opportunities and options for the Fund in the area of PPR. It is not an evaluation or assessment of the Fund's actual capacity and performance and should not be read as such. Within this context the TERG felt that the report met the TERG's quality standards with some shortcomings.

The report is well written and relatively well structured. The GHS frameworks, international and national country stakeholders and country case studies are well documented in the annexes. It provides sufficient information on the methodology and analytical framework.

The findings and related recommendations are well organized, clear and insightful. They are captured well in the Executive Summary although less clearly in the body of the report. The report is well positioned to contribute to focusing discussion on the implementation of this evolving objective in the new Global Fund strategy.

The overall utility of this report is high as it provides valuable analysis that can be drawn upon to assess the case for a major Global Fund role in PPR. It identifies, with greater clarity, the current limitations that need to be addressed and the pathways the Fund would need to follow to boost its resources and capabilities to be an effective conduit for PPR financing.

Shortcomings of report

The "Thematic Review of Global Health Security" had very broad and ambitious terms of reference for the time available. The intention had been for this review to inform the Board deliberations on the Global Fund's role in global health security (GHS) in the next strategy. However, because of the timing of the review, which commenced in mid-April 2021, it was conducted in parallel with the Board and committee deliberations and decision regarding the new Strategic Framework.

Based on the Board decisions, the consultants were requested to use the term "pandemic preparedness and response" (PPR) rather than the term GHS and to focus particularly on Global Fund existing strengths and capabilities in PPR, future strategic options and implementation modalities and challenges. This evolving situation made some of the terms of reference irrelevant. The TERG supported this revised focus as appropriate and pragmatic

particularly considering the tight timeline. However, an earlier commissioning of this review would have allowed for timely and more robust analysis to cover the entire original TOR.

Key informant interviews included the global and national level stakeholders (with country case studies). While there was a very strong focus on USA agencies and informants and some European sources, data and informants from other regions would have provided a more balanced evidence base. There was also limited focus on the private sector and the role of regional structures.

Some findings were not well grounded in evidence and the report didn't clearly distinguish whether the strength of the Global Fund lies in pandemic preparedness or pandemic response. Consequently, some of the findings and conclusions are overly optimistic and may exaggerate some of Global Fund's strengths and capabilities.

c). Observations on the hybrid approach of evaluation.

This was the first independent review commissioned and managed by the Secretariat with TERG oversight and was an interim arrangement. As there was no agreed SOP from the start to guide some of the processes of this evaluation it is not surprising that there were initial minor challenges of coordination and communication between the Secretariat and the TERG, but this improved significantly over time.

From the TERG's perspective the hybrid model did not lead to a reduction in time and effort by either the TERG focal points or the TERG Secretariat. This may have been partly to do with the nature of this particular review, its changing focus and the fact that the drafts needed considerable input. The technical oversight committee was much larger than TERG steering committees for evaluations and may have resulted in greater Secretariat input and therefore ownership of the final product.

In the TERG's opinion, this experience highlights the importance of developing SOPs for the new independent evaluation arrangements prior to these arrangements coming into effect.

Preparing for and Battling Future Pandemics:

A Strategic Review of Potential
Roles for the Global Fund to Fight
AIDS, TB, and Malaria

10 September 2021



**Pharos
Global Health
Advisors**

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Executive Summary

As we enter the second half of 2021, the world is at a major crossroads in its battle against COVID-19 and in its larger thinking and planning on how to prepare for and respond to future pandemics and other major health threats. COVID-19's devastating impact on global and national economies, communities and individual lives, and on health systems and services has laid bare the huge deficits in our current systems and capabilities to deal with such disease outbreaks, and has presented to us with greater clarity and urgency than ever before the unprecedented challenges and opportunities we have to change course and take swift and decisive actions to invest in improved policies, programs and governance and financing mechanisms.

Staring in the face of COVID-19 and our collective failures and mistakes of the past 18 months, the question arises – will the world step up to our new awareness and to the difficult opportunities ahead of us? Will we mobilize fresh funding, new planning and investment modalities, and new coordination mechanisms to create a robust pandemic preparedness and response (PPR) system, or will we fall back to our previous state of “panic and neglect”, as we did after Ebola in 2013-14? The recent reports from the IPPPR and the G20 High Level Independent Panel give us some hope that things will change this time around, that we will make the big moves required to build a strong PPR system worldwide including in Low- and Middle-Income Countries (LMICs).

In this uncertain and dynamic context, related questions arise – what role should the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GF) play in contributing to major new initiatives in PPR? What are the GF's current and potential future strengths in assisting LMICs in creating and operating robust national PPR systems that could simultaneously reinforce the new and evolving overall global PPR architecture? How could the GF work with others in such an endeavor? Can this be made compatible with the GF's original and current mandate to lead in ending the three major HIV, TB, and malaria (HTM) epidemics by 2030? Indeed, is it essential that the GF engage in this endeavor if it is to deliver on its core mandate? And what sorts of changes and adaptations in organization, skills, and processes would be required for the GF to play a substantial and effective role in PPR?

In the past few months, many groups and individuals have called on the Global Fund to take on additional responsibilities in the PPR realm. An expanded role in PPR is currently highlighted in the GF's Strategic Framework for 2022-26 as endorsed by the GF's Board in July 2021. However, the details are still unclear. How far should the GF go in providing grant investments in national PPR systems, given the wide range of needs, gaps, and possibilities? What should the GF include in its menu of PPR activities eligible for grants, and where should it build and strengthen its PPR capabilities? How can it best manage the risks connected with such changes?

A. Purpose

To help answer these questions and positively shape the current discussions on PPR and the Global Fund, Pharos Global Health Advisors¹ was asked by the GF's Secretariat, in response to requests from the Board and the Technical Evaluation Reference Group (TERG, to undertake a rapid “thematic review” (TR) of the GF's place in the future PPR universe, especially in supporting LMICs while contributing to a stronger regional and global PPR system.

The main objectives of the TR were to:

¹ The Pharos team included experts on global health security and PPR from Georgetown University and from global institutions in several regions including West Africa, Southeast Asia, and Latin America.

1. Characterize the current global health architecture for health security, identifying the main gaps in PPR systems and in the institutional structures, and focusing on the key areas where the GF could make a major contribution in filling those gaps over the coming decade
2. Examine these potential priority areas more closely to assess the current strengths and limitations of the GF to make leading investments in PPR in LMICs. As context and input to the assessment, briefly summarize the GF's response to COVID-19 with a focus on highlighting what the GF's C19RM efforts reveal about its current and potential future PPR capabilities and limitations
3. Develop a continuum of choices for the GF in PPR with focus on a menu of strategic, operational and programmatic investment approaches that would leverage the GF's existing capabilities, while also considering more ambitious but achievable new areas for Fund involvement in PPR
4. Assess those choices along the continuum for their expected positive impacts and benefits, while also pointing to the risks that would need to be addressed
5. Draw out the high-level implementation modalities for expanded/new roles for the GF in PPR, including implications for GF processes, skills, financing, partnerships, governance, and communications.

B. Methods

To conduct the TR, the Pharos Team used a range of methods and sources, including:

- Review of more than 50 key documents including GF strategies and plans, academic papers and gray literature, and materials from other concurrent initiatives such as the G20 HLIP, and the IPPPR (see Annex B for bibliography).
- Interviews with over 50 global leaders and more than 80 national leaders in six representative countries (Cambodia, Colombia, Haiti, Liberia, Malawi, and Nigeria) (see Annex C).
- Use of several analytical frameworks for PPR including the WHO's Joint Evaluation (JEE), National Action Plans for Health Security (NAPHS) and its COVID-19 Response Pillars; the Global Health Security Index²; the Health Systems Building Blocks and other frameworks for Health System Strengthening, and strategic frameworks developed by the consultants (Chapter 4 and Annexes E and F)

C. Context for the Thematic Review

Humanity as a whole has done exceedingly poorly in preparing for, preventing, detecting, and responding to COVID-19. The pandemic continues to ravage countries around the world in all major regions, with temporary successes in certain countries being rapidly reversed as new waves of the virus circulate around the globe. Despite the grim and disappointing results to date, there are some good practices from High Income and LMIC countries alike that should be elevated and drawn upon in the future, including: the importance of swift and comprehensive national disease surveillance and notification; the use of early and comprehensive public health and social measures, e.g. lockdowns, which can be flexibly relaxed as conditions change; the value of strong central coordination of policies and resources (and the corresponding drawbacks to excessive decentralization and fragmentation, even in the richest countries); and the positive impact of massive early investments in R&D for new vaccines, therapeutics, and diagnostics, building on existing

² The GHSi is a project of the Nuclear Threat Initiative (NTI) and the Johns Hopkins Center for Health Security (JHU) and was developed with The Economist Intelligence Unit (EIU).

platform technologies to rapidly bring new pandemic products to regulatory approval and scaled introduction across a wide range of countries at the same time.

The short-term impact of COVID-19 on other major diseases including HTM and health service generally has been very large, with major drops in case detection, prevention and treatment coverage and negative effects on health and well-being. Many countries have seen their HTM and other health service rebound in late 2020 and early 2021, though the new waves of COVID-19 variants may once again cause setbacks this year and next. The Global Fund has assisted many countries to cope with and mitigate the downward effects of COVID-19 on HTM and other essential health services.

D. Main Findings

- 1. COVID-19 has exposed many glaring weaknesses in global, regional, and national PPR systems. There is a very large agenda of needed “fixes”.** Chapter 4 lays these out systematically. For LMICs, among the top areas for urgent improvement are pandemic surveillance, laboratory networks and diagnostic capabilities, information systems performing swift data analysis and reporting, trained and coordinated frontline health and community workers, strong and activated community response systems and organizations, and access to a robust and reliable global supply chain system for pandemic commodities. At the global level, LMICs will be far better served if the overall architecture is changed to ensure adequate financing for global public goods and external assistance for resource-poor countries, and to promote stronger global coordination and governance and a more efficient global marketplace for pandemic commodities and a robust global supply chain. All of these are areas where the Global Fund can help.
- 2. The GF’s 20 years of experience with the three diseases and with RSSH and its recent foray into C19RM to help countries respond to the immediate pandemic crisis have shown that several inherent features of the GF’s existing model can serve the organization well in taking on this additional responsibility related to PPR, both on the preparedness and response sides.** These include:
 - (a) The GF’s ability to operate at *global scale* and deliver *billions of dollars* of assistance in over 130 countries on a *grant basis*, without inducing greater levels of indebtedness;
 - (b) the *speed* with which it can act in a crisis such as COVID-19, while providing more *patient and predictable multi-year funding* for the systems that can help countries to prepare for future pandemics;
 - (c) its *flexibility and adaptability* to changing circumstances, as shown through the GF’s rapid adjustments in 2020-21 to counter the negative effects of COVID-19 on HTM and to set up and operate C19RM
 - (d) its *responsiveness* to country-expressed priorities, as demonstrated through the use of CCMs and country-driven funding requests;
 - (e) its *partnership approach*, in which the GF seeks to tap the strongest technical expertise available to elevate the quality of its financing and to work with public, private, and civil society organizations in implementing its programs;
 - (f) its focus on integrating the needs, views, and involvement of communities and supporting *community systems and responses*;
 - (g) its attention to the *human rights, equity, and gender* dimensions of HTM and pandemics.

The GF’s focus on detecting, preventing, and responding to large and long-standing HTM epidemics also gives countries *strong and continuous motivation to invest in systems* for the three diseases that can be substantially parlayed to address new pandemic threats, if properly designed and managed. The fact that tens of billions of dollars are being invested in achieving the 2030 goals for elimination of HIV, TB, and malaria means that these

“always on” disease control programs are well-placed to harness the political attention and technical/managerial talents of countries to build up resilient PPR systems.

3. **The GF has seven areas of substantial and growing capabilities** that can be further developed and leveraged to make a major contribution to PPR (Chapter 5). This report looks at each of these PPR-related capability areas in depth and draws out their positive features as well as their limitations. They account for a third of the \$25 billion in Global Fund grants awarded over the past six years under the NFM2 and NFM3 financing cycles (2016-21 allocations), both through grants for the three diseases and for Resilient and Sustainable Systems of Health (RSSH). This is consistent with the findings from a recent Lancet Global Health paper that reviewed a large sample of Global Fund country grants³. The areas include:

- a) Global Supply Chains (including global procurement and market shaping)
- b) Surveillance (including Integrated Data and Information Systems)
- c) Laboratories and Diagnostics (including commodities, equipment, and systems) and combatting Anti-Microbial Resistance (mainly for TB)
- d) National Procurement and Supply Chain Strengthening (including in-country forecasting, purchasing and supply chain logistics)
- e) Front-line (including field epidemiologists and primary care personnel) and Community Health Workers
- f) Community Systems and Responses (including CSO/CBO-delivered services, monitoring and accountability) and rights/equity/gender
- g) Financing (including channeling ODA, GF grant-making and domestic resource mobilization)

While the GF’s capabilities in these areas, which are vital in helping LMIC countries both to prepare for and prevent pandemics and to respond to an acute outbreak, have enabled the GF to make impactful grants for the three diseases and for RSSH, there is more to be done to expand and enhance its effectiveness in these areas. Many grants have focused on commodities (for example in laboratories) or on paying other recurrent costs (for example salaries, stipends, and incentives for frontline health staff and community health workers) and have not gone far in building integrated delivery and data platforms and longer term technical and institutional capacities. The recent TERG review of RSSH⁴ has underscored these limitations. More needs to be done to make the GF an undisputed leader in the key RSSH domains that will help LMICs get ahead of future pandemics and minimize their negative effects on health and society.

4. **There are also new areas beyond the domains mentioned above where the GF could have a big impact on PPR, requiring additional financial resources and expertise and decisions by the GF to move into non-traditional activities.** Among the most important areas with substantial gaps to be filled are:

- a) Financing and managing *pandemic stockpiles* (especially for diagnostics and PPE), which would extend the GF beyond its current work in Global Supply Chains
- b) Investing in *national PPR plans* as part of the NAPHS process, analyzing their costs, prioritization based on key criteria such as immediacy and probability of risks, their consequences, and the cost of action/inaction), and financing options, mobilizing the needed resources (as the GF already does for HTM), and assisting countries in

³ Matthew Boyce et al, Global Fund Contributions to Global Health Security in 10 Countries, 2014-20, Lancet Global Health January 2021

⁴https://www.theglobalfund.org/media/8793/terg_resilientsustainablesystemsforhealthreview_paper_en.pdf

conducting their own State Party Self-Assessment Annual Reporting (SPAR) exercises to enhance national ownership and accountability

- c) Funding vital *PPR infrastructure* such as biosafety labs and hospital isolation wards, and genomic sequencing facilities, and more generally supporting *infection prevention and control engineering solutions* in health care settings
- d) Extending core support to nascent *national institutes of public health* and national centers for disease control to build stronger pandemic-related capacities
- e) Working on specific aspects of the *zoonotics prevention* agenda such as expanding laboratory capabilities to test for zoonotic infections and integrating lab results in the larger HMIS systems that the GF is currently supporting.

5. **The Global Fund has begun to demonstrate its abilities and potential to contribute to longer-term building of national capacities for PPR** (especially in the response phase of a pandemic) through its involvement in COVID-19 via the COVID-19 Response Mechanism (C19RM). C19RM mobilized a billion dollars in reprogrammed or new grants in 2020 when COVID-19 first appeared, and the GF is currently awarding another \$3.3 billion in C19RM 2021 awards to over 100 LMICs. The money is being used to respond directly to COVID-19 via commodities (60% of the total) such as diagnostic tests, PPE, and oxygen and other treatment and prevention services such as infection control, to help LMICs mitigate the impact of COVID-19 on the three diseases (HTM) and to build health and community systems that can help withstand future pandemics (Chapter 3). While it is too early to evaluate fully the C19RM process and portfolio, the majority of grant money targeted at direct response appears to be improving efforts in many countries to protect health care workers, test and trace COVID-19 infections, and treat those with severe disease. Mitigation measures also appear promising despite lack of systematic evidence.

The experience to date with C19RM has also begun to point to **areas of current limitations in the GF's model and capabilities that need to be addressed** if the GF is to play a central role in PPR in the future, especially on the response side. While the GF has expedited C19RM funding requests and global pooled and national procurement of pandemic supplies (PPE, diagnostics, and oxygen), *processes need to be further streamlined and timelines shortened* to meet the urgent needs of countries⁵. The GF's global and country governance structures, painstakingly built over the past two decades to bring together HTM institutions and stakeholders, *will need to evolve to include the main international and national players (including civil society) involved in PPR*, who are different from the GF's current main constituencies.

6. **The GF faces a continuum of choices between extending its current activities (Extend) in the seven areas of existing strength mentioned above and branching into new areas of PPR (Extend Plus) including the five highlighted above.** This is consistent with the recently approved GF Strategic Framework. This report finds that given adequate money and a chance to bring on board the additional expertise required, the Global Fund could take on any and all of the PPR roles listed here. The more the GF moves "to the right" along the continuum toward Extend Plus (see Chapter 6), the greater the required financial and human resources needed, as well as changes in processes, governance, and partnerships. A detailed costing of points along the continuum is beyond the scope of this report, but others (McKinsey, WHO, IPPPR, Georgetown University) all converge in their estimates suggesting that the needed external funding for PPR in LMICs exceeds \$10 billion a year over the coming decade. If the GF is called upon to support the Extend activities described here as well as several of the Extend Plus investments, it

⁵ https://www.theglobalfund.org/media/10793/oig_gf-oig-21-008_report_en.pdf

will need a major portion – as much as 50% -- of this extra money to get the job done. (Chapter 6)

7. As larger global political and financial processes unfold over the coming months, the more precise position that the GF will occupy in PPR along the continuum between Extend and Extend Plus will emerge. **As this happens, it will be important for the GF to design and execute implementation arrangements that draw on existing arrangements and strengths while building new skills and capabilities as needed.** Anticipating that the Global Fund will be called up to ramp up in the core areas mentioned above (Extend) and in some of the new areas (Extend Plus), this report points to seven critical functions of the Global Fund where further investments and changes will need to be swiftly designed and implemented: **grant-making processes, financing, monitoring and accountability, governance, organizational structures and skills, partnerships, and communications.** This is explored in Chapter 7. In all seven functions, adaptations will be required to optimize the GF's effectiveness and efficiency and to justify the additional resources allocated to it for PPR. As the chapter points out, for each function the GF has experience and expertise that it can build upon.

E. Recommendations and Next Steps

1. **The Global Fund should seize the potential to be a major player in PPR.** The opportunities before it and the global and country benefits that the GF can generate to help address the huge and urgent need to build strong and resilient global and country based PPR systems should be harnessed and not squandered. **The cost of failing to act** would be very large for global health, leading to shortfalls in efforts by LMIC countries to build stronger PPR systems and putting at greater risk the gains in HIV, TB, and malaria that have taken place over the past two decades. The cost of inaction would also be significant for the GF itself, potentially reducing its relevance and centrality to global efforts to combat the HTM epidemics as well as new and emerging pandemic disease threats.
2. **The GF should vigorously adopt specific investment choices lying along the continuum between Extend and Extend Plus,** simultaneously reinforcing its work on HTM and accelerating progress toward the 2030 goals and protecting HTM programs against downside effects of future pandemics starting with COVID-19 and including other post-COVID-19 threats. Potential tradeoffs exist but can be managed. This can be done by ensuring that the Global Fund receives adequate supplementary financing for its grants as well as operating budgets to carry out its historic HTM responsibilities and any new PPR tasks it takes on. Internal staffing and systems and other operational modalities must also be adapted to the additional PPR roles assigned to the GF.
3. **To inform the detailed choices about the scope of PPR activities and investments for the GF, the GF needs to take a more in-depth look at the specific “boundary” issues at the Extend Plus end of the continuum** – what for example would be the additional grant, staffing and organizational requirements if the GF moves decisively into areas like pandemic stockpiles, laboratory and infection control infrastructure, and zoonotics prevention? For the more mainstream RSSH investments for PPR, such as surveillance, national procurement and supply chains, lab systems strengthening, HRH, and Community Systems and Responses, what further steps toward integration will be required?
4. **Finally, a wider independent comparative analysis of all the major multilateral institutions involved in the same parts of the PPR financing space** as the Global Fund, including Gavi and the development banks, is needed to be able to assess how the

additional pandemic financing should be optimally allocated across these financing organizations.

The analysis in this report can be drawn upon to make the case for a major Fund role in PPR, as well as to identify with greater clarity the GF's current limitations that need to be addressed and the challenges and pathways the GF will need to follow to boost its resources and capabilities to be an effective conduit for PPR financing.

When the overall political and financial decisions have been taken on the future PPR system – including the shape of the overall institutional architecture, the amount of additional global funding and how it will be allocated, the governance, coordination, and accountability arrangements, and the role of the GF in this evolved system -- the analysis in this report can be used to select more precisely the new PPR activities and investments that the GF will pursue along the continuum of choices, and to flesh out the ways in which the GF will need to adapt its model and other assets to perform effectively in the selected PPR areas. Such detailed design of the “implementation roadmap” for the GF in PPR should cover the seven functions brought out in Chapter 7 (grant-making processes, financing, monitoring and accountability, governance, skills and organizational structure, partnerships, and communications) and take a hard look at the challenges and risks of such changes and how best to mitigate them.

1. Problem and purpose of the thematic review

Problem and Challenge

COVID-19 has shown how ill-prepared countries and the global system currently are to deal with serious new pandemic threats. Despite the many warning signs triggered by SARS, H1N1, Ebola, and Zika, and all the related efforts over the past five years to conduct country evaluations through the WHO-led Joint External Evaluations (JEE) and prepare for future pandemics through National Action Plans for Health Security (NAPHS), over the past 18 months we have seen widespread failure to rapidly detect COVID-19, prevent its spread, and control outbreaks and mitigate their human and economic toll in most countries. At the same time, some countries have done better than others in confronting COVID-19, and the policies they have followed and actions they have taken are worth considering for the future^{6 7}. Past investments in health systems and disease control, including those made by the Global Fund in the three diseases have also helped countries to respond to COVID-19, possibly helping to mitigate the negative effects of the pandemic (some examples of this are cited in this report). This is prompting an unprecedented re-examination of our global and country pandemic preparedness and response (PPR) system and of ways to strengthen this system in the coming years, to avoid future pandemics of the same or potentially even greater magnitude^{8,9,10}

Against this background, the Global Fund to Fight AIDS, TB, and Malaria is being called upon to rethink its own role in PPR. Over the past two decades, the GF has played a central part in the battle against three of the biggest killer infectious diseases in the world. Since February 2020, the GF has undergone a major adjustment in its operations to protect and preserve HIV, TB, and malaria (HTM) programs in the face of COVID-19's disruptive forces, while channeling billions of additional dollars to investments (tests, PPE, oxygen) to directly fight COVID-19 in over 100 low- and middle-income countries, while at the same time continuing to monitor its traditional HTM portfolio of over \$12 billion under the NFM2 cycle (2018-20) and to make additional HTM grants under the new NFM3 cycle (2021-23).

This raises a series of questions— within an expanded and intensified global system to prevent, detect, prepare for and respond to future pandemics far better than the world has been able to do against COVID-19, what role should the GF play? What are its main choices, and what are the implications and pros and cons of each of these choices in terms of the required financial resources, grant portfolio composition, technical and managerial capabilities, and partnerships with other institutions? Should it go beyond the investments the GF has historically made over the past 20 years, and if so in what areas? If there is a likely or best choice for the Global Fund to expand its involvement in PPR, what would the GF need to do to implement such a choice, in terms of its organization, staffing, processes, technical capacities, partnerships, and financing? Where would it fit into the evolving new global and country “architecture” for PPR?

⁶ Summers, J., Hao-Yuan, C, Hsein-Ho, L. , Barnard, L., Telfar, K., Wilson, N., et. Al. Potential lessons from the Taiwan and New Zealand health responses to the COVID-19 pandemic. *The Lancet Regional Health*. 2020. 4 <https://doi.org/10.1016/j.lanwpc.2020.100044>

⁷ Wang CJ, Ng CY, Brook RH. Response to COVID-19 in Taiwan: Big Data Analytics, New Technology, and Proactive Testing. *JAMA*. 2020;323(14):1341–1342. doi:10.1001/jama.2020.3151

⁸ <https://www.g20.org/high-level-independent-panel-urges-the-g20-to-launch-a-global-deal-to-prevent-catastrophic-costs-of-future-pandemics.html>

⁹ https://www.who.int/influenza/pip/pip_pc_ga.pdf?ua=1

¹⁰ https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf

Objectives of the thematic review

To assist the GF's secretariat, senior leadership, Strategy Committee and Board in addressing the questions outlined above, Pharos Global Health Advisors was asked to carry out a rapid strategic review of the GF's roles in PPR. To produce such a review, Pharos was asked to:

- Briefly summarize the impact of COVID-19 on HTM and health services, and the GF's response to date to COVID-19, drawing from this experience some early trends and lessons
- Characterize the ideal state of an effective global PPR system and identify the principal gaps in the current system that need to be addressed
- Describe the GF's current core capabilities that can help to fill these gaps, and consider additional capabilities that the GF might be able to stand up in PPR
- Develop a series of strategic options for the GF covering a range of possible future roles in PPR, from more limited to more fulsome changes
- Assess these options for their feasibility, expected impact, and cost
- Make recommendations among these options
- Elaborate the implications of the recommended strategic direction for the Global Fund's operations and processes, technical roles and capabilities, financing policies and practices, partnerships, and communications.
- Suggest further steps that could be taken to refine and analyze these options as a basis for decisions by the GF's leadership

2. Definitions, Methods and Analytical Framework

Definitions and principles: The challenges of pandemic preparedness and response fall under the larger umbrella for Global Health Security (GHS). We propose the following working definition of GHS: *The existence of strong and resilient health systems that can prepare for; prevent, detect, and respond to; and recover from acute public health emergencies with the potential for international spread, irrespective of biologic origin or geographic location.*

Based on this definition, GHS must be ready to address pathogens with potential for rapid global spread (such as respiratory viruses like COVID-19 and influenza) as well as diseases likely to infect large numbers of people within specific geographic regions (such as hemorrhagic fevers like Ebola, or insect-borne illnesses such as Zika virus), which have been designated by WHO as Public Health Emergencies of International Concern. Even though they may not spread globally, countries may also need to implement Health Security measures to deal with subregional epidemics such as cholera, Lassa Fever, and Meningitis A.

In order to focus on what needs to be done to promote GHS, and especially on the Global Fund's roles in advancing GHS globally and in the roughly 130 LMIC countries where it current makes grants, this report heavily uses the language of pandemic preparedness and response (PPR): *the global and country-level investments and actions required to enhance GHS*. Recent high-profile reports assessing the response to COVID-19 and making recommendations for improved GHS utilize this PPR terminology in discussing what needs to be done to get out ahead of, and blunt, future disease outbreaks with pandemic potential¹¹.

There is much overlap between the capacities required for pandemic preparedness and pandemic response. However, although the two concepts are related, they are distinct. Pandemic preparedness relates more to the longer-term efforts to strengthen health systems and related infrastructure, develop and implement multi-sectoral plans to address capacity gaps, and sustainably finance efforts to implement the International Health Regulations; Pandemic response relates more to the speed and efficiency with which capacities are

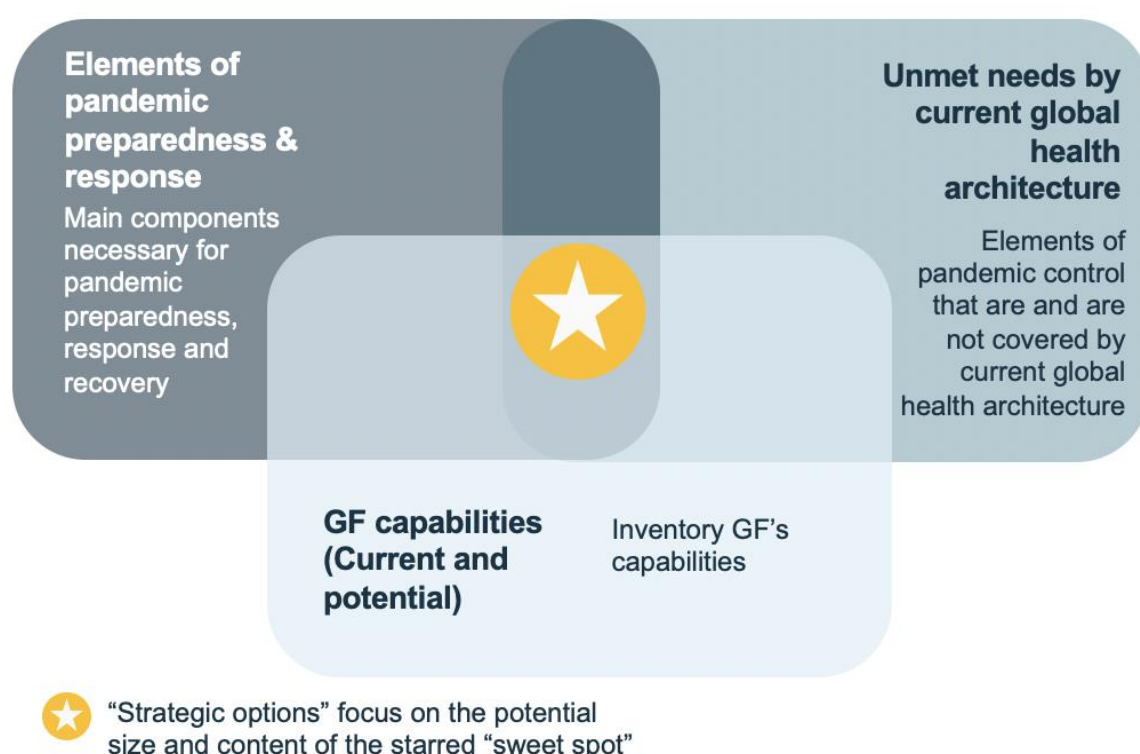
¹¹ <https://theindependentpanel.org/mainreport/>, <https://www.g20.org/wp-content/uploads/2021/07/G20-HLIP-Report.pdf>

activated and implemented during infectious disease outbreaks or other potential public health emergencies.

Methods and data: For this review, Pharos utilized data from a number of sources including a range of published and unpublished reports (Annex B), more than 30 global interviews with persons both internal to and outside of the Global Fund, and over 50 interviews with leaders in six diverse LMIC countries where case studies were conducted (Cambodia, Colombia, Haiti, Liberia, Malawi, and Nigeria). The list of those interviewed is shown in Annex C.

Analytical framework: The identification of future roles for the GF in PPR was built off an analytical framework which we compared global PPR needs and gaps with existing and potential future Global Fund assets and capabilities (Figure 1 below).

Figure 1: Analytical Framework



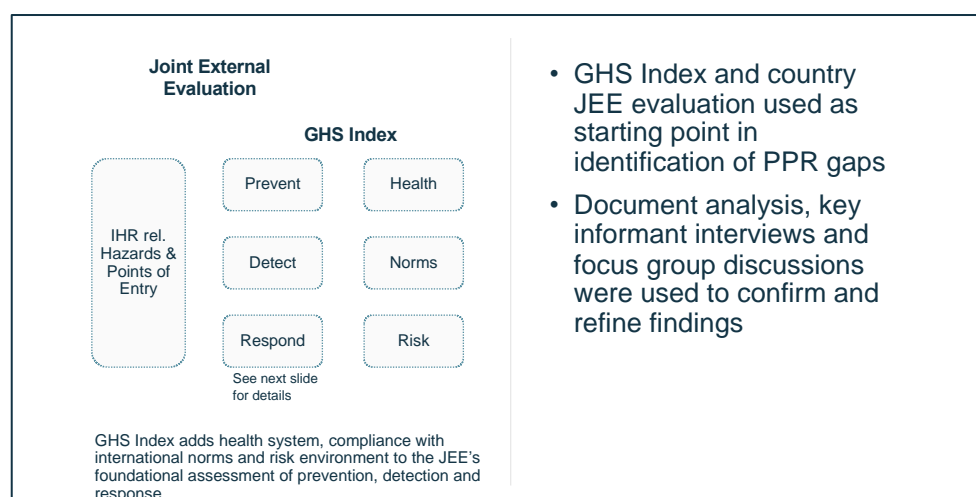
To describe the ideal PPR system and assess unmet needs at both global and country levels, a number of different frameworks have been developed in recent years (Figure 2 below). Some such as the JEE are largely diagnostic tools, while other such as the WHO C-19 Operational Planning Guide and McKinsey's Epidemic Preparedness Pillars categorize the different areas of required planning and investment to improve PPR systems.

Figure 2: Frameworks for Global Health Security and Pandemic Preparedness

Assessment Tools	Joint External Evaluation (JEE)	Evaluate country capacity to prevent, detect and rapidly respond to public health threats & measure country-specific status and progress in achieving targets
	Global Health Security Index (GHSI)	Benchmarking of health security and related capabilities across the 195 countries that make up States Parties to IHR
	WHO global influenza preparedness plan	Assess readiness and public health capacities necessary for mounting a pandemic influenza response
	WHO health system building blocks	Monitoring and evaluation framework to monitor program management of health system investments, assess health system performance and evaluate the results of health reform investments
Recommendations & Guidance	WHO C19 operational planning guide	Guide for national authorities to develop and update national COVID-19 preparedness and response plans
	Independent Panel for Pandemic Preparedness & Response	Review of the international health response to C19 and recommendations to improve capacities for the future
	McKinsey Epidemic Preparedness Pillars	High-level estimates for investments in pandemic preparedness capacity building

In this report, a combination of the JEE and the Global Health Security Index (Figure 3 below) was used to assess the PPR systems strengths, weaknesses and needs in the six country cases presented below. As the JEE and GHSI are designed to evaluate country capacities, the identification of gaps and unmet needs on a global level was more strongly influenced by reviews of the global PPR status including the recommendations from the IPPR and McKinsey.

Figure 3: Methodology: Use of JEE and GHS Index to identify gaps in PPR



Source: WHO International Health Regulations (IHR) JEE framework, GHS Index

The WHO's International Health Regulations (IHR) framework including both the Joint External Evaluation (JEE) and the State Party Self-Assessment Annual Reporting (SPAR) tools is especially helpful, as it contains a list of five main categories of capacities and 17 specific areas of competence that countries should aim to master in a highly functional, efficient, and resilient PPR system (Figure 4 below). However, the JEE focuses on country-level preparedness and does not include important global elements of a PPR system such as

research and development and new product innovation, domestic and international financing, market shaping, and global stockpiles, that are also considered and discussed in this report. Not only are these global functions vital, but some of them such as market shaping are ones that the Global Fund can help to tackle. At national level, the GF's ability to strengthen and support civil society and to protect rights and improve equity are also absent from the JEE framework, but are taken into account in this report.

Figure 4: JEE framework for analyzing key capabilities in a strong PPR system

Prevent	Detect	Respond
Legislation, Policy & Financing	Laboratory systems	Emergency Preparedness
Coordination, communication and advocacy	Surveillance Systems	Emergency Response Operations
AMR	Reporting	Linking public health and security
Zoonotic Disease	Human Resources	Medical countermeasures and personnel deployment
Food Safety		Risk communication
Biosafety and Biosecurity		Maintaining routine services and recovery
Immunization		

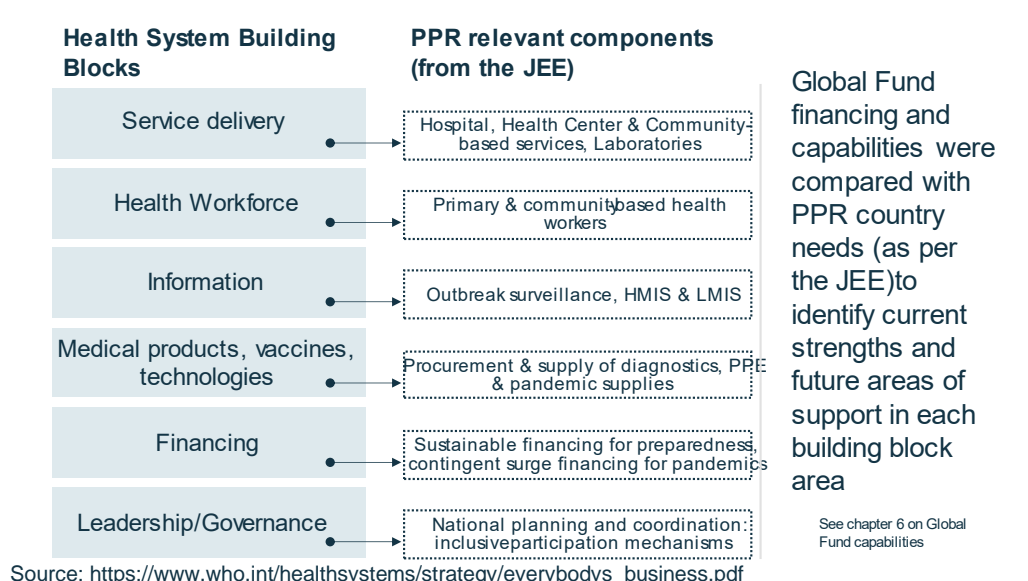
Missing elements of JEE: Market Shaping, R&D, Financing

Source: WHO IHR JEE Framework

In analyzing PPR system requirements and needs against the Global Fund's assets and capabilities, it was important to focus on those parts of the JEE framework that are components of national health systems (as well as including "missing" global elements such as market shaping, stockpile creation and management, and financing structures). In the JEE framework, categories that belong within health systems include Laboratory Systems, Surveillance, Reporting, Human Resources, Medical Countermeasures, Risk Communications, and Maintaining Routine Services. These fit neatly into the WHO's Health Systems Building Blocks (Figure 5 below) and are critical for Preparedness as well as Response. In addition, the WHO's COVID-19 Response Framework's¹² pillar 9 on Maintaining Essential Health Services and Systems captures the overarching importance of preparing health systems to prevent, detect, and respond rapidly to pandemics without a breakdown in the rest of the health system. In each relevant health systems building block area, it is possible to examine recent Fund grants, technical skills, and existing partnerships, as well as gaps and opportunities (Chapter 5).

¹² World Health Organization, COVID-19 Strategic Preparedness and Response Plan 2021-22. <https://www.who.int/publications/i/item/WHO-WHE-2021.02>.

Figure 5: WHO's Health System Building Blocks mapped to national PPR capacities



3. COVID-19: Impacts on HTM, Global Fund Response, and Lessons

The impact of COVID-19 on HTM

The devastating impacts of COVID-19 on the global society and economy have been well documented. Globally, as of August 9th, 2021, there have been more than 202 million confirmed cases of COVID-19 and over 4.2 million deaths.¹³ The decline in global gross domestic product (GDP) in 2020 was 4.9 percent, resulting in almost 3.94 trillion US dollars of lost economic output.¹⁴ Human capital has also been adversely impacted as 1 billion children have been denied a year of schooling leading to projected losses of US 10 trillion dollars in lifetime earnings.¹⁵

The negative effects of the pandemic on health and social services are also being increasingly understood. A recent report on “service disruptions” by the Global Fund documented a major drop off in access and uptake of key HTM interventions (testing, initiation of treatment, prevention) in 2020 because of lockdowns and temporary closure of health facilities¹⁶. In the 502 health facilities surveyed across Africa and Asia, there was a 41% reduction in HIV testing and a 20% drop in PMTCT uptake. TB diagnosis and screening fell by 44% while TB referrals decreased by 59%. Similar trends were noted for malaria interventions with a 56% decrease in diagnosis and a 59% reduction in treatment uptake¹⁷. See Figure 6 below. Other types of essential health services were also negatively impacted. For example, there was a reduction in antenatal first care visits by 66%, and a decrease in consultations for under-5 services by 74% across facilities in Asia and Africa, and individual countries in East and Southern Africa

¹³ WHO Coronavirus (COVID-19) Dashboard at <https://covid19.who.int>

¹⁴ World Economic Outlook, International Monetary Fund at <https://www.imf.org/en/Publications/WEO>

¹⁵ Learning Losses due to covid-19 <https://www.brookings.edu/blog/future-development/2020/07/30/learning-losses-due-to-Covid-19-could-add-up-to-10-trillion/>

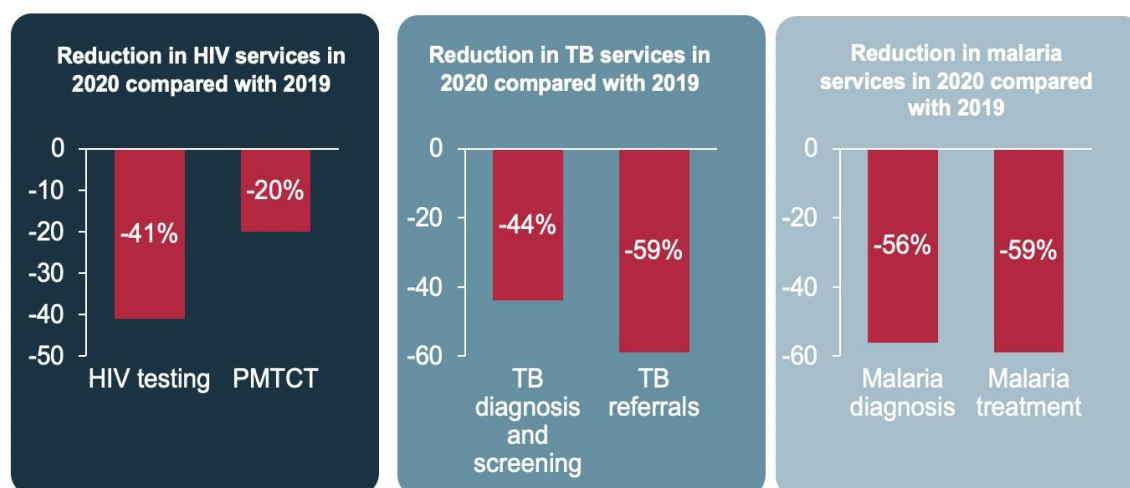
¹⁶ The Global Fund. (2021, April). The Impact of COVID-19 On HIV, TB and Malaria Services and Systems For Health: A Snapshot From 502 Health Facilities Across Africa and Asia. https://www.theglobalfund.org/media/10776/covid-19_2020-disruption-impact_report_en.pdf

¹⁷ <https://www.theglobalfund.org/en/updates/other-updates/2021-04-13-the-impact-of-Covid-19-on-hiv-tb-and-malaria-services-and-systems-for-health/> Global Fund,

saw marked declines in these areas, likely causing an uptick in avoidable illnesses and deaths¹⁸.

These disruptions occurred because patients were fearful of catching COVID-19 and were no longer able to visit health facilities due to lockdowns and stay-at-home orders. In addition, due to the diversion of focus and resources away from HTM and toward COVID-19, there were fewer health communication campaigns to encourage people to seek care.

Figure 6: Impact of COVID-19 on HTM services in 502 health facilities in Africa and Asia



Source: <https://www.theglobalfund.org/en/updates/other-updates/2021-04-13-the-impact-of-Covid-19-on-hiv-tb-and-malaria-services-and-systems-for-health/>

In addition, thousands of HTM workers have been infected with COVID-19 globally, and many perished. According to data from WHO's case database, healthcare workers accounted for nearly 10% of reported cases in the first three months of the pandemic¹⁹.

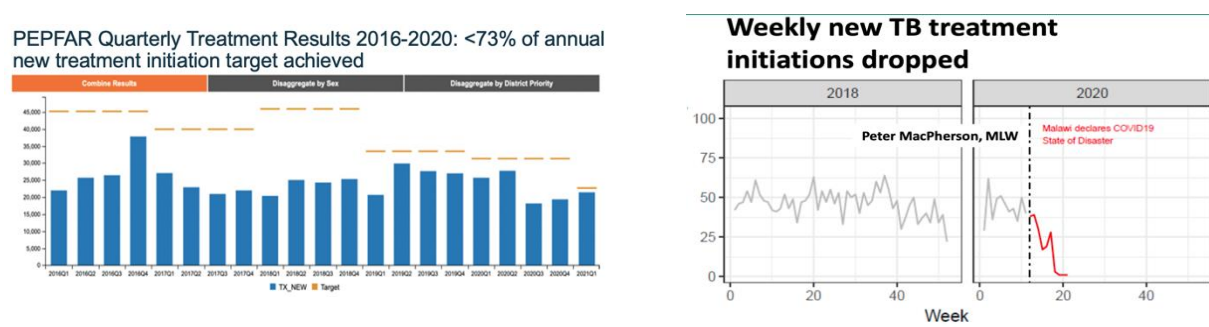
The country case studies conducted by Pharos for this report buttress these findings. For example:

- In **Malawi**, the suspension of VMMC, PrEP initiation, routine viral load monitoring and other services led to a drop in HIV testing, diagnosis and treatment (Figure 7 below). There was also a decrease in TB testing as resources were adapted for COVID-19, for e.g., GeneXpert machines that were previous used to diagnose TB were re-directed to COVID-19 testing.
- In **Colombia**, many HTM outreach services were suspended in 2020 to protect healthcare workers. Even after lockdowns eased, fifty five percent of healthcare workers were redeployed exclusively for COVID-19, negatively affecting coverage of HTM programs.
- In **Nigeria** the reprioritization of funding to focus on COVID-19 led to an average 50% decline in malaria IPT (Figure 8 below) uptake and a 74% decline in HIV testing and counseling services.

¹⁸ <https://www.cgdev.org/publication/addressing-Covid-19-crisis-indirect-health-impacts-women-and-girls>

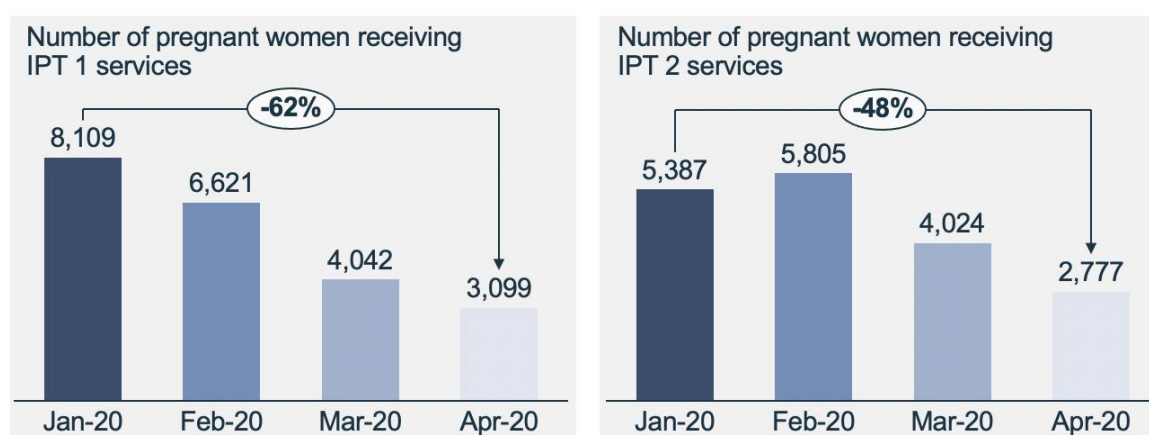
¹⁹ <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20210202-weekly-epi-update-25.pdf>

Figure 7: Impact of COVID-19 on HIV (left panel) and TB (right panel) services in Malawi



Source: PEPFAR 2020 COP SDS, Divala. State of COVID-19 PowerPoint presentation.²⁰

Figure 8: Impact of COVID-19 on uptake of IPT services for pregnant women in Nigeria



Source: Nigeria National Health Management Information System, DHIS2. For Lagos State

The response of the Global Fund to date

To respond rapidly to COVID-19, the Global Fund in 2020 utilized a combination of reprogramming of existing grants (flexibilities) and the allocation of additional grant funds (the C19 Resource Mechanism or “C19RM”) in the amount of nearly a billion dollars. The majority of C19RM was budgeted to respond to country requests for investments to reinforce the national COVID-19 response (55%), followed by actions to mitigate the impact of COVID-19 on HTM programs (34%) and to improve the resilience of health and community systems (11%). Three quarters of this funds were allocated to commodities and procurement and supply chain-related expenses²¹.

The GF is currently approving a second round of country requests for C19RM (May-July 2021) for \$3.8 billion along similar lines, while aiming to speed up processing and enhance quality and impact, based on the 2020 experience. For the second phase of C19RM disbursements, the Global Fund has an extended its scope to encompass almost all WHO COVID-19 Response pillars as set forth in national strategic preparedness and response operational guidelines. These measures include coordination among partners through the CCM, Act-A

²⁰ PEPFAR’s FY 2020 annual Malawi data shows drop off in new HIV treatment initiation from Q1 (Oct- Dec 2019) to Q1 (July-Sept 2020). The data suggest that over 84,000 people were lost to care. HMIS data show a precipitous decrease in TB treatment initiation after COVID-19 emergency was declared (dotted line).

²¹ <https://www.theglobalfund.org/en/oig/updates/2021-04-15-audit-of-the-Covid-19-response-mechanism-c19rm/>

and COVID-19 partner mechanism (pillar 1), adaptation of monitoring platforms (e.g., DHIS 2) to include COVID-19 surveillance and tracking (pillar 3), strengthening of laboratory and diagnostic systems by adding more GeneXpert machines and increasing capacity for genomic testing (pillar 5), and procuring PPE to prevent infection of health care workers (pillars 6 & 8)²².

The positive effects of C19RM in 2020 emerged from the case studies carried out for this report. In Colombia for example, funds approved last year were used to purchase PPE for HTM workers as well as for KPs, set up a technical team to support and monitor multi-month dispensing of ART, and provide remote counseling to KPs on seeking health and psychological support services. In Nigeria, grants were invested in expanded COVID-19 diagnostics capacity through decentralization of testing to all 36 states and adaptation of GeneXpert machines for COVID-19 testing, and in procurement of COVID-19 test kits and biosafety cabinets to protect laboratory scientists.

At the same time, a review of the 2020 C19RM by the GF's own Office of Inspector General²³ pointed to certain challenges to be addressed in fine-tuning the Global Fund's future performance in assisting LMIC countries with their pandemic responses. Because of the pressure to design and approve grants rapidly, as of Feb 2021 only 67% of funds had been reported as initiated for procurement or disbursed as cash. These delays were exacerbated by shortages in the global supply chain and slow administrative processes by countries' principal recipients more accustomed to the gradual pace of procurement for routine HTM commodities.

These issues also arose in the six Pharos country case studies. Interview respondents in Nigeria and Liberia for example reported that although there was timely authorization for repurposing grants, a range of national and GF-related bureaucratic bottlenecks reduced the speed and effectiveness of accessing and utilizing these funds. They also cited the complexity of the funding request process in an emergency context, where speed is essential. Persons interviewed in several countries called for increased engagement of Civil Society Organizations to improve transparency and accountability and enable community-led responses.

While other health and development agencies also faced comparable delays in mobilizing resources and facilitating purchase and delivery of pandemic commodities, the GF will certainly want to learn lessons from this experience and incorporate them in its approach to pandemic financing, as it is attempting to do at present with C19RM 2021. In a pandemic, greater speed is needed in calling for and approving proposals for financing and in implementing activities – months need to be reduced to weeks or even days. To meet the tight deadlines for pandemic commodities, the GF needs to keep evolving its global procurement system, drawing on multiple solutions including expansion of domestic sourcing, advance agreements with suppliers, long-term multi-year contracts, and ability to purchase ahead of full authorization by PRs. Countries need to develop, update, and simulate implementation of plans for HTM service adaptation and pandemic mitigation, an area the GF could support. Health systems components currently financed by the GF for HTM including laboratories, information systems, national procurement and supply chain distribution, frontline and community health workers and community response systems can be leveraged to fight pandemic. To address pandemics effectively, the CCM and other in-country structures must include expertise beyond HTM and incorporate CSOs representing immigrant, rural, ethnic, and other minority communities that are disproportionately affected during pandemics.

²² COVID-19 Strategic Preparedness and Response Plan, Geneva: World Health organization; 2021, License: CC BY-NC- SA 3.0 IGO

²³ <https://www.theglobalfund.org/en/oig/updates/2021-04-15-audit-of-the-Covid-19-response-mechanism-c19rm/>

4. PPR system and architecture: the ideal state and existing gaps

PPR system: Ideal state

Drawing on the different Global Health Security Frameworks as well as recommendations from the IPPPR, McKinsey and other analyses that were introduced in chapter 2 (more details in Annex F), this report identifies the components of an ideal pandemic preparedness and response system (see Figure 9 below), comprising a mix of actions and capabilities within the health sector but also outside (such as preventing zoonoses), and at national level but also globally (such as building a resilient supply chain that also stimulates the development of new pandemic technologies through R&D). As the figure shows, some activities relate more strongly to prevention (e.g., AMR), while others relate mostly to response (e.g., national procurement and supply chain), or span the entire spectrum from prevention, detection, and responding to pandemics (e.g., surveillance). As countries work to strengthen their PPR systems, it is important to include investments that enable the countries to get out ahead of pandemic threats by mounting effective prevention programs and detecting infections as early as possible, as well responding to widespread outbreaks. While most of the components of the ideal PPR system are “horizontal”, there are two “verticals” – financing that enables timely and efficient implementation of the other technical activities, and a focus on protecting the human rights, gender equality and equitable access to services and information by all populations.

Figure 9: Components of an Ideal Pandemic Preparedness and Response System





Vaccinations, AMR & Zoonosis

At global, regional, national, and sub-national levels pathogenic threats are reduced by preventing zoonotic spillovers, controlling antimicrobial resistance, and eliminating vaccine-preventable disease.



Surveillance

The ideal surveillance system, composed of field epidemiologists and other surveillance workers, diagnostic tests and laboratory equipment and technicians, and the data systems to analyze and transmit information on infections, illness, and deaths and facilitate sound decisions, picks up suspected outbreaks early, correctly diagnoses them, and sends the information to central decision-makers to inform public health and social measures. A robust surveillance system is characterized by a secure integrated electronic surveillance tool, national and intermediate level (regional) capacity to analyze and link data from and between the different levels and frequent (ideally real-time) systematic reporting. Supplementing event-based surveillance with advanced analytics to predict infectious disease risks can help authorities to initiate early efforts to stop individual chains of transmission.



Integrated Data & Systems

Integrated systems are essential for disease surveillance, maintaining services and monitoring and adapting the emergency response. These functions require data from various sources including health, laboratory and logistics information systems. In the ideal PPR state, countries will operate an integrated and harmonized health information system with access to real-time data allowing for data-driven decision making.



Labs & Diagnostics

In an ideal PPR system, laboratories adhering to national quality standards will collect outbreak specimens and transport them safely and securely to accredited laboratories through a specimen transport system that accesses all districts/local levels of the country. Laboratories are able to reliably conduct tests on the main disease threats, with at least one laboratory in the country capable of performing genomic sequencing



Community systems and responses

Risk communication and community mobilization and engagement (including minority and marginalized groups) with strong “infodemic” management are key to PPR. Communities can provide insights into circulating rumors, misinformation as well as institutional barriers. Engaging communities and their leaders in solution design is crucial for trust in information and compliance with public health interventions. Community organizations can also be instrumental in delivering pandemic health services.



Community & Frontline Workers

A well-trained health workforce (including nurses and midwives, physicians, public health and environmental specialists, social scientists, laboratory scientists/technicians, biostatisticians, IT specialists and biomedical technicians) is fundamental for maintaining essential services during a pandemic and for executing the pandemic response. To optimize capacities, these health workers need to be multi-valent. In many LMIC countries, community health workers (CHW) who may be compensated but are not regular employees of health ministries also serve as an important first line of defense against pandemics, identifying and reporting early cases of disease and delivering services and information to clients in even the remotest parts of the country.



National Procurement & Supply Chain Management (PSM)

Similar to global supply chains, national procurement and supply chains must be able to adapt to rapidly changing demand and supply requirements in a pandemic. Besides a strong

supply chain infrastructure (warehousing, transport, inventory management) needed in non-pandemic conditions, countries will ideally have national stockpiles of essential medical commodities, drugs and equipment. A well trained and highly professional procurement and supply chain team will also use artificial intelligence tools to anticipate supply and demand shocks, re-allocate essential supplies to where they are needed most at subnational level, and leverage various sourcing tools (e.g., tendering, auctioning, pre-certification of suppliers) to quickly increase supply.



Resilient Global Supply Chains

A resilient global supply chain must ensure equitable and reliable supply of protective equipment, diagnostic tests and laboratory equipment, therapeutic drugs, and vaccines. To fulfil this task despite the substantial increased demand and possibly reduced trade volumes during a pandemic, a global stockpile of essential goods, regional/local manufacturing capacity and strategic demand and supply steering may also be required. To do this, commodity demand and supply must be effectively monitored, forecasted, and managed.



Leading, Coordinating & Planning Response

In the ideal PPR system, countries will have planned and tested coordinating mechanisms, incident management systems and public health emergency operation centers (EOC). They will also have well-trained and maintained multisectoral rapid response teams and EOC staff capable of rapidly activating the emergency response.



R&D Platforms

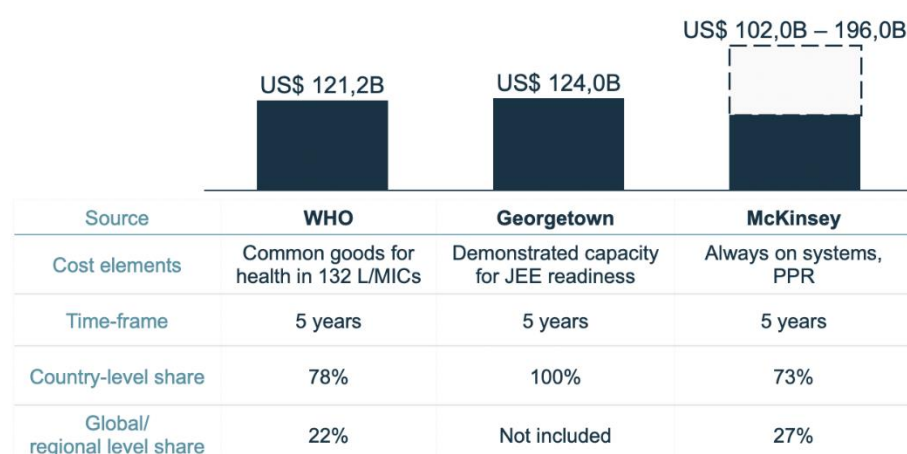
R&D platforms are key to close gaps in addressing known threats. Upstream, continuous investment in basic research and in platform technology development will help to prepare the world for as yet unknown and hard-to-predict outbreaks. These technologies need to be activated rapidly upon the discovery of a new pathogen (as done with mRNA for COVID-19 vaccines). In an ideal system, new technology will be shared and transferred within a geographically diversified network of production sites to scale up production and ensure equitable access.



Financing

Building and maintaining a system of pandemic preparedness (as well as scaling up actual response) will require substantial additional funding (though this pales in comparison with the economic and financial costs of not averting a pandemic, as COVID-19 has shown dramatically) Three recent independent studies point to similar funding needs for PPR – of the order of \$100-150 billion over the next five years, with frontloading in the first years and around \$15-20 billion required in the outer years and three-quarters of this or more to be devoted to investments at country level (see Figure 10 below).

Figure 10: Estimates of Future PPR Funding Required



Source: McKinsey Report, WHO Assessment of Gaps in PPR, Interviews



Human Rights, Gender, and Equity

To ensure that in a pandemic situation human rights and other legal protections are not abused in the name of a national health emergency, that women and others do not suffer stigma and discrimination, and that the pandemic services such as testing, treatments, vaccines, and other key health information are equitably distributed among different population groups, it is important that such rights/gender/equity goals are pursued across the entire spectrum of pandemic preparedness and response activities.

PPR System: Major Gaps

The experience with Ebola^{24 25} and COVID-19 has led to a multitude of analyses identifying the biggest gaps in pandemic preparedness and response. Across the analyses conducted by IPPPR²⁶, the GPMB²⁷, G20 HLIP²⁸, WHO²⁹, McKinsey³⁰ on COVID-19 and using the results from interviews for this report, the following needs were identified as critical (Figure 11 below). These point to areas for increased investment by the Global Fund and others.

²⁴ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)00946-0/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00946-0/fulltext),

²⁵ <https://www.who.int/csr/resources/publications/ebola/report-by-panel.pdf>

²⁶ https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf

²⁷ https://apps.who.int/gpmb/assets/annual_report/2020/GPMB_2020

²⁸ <https://www.g20.org/wp-content/uploads/2021/07/G20-HLIP-Report.pdf>

²⁹ https://www.who.int/influenza/pip/pip_pc_ga.pdf?ua=1

³⁰ <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/not-the-last-pandemic-investing-now-to-reimagine-public-health-systems>

Figure 11: Unmet PPR needs

PPR Area	Critical unmet needs
Zoonosis	<ul style="list-style-type: none"> • Limiting human/wildlife interactions
Vaccination	<ul style="list-style-type: none"> • Global immunization • Regional manufacturing capability for vaccines
Surveillance	<ul style="list-style-type: none"> • Regular simulations • Pathogen surveillance • Rapid notifiable disease reporting • OneHealth predictive analytics • Field epidemiologists
Community mobilization	<ul style="list-style-type: none"> • Communication and rumor management
Labs & Diagnostics	<ul style="list-style-type: none"> • Biosafety / biosecurity labs • Rural lab infrastructure including specimen transport systems
Integrated Data & Systems	<ul style="list-style-type: none"> • Data systems with real-time reporting capability • Integration of HMIS with logistics and laboratory information systems
Community & Frontline workers	<ul style="list-style-type: none"> • Surge capacity
National PSM	<ul style="list-style-type: none"> • Professional sourcing and supply chain management
Unbreakable Global SC	<ul style="list-style-type: none"> • Global management of demand & supply (Anticipating shocks, pooling demand, allocating scarce commodities) • Market shaping capabilities for pandemic commodities • Stockpiles of essential equipment
Leading, Coordinating, Planning Response	<ul style="list-style-type: none"> • Emergency operation centers • Planning and coordination
R&D platforms	<ul style="list-style-type: none"> • Accelerated discovery for therapeutics • Rapid technology transfers

Source: IPPR, HLIP, WHO, McKinsey

Many of these gaps were highlighted in the six country cases studies conducted for this report (Figure 12 below and Annex I). Interviewees in Cambodia for example found itself without the capacity for large-scale PCR testing and genomic sequencing, preventing the country from tracking disease outbreaks. Interviewees in Liberia pointed to the fact that frontline health workers only received sporadic training in surveillance and management of pandemic outbreaks, and this was siloed according to specific diseases without applying to multiple pathogens. Even a country like Colombia with a well-established health management information system found itself ill-prepared to collect and analyze data on a rapidly evolving outbreak such as COVID-19 in order to take counter-measures.

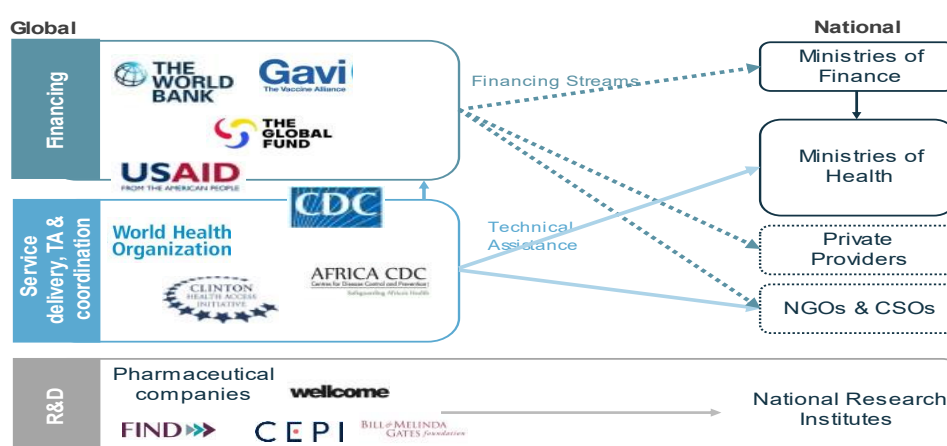
Figure 12: PPR Gaps Highlighted in Country Studies



PPR Institutional Architecture and Gaps

The current landscape of organizations involved in PPR is diverse and complex, but there are also important gaps and issues with the existing array of PPR-related institutions, which the Global Fund can help to address. Figure 13 shows the structure of this landscape, and gives illustrative examples of some of the most important actors. A more complete catalogue is contained in Annex G and can be useful in assisting the Global Fund in identifying key partnership opportunities connected with an expanded Fund role in PPR (Chapter 7).

Figure 13: Global Health Architecture – Illustrative Schematic



Pharos

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Overall architecture: It is useful to distinguish between organizations that focus on Research and Development (R&D) of new technologies and products to fight pandemics, and organizations that largely concentrate on the development of national and global systems for delivering PPR services.

In the R&D category are private pharmaceutical and diagnostic companies, national institutes of health research such as the US NIH and the UK's MRC, and public-private partnerships like the Coalition for Epidemic Preparedness Innovations (CEPI) established in 2017.

On the systems development side are national ministries of health, centers for disease control/national institutes of public health, international NGOs, civil society organizations, United Nations agencies (including WHO, UNICEF, and UNDAC/OCHA), bilateral institutions (e.g. PEPFAR and Agence Francaise de Developpement), and multilateral organizations. In such a complex environment, all of the main institutions must work closely and productively with others containing complementary skills and resources, in order to make the global PPR system work effectively.

While there are a few cross-over organizations such as the Bill and Melinda Gates Foundation and the Wellcome Trust, nearly all the national and global actors mentioned above operate either in the PPR R&D product innovation realm or in the PPR services domain. This report focuses on the latter, while recognizing that improved structuring and financing of R&D is also vital for future pandemic preparedness and response – as the development of COVID-19 vaccines, tests, and therapeutics has so clearly shown.

PPR services and the Global Fund. The “PPR services-related” organizations perform three kinds of functions -- financing PPR services, delivering those services, and providing technical advice, policy direction and coordination. Among the most important actors in the PPR space, and with potential to do so in the near future, are the following:

- Financing: at national level, ministries of finance and national health insurance funds; at the global level via external aid Gavi (vaccines), the World Bank and other regional development banks, bilateral aid agencies such as USAID, GAC Canada, and the UK's DFID, the Bill and Melinda Gates Foundation (health systems broadly), and the Global Fund (HIV, TB, malaria, and health systems)
- Service Delivery: ministries of health, private health care providers, and large NGOs such as Medecins Sans Frontieres and ALIMA
- Technical Know-How, Policy and Coordination: at national level, ministries of health, centers for disease control and institutes of public health; and at regional and global level the World Health Organization, the Africa CDC, the US CDC, and NGOs like CHAI and Resolve to Save Lives.

This review finds that the Global Fund's main place is in the area of PPR systems development and service delivery, although its relationships with R&D actors such as the Fund for Innovative New Diagnostics (FIND) under ACT-A and its potential upstream impact on product R&D by helping to quantify demand and create a more transparent and predictable market for new pandemic products still makes the Global Fund relevant for R&D. By using its purchasing power, it can “pull” through new products and get them to market.

Despite the plethora of organizations involved in PPR and their deep expertise, there are important gaps in the landscape that reduce the effectiveness of PPR responses globally and especially in LMIC countries:

- There is no one single structure or agency that brings all the actors together and coordinates them at present. The main sources of PPR financing and their technical and policy counterparts are still learning to plan and coordinate implementation more effectively. There are still too many silos. Recent proposals for a single Pandemics Threats Council and Board, a single Pandemic Threats Fund financing mechanism, and an enhanced coordination role by the WHO may change the picture around coordinated decision-making, planning, financing, and reporting and accountability, but this is by no means assured. The Global Fund could help strengthen this coordination, as it has done for HTM.
- Also at global level, the new PPR financing organizations such as the Global Fund and World Bank that have hitherto worked mainly on infectious disease control and health

systems development need to deepen their ties to the key technical agencies for PPR. This requires new partnerships.

- At country level, PPR-related capacities are often fragmented across several national organizations – including the laboratories and surveillance units of health ministry, the national institute of public health, and the pandemics crisis response agency -- that lack experience working closely together. They also need to be brought more closely together, building on the national coordination structures that have been set up under NAPHS implementation and fully activated for Ebola (in a few African countries) and for COVID-19 everywhere. The Global Fund's 20-year experience with country coordination mechanisms for HTM may be relevant here.

Given the degree of specialization among national and international organization, it is critical for individual actors to be able to form effective partnerships with others. No single organization will be able to perform all three functions related to pandemics – the most successful organizations will know how to partner effectively and seamlessly with others.

PPR Financing Gaps

Prior to COVID-19, the amount of annual spending on PPR was only a fraction of the roughly \$25 billion in annual investments called for in various studies including the reports of the IPPPR and the G20 High Level Independent Panel HLIP report. The bulk of this expenditure has been devoted to emergency responses to Ebola and Zika and very little has been devoted to pandemic preparation -- less than \$400 million worldwide in 2019.³¹

When COVID-19 emerged in early 2020, the World Bank's Pandemic Emergency Financing Facility and the WHO's contingency fund for emergencies were quickly exhausted. As of early 2021 an additional \$125B+ in financing for COVID-19 response and recovery has been made available from the World Bank and the regional development banks and other bilateral and philanthropic donors, but most of this is for economic and social support, and coordination has been weak.³²

Recommendations for a future PPR financing system are sketched out in the IPPPR report³³ and in the G20 HLIP report³⁴. There is broad congruence among them. Of the \$25 billion or more annual funding required for preparedness (pre-response), nearly \$15 billion will need to come from external donor sources, either to pay for investments that are classified as global public goods, or to help the countries with very low incomes whose ability to pay is compromised.

The HLIP has called for a concerted and coordinated global effort to mobilize commitments to this level of funding before the end of 2021 and for the creation of a single PPR financing mechanism that can collect and allocate these funds to countries, mainly via the existing multilateral mechanisms for enhanced disease surveillance, health systems development, and product R&D, including the Global Fund, GAVI, and the multilateral development banks.

At present there are few actors playing a substantial role in mobilizing and channeling large amounts of financing to PPR systems and services in low- and middle-income countries. Those that stand out are the World Bank (via its COVID-19 response funding and its Pandemic Emergency Financing Facility (PEF); Gavi and COVAX; and the Global Fund's C19RM.

A significant share of the additional investment in PPR systems in LMIC countries over the coming decade will also need to come from domestic resources, to ensure national buy-in and sustainability. International funding mechanisms such as the Global Fund will need to adapt

³¹ <https://www.disasterprotection.org/covid19-data-visualisation>

³² Ibid.

³³ https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf

³⁴ <https://www.g20.org/wp-content/uploads/2021/07/G20-HLIP-Report.pdf>

their policies and practices around domestic resource mobilization and co-financing in order to provide incentives for such enhanced national spending on PPR.

Access to COVID-19 Tools Accelerator (ACT-A)

The ACT-A is a global collaboration to accelerate development, production, and equitable access to COVID-19 technologies and commodities. It brings together many of the major actors including the WHO, World Bank, Global Fund, Gavi, CEPI, the Wellcome Trust, and others to advance access to COVID-19 diagnostics, vaccines, and therapeutics. As of June 2021 ACT-A had delivered almost 100 million doses of COVID-19 vaccines, 84 million tests, and a billion dollars of oxygen, treatments, and PPE.

The Global Fund has been co-leading two ACT-A pillars – the Diagnostics Pillar and the Health Systems Connector – and is also supporting the Therapeutics Pillar, primarily as it relates to procurement and distribution. In partnership with FIND, the Global Fund’s work on the Diagnostics Pillar helps LMICs to procure COVID-19 diagnostic tests, strengthen laboratory infrastructure and capacities, provide training and technical assistance, and develop new testing tools. Under the Health Systems Connector the GF partners with the World Bank to develop training laboratory and health staff to manage lab facilities and personal protective equipment under pandemic response conditions.

ACT-A has improved planning and coordination among many of the major actors in PPR. It also promotes a whole-of-society approach to pandemic response by including governments, philanthropies, global health organizations, scientists, businesses, and civil society organizations. But the initiative has limited authority to deliver on its promises (e.g., many wealthy countries arranged bilateral deals with vaccine producers, which hindered ACT-A’s ability to procure and deliver vaccines through COVAX). Fund-raising for ACT-A has also been challenging, with multiple targets for the different pillars and difficulties in tracking funding flows and enforcing accountability for financial commitments. Beyond this, it is unclear that ACT-A will be sustained for other PPR purposes beyond a single disease, COVID-19.

5. Global Fund’s strengths and capabilities in PPR

The Global Fund possesses both general operational strengths and more specific technical capabilities that can enable it to take on responsibilities for financing PPR investments, if called upon to do so. The operational strengths have already been touched upon in Chapters 3 and 4 and are briefly restated below. The key technical capabilities are described and analyzed in greater detail in the second part of this chapter, as well as areas of current weakness that would need to be addressed to maximize the GF’s performance in PPR.

Operational Strengths

The GF’s 20 years of experience with the three diseases and with RSSH and its recent foray into C19RM to help countries respond to the immediate pandemic crisis have shown that **several inherent features of the GF’s existing model can serve the organization well in taking on this additional responsibility related to PPR, both on the preparedness and response sides.** These include:

- (a) The GF’s ability to operate at *global scale* and deliver *billions of dollars of financial assistance* to over 130 countries on a *grant basis*, without inducing greater levels of indebtedness; The GF’s size (\$4 billion a year in grants for HTM and additional billions for COVID-19), accompanied by substantial country and global knowledge, also give it a special ability to shape markets for key health commodities, raising quality, lowering prices, and promoting innovation and new product development
- (b) The *speed* with which it can act in a crisis such as COVID-19, as shown through the rapid establishment of C19RM, the approval of the first wave of \$1 billion in special grants in

2020 and of an additional \$3.3 billion in 2021³⁵; while also providing more *patient and predictable multi-year funding* for the systems that can help countries to prepare for future pandemics;

- (c) Its *flexibility and adaptability* to changing circumstances, as shown through the GF's rapid adjustments in 2020-21 to counter the negative effects of COVID-19 on HTM and to set up and operate C19RM;
- (d) Its *responsiveness to country-expressed priorities*, as demonstrated through the use of CCMs and country-driven funding requests rather than headquarters-originated proposals;
- (e) The GF's *partnership approach*, in which it seeks to tap the strongest technical expertise available to elevate the quality of its financing and to work with public, private, and civil society organizations in implementing its programs. In the case of COVID-19, the GF has rapidly forged new partnerships with groups such as the WHO Health Emergencies Programme, the US CDC's Health Protection Division, the Africa CDC, the Global Health Security Agency, and others;
- (f) Its focus on integrating the needs, views, and involvement of *communities* in pandemic planning and response, including communities comprising vulnerable populations;
- (g) Its attention to the *human rights, equity, and gender* dimensions of HTM and pandemics.

The GF's focus on detecting, preventing, and responding to large and long-standing HTM epidemics also gives countries *strong and continuous motivation to invest in systems* for the three diseases that can be substantially parlayed to address new pandemic threats, if properly designed and managed. The fact that tens of billions of dollars are being invested in achieving the 2030 goals for elimination of HIV, TB, and malaria means that these "always on" disease control programs are well-placed to harness the political attention and technical/managerial talents of countries to build up resilient PPR systems.

PPR-relevant technical capabilities

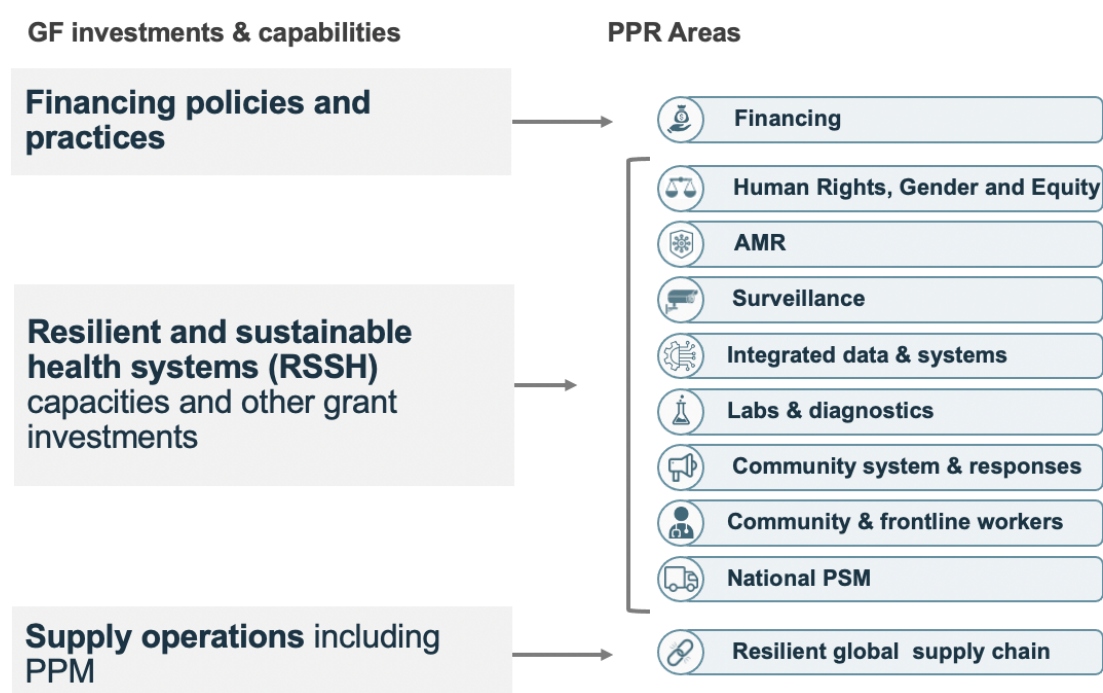
A substantial amount of the existing work of the Global Fund is grounded in technical capabilities that can contribute directly or indirectly to PPR. These capabilities have already been harnessed for the GF's regular HTM portfolio as well as under C19RM and can be further developed.

The GF's global supply operations including the pooled procurement mechanism (PPM), the capacity the GF has developed to back up its traditional grant investments in resilient and sustainable health systems (RSSH), and its financing policies and practices around domestic resource mobilization and sustainability are among the most important cross-cutting technical areas that can be utilized for PPR.

Figure 14 below shows the areas of an ideal pandemic preparedness and response system (introduced in the previous chapter) where the Global Fund is currently investing and making an important contribution at global and national levels. Ditto for the GF's policies and investments in human rights, gender, and equity, which have been shaped by the struggles to fight AIDS, TB, and malaria but also play a critical role in effective pandemic preparedness and response.

³⁵ Under C19RM in 2021, the GF has set shorter turnaround times for processing Funding Requests and sending notification letters to countries.

Figure 14: GF capabilities and investments contributing to PPR



Source: Internal Data on NFM2 and NFM3 investments; Boyce et al, Global Fund Contributions to Health Security in Ten Countries, 2014-20. The Lancet, February 2020

For each of these areas, the amount of approved grant financing over the past two replenishment cycles (NFM2 and 3) is presented in the sections below, along with an analysis of these grants to assess how much of the funding is being channeled into areas that build national systems that can detect, prevent, and respond to pandemics³⁶. Examples of investments that appear to add the most value to future PPR are also given, along with specific areas where the GF could go further to enhance its effectiveness.

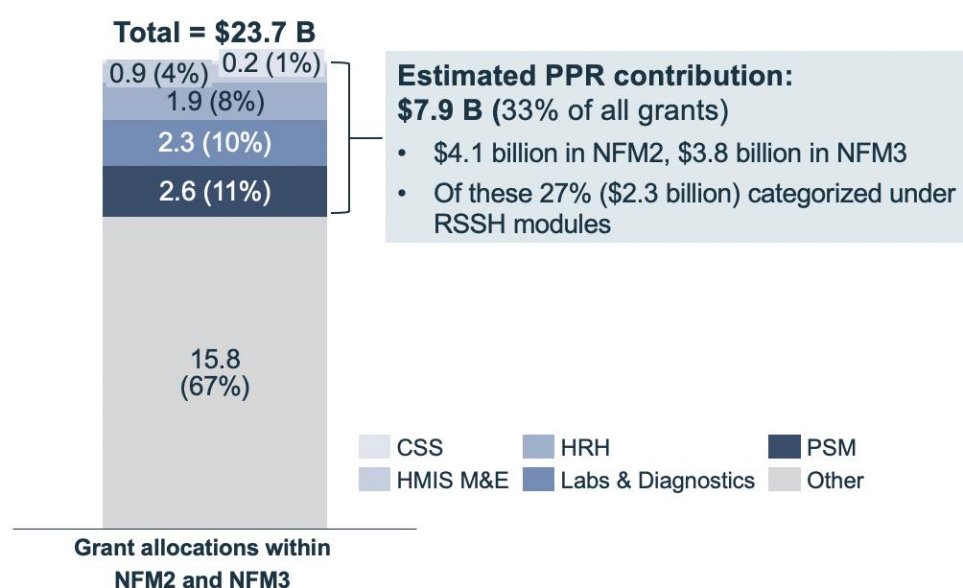
The analysis presented below, which suggests that a third of Global Fund grants is devoted to areas that help countries build capacity for pandemic preparedness and response, is consistent with work published in early 2021 that suggests that 37% of the GF's recent grants can be mapped to the JEE categories and thus can be counted as being relevant for PPR capacity strengthening.³⁷

³⁶ The estimation of Global Fund grant amounts for PPR-related activities under NFM2/3 was carried out using the GF's budget system, with data compiled with assistance of the lead data analyst from the RSSH team. A breakdown of the grant allocations judged to contribute to PPR is shown in Figure 15. Details on the included budget modules and cost categories are provided in Annex H.

While the PPR capability areas assessed below draw upon these Global Fund budget modules, their scope is not identical to the grant modules and cost categories used by the GF in its budget classification and analysis. For instance, the modules *HMIS M&E*, *MDR TB*, and *Human resources for health, including community health workers* were all counted under Surveillance. Several budget categories from *HMIS M&E* also contribute to the PPR area Integrated Data and Systems.

³⁷ Boyce et al, Global Fund Contributions to Health Security in Ten Countries, 2014-20. The Lancet, February 2020, [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30420-4/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30420-4/fulltext)

Figure 15: Estimated amount of grant allocations (NFM2 & NFM3) contributing to PPR



Source: Internal Data on NFM2 and NFM3 investments



Anti-Microbial Resistance

AMR poses a serious threat to progress in the fight against all three of the Global Fund's priority diseases. The vast majority of the GF's support in this area involves investments to address MDR and XDR tuberculosis³⁸. More specifically, the Global Fund supports AMR efforts through a variety of activities including conducting drug sensitivity studies, monitoring the efficacy of various drug treatment regimens, conducting sequencing of drug resistant pathogens, providing laboratory equipment necessary for diagnosing resistance, and referring patients and pathogen samples for further resistance testing as needed. Other AMR focused work conducted by the Global Fund includes monitoring and countering insecticide resistance in mosquitoes, which is beyond the scope of AMR as defined by the JEE.



Resilient global supply chain

Procurement and supply chain management is one of the core capabilities of the Global Fund. Per year the GF procures over \$2 billion of HTM products through global pooled procurement (~55%) or partner and national procurement.³⁹ The GF's Pooled Procurement Mechanism (PPM) is used by over 60 countries.⁴⁰

Global Fund already contributes to improved affordability and availability for HTM commodities. A review from 2019 showed that PPM achieved its targets regarding product quality and availability/affordability including establishing four suppliers for key products, 80-90% on-time-in full delivery in 2018 and yearly cost savings of \$150-220m between 2016 and 2018⁴¹.

C-19RM has driven expansion into PPR commodities: Since the start of COVID-19, the GF has expanded its PSM activities to include financing for the procurement of over \$700 million

³⁸ This is, in part, because of the scope of considerations granted to AMR in the JEE -- the JEE specifies that in the human health sector, reviews are limited to bacterial resistance to antibiotics and systems for tracking TB resistance are managed through those respective programs. Viral, other non-bacterial pathogen and vector resistance are beyond the scope of the JEE, unless they are integrated in national policies, standards or guidelines.

³⁹ Based on Pharos analysis of NFM2 and NFM3 budgets

⁴⁰ *ibid*

⁴¹ The Global Fund: Technical Evaluation Reference Group: Market Shaping Strategy Mid-Term Review Position Paper December 2019

in COVID-19 related commodities such as PPE and COVID-19 diagnostic tests and is currently gearing up to manage procurement of an expected \$2 billion+ of additional commodities under C19RM grants in 2021. Preliminary estimates indicate that around 60% will be channeled through PPM and 40% through partner or national procurement.⁴²

While the overall mandate and scope of the Global Fund's market shaping strategy are wide, thus far the GF is only addressing a portion of the broader global health security commodity needs. To do this, the Global Fund can tackle global health security as part of larger efforts to enhance the GF's market shaping influence. According to the mid-term review of the GF's market shaping strategy, beyond ensuring availability and affordability, the Global Fund has thus far generated only modest selected market shaping outcomes (e.g., artemisinin supply stabilization).⁴³ While the GF has not taken a leadership role in broader, proactive market shaping to drive product selection, new product adoption and innovation, the next generation market shaping approach will examine such roles more closely. To do this, the GF will have to broaden its collaboration with current partners like UNICEF, Unitaid and CHAI and forge new partnerships.

C19RM has revealed market visibility and agility as challenges for emergency PSM: PPM gives the GF direct visibility over demand and the GF can strategically manage supply. Its visibility into national and partner procurement is however still limited and reliant upon reports with cycles of up to just 6 months. This constrains the ability of the GF to pool and steer demand across PPM, collaborate with partners, undertake national procurement and to adapt quickly and flexibly in emergency situations.

By further adapting the PPM, the Global Fund could better serve as an emergency supply chain mechanism for HTM and essential medical emergency supplies: While building on the existing PPM, expanding the GF's role in emergency procurement and supply chain management would require increased agility through e.g., improved visibility, supplier, pre-registration and guaranteed and advance payments.

To address other unmet needs in the global PPR system, including proactive market-shaping (e.g., for PPE and therapeutics) or establishing and managing a global global health emergency stockpile for medical equipment and PPE would require a new set of skills and partnerships (e.g., manufacturers of PPE, essential medicines etc.). More funding would also be needed -- for instance, a global medical supply stockpile has been estimated to cost \$23 billion over 10 years.⁴⁴



National PSM

In addition to funding and procuring commodities, the Global Fund invested \$2.58 billion or around 11% of all grants approved in NFM 2 and NFM 3 in national supply chain management.⁴⁵ The large majority (82%) of these investments were for operating costs of storage and distribution of HTM commodities. Building out and professionalizing domestic capabilities around strategic sourcing and supply chain management (e.g., product selection, quality assurance, tendering, inventory, and supplier management) is an area that received on 18% of grant funding. Figure 16 below shows a more detailed breakdown.

Supply chain capacity building is already defined as a Fund priority going forward: The SC Roadmap identifies the professionalization of countries' supply chain management as one of

⁴² Key Informant Interview

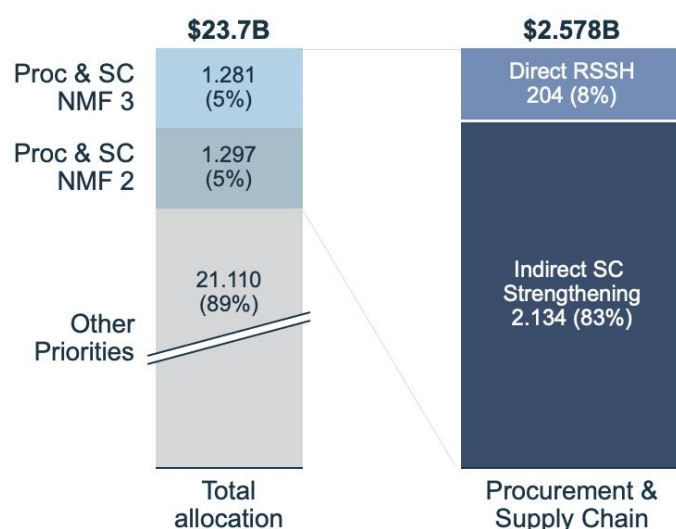
⁴³ The Global Fund: Technical Evaluation Reference Group: Market Shaping Strategy Mid-Term Review Position Paper December 2019

⁴⁴ McKinsey & Company, Not the last pandemic: Investing now to reimagine public-health systems (2021) <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/not-the-last-pandemic-investing-now-to-reimagine-public-health-systems>

⁴⁵ Global Fund internal data on grants approved under NFM2 and NFM 3

five objectives. Within this objective the focus will be on supporting the development of national frameworks and SC plans as well as best practices and standards.

Figure 16: Spending in Procurement and Supply Chain, NFM2/3



Note: Direct RSSH: Constructing and maintaining infrastructure and equipment (5%), supply chain operations (3%), technical assistance (2%) and other (8%). Indirect SC strengthening: Supply chain operations (72%) includes freight and insurance, warehouses and storage, customs, and in-country distribution, procurement agent and handling fees (8%) and other procurement and quality assurance and quality control (3%).⁴⁶

The GF can build on its current capabilities to support pandemic SC planning and operations in LMIC countries. This will require additional know-how for pandemic conditions (e.g., modelling rapid and unpredictable supply and demand fluctuations) and new PSM partners e.g., disaster relief supply chain management organizations. In other PPR areas such as managing national pandemic stockpiles would require additional changes in the GF's structures, skills, and operations.



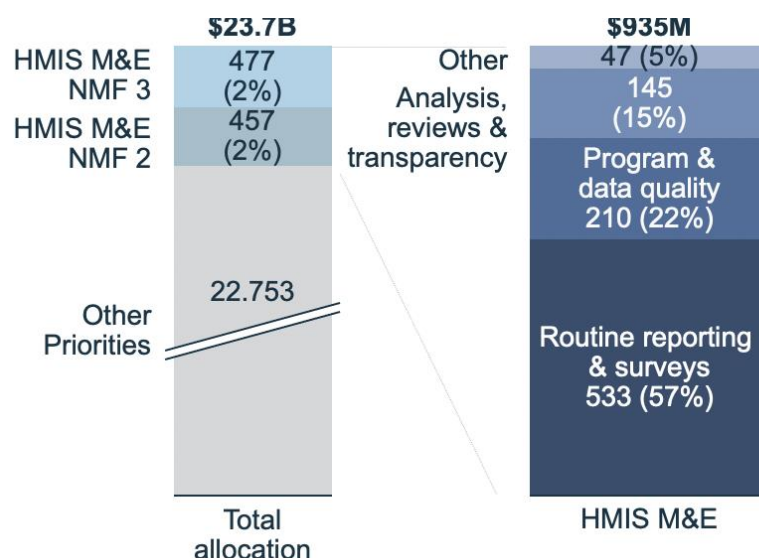
Integrated data & systems

Most of Fund's value-added to countries' integrated data and systems occurs through its activities in Monitoring and Evaluation. Since monitoring of the Global Fund's grants builds on national data systems, investments in M&E contribute to the health information system infrastructure in each country.

⁴⁶ Ibid.

Grants in this area over the past six years (Figure 17) total to around \$ 935 million or 4% of all approvals. An additional \$72 million of catalytic funding are budgeted for the period of 2017-2022. More than 50% of the money has been allocated for routine reporting and surveys). Program and data quality is the second largest funding category (22%).

Figure 17: Spending in HMIS and M&E, NFM2/3



Note: Further Spending breakdown is as follows. Routine Reporting and surveys (57%), Program and data quality (22%), Analysis, reviews and transparency (15%), Other interventions (5%)⁴⁷

Through their grants and catalytic investments, the GF has supported the broad roll-out of District Health Information Software 2 (DHIS2) starting in 2013. At present, these packages allow aggregate reporting from national HMIS for 60 country/disease combinations. Catalytic funding has been used to install WHO analytical dashboards in 22 countries for HIV, 24 for TB, and 27 for malaria.

While over 70 countries have adopted the system, harmonizing the national system landscape often remains a work in progress, requiring additional national leadership and funding. Integration with laboratory and logistics information systems is also a challenge.⁴⁸

As the use of data has been mostly upward facing for grant performance assessment, there has been less focus on building national capacities in data analysis and the use of data for policy decisions and selection of interventions.⁴⁹ However, building capacity for decisions at national level will be an important focus for the GF's new strategy.

DHIS2 has been rapidly adapted to account for COVID-19 data. Together with the University of Oslo and other partners, the GF was able to develop a new COVID-19 add-on module for DHIS2. In August 2020 the *DHIS2 COVID-19 Surveillance and Response Toolkit* was already operational in 36 countries in August 2020 (41 countries in July 2021). The *DHIS2 COVID-19 Vaccine Delivery Toolkit* is also up and running in 29 countries (as of July 2021).

For COVID-19 the reporting cycle has been shortened from six months to around one month. While this is a substantial increase in reporting speed, even faster reporting – ideally real-time data sharing – will be required for future pandemics.

⁴⁷ Ibid.

⁴⁸ The Global Fund: Report on RSSH Investments in the 2017-2019 Funding Cycle

⁴⁹ Technical Evaluation Reference Group: Position Paper - Thematic Review on Resilient and Sustainable Systems for Health (RSSH) (July 2019)

The integration of Global Fund systems with national HMIS' can serve as a foundation for more rapid data sharing. Currently, four countries are automatically sharing their data with the Global Fund (Togo, Mozambique, Burkina Faso, Uganda).⁵⁰

Continuing to invest in data systems will contribute simultaneously to both HTM and PPR goals. Rolling out real-time monitoring systems is a PPR gap that the GF can help to fill. This would require additional capabilities and financing as well as the collaboration with new partners (e.g., National Institutes of Public Health, software companies).

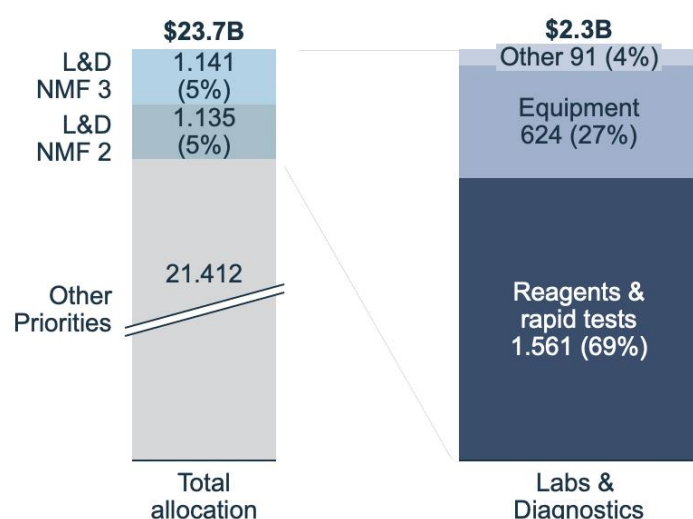


Labs and diagnostics

The Global Fund is actively involved in supporting laboratories and diagnostics in its portfolio countries. Investments in this area for NFM2/3 total to \$2.28 billion or around 9.6% of all grants approved in this period.⁵¹

Nearly 69% of this amount is for reagents (29%), test kits, cartridges, and other commodities (40%). Around 27% of the funding is allocated towards procuring and maintaining equipment including diagnostic platforms like GeneXpert machines. The remaining 4% is for human resources, travel, and other infrastructure expenses (Figure 18).⁵²

Figure 18: Spending in Labs and Diagnostics, NFM2/3



Note: Further Spending breakdown is as follows. Rapid Diagnostic Tests (40%), Laboratory Reagents (28%), TB Molecular Test equipment (11%), Maintenance & Services (4%), HIV viral load accessories (2%), Other HPE (10%), Other interventions (4%)⁵³

Through its investments the Global Fund has played a key role in building testing capacities in countries. For instance, in 10 countries in Sub-Saharan Africa, together with other donors the GF has deployed nearly 3000 diagnostic platforms.⁵⁴

GF funded equipment and infrastructure has been crucial to countries' COVID-19 responses. Especially before rapid diagnostic tests became available, PCR was the main COVID-19 testing method. Many countries relied on equipment from HTM like GeneXpert machines to scale up the number of COVID-19 tests.

In addition to its traditional investments in this area, around 24% of C19RM funding in 2020 (\$182 million) was requested for COVID-19 diagnostics and equipment, and a substantial

⁵⁰ Key Informant Interview

⁵¹ Global Fund internal data on grants approved under NFM2 and NFM 3

⁵² Ibid.

⁵³ Ibid.

⁵⁴ The Global Fund: Mutualization of Diagnostic Platforms for COVID-19 (internal) (March 2021)

share of the C19RM grants in 2021 are also expected to be for labs and diagnostics. The investment has supported 3.73 million automated and 1.57 million manual PCR tests and 14.81 million Ag RDTs in more than 78 countries as of March 2021.⁵⁵

Beyond financing commodities, in selected countries the GF has shifted towards an integrated lab systems approach which can be more efficient and lay the groundwork for laboratories that can address pandemic threats. In Uganda, for example, the Global Fund is closely collaborating with the Ministry of Health and other partners to strengthen centralized testing capacity and build a hub network covering over 97% of the country.⁵⁶ The GF is also financing Uganda's supranational reference lab, which provides regional testing capacity for complex cases and technical assistance to labs in 21 African countries.⁵⁷

To play a long-term role in national laboratory capacity building, the GF will need to focus more on systems and less on pure commodity financing and provision. Over NFM2/3 only 6.3% of the investments in labs and diagnostics were categorized as RSSH with 3.6% going to strengthening lab systems and 1.9% to integrated service and delivery. The siloed nature of grants for labs and diagnostics will also have to be overcome. For instance, 38% of the \$624 in grants for lab equipment was allocated to TB-specific equipment, which was largely retained for TB tests only and not used in a multi-valent manner for other diseases (this has started to change with COVID-19 – before the pandemic the median utilization rate for GeneXpert platforms was only about 20%).⁵⁸

To address other unmet country PPR needs related to labs and diagnostics, the GF would need to move beyond the areas it is already covering for HTM and in the C19RM. Gaps include constructing and staffing advanced biosafety labs and assisting countries to perform genomic sequencing for a wide range of infectious diseases. To complement the GF's capabilities in these areas the GF could partner with others including the Africa Regional Disease Surveillance Systems Enhancement Program (REDISSE), the Africa CDC, the US CDC and the WHO.



Frontline and community workers

Frontline and community workers are often the first people to notice and respond to cases of diseases with pandemic potential and are hence crucial in early detection and response to pandemics.

The Global Fund has made significant investments in maintaining the HTM workforce. US\$ 1.07 billion was budgeted for this in NFM2 and 850 million in NFM3, amounting to 8.1% of the combined funding cycles. The vast majority of this funding (87%) has been allocated to the remuneration of community health workers and other government health workers (Figure 19).

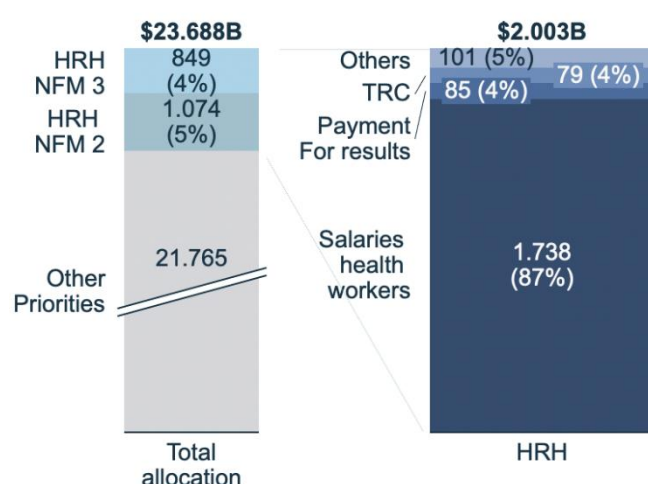
⁵⁵ Ibid.

⁵⁶ <https://www.theglobalfund.org/en/blog/2021-03-23-ugandas-remarkable-response-to-Covid-19/>

⁵⁷ <https://www.theglobalfund.org/en/blog/2018-09-24-supranational-lab-supercharges-fight-against-tb-in-east-africa/>

⁵⁸ The Global Fund: Integrated Lab Systems Strengthening Roadmap (internal) (March 2021)

Figure 19: Spending in HRH, NFM2/3



Currently, 82% of funding for HRH is channeled through vertical disease grants (HTM) and 18% through RSSH or multicomponent grants. Most of the funding is therefore for recruitment, training, and paying healthcare workers for disease-specific roles, which could limit their skills and flexibility when a new pandemic threat arises. A stronger focus on integrated multi-disease training and multi-valent job content could help overcome this issue. Some examples of success have already occurred. In Afghanistan, for example, the GF has financed the Family Health House Model, in which midwives and nurses provide integrated services for HIV, TB, malaria, and maternal and child health.

In addition, to detect and respond to pandemics, the GF could finance additional training for CHWs in areas such as surveillance and field testing, rumor and misinformation management, encouraging vaccine uptake, and disseminating public health news to communities. CHWs are generally trusted members of their communities, and their networks and services can be leveraged during a pandemic.

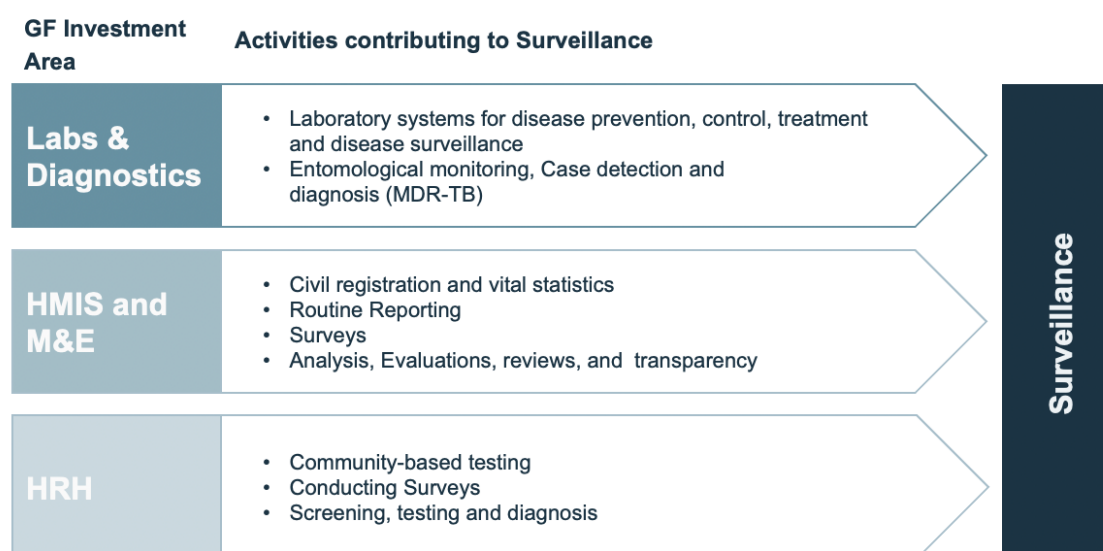
Since the demand for health workers will increase substantially when there is a large pandemic outbreak, the GF could also help countries develop plans for a temporary “surge” in the workforce using retired nurses, community extension workers, and others.



Surveillance

While the Global Fund does not have a separate budget module for surveillance, its grant investments in three areas -- labs & diagnostics, human resources for health, and HMIS --together contribute to surveillance goals and activities (Figure 20) For instance, around 8% of NFM 2 & 3 budgets for the HRH module (~USD 143m) support CHWs in conducting surveys and carrying out community-based testing, screening, and diagnosis, all important surveillance activities. Similarly, 46% of the grants budgeted for Labs (~ USD 1048 m) are allocated to interventions including entomological monitoring and drug resistance monitoring for TB, which are also an integral part of surveillance. Grants for M&E activities such as surveys routine, reporting, and civil registration, and vital statistics (amounting to 57% of the M&E budget (~USD 541 m) contribute to improvements in surveillance.

Figure 20: GF Modules Contributing to Surveillance



To support PPR, the GF can adapt and expand its financing of surveillance-related interventions under HRH, M&E and Lab & Diagnostic modules to build countries' capacity to conduct pandemic surveillance. To do so, investments could be made in several areas:

- **Training CHWs:** The GF has developed CHW guidance on strategic information and service monitoring and is working on updating associated DHIS2 packages⁵⁹. Additional investments could be made in training CHWs in syndromic reporting and events-based surveillance. CHWs would then be able to identify symptoms (e.g., of a hemorrhagic fever) and empowered to take action rather than go through the process of filling out a report and sending it to a more senior official, as is being done via IDSR currently.
- **Improving HMIS systems (e.g., DHIS2) to include other notifiable diseases:** The Global Fund has rapidly adapted its DHIS2 toolkit to incorporate a new module for COVID-19 which can track cases and vaccine delivery. However, the GF has not focused 'upstream' on data systems that are longitudinal and form the basis of aggregate reporting. This not only affects the quality of the data but also constitutes a reporting issue during pandemics where it is vital to track the course of illness from detection to clinical diagnosis to chronic disease syndrome/recovery/death.
- **Building stronger population-representative surveillance** including maintenance of civil registration systems, vital statistics, and mortality surveillance to establish a background against which disease outbreaks can be detected.
- **Investing in Outbreak Investigation Capacity:** The GF could partner with the US CDC, the World Bank, and others to support field epidemiology programs and build the capacity of National Public health Institutes and ministries of health to coordinate surveillance activities, analyze data and notify the IHR of outbreaks.
- **Zoonotic surveillance:** Some of the Global Fund's ongoing surveillance work also touches on zoonotic infections and has the potential to contribute to specific aspects of zoonotic prevention under PPR, an area where other organizations involved in wildlife and agriculture could take the lead with the GF as a partner. Current GF investments in zoonoses include funding of IDSR programs and supporting specimen transport through labs systems. Although extending this to become fuller partners in a One Health framework for pandemics will be challenging, current and future Fund investments in M&E and community mobilization could be harnessed to additional activities in zoonoses

⁵⁹ Correspondence with GF officials in M&E Department

such as adapting DHIS2 systems to include notifiable zoonotic diseases, supporting FETP programs to include animal health specialists and veterinarians, and providing trainings to community health workers in events-based zoonotic surveillance.

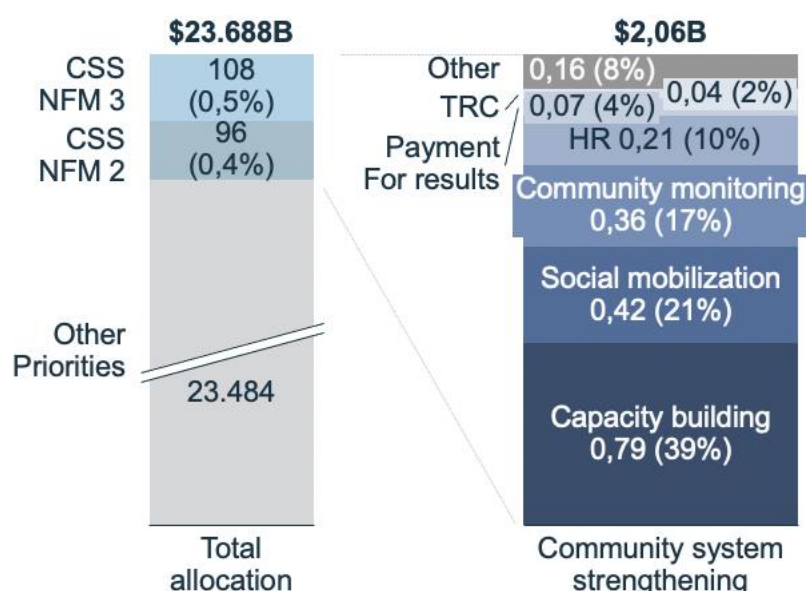


Community systems and responses

Responses that are led by communities are essential in the collective response to pandemics, as communities help to identify what rumors are circulating, provide insight into institutional barriers, and work with members ensure compliance.

The Global Fund has provided monetary and technical support to building and maintaining community networks through **Community Systems Strengthening (CSS)** under RSSH. US\$ 206 million was budgeted for CSS over the NFM2 and NFM3 cycles (Figure 21). Most of this funding has been allocated to capacity building interventions such as leadership development (38%), and social mobilization and building community linkages (21%).

Figure 21: Spending in Community Systems Strengthening, NFM2/3



Note: Further Spending breakdown is as follows. Capacity Building (39%), social mobilization (21%), community-based monitoring (17%), Advocacy and Research (10%), Norms Change (2%), other Interventions (8%)⁶⁰

There have been a number of successes using these resources. In Mali, Senegal, and nine other West African countries, community treatment observatories have been set up by people living with HIV using GF grants, to collect and report data on access to treatment. With another Global Fund grant, a malaria CSO platform has been established in the Greater Mekong sub-region to bring together more than 50 local organizations to monitor malaria elimination efforts and report their views to governments and CCMs,

As part of C19RM, the GF has supported digital engagement of CSOs as a way to amplify their voices despite lockdowns. GF investments have helped CSOs reach communities virtually during the pandemic e.g., the creation of an OST hotline in Ukraine to record HR violations of PWID.

⁶⁰ Ibid.

The GF has also used its CRG Regional platforms to organize roundtables for hundreds of CSO representatives to discuss plans and actions to protect human rights, maintain HTM services and fight COVID-19 during the pandemic.

Since most CSS grants are channeled through disease-specific components and only 5% through RSSH or multicomponent grants, it may be challenging to leverage these existing investments directly for PPR. For this purpose, the GF will need to consider how it will have to adapt to work effectively with CSO networks that reach other vulnerable groups such as undocumented immigrants, racial and ethnic minorities, and those living in extreme poverty. The GF could also build on its current capabilities to go into adjacent areas required for PPR, such as setting up a global secretariat to coordinate CSO involvement in PPR and exchange information and best practices across countries and partners.



Human Rights, Gender, and Equity

Under pandemic conditions, human rights violations, discrimination, and gender-based violence can all increase, as has been seen under COVID-19 in many countries. Access to pandemic testing, treatment, vaccines, and PPE may also be highly inequitable, as COVID-19 has also shown. In these circumstances, the Global Fund's longstanding work with organizations to protect human rights and safeguard legal measures, minimize gender and other forms of discrimination, and ensure equitable access to services can be tapped to improve PPR efforts.

The GF is already starting to show how its investments in rights, gender, and equity can have an impact in the midst of a pandemic. It is supporting programs to monitor the increase in human rights violations under COVID-19. Examples: legal services are being provided in Uganda to homeless LGBTQ arrested on the pretext of violating COVID-19 restrictions. In Ghana, peer-educators are being given additional resources to counsel and make referrals for legal and rights protections, while in South Africa street- and brothel-based outreach has been expanded to deliver PPE to vulnerable populations.⁶¹

To go further in the area of equity, the GF may need to bolster its ability to measure, monitor, and analyze information on the distribution of pandemic and other health services and spending across different population groups. This area of health equity has long been an area of focus for some partner organizations such as WHO and the World Bank, and the GF could draw on their expertise to rapidly strengthen its ability to promote greater equity (e.g., in access to PPE, vaccines, and tests) across various groups.



Financing

The Global Fund's financing policies and practices are in some respects well-suited to the needs of an ideal PPR system. It currently approves and disburses several billions of dollars annually for HTM, a level of financing comparable to the amount of external development assistance estimated to be needed for PPR capacity strengthening in LMICs.

It is the only global agency that focuses on both major infectious pathogens (HIV, tuberculosis, malaria) and cross-cutting health systems development. A number of other organizations e.g., the World Bank invest in health systems, but do not possess the Global Fund's level of knowledge of infectious diseases and of ways to combat them through surveillance, testing, multi-faceted prevention, and large-scale treatment.

The GF's mandate also enables it to provide financing directly to NGOs and civil society organizations and to the private sector as well as to governments, primarily national ministries of health. It can thus support the full array of national institutions involved in PPR in LMICs.

⁶¹ CRG COVID-19 Board presentation 11/22/2020

The Global Fund's growing focus on financial sustainability and domestic resource mobilization for HTM could also position it well to develop and apply measures that encourage LMIC countries to finance a progressively larger share of the cost of PPR investments.

On the other hand, the GF would need to adapt and expand its financing capabilities to master the area of PPR. A large increase in annual grant approvals and disbursements for PPR would strain the GF's existing systems. The GF would need to become familiar with the costs, financing, and efficiency-enhancing measures related to a set of new investments, e.g., pandemic surveillance, genomic sequencing etc. It would also become knowledgeable about the costing of long-term pandemic planning and the mobilization of external and domestic financing to meet these expected costs.

RSSH – limitations and needs for PPR

This chapter highlights the important fact that many of the Global Fund's most important areas of know-how and investment relate to the health systems strengthening areas essential for PPR, including surveillance, information systems, labs, human resources for health, and national procurement and supply chain management. The strategic options that follow below attempt to leverage these RSSH capabilities and extend them into PPR.

While this report emphasizes the GF's progress and achievements in this area, for HTM and transversally across the entire health sector, various recent reviews of the RSSH program also point to areas of lingering weakness in the GF around RSSH and recommended actions to make investments in this area more effective.

These persisting challenges and suggested changes are consistent across reviews from the OIG⁶², TERG⁶³, and the TRP⁶⁴, all from 2019 before COVID-19 emerged. Based on experience under previous replenishment cycles especially NFM1 and 2, these reviews call attention to the need to address several shortcomings in the RSSH portfolio, including heavy "siloeing" around the three diseases with relatively little integration; an orientation toward short-term recurrent spending on equipment, commodities, and human resources (especially salaries) and less focus on longer-term capacity building; and insufficient expertise within the GF in some RSSH areas to be able to select and support optimal investments.

If the Global Fund moves into an expanded role for PPR, as agreed in the approved Strategic Framework for 2023-28, it will become even more important and urgent that these shortcomings be addressed with the appropriate guidelines, grant development, expertise, and partnerships to increase the impact and return on investment in RSSH.

6. Strategic Options for the Global Fund's engagement in PPR – Definitions, Assessment, and Recommendations

Constructing the Options Space

Given the significant existing deficits in the global and national PPR systems, the Global Fund faces a series of stark distinct choices. Stepping back and returning to its pre-COVID-19 policies and investments is not one of them. As the 2014 Ebola outbreak in West Africa showed and as COVID-19 has made even more patently obvious, unexpected severe outbreaks can have highly detrimental impacts on AIDS, TB, and malaria program service delivery and more generally on health services, causing major drops in coverage of essential

⁶² OIG Audit Report Managing investments in Resilient and Sustainable Systems for Health May 2019 - https://www.theglobalfund.org/media/8441/oig_gf-oig-19-011_report_en.pdf

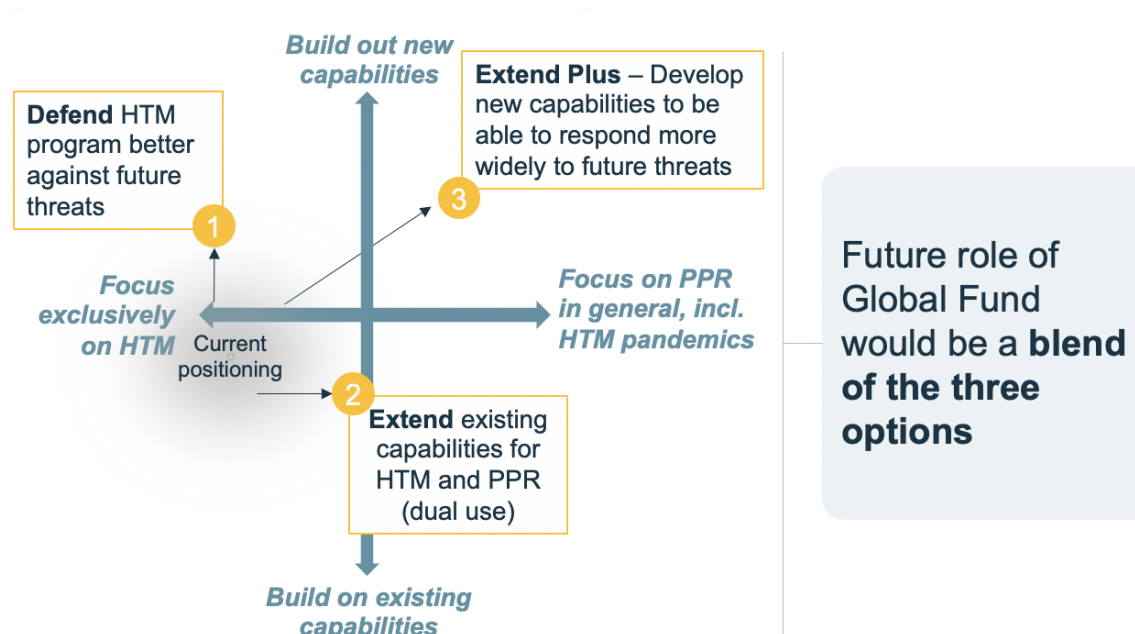
⁶³ Technical Evaluation Reference Group: Position Paper - Thematic Review on Resilient and Sustainable Systems for Health (RSSH) July 2019 https://www.theglobalfund.org/media/8793/terg_resilientsustainablehealthreview_paper_en.pdf

⁶⁴ https://www.theglobalfund.org/media/8093/trp_rssh2017-2019fundingcycle_report_en.pdf

services and consequently increases in illness, hospitalizations, and death. While some countries have seen their HTM and health services rebound since the initial wave of lockdowns in the first half of 2020, COVID-19 is still likely to set back progress toward the 2030 goals for the three diseases more than any other single factor in the past decade. With continuing waves of COVID-19 infection occurring as this report is being written, the story of C-19's negative effects have not yet been full told.

The main options for the GF in the PPR space can be visualized as being located in a space with two dimensions – (a) the extent to which the GF focuses exclusively on obtaining results in its three disease areas, driven by the agreed 2020 global HTM goals and their related expression in country strategic plans, versus whether it decides to measure its impact through the additional lens of building country PPR capacity and pre-empting and minimizing the effects of future pandemics; and (b) the degree to which the GF selects PPR activities and investments based on its existing set of knowledge, skills, capacities, and partnerships, versus whether it chooses to expand additionally into include new areas of expertise, capability, and collaboration related to PPR. See figure 22 below.

Figure 22: Three Distinct Options Help Frame the Strategic Space



Using these two dimensions, any number of strategic options can be selected. For purposes of analysis and discussion leading to strategic choices, this paper first identifies three distinct strategic options for the GF, which are labeled as: Defend, Extend, and Extend Plus. These options are presented purely to illustrate the full spectrum of possibilities. Having a broad set of distinct options can help the GF's governing bodies and others to understand their salient differences, implications, and the tradeoffs among them.

It should be understood from the outset that that the direction that the Global Fund decides to pursue could easily be a blend of several options or lie along a continuum of choices. In fact, the assessment in this report points to a recommended option that blends elements of two of the options – Extend and Extend Plus. Since this analysis was initially conducted, the Global Fund's Board has endorsed a strategic framework that appears to position the GF between the two options, without being very specific about what this should entail.

Defend: Under Defend, the Global Fund would limit itself to doing things to improve the chances that AIDS, TB, and malaria programs would be protected from the downside effects of pandemics. This would require some innovation and potentially more funding and staff, but only modest amounts of additional financial and human resources. In the Labs area, for example, the GF could promote greater use of home and community-based testing for the

three diseases. Prevention and treatment services for HTM could shift further in the direction of telemedicine, text messaging, and other remote technologies. If investments did not meet the litmus test of protecting HTM programs, they would be out of bounds. Larger improvements in health systems would be coincidental.

Extend: Under Extend, the Global Fund would increase its investments and corresponding capabilities in areas where the GF already has a track record and existing capacities, to be able to contribute more substantially to PPR. This would largely mean essentially investments in RSSH areas where the GF is already established, leveraging these to improve PPR capacities in the 100+ LMIC countries where it is already actively helping countries to fight the three big infectious diseases. But the GF would not get involved in areas beyond the core RSSH domains.

The notion of “dual use” helps to capture some features of this strategic option but risks understating the extent of changes required by the GF to be able to deliver on the Extend option -- it would not be correct to argue “we are doing this type of systems investment anyway, so we can just do more of the same and stop pandemics”. In the Labs area, for example, under Extend the GF would help to strengthen a country’s lab infrastructure, staffing, and sample transport system across the board, with a view to ensuring rapid detection and reporting of new disease pathogen outbreaks. Community Health Workers would have to be trained and equipped to assist with outbreak surveillance and pandemic response measures, going well beyond HTM and other areas of routine primary care. And so on.

Extend Plus: Under Extend Plus, the GF would do everything selected under Extend but would go further and play a larger and more expansive role in PPR, operating on multiple fronts with a mandate to be one of the global leaders in building strong and resilient PPR capacity, especially in low- and middle-income countries. At least five areas of additional investment under Extend Plus would distinguish it from Extend:

- (a) Financing and managing *pandemic stockpiles* (especially for diagnostics and PPE), which would extend the GF beyond its current work in Global Supply Chains
- (b) Investing in *national PPR plans* as part of the NAPHS process, analyzing their costs, prioritization based on key criteria such as immediacy and probability of risks, their consequences, and the cost of action/inaction), and financing options, mobilizing the needed resources (as the GF already does for HTM), and assisting countries in conducting their own State Party Self-Assessment Annual Reporting (SPAR) exercises to enhance national ownership and accountability
- (c) Funding vital *PPR infrastructure* such as biosafety labs and hospital isolation wards, and genomic sequencing facilities, and more generally supporting *infection prevention and control engineering solutions* in health care settings
- (d) Extending core support to nascent *national institutes of public health and national centers for disease control* to build stronger pandemic-related capacities
- (e) Working on specific aspects of the *zoonotics prevention* agenda such as expanding laboratory capabilities to test for zoonotic infections and integrating lab results in the larger HMIS systems that the GF is currently supporting.

The three strategic options are described in greater detail in Figure 23 below.

Figure 23: Defining the three stereotypical strategic choices

	Defend	Extend	Extend Plus
Objective	Defend HTM programs against future threats	Generate enhanced impact by using existing core GF capabilities in future global pandemic control, in addition to defending HTM	Develop new GF capabilities to be able to respond to a wide range of future pandemics, maximizing potential impact on pandemics as well as HTM
Do	Increase investment in all relevant areas to protect and reinforce HTM programming against future pandemic threats	Invest in HSS where current HTM spending can also be used for pandemic preparedness	Consider investing in any need related to pandemic preparedness regardless of connection to HTM
Do NOT	Invest in anything outside of HTM defense	Invest in anything new outside of dual-purpose commodities or skills	Nothing is off the table
What you would have to believe to choose this option	<ul style="list-style-type: none"> Protecting HTM service delivery in a pandemic is possible through focus, financing, new efficiencies/protocols, and technologies The GF can save the most lives by maintaining a laser focus and not diverting funding from core HTM goals Incidental spillover benefits may occur but should not be intentional – the cost of going beyond HTM will outweigh the benefits 	<ul style="list-style-type: none"> Dual-purpose programming would enhance PPR capacity without detracting from core HTM mission Unless the Fund gets out ahead of future pandemics, HTM goals will be compromised – a wider offence is in fact the best defense Additional funding could be raised without depleting HTM financing 	<ul style="list-style-type: none"> GF model and capabilities are strong and unique and should be used to prepare for and respond to future crises The Fund can take on these areas without compromising HTM and targeted PPR programming and related goals There is a significant institutional vacuum of financing and ideas for global/national PPR strengthening and the Fund has the agility to fill this vacuum while forging critical partnerships

As mentioned above, in each area of PPR there are multiple actions and investments that the GF can consider adopting along the continuum from Defend to Extend Plus. Figure 24 below shows that the GF could potentially pick from a menu of additional investments in key PPR domains along this continuum. As one moves along this continuum, these actions and increase in depth, complexity, and potential impacts

Two examples from Figure 24 below:

- In the area of Labs and Diagnostics, important investments under Defend could include continuing to finance the procurement of HTM diagnostics and lab equipment, creating adequate redundancy to protect against pandemic shocks, and also further integrating across HTM labs so that they can maintain adequate HTM diagnostic test results and reporting in the face of a pandemic. Under Extend, the GF could go further, for example developing a specimen transport system that can handle pandemic testing without reducing the flow of HTM and other routine specimens and upgrading national lab systems to employ multi-disease diagnostic platforms ready to perform against pandemic diseases. Finally, under Extend Plus, the GF would provide financing for comprehensive national molecular testing platforms and genomic sequencing, and for a network of advanced biosafety labs and hospital isolation wards for suspected cases of new and highly contagious pandemic pathogens. It could also play an expanded role in zoonotic prevention, working with other health and agriculture partners under the One Health approach. Along this continuum, the successive actions of the GF would take it along a journey from more familiar to less familiar technical territory, and would also require increasing amounts of grant money, from a few tens of millions of dollars to hundreds of millions and even additional billions.
- In the area of Community Responses, the GF could Defend its HTM investments and goals by further equipping and capacitating its existing networks of CSOs so that Key Populations continue to receive human rights protections and prevention and treatment services during future pandemics. Digital civic engagement could be expanded so that CSOs are able to remain active and engage communities even in the face of pandemics and related lockdowns or restrictions to movement. In the Extend space, the GF could go

further by developing and promoting new mechanisms to ensure that CSO voices are heard, and ideas are taken into account in national pandemic planning, not only in the CCM but also in the development of NSPRPs. It could also support additional CSO networks most able to represent the interests of those most likely to be vulnerable and left behind in a pandemic, such as undocumented migrants, ethnic and racial minorities, and those in extreme poverty. Finally, if the GF were to go further under Extend Plus, it could even consider playing a role as a clearinghouse for information and exchanges on Community Responses to pandemics and could fund and manage a global secretariat to coordinate the involvement of CSOs in pandemic planning and response. Again, it would make sense for the GF to move from “left to right” in investing in this area, entailing greater scope and financing at different points along the continuum.

Figure 24: Spectrum of Illustrative PPR Actions Across the Continuum

	Defend		Extend			Extend Plus
Surveillance	Improve M&E of national HTM programs to report impacts of pandemics on services and outcomes	Integrate HMIS across HTM thoroughly to raise system efficiency	Add pandemic surveillance modules to HMIS; Upgrade DHIS2 for pandemic reporting	Train an expanded cohort of field epidemiologists and train CHWs on outbreak identification: Train information analysts and decision-makers in use of pandemic reporting	Upgrade frequency and speed of pandemic reporting systems	Take lead in investing in national outbreak investigation capacities
National PSM	Strengthen warehousing and transport to ensure HTM commodities are available in a pandemic	Improve LMIS to track HTM commodities rapidly in an emergency	Train national teams to quantify pandemic commodity needs	Prepare national teams to procure, receive, and distribute pandemic commodities efficiently and effectively	Plan for alternative warehousing and transport systems to handle pandemic commodity surges	Establish and maintain national medical emergency stockpiles
Resilient Global SC	Develop contingency plans to maintain steady supply of HTM commodities in the face of pandemic and other shocks	Revise forecasting, procurement, and transport standards to be able to continue HTM commodity supply in crisis conditions	Improve knowledge and capabilities to quantify needs and procure and supply pandemic commodities	Become a leading global supplier of non-vaccine pandemic commodities via pooled procurement and other mechanisms	Monitor, manage and publish key supply information on pandemic commodities	Establish, finance, and manage global and regional pandemic emergency stockpiles
Labs & Diagnostics	Continue to fund purchase of HTM tests and equipment, building resilience against pandemics and other shocks	Expand investments in integration of HTM labs systems to ensure their maintenance under pandemic conditions	Develop rural and urban specimen transport systems capable of handling pandemic testing while maintaining HTM diagnostics	Upgrade lab systems to use polyvalent diagnostic platforms for a wide range of pathogens	Invest in comprehensive molecular testing platforms and in genomic sequencing capabilities	Invest in a network of advanced biosafety labs and hospital isolation units for new and highly contagious pathogens
Frontline & Community Workers	Ensure availability of HRH for HTM programs to mitigate impact during pandemics	Train and equip frontline workers to develop adaptive HTM responses to pandemics	Develop health force policies and train workers to address multiple infectious diseases	Train community workers in syndromic surveillance, rumor management, vaccine promotion, etc in pandemic conditions	Fund large scale production of multi-disease health workforce including task shifting in pandemics	Help national authorities develop and implement plans to surge and re-deploy workforce in public health emergencies
Community Systems & Responses	Equip existing CSO networks to protect KPs access to HTM services during future pandemics	Finance digital civic engagement as a buffer against future pandemic lockdowns and other disruptions to HTM services	Develop mechanisms and skills to ensure that CSOs contribute fully to national pandemic response planning	Support CSO networks reaching those who could be most vulnerable in the event of pandemics, such as immigrants, ethnic and racial minorities, etc.	Promote sharing of information and best practice on CSO roles in defending rights and ensuring access to health care during pandemics	Set up and manage a global secretariat to coordinate CSO involvement in PPR
Leadership Coordination & Planning	Strengthen CCMs to modify HTM grants to protect gains in pandemic situations	Build stronger links between CCMs and HTM programs and national pandemic coordination structures	Integrate surveillance, laboratories, and other leading national units for pandemic response into CCMs	Support costing, financing, and implementation of NAPHSs	Finance National Public Health Institutes to improve their coordination of surveillance and other public health activities during pandemics	Major financing of Emergency Operations Centers for pandemic response

Assessing the Options

Each of the three distinct and stylized options for the Global Fund in the arena of PPR described above has its pros and cons, based on a series of costs, expected benefits, and attendant risks. Even though it would require substantial additional time and effort to investigate thoroughly and precisely quantify each of the three options, for this rapid high-level strategic review broad estimates and qualitative judgments offer a good basis for the GF's deliberations and decisions on the organization's future role in PPR.

It is important to remember that the Global Fund has a multitude of choices along the axis from Defend to Extend Plus – the question is how far the GF should go along this continuum, and the financial, operational, organizational, and other dimensions of the position that the GF chooses along the continuum.

The rest of this chapter presents an assessment of the three broad options and then recommends a strategic course that Pharos believes to be the most appropriate one. The final chapter fleshes out many of the practical implications and implementation modalities for executing the recommended strategic direction for the GF.

Generally speaking, moving toward Extend Plus on the continuum increases the risks due to higher funding needs and technical complexity, the amount of additional skills and knowledge the GF would have to build and the number and scope of new partnerships it has to forge (Figure 25). At the same time, rewards also multiply.

Figure 25: Moving Along the Continuum Toward Extend Plus Increases the Stakes



Figure 26: Impacts and Implications of Strategic Choices

	Defend	Extend	Extend+
Magnitude and management of change	Easiest – tweak current <u>modus operandus</u>	Harder – build out RSSH as investment area, skill set, and partnerships	Major organizational change – adding a full new area of competence
Capabilities	Reinforcement of existing capabilities	Expansion and adaptation of existing RSSH capabilities	Major additional skill sets and creation of new organizational units
Rough Additional Funding Required	1.1X [+\$500M/y]	1.5X [+\$2.5 B/y]	2X [\$5B/y]
Impact on HTM	Maintain momentum toward 2030 goals	Could accelerate progress toward HTM goals by strengthening health systems that delivery HTM services and commodities	
Impact on PPR	Minimal	Some	Significant
Partnerships	Limited to existing ones	Deepening existing RSSH relationships and new PPR ones forged during C19	Multiple new PPR-related partners beyond C19RM
Governance	Retain and keep evolving CCMs	Reform CCMs to include more representation from health systems, public health institutes, and wider NGO community	
Risk	Limited – sustaining current focus	Some – technical, managerial	More – technical, managerial, communications

Figure 26 provides more details on the three broad options, focusing on the degree of change required, financial requirements, expected impacts, and implications for partnerships and governance, as well as overall associated risks.

Defend: The Defend option would be the easiest for the Global Fund to adopt, as it represents the smallest degree of change and the smallest adjustment to current practice – but its expected benefits will also be the most modest. To better defend HIV, TB, and malaria programs from the negative effects of pandemics, the GF needs to ensure that its policies and grants help countries to make their HTM activities more “pandemic proof”. This would require some additional funds but much of the defense of HTM can be achieved using the current level of grant financing (\$4-5 billion a year), especially if the GF and its clients are able to implement further efficiency measures which are already being pursued⁶⁵. The GF could continue to rely on its strong and long-established HTM partnerships (e.g., with WHO, Stop TB, UNAIDS, Roll Back Malaria, PEPFAR, etc.) and its current efforts to “evolve” the structure, functions, and performance of CCM should be adequate to build effective in-country governance. The benefits of Defend should not be under-estimated: if Defend enables countries to deflect the adverse effects of future pandemics and achieve their 2030 goals for elimination of the three disease, millions of lives will be saved. The key risk connected with Defend is that the Global Fund will be criticized by multiple audiences for failing to implement substantial permanent changes in response to COVID-19, and not rising to the new challenges and opportunities of the current moment of global “pandemic awareness”

Extend: The Extend Option would be more demanding for the GF, requiring it to flex and stretch beyond its present status – but the gains in helping countries build systems and capacity to prepare for, prevent, and respond to future pandemics would also be commensurably larger. Under Extend, the Global Fund would become a central multilateral player in the PPR space. To do so, the GF would need to change in several respects, to build out its core health systems capabilities -- notably in areas such as global supply operations, national procurement and supply chain management, disease surveillance, data information systems, labs and diagnostics, frontline and community health workers, (human resources for health), and community systems strengthening. This would require more in-house skills in these areas, and stronger partnerships with others working on integrated health systems and

⁶⁵ https://www.theglobalfund.org/media/8596/core_valueformoney_technicalbrief_en.pdf

PPR activities. It would also mean reforming CCMs to take on board the views and engage other parts of the health system, country governments, and other CSOs needed to drive PPR. Extend would require the GF to mobilize and make grants amounting to an additional \$2-3 billion a year, a 50% increase on its current grant funding flows. This would need to come from an expanded Global Fund replenishment, an allocation from a central pandemic financing fund (such as a World-Bank Managed Fiduciary Intermediary Fund (FIF), or some other source. Given the requirement for long-term stable investment in PPR, more predictable financing than the traditional three-year cycles of the Global Fund would be valuable. In many ways, under Extend the Global Fund would institutionalize and make permanent the changes that have been forced on the organization under COVID-19 to enable it to rapidly allocate an additional \$4.2 billion during 2020-21 to help countries fight COVID-19. Risks to be watched and managed under Extend would mainly focus on the challenges of building out additional in-house skills and procedures to efficiently award, supervise, and monitor billions of dollars of additional PPR-related grants to a high degree of quality and impact.

Extend Plus: Under this option, the need for change in the Global Fund would be the largest, with attendant larger potential gains and larger corresponding risks. To enable the GF to perform effectively as a financier of a wide range of country and regional investments in PPR and to help steer global policy and coordination in PPR, the GF would need to go further in adapting its structure, staffing, and brand, to effectively occupy its place as a leading global institution in PPR, while maintaining its 20-year-old leadership position in the fight against HIV, TB, and malaria. Staff and expertise would have to be added in areas going beyond the existing supply operations, RSSH, and financing domains highlighted above that can be seen as a natural extension of current Global Fund practices. More profound knowledge of for example pandemic surveillance, advanced lab diagnostics and infection control, emergency operations, and stockpile management might have to be added. A wider range of new partnerships and possibly greater changes to the CCM structure and functions would have to be considered. The wider set of PPR investment covering areas like EOCs, biosafety labs, genomic sequencing, and core support to field epidemiology training would cost more, requiring an additional \$4-5 billion a year in grants, a doubling of the Global Fund's current resources. Again, the sources of this additional financing (from periodic direct replenishments or from a common pandemic financing facility) would need to guarantee that they would not cannibalize resources for other global health priorities including HTM and ensure long-term predictable flows required for investments in PPR. Taking on such a large, expanded mandate, the GF would need to manage important risks, including a possible loss of focus on HTM, increased organizational complexity and potential staff burnout, and difficult communications and branding challenges – but the benefits could also be very large, in assisting countries to prevent future pandemics and blunt their negative health, social, and economic impacts.

Across the continuum from Defend to Extend Plus and as previously highlighted earlier in Chapter 7, the progression from left to right will push the GF in the direction of simultaneously: requiring more substantial sums of money to invest, calling for more in-house specialized staff, skills, and knowledge; and a wider range of partnerships with other organizations. In Chapter 7 the choices along the continuum were illustrated for Labs and Diagnostics and for Community Responses. Two more examples show what the GF would need to do differently in shifting from Defend to Extend Plus:

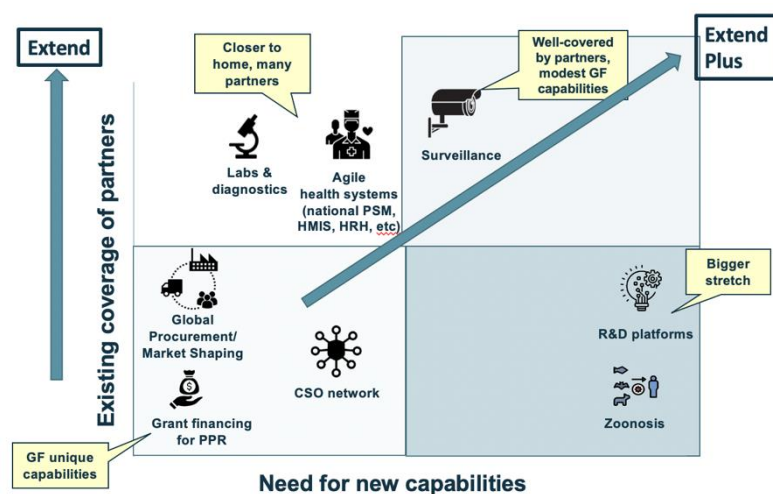
- In the case of Resilient Global Supply Chains, under Defend the GF would improve its planning and systems to reduce the chances that another global pandemic or other shock (political, financial, etc.) would disrupt the flow of HTM commodities. Under Extend, the GF would establish the relationships with forecasting agencies, suppliers, and the full range of pooled and local procurement mechanisms to be able to play a leading role in the purchase and supply of pandemic commodities including PPE, diagnostics, and therapeutics. Under Extend Plus, the GF might add the option of designing, financing, and managing stockpiles of key pandemic commodities.

- In the area of Surveillance, under Defend the GF would integrate its current support for HMIS and disease reporting across the three diseases and make its HMIS software and reporting available to cover other pandemic diseases. Under Extend the GF would assist countries to enhance early detection and reporting of real or suspected pandemic threats, training the field workers and community health officers currently in national health systems to address HTM and building expanded reporting frameworks. Under Extend Plus, the GF would go further to directly support long-term FETP programs.

In some of areas, even modest incremental steps along the continuum could have very substantial financial consequences. In the area of laboratories, for example, if the GF took on support to biosafety level labs, equipment and facilities for genomic sequencing, and hospital units for the isolation of patients with suspected new highly infectious diseases, the costs could grow by hundreds of millions of dollars annually.

In weighing the pros and cons of the three options and in selecting areas of increased responsibility along the continuum, two of the most important dimensions for the Global Fund to weigh are the additional skills and knowledge required (expanded organizational and technical capacity) and the extent to which the GF has a comparative advantage vis a vis others, and whether it will need to develop complex new partnerships (in entering a relatively empty or crowded space – see Figure 27 below). There could be real tradeoffs and risks. In Global Supply Chains the GF would only have to add modest capabilities and would find many openings in the existing partner landscape. The same is true for Community Responses. On the other hand, pandemic Surveillance is an area where the GF would have to add substantial technical capacity and would also need to navigate carefully in the current environment of other organizations already active in this field.

Figure 27: New Skills and Partnerships Along the Continuum



In assessing the three broad options for the Global Fund in PPR, and especially in considering something between Extend and Extend Plus, the GF's place in the global architecture for pandemic financing is important to examine closely. Whether it becomes the apex organization for channeling development assistance for PPR or is one of the main conduits of financing flowing from a new common pandemic financing facility, the GF has several features that makes it attractive as a central part of the architecture. The GF's abilities to move large amounts of money to countries rapidly and effectively; to finance expanded health and community systems; and to monitor and report on performance around controlling epidemics have been honed over 20 years. It would seem duplicative and inefficient to set up entirely new financing channels for PPR.

Among the other potential channels for development assistance for PPR, Gavi and the World Bank could have valuable roles to play, given their experience with financing various parts of LMIC health systems. A quick comparative review of the strength and weaknesses of the

World Bank and Global Fund is shown in Annex J, based on earlier work for the G20 High Level Independent Panel.

Recommended strategic direction

Based on the analysis of data from a review of documents, a large sample of interviews, and six cases studies from a representative range of Global Fund client countries, plus decades of experience in global health, combined with longstanding knowledge of the Global Fund and the larger multilateral system architecture, Pharos recommends that the Global Fund adopt an option along the continuum located between Extend and Extend Plus.

This would be consistent with the recent decision of the Global Fund Board in adopting the GF's Strategic Framework for 2023-28.

By using its comparative advantages inherent in its operational model and leveraging the 8 core capabilities of the GF, many of them in the health and community systems areas, the Global Fund can have a major impact on global and country preparedness for future pandemics and for their ability to respond effectively to outbreaks, while at the same time reinforcing its central role in helping LMICs move toward the 2030 goals for HTM.

Not to take on a major role in PPR would have major disadvantages and downsides. It would make HTM programs more susceptible to pandemic shocks. It would leave "on the table" a range of existing Global Fund assets that could be put to the service of getting countries and the global system ready for any pandemic threats that emerge in the coming years. And it could potentially move the GF away from the center of the global architecture for health and from efforts to fight the three major infectious diseases for which it was established nearly 20 years ago.

There can be no retreating to the pre-COVID-19 status quo ante. The GF is well placed to design a set of actions to protect AIDS, TB, and malaria programs. This is not just business as usual. Contingency plans for continuity need to be drawn up. Experimentation and innovations are required to help countries adapt to pandemic shocks.

If the GF proves adept at amplifying and adjusting its operating model to effectively deliver the more than \$4 billion in C19RM grant financing over the next 24 months, this would add to the case for the GF to take on the added responsibilities and resources associated with the Extend to Extend Plus options.

This recommendation is based on the foregoing analysis showing that there are huge and pressing gaps in preparedness and response capabilities in LMIC, and that the GF is well-placed to help finance these, starting with the core PPR-related capabilities covered above, (global supply chains, national PSM development, surveillance, labs and diagnostics, frontline and community health workers, community responses and systems. The GF's operating model characteristics described earlier (size, speed, adaptability, responsiveness, inclusiveness, ability to partner with others) can enhance its effectiveness in this extended role.

While investments in Extend Plus would strain the GF to expand its staffing and expertise and open lines of grant financing that go beyond the three disease and RSSH vehicles, the positive impacts on country and global preparedness and capacity to respond to future pandemics could provide enormous benefits.

Potential tradeoffs exist, for example if the GF does not receive insufficient resources to get the job done, if there occurs a loss of focus on achieving results, or if internal staffing and systems and other operational modalities are not adapted to any additional PPR roles assigned to the GF. These tradeoffs will need to be actively managed, by ensuring that the Global Fund receives adequate supplementary financing and budgets to carry out its historic HTM responsibilities and any new PPR tasks it takes on. As this report shows, there are many synergies between the two areas.

To inform the detailed choices about the scope of PPR activities and investments for the GF, the GF should take a more in-depth look at the specific “boundary” issues at the Extend Plus end of the continuum – what for example would be the additional grant requirements and staffing and organizational requirements if the GF moves decisively into areas like pandemic stockpiles, laboratory and infection control infrastructure, and zoonotics prevention? And for the more mainstream RSSH investments for PPR, such as surveillance, national procurement and lab systems, HRH, and Community Responses, what further steps toward integration will be required?

More broadly, if the GF adopts a position between Extend and Extend Plus, it will have to plan and execute a series of important changes in its operational functions and modalities. These are examined in the final chapter below.

7. Implementation Modalities and Challenges

If the Global Fund takes on an expanded mandate for PPR, larger or smaller along the spectrum highlighted above and in line with the current Strategic Framework, such a change will have important implications for the way in which the GF enters into grantmaking and execution of its grants by recipients, carries out its financing and resource allocation activities, is organized and staffed, manages relationships and governance at country level (especially through country coordination mechanisms), forges and manages partnerships, and develops communications activities. Moving towards Extend Plus on the continuum requires a greater degree of changes in these key dimensions (Figure 28).

Figure 28: Expanded PPR Roles Require Larger Changes in GF Modalities



These implications are explored further below, with possible implementation modalities described, to assist the GF in thinking about the magnitude of the necessary changes and to begin anticipating and planning for them.

1 Operational Processes for Grant Allocation and Grantmaking

Based on the model that the Global Fund has evolved over the past 20 years, a number of its current processes and practice in the areas of planning, grant investment design, sustainability and transition, and monitoring and evaluation have potential for rapid carry over into the area of PPR. In some cases, these processes and practices are already well suited to PPR investments in core areas such as laboratories, surveillance, HMIS, human resources, and

community systems. In expanded and new areas of investment related to PPR, existing processes/practices may need to be adapted.

Figure 29 below highlights current Global Fund practices in four main process areas: health and disease planning, grant investment design and approval, sustainability/transition/co-financing, and monitoring and evaluation. For each, mainstream GF practices currently used for HTM and RSSH grants are listed, as well as the relevant homologous practice for expanded PPR investments and activities. In some cases, the GF has already started adapting the practice or tool from HTM to PPR though its involvement in the C19RM grant window operating over the past year (highlighted with green star). In other areas, the GF will need to take further steps support the relevant PPR practice by leveraging its existing experience in doing similar work for HTM/RSSH.

Figure 29: Global Fund Grantmaking Areas for PPR

Process	Current GF HTM Practices
Health and Disease Control Planning	<ul style="list-style-type: none"> • Support to National Strategic Plans ★ Costing of national HTM plans • Investment Cases
Investment Development	<ul style="list-style-type: none"> ★ Guidance and review of Funding Requests • CSO representation in CCMs & CSO consultations ★ CCM guidance, deliberation, and approval ★ Prioritization based on multiple criteria (cost-effectiveness, equity, sustainability)
STC	<ul style="list-style-type: none"> • Income and disease burden-based co-financing levels • Sustainability assessments • Transition work plans and transition grants
Monitoring & Evaluation	<ul style="list-style-type: none"> • M&E integrated in national HMIS • Use of KPIs for accountability

★ Already partly adapted for C19RM

Examples of the GF already adapting its existing operational processes to PPR:

- For C19RM the GF is already using its same Funding Request (FR) process in soliciting and reviewing country requests for PPR financing, while issuing new guidelines with substantial input from WHO and others.
- Also, under C19RM the GF has activated its networks of CSOs to generate civil society involvement in C19RM FRs. Consultations with CSOs have been held in nearly all countries prior to submission of C19RM grant proposals, often facilitated by the regional CSO networks that the GF already supports for HTM.
- The HMIS systems backed by the GF over the past decade have been expanded in more than 36 countries to enable the countries to track COVID-19 and national responses (testing, treatment, vaccination, etc.). More details on this were presented in chapter 6.

Examples of areas where the GF could be called upon to adapt its existing operational processes for address PPR in the future:

- The GF's policy of using national strategic plans for HTM as the foundation for grant Funding Requests and of supporting the development of these NSPs and their related detailed costing could be instrumental in improving the quality and costing of the relatively new National Action Plans for Health Security (NAPHS) and their consistent use in budgeting and financing. To do this, the GF would need to review and help improve its costing methodology and develop the in-house expertise in its TRP and Secretariat to be able to critically appraise PPR funding requests against the NAPHS. As many countries also begin to shift their focus from the more aspirational NAPHS to shorter-term

operational plans and greater reporting and accountability through the SPARs, the GF could apply the highly operational and resource constrained approach that it uses in country-developed and Secretariat/TRP-reviewed funding requests to such national PPR plans.

- The GF's support for Investment Cases for HIV, TB, and malaria could carry over to PPR, where there is a lack of investment case analysis and use for priority setting and budget advocacy. To do so, the GF's Strategic Information Department has experience with investment cases for the last three GF replenishments, and the recently expanded Health Financing unit could support costing, budgeting, and investment case analysis related to PPR, considering the trade-offs among alternative interventions and helping to set priorities using cost-effectiveness and other criteria.
- The GF's inclusive CCM structure would almost certainly need to be adjusted to incorporate the views of PPR-related stakeholders in a truly participatory process of national PPR policy and program development, giving voice to all important actors including communities and civil society organizations. The GF's reputation for being open to hear the voices of non-state actors including CSOs and the private sector would give it good ex-ante credibility in calling for an expanded CCM.
- The GF's increasingly sophisticated approach to analyzing the risks to long-term sustainability of investments in HTM and to dialogue and planning with countries on ways to transition financing from external donors to national domestic resources could also translate into efforts to assess the domestic resource mobilization, sustainability and transition challenges of PPR investments in LMIC countries. Already the GF's expanded efforts in "sustainability/transition/cofinancing" have resulted in more than 40 country Transition and Sustainability Risk Assessments and Plans which have been incorporated in follow-on GF grants and in the mobilization of billions of dollars in additional domestic financing for the three diseases, especially in areas where countries have replaced external financing with national resources⁶⁶. The GF could help countries chart a path to increasing self-sufficiency and reduced reliance on outside financing for PPR, as called for by the HLIP on pandemic financing⁶⁷.

2 Financing

If the Global Fund receives an expanded mandate, in line with its current Strategic Framework, along with additional financing connected with PPR investments in LMIC countries, the GF would have the opportunity to infuse PPR investments with the same mindset and practices connected with Value for Money, Return on Investment approaches, and Sustainability/Transition/Co-financing that already apply to existing HTM and RSSH grant funding, and that were already growing in the pre- COVID-19 period from 2014-19. However, to apply value for money, ROI, and related prioritization lenses to PPR, the GF may need to build further its health financing team to be able to lead in this area, whether through in-house expertise or through managing engagements with outside technical assistance organizations.

Value for Money: The different value for money lenses currently employed by the GF for HTM and RSSH are relevant for PPR-related investments, too. PPR funding will have many worthy claimants and governments and international financing institutions will have to make difficult choices. Decisions by the GF to provide resources to PPR for less costly technologies that can achieve the same impacts (technical efficiency gains) or to different interventions that achieve greater health outcomes (allocative efficiency gains) based on relative cost-effectiveness can help to improve the use of scarce donor financing for PPR. The GF's links to national organizations involved in health technology assessment can be leveraged to include critical PPR investments. Think, for example, of comparing and choosing among different pandemic testing strategies and technologies or assessing the relative efficiency of

⁶⁶ https://www.theglobalfund.org/media/9036/bm42_12-updatetstcpolicyimplementation_report_en.pdf.
<https://www.theglobalfund.org/en/sustainability-transition-and-co-financing/>

⁶⁷ <https://www.g20.org/wp-content/uploads/2021/07/G20-HLIP-Report.pdf>

regional versus country-based genomic sequencing capabilities. In addition, the GF will need to incorporate factors such as predictability, country autonomy, and equity in judging the value of its PPR investments.

Return on Investment: Using elements of value for money analysis, the GF's established support for return-on-investment studies can also feed into PPR financing policy decisions and budget advocacy, globally and at country levels. The GF has been conducting ROI analyses in each of its past three global strategies and in support to its periodic replenishments (REF) and has both assisted LMIC countries in conducting national Investment Cases (ICs) for HIV, TB, and malaria and used ICs in developing national strategic plans and Funding Requests. Given the constraints on national and donor funding for PPR in the coming years, especially in relation to the needs (variously estimated at \$10-25 billion in additional resources annually), PPR investment cases will be an important tool in advocating for this additional money and in allocating it to places where it can do the most good. In the global PPR arena, for example, ROI analysis would be essential in considering the case for global and regional stockpiles of PPE, diagnostic kits, and anti-viral medicines.

Allocating PPR financing among countries: One of the strengths of the GF in awarding incremental donor resources for PPR to LMIC countries and regional initiatives is its current Allocation Model that was established in 2013 to replace the previous rounds-based approach. This allocation model (known as the New Funding Model or NFM) uses a combination of country disease burden and per capita income and other factors to determine the share of Global Fund grant resources that are assigned to each country. In addition, flexible incentive grant awards catalytic resources are available to supplement country's "base" allocations⁶⁸. This approach, which has been tested and refined over the past decade, could also be adapted to allocating new infusions of PPR funding. However, the criteria and allocation formulas for PPR would almost certainly be different from the methodology currently used for HTM – for example, the probability of new pathogens emerging in the country and the strength of its disease surveillance system might replace "disease burden" in the allocation equation. The GF would need to look intensively at this issue if and when it takes on new PPR grant financing, using the technical and consultative methods employed for the development and continuous refinement of the NFM. C19RM has already challenged the GF to modify its HTM allocation formula to take into account the severity of COVID-19, so new thinking on PPR allocation is already taking place.

Sustainability, Transition, and Co-financing: A large number of possible investments in PPR systems, capacities, and activities in LMIC countries will require external financing, either because they entail global public goods with shared multi-country benefits (e.g., disease surveillance and reporting), or because highly vulnerable LMIC countries do not have the fiscal space today to pay the extra billions of dollars needed for PPR. Many of the investments that will be financed in the early years by donors via external aid also involve recurrent expenditures to e.g., operate labs, pay salaries of additional health workers, run emergency operations centers, etc. This will create the same issues around long-term sustainability of these expanded PPR efforts that the GF has acutely faced over the past decade in relation to HTM.

The GF's policies and practices around Sustainability, Transition, and Cofinancing⁶⁹ will need to be adapted to the realm of PPR. The tools currently in widespread use for HTM, including Sustainability Risk Assessments and Transition Planning, can be adjusted to focus on PPR investments. This should be relatively easy for RSSH, since the GF has many years of experience exploring assist countries to increasingly take over the financing and management of investments in laboratories, procurement of health commodities, HMIS, human resources

⁶⁸ <https://www.theglobalfund.org/en/funding-model/>

⁶⁹ <https://www.theglobalfund.org/en/sustainability-transition-and-co-financing/>

for health, and CSOs and community responses for HIV, TB, and malaria⁷⁰. The GF's requirements for countries to meet specific co-financing requirements with domestic resources can also be applied to PPR, in line with pre- COVID-19 efforts by the GF to strengthen the design, compliance, and monitoring of co-financing performance by countries.

3 Organization and Staffing

If the GF moves significantly into the PPR arena in line with its approved Strategic Framework, many of its existing organizational assets can be leveraged or repurposed to serve the organization's new PPR objective. However, some existing organizational structures and staffing would almost certainly need to be modified to enable the GF to take on its additional responsibilities. While the details of such organizational and staffing changes are beyond the scope of this report, requiring a more in-depth organizational development review and plan, some examples of the changes that will be needed are given below. These are based on the assumption that at a minimum, structures and teams that coordinate and provide coordination and oversight to key PPR-related activities will have to be strengthened to make the GF's operations effective and efficient.

- The Community, Rights, and Gender unit may need to be expanded to include more staff with expertise in community involvement in pandemic-related advocacy, communications, and service delivery.
- Several of the health-systems related teams in the GF (e.g., laboratories, HMIS/M&E, frontline and community health workers) would require more staff to plan and coordinate investments, with an expanded focus on systems targeting pandemic preparedness and response and moving beyond HTM
- The Supply Operations Division would have to have the requisite expertise to extend its current work on strategic sourcing and quality assurance beyond HTM to the full range of pandemic commodities and to the faster pace of procurement, shipping, and distribution needed under pandemic conditions
- If the GF is charged with new PPR functions, e.g., core support to national institutes of public health, pandemic stockpile financing and management, emergency operations center development and maintenance, some additional expertise would have to be established entailing specialists who can plan, coordinate, and work on these investments with partner organizations
- Even without establishing a separate grant window for PPR (current consensus is that there should not such a new grant series for PPR, but that instead this should be done through the existing HTM and RSSH windows – however if PPR money flows to the GF from a new central pandemics financing facility, this new facility's governance may demand some separation of operations, staffing, and reporting from the rest of the GF), it would almost certainly make sense for the GF to set up a more permanent coordination unit for PPR, potentially building on the existing ad hoc C19RM unit that is currently up and running. This would help improve both internal coherence of the GF's work in PPR and its collaborations with partners.

4 Governance

To align with a larger sustained role for the GF in the PPR arena, its existing governance arrangements would need to be modified to make them fit for purpose.

Country Coordination Mechanisms would need to be restructured to include participation of public, private, and community organizations focusing on PPR activities. A good example of this would be nominating a senior official of the national centers for disease control or the

⁷⁰ Synthesis review of transition and sustainability readiness assessments and plans supported by the Global Fund, Pharos Global Health Advisors, March 2020

national institute of public health as a member of the CCM. Health ministry departments leading on the core health systems functions connected to PPR – such as laboratories and surveillance – would also need to be given a more prominent place in the CCM. The same would apply to CSO officials expressing the voices and interests of key and vulnerable populations most likely to be negatively impacted by future pandemics. As the GF continues to examine the evolution of the CCMs, it would be important to find ways to achieve strong country coordination, representative participation, and technical efficiency using existing bodies as much as possible and ensuring that such mechanisms do not wither if Global Fund grant financing declines or ends as a result of transition.

The GF's Board and Committee set up would also merit some changes to enable these bodies to perform their duties. This might mean for example adding a committee focusing on PPR, to bring insights and recommendations to the full Board. While many of the same agencies involved in PPR are already represented in the Board (e.g., WHO, US CDC, etc), adding space for other actors who are central to PPR such as the Africa CDC or the International Association of National Institutes of Public Health could well add new value to the GF's effectiveness in PPR.

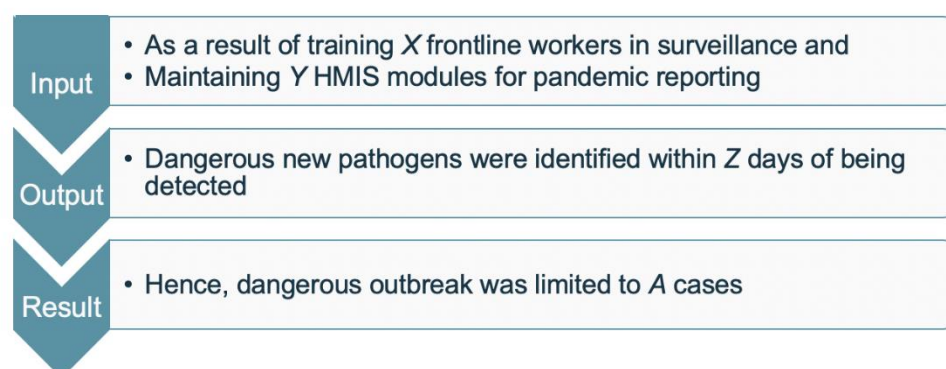
The TRP would need to be reconfigured to include experts in PPR. The current ad hoc arrangement for grant review involving the C19RM Technical Advisory Group and GAC Partners could be adapted for this longer-run purpose, or expertise from the ad hoc set up could be incorporated in the TRP. While for investments in pandemic preparedness the TRPs current deliberate processes could be used, but for pandemic response financing funding request review would need to be performed more expeditiously than is normally the case for the traditional HTM/RSSH funding requests.

5 Performance Monitoring and Accountability

The GF's central principle around focus on and drive toward results on the ground and on measuring and reporting these results and using them in a timely way for accountability and improved program management, would not only be vital for the effective performance of the GF in the PPR arena, but could also help generally to bring more rigor results measurement in the field of PPR.

The GF's current efforts to define outcomes, outputs, and inputs and measure them accurately and report them in a timely manner needs to carry over to all future PPR-related investments. The goals, targets, and indicators would of course be different from those currently used for HTM, but the same approach would hold. Figure 30 provides an example: if the GF invests in national systems to detect and investigate infectious disease outbreaks via field surveillance personnel, testing, and enhanced HMIS, the key performance results (KPIs) could take the form of: dangerous new pathogens are identified within X days of being detected (output), as a result of training and supervising Y front line surveillance workers and installing and maintaining Z HMIS modules for pandemic reporting (inputs); as a consequences, the dangerous outbreak was limited to A cases (outcome).

Figure 30: Applying GF's impact based funding model to PPR (Example)



Such results focus and use of HMIS to measure and report could be adapted to incorporate the new 7-1-7 goals that are being espoused by some leaders in the PPR global community⁷¹. Other necessary changes in the GF's performance management system would potentially have to come into alignment with the overall requirements of any new global pandemic financing facility if the latter is established as proposed by the G20 High Level Independent Panel.

6 Partnerships

While the GF has operated for nearly two decades on a “partnership model”, any decision to increase its involvement in PPR will require changes in its approach to partnership. First, since the PPR institutional architecture will inevitably grow and shift as more money flows through it, the GF will need to be agile and ready to adapt to the emergence of new arrangements and actors. No one can predict today exactly how this architecture will look a decade from now, and its evolution may well be dynamic and shifting. Second, the Global Fund will be called upon to form partnerships with many of the same organizations with which it works closely on HTM, but the links will be with other units in these organizations – for example with the WHO's Global Emergencies Department or with the US CDC's Health Protection Division. Thus, an array of new relationships will have to be forged with people and teams in the same institutions. Third, the GF will be required to enter partnerships with organizations they are less familiar with and with whom they have not worked in the past, but who are critical for the GF's effectiveness in PPR. Examples – the Global Health Security Agenda Consortium, the International Association of National Institutes of Public Health (IANPHI), and CSOs representing pandemic-vulnerable groups such as immigrants, ethnic minorities, and poor rural communities.

As the Global Fund extends its focus to include an enhanced effort in its existing capability areas most relevant for PPR (as described in Chapter 6) – Global supply chain national PSM, Integrated data and systems, labs and diagnostics, frontline and community workers, surveillance, community mobilization, and financing – and potentially goes beyond these core areas, it will be critical for the GF to develop new and/or stronger partnerships consistent with its historical model of extensive operational collaborations with other organizations. These new partnerships should consider at least the following four groups of partner organizations:

- Donors/funders: In addition to its traditional bilateral donors, the GF would want to explore a deeper relationship with the World Bank. It is conceivable that the Bank will be called upon to play an important role in managing a pandemic financing mechanism as a Financial Intermediary Fund (FIF) similar to the Global Environment Facility, as recommended by the G20 High-Level Independent Panel. If funds from such a mechanism are channeled to the Global Fund to be then allocated and packaged as country grants for PPR, the GF will need to deepen its relationship with the Bank, especially with its Development Finance vice presidency and its Finance, Competitiveness, and Innovation global practice. In addition, if Fund grants for PPR are blended with loans and credits from the World Bank, Fund staff will need to strengthen their ties to the Bank's units involved in such blended finance operations, both in the Health, Nutrition, and Population technical department and in the Bank's financial operations units.
- Technical agencies (technical, normative, policy, coordination): The GF already works hand in hand with a number of global and national technical agencies responsible for HTM, such as WHO's disease teams, UNAIDS, StopTB, Roll Back Malaria, and the US PEPFAR program (driven largely by USAID and the CDC's disease units) and the US President's Malaria Initiative (PMI). In addition, a wide array of dozens technical assistance

⁷¹ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)01250-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01250-2/fulltext)

organizations such as CHAI and EGPAF, either financed indirectly by others or directly under contract to the GF, support its HTM work. For PPR, the Global Fund will be required to diversify these technical partnerships to include organizations that specialize in global health security. Within WHO, this means aligning with the Health Emergencies department, and within the US CDC with its Health Protection Division. Technical institutions focused on PPR also need to be brought closer to the GF as source of technical guidance to both the GF and its clients. A good example is the African Centers for Disease Control, but there are many others.

- Implementers (public, private, NGO): Building from its experience with HTM, the Global Fund may wish to identify and enlist an expanded set of organizations capable of implementing PPR investments in LMIC countries. Among public sector institutions, national centers for disease control, national institutes of public health, and national health emergency operations centers will deserve consideration as either Principal or Sub-Recipients for Fund PPR grants. The private sector can also play a significant role as PPR implementers, for example private managers of national health products supply chains and private operators of laboratories and lab sample transport systems – the GF already works with the private sector in these areas, but such partnerships could become more prominent under PPR. In some of the PPR domains such as strengthening national PSM policies and system, other bilateral and multilateral donors have long-term relationships with private implementers (e.g., USAID and Chemonics for health procurement and supply chains). The GF can enhance its effectiveness in PPR by partnering with these kinds of public donor-private supplier pairings.
- Civil society organizations: The Global Fund already has a highly developed network of community partners, both at country level and regionally through its multi-country grants. These CSOs carry out advocacy, monitoring and accountability, and service delivery activities related mainly to HTM. As the GF extend itself into PPR, this range of CSO-led work needs to be applied to pandemic preparedness and response, in order to amplify community voices and harness the talents and energy of community organizations. While many of the GF's current CSO partners for HTM can also help with PPR, there will be other community groups that are also well-suited to working with those most at risk of being marginalized in preparing for and fighting pandemics – including migrants, ethnic and racial minorities, and those living in condition of extreme poverty. Under an expanded PPR role, the GF will need to forge partnerships with these other groups. Closer links to UN organizations that have operated in this space for decades, such as UNICEF and UNDP, and international NGOs that have been set up to combat grass-root poverty, can also serve as valuable intermediary partners to the GF. National CSO umbrella organizations representing the views of smaller CSOs can provide strong community input on PPR. These organizations should be promoted by the GF, along similar lines to the national umbrella organizations for HIV and key and vulnerable populations that already work with and receive assistance from the GF.

7 Communications

To convey to multiple audiences its new PPR responsibilities, grant investments, operating practices, and partnerships, and to report effectively on country and Fund performance in PPR, the Global Fund will need to shift some aspects of its communications machinery.

With the additional work in PPR, it will be critical to inform and reassure traditional constituencies that the GF's historic focus on eliminating the three diseases has not wavered,

but that on the contrary the GF's involvement in PPR will further enhance its impact on HIV, TB, and malaria. This can be done through a number of actions, including showing that investments in HTM have been maintained, and that strong results are being achieved in line with goals and targets for the three diseases; demonstrating the ways in which investments in PPR-related areas are having spillover benefits for HTM; and how an expanded focus on PPR is in fact protecting HTM gains against future pandemic threats, building on the mitigation and resilient systems building activities funded through C19RM.

At the same time, it will be essential to show the PPR community, including the main contributors to the Global Fund's investments in this area (whether through direct replenishments or through an allocation of money from a central pandemics threat fund), that the GF is delivering results and value for money with the new resources assigned to it. Skeptics may feel initially that the GF's health systems investments are not broad or deep enough or that the GF does not have the technical knowledge to be an efficient and effective investor in this area of PPR. Such skepticism will need to be addressed in the first 2-3 years of the GF's new role in PPR, through a series of publications, events, and arms-length evaluation by OIG and independent reviews sponsored by the TERG. Open dialogue with the GF's strongest doubters and critics can help this process of "conversion". If the GF's additional grant money for PPR comes from a common central "pandemics threats financing facility" housed at the World Bank or elsewhere, the secretariat to this financing facility and its governing board will undoubtedly challenge the Global Fund and other eligible channels for pandemic financing to LMICs to report on its performance and will publish the results.

The issue of whether the GF should eventually rename or rebrand itself to take into account an expanded role in PPR is something that needs to be very carefully studied, to ensure that the HTM community does not feel that its interests are being diminished or forgotten, while at the same time the GF's entire mission including PPR is enshrined in its name, logo and other branding elements.

The External Relations and Communications Division at the GF, and especially the Communications and Donor Relations departments, may need to reinforce their staffing and expertise to be able to handle effectively the communications aspects of the Global Fund extending itself into the PPR arena. These departments will have to converse easily in the language surrounding PPR, which overlaps with but is distinct from the HTM and health systems language the GF is familiar with. They will also have to have the capacity and contacts to interact with the donor units charged with global health security, which will include the bilateral ODA agencies but may also extend to ministries of foreign affairs and defense that are very active in the global security space.

Annexes

A. List of Abbreviations

Act-A	Access to COVID-19 Tools Accelerator
AI	Artificial intelligence
ALIMA	Alliance for International Medical Action
AMR	Anti-Microbial Resistance
BMGF	Bill & Melinda Gates Foundation
C19 RM	COVID-19 Resource Mechanism
CCM	Country Coordinating Mechanism
CDC	Center for Disease Control
CEPI	Coalition for Epidemic preparedness and Innovations
CHAI	Clinton Health Access Initiative
CHW	Community Health Workers
CRG	Community Rights and Gender
CSO	Civil Society Organization
CSS	Community Systems Strengthening
DFID	Department for International Development
DHIS-2	District Health Information Software-2
EGPIF	Elizabeth Glaser Pediatric AIDS Foundation
EOC	Emergency Operation Centers
FETP	Field Epidemiology Training Program
FIF	Financial Intermediary Fund
FIND	Fund for Innovative New Diagnostics
FR	Funding Requests
GAC	Global Affairs Canada
GAVI	Global Alliance for Vaccines and Immunizations
GDP	Gross Domestic Product
GF	Global Fund
GHS	Global Health Security
GHSI	Global Health Security Index
HLIP	High Level independent Panel
HMIS	Health Management Information Systems
HRH	Human Resources for Health
HTM	HIV, TB, Malaria
IAVI	International AIDS Vaccine Initiative
IC	Investment Cases

IDSR	Integrated Diseases Surveillance and Response
IHR	International Health Regulations
IMF	International Monetary Fund
IPPR	Institute for Public Policy Research
IPT	Intermittent Preventative Treatment
JEE	Joint External Evaluations
KP	Key Populations
KPI	Key Performance Indicator
LMIC	Low-Middle Income Country
MDB	Multilateral Development Bank
MDR TB	Multi Drug Resistant Tuberculosis
M&E	Monitoring & Evaluation
mRNA	Messenger RNA
MRC	Medical Research Council
NAPHS	National Action Plans for Health Security
NFM	New Funding Model
NGO	Non-Governmental organization
NIH	National institutes of Health
NSP	National Strategic Plan
NFM	New Funding Model
ODA	Official Development Assistance
PEF	Pandemic Emergency Financing Facility
PEPFAR	President's Emergency Plan for AIDS Relief
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother to Child Transmission
PPE	Personal Protective Equipment
PPR	Pandemic Preparedness and Response
PPR-S	Pandemic Preparedness and Response Services-related
PR	Principal Recipient
PrEP	Pre-Exposure Prophylaxis
PSM	Procurement & Supply Chain Management
PWID	People who Inject Drugs
R&D	Research & Development
REDISSE	Regional Disease Surveillance Systems Enhancement Program
RBF	Results-Based Financing
ROI	Return On Investment

RSSH	Resilient & Sustainable Systems for Health
SARS	Severe Acute Respiratory Syndrome
STC	Sustainability/Transition/Co-financing
TRP	Technical Review Panel
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VMMC	Voluntary Medical Male Circumcision
WB	World Bank
WHO	World Health Organization

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C. List of Interviews

Global Fund internal interviews

Department/Unit	Name(s)
C19RM Secretariat	Jaqueline Bataringaya, Ketevan Bejanishvili, Linna Palmquist
Community Rights and Gender	Kate Thompson, Jack MacAllister, David Traynor
Disease Surveillance Systems / HMIS (MECA/TAP)	Michelle Monroe, Jinkou Zhou
Donor Relations	Dianne Stewart
Executive Directors Office (EDO)	Peter Sands
Executive Directors Office (EDO)	Marijke Wijnroks
External Relations and Communications	Francoise Vanni
Grants Management Division	Mark Edington
Head of HIV	Siobhan Crowley
Head of Malaria	Scott Filler
Head of TB	Eliud Wandwalo
Health Finance Dept.	Kalipso Chalkidou
Health Finance Dept.	Manjiri Bhawalkar
Health Finance Dept.	Michael Borowitz
Regional Portfolio Managers, GMD	Urban Weber, Cynthia Mwase, Linden Morrison, Maria Kirova, Annelise Hirschmann
Risk Management Dept.	Rahul Singhal
Strategy and Policy Hub	Harley Feldbaum, Jessica Kraus, Hannah Grant
Supply Operations	Hui Yang
TAP	Michael Byrne
TAP / RSSH	Benjamin Loevinsohn
TAP / RSSH / HRH	Alexander Rowe
TAP / RSSH / Labs	Fatim Jallow, Eileen Burke, Martine Guillermin, Juliet Bryant

External interviews

Organization	Name(s)
AFENET	Simon Antara
Africa CDC	John Nkengasong
Africa CDC	Talkmore M
Center for Global Development	Prashant Yadav
CGDEV	Amanda Glassman
CHW Impact	Madeleine Ballard
FoGF	Chris Collins, Mark Lagon
Friends of the Global Fund Europe	Marco Simonelli
Gavi	Aurélia Nguyen
Georgetown University	Rebecca Katz
Georgetown University	Charles Holmes
German Government	Birgit Pickel, Alexander Freese

GHSA Consortium	Julie Fischer; Samantha Dittrich
GHSA Private Sector Roundtable	Ashling Mulvaney, Allen Tennenbaum
Global Health Advocacy Incubator	Ann Danelsky
Global Health Security Agenda (GHSA) Steering Group	Khanchit Limpakarnjanarat
IANPHI	Jeffrey Koplan
London School of Hygiene and Tropical Medicine	Peter Piot
McKinsey	Matt Craven
Norwegian Government	John-Arne Røttingen
Resolve to Save Lives	Amanda McClelland
Resolve to Save Lives	Tom Frieden
UK Government	Beth Arthy
UNAIDS	Shannon Hader
USG - CDC	Nancy Knight
USG - CDC	Mitchell Wolfe
USG - GHSA coordinator	Rebecca Martin
USG - HHS/OGA	Loyce Pace, Colin McCiff, Shuen Chai
USG - PEPFAR/DOS	Julia Martin
USG - USAID	Paul Mahanna
USG - USAID GHS & Emerging Threats	Tracy Goldstein, Ricardo Echalar, Vamsi Vasireddy
Village Reach - CAF Africa	Emily Bankcroft
Wellcome Trust (CEPI)	Jeremy Farrar
WHO Health Emergencies	Scott Pendergast
WHO Health Emergencies	Mike Ryan
World Bank	Sara Hersey
World Bank	Mohammad Pate, David Wilson, Mukesh

Interviews for country case studies

Country	Organization	Function	Name(s)
Cambodia	MoH	Secretary of State for Health	HE. Dr. Youk Sambath
Cambodia	MoH	Director General for Health	Dr. Hok Kimcheng
Cambodia		Director of National Immunization Program	Dr. Ouk Vichet
Cambodia	CDC	Director of Cambodia CDC	H.E Dr. Ly Sovann
Cambodia	NCHADS	Director of NCHADS	Dr. Ly Penhsun
Cambodia	CNM	Director of CNM	Dr. Huy Rekol
Cambodia	CNAT	Director of CNAT	Dr. Huot Chanyuda
Cambodia	NIPH	Director of NIPH	H.E Prof. Chhea Chhorvann
Cambodia	World Bank	Cluster Leader for Health, Nutrition and Population	S.M. Ziauddin Hyder
Cambodia	UNAIDS	Country Director	Vladanka ANDREEVA

Cambodia	UNOPS	Senior Program Coordinator, PR for Global Fund	Naeem Durrani
Malawi	MoH	National COVID-19 Coordinator	Dr. Bridon M'baya
Malawi	Malawi College of Medicine	Malawi College of Medicine, member of the COVID- 19 Experts committee	Dr. Titus Divala
Malawi	MoH	Ministry of Health technical advisor on data systems	Joseph Wu
Malawi	Malawi College of Medicine	Malawi College of Medicine, lead for the 2020 GF TB-HIV concept note development process, former CCM member	Prof. Victor Mwapasa
Malawi	CDC	Country Director, CDC	Dr. Andrew Auld
Malawi	MoH	Long-term advisor to the Government of Malawi (Ministries of Health and Finance), former advisor to CCM	Anne Conroy
Malawi	National AIDS Commission	Acting CEO, National AIDS Commission	Dr. Andrew Gonani
Malawi	PIU	GF Project Implementation Unit (PIU)	Doreen Sanje
Malawi	CHAI	Country Director, CHAI	Andrews Gunda
Malawi	PEPFAR	PEPFAR Deputy Coordinator & Chair for Malawi, former PEPFAR Malawi Country Coordinator	Mamadi Yilla
Malawi	CSO	Roundtable with CSOs representing the affecting communities	
Colombia	MoH	Coordinador Grupo Sexualidad y Derechos Sexuales Reproductivos - Dirección de Promoción y Prevención	Ricardo Luque
Colombia	MoH	Director de Promoción y Prevención, Coordinador de respuesta contra el COVID-19	Gerson Orlando Belmont Galavis

Colombia	MoH	Director de Epidemiología; Coordinador del sistema de pruebas y rastreo PRASS	Julián Fernández
Colombia	MoH	Directora de prestación de Servicios y atención Primaria	Karen Rincón
Colombia	MoH	Director de Medicamentos y Tecnologías en Salud	Leonardo Arregoces
Colombia	DNP – ENTerritorio (PR)	Gerente de Proyectos Internacionales de ENTerritorio	Andrés Oyola Sastoque
Colombia	ENTerritorio (PR)	Consultor, coordinador de equipo técnico de mitigación VIH	Rafael Pardo
Colombia	PAHO	Asesora Subregional para el Área Andina en VIH, Organización Panamericana de la Salud - OPS/OMS/	Berta Gómez
Colombia	PAHO		Guillermo González
Colombia	BID	Especialista en Salud y Protección Social	Jaime Cardona
Colombia	EPS del Régimen Subsidiado	Directora Ejecutiva	Elisa Carolina Torrenegra
Colombia	Consulted several PRs, MSPS and civil society organizations at Country Coordinating Mechanism meeting held on June 11 to present requests from CSOs and communities' requests for funding through C19RM		
Haiti	Civil Society	Roundtable with CSOs representing affected communities	Ms. Malia Jean, PLWVIH
Haiti			Mr. Jhonny Clerge, LGBT
Haiti			Ms Augusta Milien, PS (Prostitutes)
Haiti			Mr. Jhon Joseph, Youth Organization
Haiti	UCMIT	National HTM Program	Dr. Farah Momprevil
Haiti	DELR	National Surveillance	Dr. Baret
Haiti	DELR	National Surveillance	Dr. Joane Adrien
Haiti	LNSP	National Laboratory	Dr. Boncy
Haiti	UGP	National PR for RSSH	Dr. Hans Muller Thomas
Haiti	UGP		Dr. Nika Nola Lamothe
Haiti	UGP		Dr. Chesner Norceide
Haiti	USAID	Country Director	Bethany Harber and colleagues
Haiti	CCM	CCM- Strategic Committee Head	Dr. Rose Mayerline Antoine

Haiti	UNDP	Country Head	Dr. Gregory Built
Haiti	UNDP	Country Head	Dr. Phenide Neaussejour
Haiti	World Bank	Country Director	Isabelle Marie
Haiti	UNAIDS	Country Head	Dr. Fleurimonde
Haiti	USCDC	Senior Public Health Advisor	
Haiti	USCDC	CDC Haiti	Ken Chen
Haiti	USCDC	GHS Branch Chief	Yoran Grant Greene
Haiti	USCDC	Branch Chief HIV/TB	Stanley Juin
Haiti	USCDC		Valerie Pelletier
Haiti	Health Through Walls		Dr. Margaret Bury
Haiti	GHEKIO		Dr. Patrice Joseph
Haiti	Partners in Health		Dr. Leandre
Haiti	FORSEF		Dr. Fritz Moise
Haiti	World Vision TB		Dr. Jeremy Goita
Liberia	WHO	WHO and LCM Technical Expert	Dr. Moses Jeuronlon
Liberia	USAID	PMI	Dr. Jessica Kafuko
Liberia	Public Health Initiative Liberia	LCM first vice chair and Executive Director	Mrs. Joyce Kilikpo
Liberia	National Malaria Control Program	Program Manager	Mr. Oliver Pratt
Nigeria	Imo State Ministry of Health	2 Malaria Program officers	
Nigeria	Kaduna State Ministry of Health	TB control Officer	
Nigeria		HIV/AIDS Program officer	
Nigeria		State Malaria Program Officer	
Nigeria		Country Coordinating Mechanism	
Nigeria	Resolve to Save Lives		
Nigeria	UNAIDS	2 Program directors	
Nigeria	Lagos State Ministry of Health	Director, Healthcare Planning, Research and Statistics	
Nigeria	Lagos State Ministry of Health	Global Fund Grant Management Unit Coordinator	
Nigeria	NMEP	National Coordinator	

Nigeria	IHVN	Program Manager
Nigeria	MSH	2 Program Directors
Nigeria	FHi360	Program Director, 3 team leads
Nigeria	Catholic Caritas Foundation of Nigeria	Program Manager

D. Glossary

After action review (AAR)	A voluntary, qualitative review of actions taken to respond to a public health event or following a project or a public health intervention as a means of identifying and documenting best practices and challenges encountered during the response to the event or the implementation of the project
Antimicrobial resistance (AMR)	A health threat that arises when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death
Biosafety	The containment principles, technologies and practices that are implemented to prevent unintentional exposure to pathogens and toxins, or their accidental release
Biosecurity	The protection, control and accountability for valuable biological materials within laboratories as well as information related to these materials and dual-use research, in order to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release
Carrier	A person or animal that harbors an infectious agent for a disease and that can transmit it to others, but does not demonstrate symptoms of the disease
Case	A person who has the particular disease, health disorder or condition that meets the case definitions for surveillance and outbreak investigation purposes. The definition of a case for surveillance and outbreak investigation purpose is not necessarily the same as the ordinary clinical definition
Case definition	A set of diagnostic criteria that must be fulfilled for an individual to be regarded as a case of a particular disease for surveillance and outbreak investigation purposes. Case definitions can be based on clinical criteria, laboratory criteria or a combination of the two with the elements of time, place and person
Cluster	An aggregation of relatively uncommon events or diseases in space and/or time in amounts that are believed or perceived to be greater than that expected by chance
Cold chain	A system of storing and transporting medical countermeasures at recommended temperatures from the point of manufacture to the point of use
Communicable disease	An illness caused by an infectious agent or its toxins that occurs through direct or indirect transmission from an infected individual, animal, vector, or the environment to another susceptible host
Community surveillance	The starting point for event notification at the community level, generally done by a community worker; it can be active (looking for cases) or passive (reporting cases). It may be particularly useful during an outbreak and where syndromic case definitions can be

	used (the identification of community cases of Ebola virus infection by community workers was an example of active community surveillance)
Contact	An individual who has been in close proximity to another individual who is, or is suspected of being, infected with an infectious disease agent
Contamination	The presence of an infectious or toxic agent or matter on the body surface of a human or animal, in or on a product prepared for consumption or on other inanimate objects, including conveyances that may constitute a public health risk
Disease	An illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans
Disinsection	The procedure whereby health measures are taken to control or kill insect vectors of human diseases present in baggage, cargo, containers, conveyances, goods and postal parcels
Documented procedures	Agreed and approved strategies for operation, standard operating procedures, roles and responsibilities, agreements, terms of reference, chains of command, reporting mechanisms, among others
Drill	Coordinated, supervised activities that are normally used to test a single specific operation or function; their role is to practice or perfect one small part of a response plan
Early warning system	A specific procedure in disease surveillance to detect any abnormal occurrence, or departure from the usual or normally observed frequency of phenomena (such as one case of Ebola fever), as early as possible. An early warning system is only useful if it is linked to mechanisms for early response
Emergency operations center	A central facility responsible for carrying out the principals of emergency preparedness and management, or disaster management functions at a strategic level during an emergency
Emerging infectious disease	An infectious disease that is novel in its epidemiologic range (geographic or host) or transmission mode
Epidemic	An occurrence of disease in a population that is greater than would otherwise be expected at a particular time and place; the number of cases indicating the presence of an epidemic varies according to the agent, size and type of population exposed, previous experience or lack of exposure to the disease, and time and place of occurrence
Epizoonosis	Any disease that is maintained predominantly in animal populations
Event	A manifestation of disease or an occurrence that creates a potential for disease

Event-based surveillance	The organized and rapid capture of information about events that are a potential risk to public health. This information can be rumors and other ad hoc reports transmitted through formal channels (i.e., established routine reporting systems) and informal channels (i.e., the media, health workers and reports from nongovernmental organizations), including events related to the occurrence of disease in humans and events related to potential human exposure
Feedback	The regular process of sending analyses and reports about surveillance data back through all levels of the surveillance system so that all participants can be informed of trends and performance
Field Epidemiology Training Program (FETP)	A training program designed to build capacity in conducting timely outbreak detection, public health response and public health surveillance
Functional exercise	A fully simulated interactive exercise that tests the capability of an organization to respond to a simulated event; A functional exercise focuses on the coordination, integration and interaction of an organization's policies, procedures, roles and responsibilities before, during or after the simulated event
Global Health Security	The existence of strong and resilient public health systems that can prepare for; prevent, detect, and respond to; and recover from acute public health emergencies with the potential for international spread, irrespective of biologic origin or geographic location
Global Health Security Agenda (GHSA)	A global effort launched in 2014 to strengthen the world's ability to prevent, detect, and respond to infectious disease threats in recognition of the threat that infectious diseases constitute in our increasingly interconnected world
Ground crossing	A point of land entry into a State Party, including those utilized by road vehicles and trains
Hazard	The inherent capability of an agent or situation to have an adverse effect; a factor or exposure that may adversely affect health (similar concept to risk factor)
Health care worker	Any employee in a health care facility who has close contact with patients, patient-care areas or patient-care items; also referred to as "health care personnel"
Health event	Any event relating to the health of an individual, such as the occurrence of a case of a specific disease or syndrome, the administration of a vaccine or an admission to hospital
Health measure	A procedure applied to prevent the spread of disease or contamination; not inclusive of law enforcement or security measures
Health threat	A threat to public health in the context of national or global security

Incidence	The number of new cases of disease during a specific period of time in a specific population
Incident command system	The standardized approach or hierarchy for the command, control, and coordination of emergency response personnel often across multiple agencies and organizations
Incubation period	The time interval between infection with a biological agent and the first appearance of disease symptoms
Index case	The first confirmed case of an outbreak
Indicator-based surveillance	The routine reporting of cases of disease, including from notifiable diseases surveillance, sentinel surveillance, laboratory-based surveillance. This routine reporting is commonly health care facility based with reporting done on a weekly or monthly basis
Infection	The entry and development or multiplication of an infectious agent in the body of humans and animals that may constitute a public health risk
Infection Control	Measures practiced by health care personnel in health care facilities to decrease transmission and acquisition of infectious agents; infection control measures are based on how an infectious agent is transmitted and include standard, contact, droplet and airborne precautions
Infection prevention	A term used to describe measures designed to reduce the likelihood of the spread of infectious disease
International Health Regulations (IHR 2005)	A legally-binding instrument of international law that was last amended in 2005 requiring Member States of the World Health Organization to uphold specific practices and procedures to detect, report, and respond to potential public health emergencies of international concern
International Health Regulations Joint External Evaluation Tool (JEE)	A voluntary, collaborative, multisectoral process to assess country capacities to prevent, detect and rapidly respond to public health risks whether occurring naturally or due to deliberate or accidental events; the JEE helps countries identify the most critical gaps within their human and animal health systems in order to prioritize opportunities for enhanced preparedness and response
International Health Regulations Monitoring and Evaluation Framework	A guidance document published in 2018 comprised of 4 components (mandatory annual reporting; voluntary after-action reviews, simulation exercises, and joint external evaluations) to provide a comprehensive, accurate, country-level overview of the implementation of the requirements under the IHR to develop and monitor health security capacities
Isolation	A method of infection prevention involving the separation and restriction of movement of diseased people or animals to prevent the spread of infection or contamination

Legislation	The range of legal, administrative or other governmental instruments that may be available for States Parties to implement the IHR. This includes legally binding instruments, such as state constitutions, laws, acts, decrees, orders, regulations and ordinances; legally non-binding instruments, such as guidelines, standards, operating rules, administrative procedures or rules; and other types of instruments, such as protocols, resolutions and inter-sectoral or inter-ministerial agreements. This encompasses legislation in all sectors, such as health, agriculture, transportation, environment, ports and airports, and at all applicable governmental levels (national, intermediate, local and other)
Medical countermeasures (MCMs)	Regulated products and equipment (e.g., drugs, vaccines, diagnostic tests, ventilators) that both prevent the harmful effects of a biological agent and mitigate consequences for those who become ill
Multisectoral	A holistic approach involving the efforts of multiple organizations, institutes and agencies. It encourages interdisciplinary participation, collaboration and coordination of people of concern and resources from these key organizations for promoting health security, to achieve a specific goal
National Action Plan for Health Security (NAPHS)	A country owned, multi-year, planning process that captures national priorities for health security, brings sectors together, identifies partners, allocates resources for health security capacity development, and can accelerate the implementation of IHR core capacities; generally created following a joint external evaluation
National IHR focal point	The national center designated by each State Party, which shall be accessible at all times for communications with WHO IHR contact points under the IHR
Notifiable disease	A disease that must be reported to appropriate authorities, as mandated by either by law or regulation
Notification	The processes by which cases or outbreaks are brought to the knowledge of the health authorities. In the context of the IHR, notification is the official communication of a disease/health event to the WHO by the health administration of the Member State affected by the disease/health event
Orientation Exercise	An event aimed at discussing, considering, and updating existing emergency planning documents, organizational structures and early warning systems and to familiarize key personnel with emergency procedures and their responsibilities in implementing them
Outbreak	An epidemic limited to localized increase in the incidence of a disease, such as in a village, town or closed institution
Pandemic	An epidemic occurring over multiple continents, affecting a substantial proportion of the global population, and resulting in a global increase of morbidity or mortality

Personal protective equipment (PPE)	Specialized clothing and equipment designed to create a barrier against health and safety hazards
Point of entry	A passage for international entry or exit of travelers, baggage, cargo, containers, conveyances, goods and postal parcels, and the agencies and areas providing services to them upon entry or exit
Port	A seaport or a port on an inland body of water where ships on an international voyage arrive or depart
Prevalence	The number of instances of illness or of persons ill, in a specified population, without any distinction between new and old cases
Public health emergency	An acute event capable of causing large-scale morbidity and mortality, either immediately or over time
Public Health Emergency of International Concern (PHEIC)	An extraordinary event (as provided in the IHR) that constitutes both a public health risk to other states through the international spread of disease and that may require a coordinated, international response
Public health risk	The likelihood of an event that may adversely affect the health of human populations, with an emphasis on whether it may spread internationally or present a serious and direct danger
Quarantine	A method of infection control involving the separation and restriction of movement of asymptomatic people or animals that may have been exposed to an infectious agent
Rapid response team	A group of trained individuals that is ready to respond quickly to an event. The composition and terms of reference are determined by the concerned country
Readiness	The ability to quickly and appropriately respond when required to any emergencies
Reservoir	The principal source in which an infectious agent normally lives and whose presence may constitute a public health risk
Risk communication	includes the range of communication capacities required through the preparedness, response and recovery phases of a serious public health event to encourage informed decision making, positive behavior change and the maintenance of trust
Simulation Exercise	A voluntary, interactive exercise that tests the capability of an organization or other entity to respond to a simulated emergency, disaster or crisis situation; also called a functional exercise
Social distancing	An infection control strategy that includes methods taken to restrict when and where people can gather with the intent of stopping or slowing the spread of communicable diseases

Strategic stockpile	A stockpile of drugs, vaccines, and medical equipment that can be rapidly deployed in response to a public health emergency
Stress test	An exercise that examines existing outbreak management capabilities of an organization, system or other entity. Frequently done as a pre-screening review, stress tests look at how an entity performed during a stressful situation in order to identify the gaps and needs for improvement
Surge capacity	The ability of a health care system (clinical care facilities and laboratories) to accommodate a sharp increase demand beyond normal services during a public health emergency
Surveillance	The systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response
Table-top exercise (TTX)	A facilitated discussion of an emergency situation, generally in an informal, low-stress environment. It is designed to elicit constructive discussion between participants; to identify and resolve problems; and to refine existing operational plans. This is the only type of simulation exercise that does not require an existing response plan in place
Trained staff	Individuals that have educational credentials and/or received specific instruction that is applicable to a task or situation
Verification	The provision of information by a State Party to WHO confirming the status of an event within the territory or territories of that State Party
WHO IHR Contact Point	The unit within WHO that is accessible at all times for communications with the National IHR Focal Point
Zoonosis	Any disease that is transmitted from vertebrate animals to human populations; may also be called zoonotic disease(s)
Zoonotic event	A manifestation of a disease in animals that creates a potential for a disease in humans as a result of human exposure to the animal source

E. Definitions of health security and related concepts

The origins of the current concept of global health security can be traced to a series of International Sanitary Conferences (ISC) that began in 1851 to forge an international agreement to reduce the spread of cholera, plague and yellow fever, while avoiding the hindrance of international trade.⁷² In 1907, the Office International d'Hygiène Publique (OIHP) was created under the Rome Agreement and tasked with overseeing the ISC.⁷³ The OIHP held this mandate for approximately 40 years until it was assumed by the World Health Organization (WHO) when it was created in 1948. Since that time, the WHO has been tasked with governing global health security and has revised the ISC multiple times adjusting the name in 1969 to the International Health Regulations (IHR) adjusting the scope as disease priorities have shifted globally.⁷⁴

In 2005, partially in response to the 2003 Severe Acute Respiratory Syndrome (SARS) epidemic, the IHR were revised. The IHR 2005 were adopted at the Fifty-eighth World Health Assembly (WHA) and subsequently entered into force in 2007. The purpose and scope of the IHR 2005 are:

To prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.

This legally binding instrument of international law requires Member States of the WHO to develop and uphold certain minimum core public health capacities. In doing so, the instrument is widely viewed as the legal foundation for global health security – a concept that has grown in popularity over recent years. While this concept has become more accepted in the wake of international infectious disease outbreaks and advances in biotechnology that amplify the threat of the accidental or deliberate release of a pathogen, there is not a general consensus on the exact definition, scope, or content of the field.⁷⁵

Figure 31: WHO and USCDC definition of GHS



WHO definition of GHS:

"The activities required, both proactive and reactive, to minimize the danger and impact of acute public health events that endanger people's health across geographical regions and international boundaries."

place an emphasis on the inherently international nature of the notion of global health security.

However, nuanced differences do exist. For instance, the WHO's definition emphasizes the acute nature of events, which precludes



USCDC definition of GHS:

"The existence of strong and resilient public health systems that can prevent, detect, and respond to infectious disease threats, wherever they occur in the world."

⁷² Howard-Jones N. The scientific background of the International Sanitary Conferences, 1851–1938. Geneva: WHO; 1975

⁷³ Gostin LO. *Global Health Law*. Cambridge: Harvard University Press; 2014.

⁷⁴ Gostin LO, Katz R. The International Health Regulations: The Governing Framework for Global Health Security. *Milbank Quarterly*. 2016;94(2):264-313. doi:10.1111/1468-0009.12186.

⁷⁵ Aldis W. Health security as a public health concept: a critical analysis. *Health Policy and Planning*. 2008;23(6):369-75. doi:10.1093/heapol/czn030.

long-lasting outbreaks and epidemics – such as global outbreaks of HIV, TB, or malaria – as being pure health security concerns. The US CDC’s definition, on the other hand, includes the concept of strong and resilient health systems, which effectively links the field to broader efforts to strengthen health systems.

Other leading experts have sought to further define the concept. Some of these efforts have further emphasized recovering from these public health events, as well as the economic, governance, political, and security consequences that are often associated with them.⁷⁶ Others have posited that at its core, health security is essentially just the protection from threats to health – further delineating the related concepts of collective health security, which is well-aligned with aforementioned definitions, and individual health security, which emphasizes the access to safe and effective health services, products, and technologies.⁷⁷

There are also several concepts that are closely related to health security. Public health emergency preparedness is the capability of health systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, especially those whose scale, timing, or unpredictability threatens to overwhelm routine capabilities.⁷⁸ Prevention, in the context of health security, relates to the efforts or activities that strive to prevent the emergence or release of pathogens, as preventing and reducing the likelihood of outbreaks and other public health hazards and events defined by IHR 2005 is essential for health security; Detection relates to efforts to quickly detect and report of outbreaks that may constitute public health emergencies of international concern, as a means of reducing the morbidity and mortality of public health events; and response relates to the rapid and effective response to outbreaks, especially those efforts requiring multi-sectoral, national, and international coordination and communication. It is generally accepted that these concepts are inextricably linked with health security.

To this end, and considering all of the above, we propose the following working definition of global health security:

The existence of strong and resilient public health systems that can prepare for; prevent, detect, and respond to; and recover from acute public health emergencies with the potential for international spread, irrespective of biologic origin or geographic location.

While this definition is helpful in that it builds upon the strengths of varying definitions and captures many of the subtle nuances, it is also necessary to acknowledge that it relies on the implementation of capacities and activities at the national and sub-national (i.e., community) levels. Thus, global health security, while expansive in nature, is entirely dependent on local action.

⁷⁶ Inglesby T, Cicero A. Protecting the nation from health security threats. *Health Security*. 2017. 15(1):1-5. doi:10.1089/hs.2016.0122.

⁷⁷ Heymann DL, Chen L, Takemi K, *et al.* Global health security: the wider lessons from the west African Ebola virus disease epidemic. *Lancet*. 2015;385(9980):1884-901. doi:10.1016/S0140-6736(15)60858-3.

⁷⁸ Nelson C, Lurie N, Wasserman J, *et al.* Conceptualizing and defining public health emergency preparedness. *American Journal of Public Health*. 2007;97(S1):S9-11. doi:10.2105/AJPH.2007.114496.

F. Description of GHS Frameworks

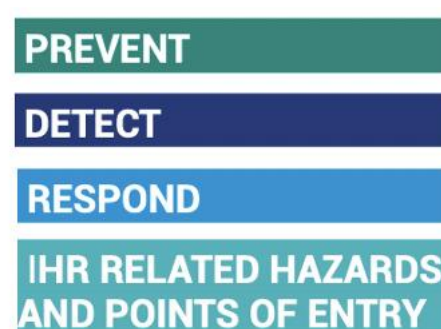
Assessments of the International Health Regulations

Annex 1, A.2 of the IHR 2005 states that each Party must assess the ability of existing national structures and resources to meet the minimum requirements and core capacities described. In 2015, at the Sixty-eighth WHA, the IHR Review Committee suggested that a new monitoring and evaluation scheme should be developed that moved away from exclusive self-evaluation to approaches that combine self-evaluation, peer review and voluntary external evaluations involving a combination of domestic and independent experts. In this context, the IHR Monitoring & Evaluation Framework emerged. This framework is comprised of four components: mandatory annual reporting, voluntary after-action reviews, voluntary simulation exercise, and voluntary joint external evaluations (JEE).

The JEE in particular has received significant attention as being a useful tool for assessing health security. The first edition of the JEE tool was made available in February 2016, and by the end of December 2017, 67 countries had completed a voluntary evaluation. As of April 2021, 113 countries have conducted JEEs. In late 2016, the JEE Secretariat began the process of systematically collecting suggestions and comments on improving the first edition of the JEE tool, and in 2017 the second edition of the tool was published. This most recent version of the JEE includes 19 technical areas (i.e., public health functions and capacities relevant to health security) that are evaluated using 49 indicators. Seven of the technical areas are categorized as relating to preventing public health emergencies (National legislation, policy and financing; IHR coordination, communication and advocacy; Antimicrobial resistance; Zoonotic disease; Food safety; Biosafety and biosecurity; Immunization), four are categorized as relating to detecting public health emergencies (National laboratory systems; Surveillance; Reporting; Human resources), five are categorized as relating to responding to public health emergencies (Emergency preparedness; Emergency response operations; Linking public health and security authorities; Medical countermeasures and personnel deployment; Risk communication), and three are categorized as relating to points of entry and IHR related hazards (Points of entry; Chemical events; Radiation emergencies).

There are many benefits for using the JEE to conceptualize health security. Among them are that it takes a fairly holistic view of health security and that it has been validated through widespread use around the world. Still, it is an imperfect tool. Some have argued that the integrity of the tool is challenged by certain aspects of the assessment that are not applicable to small states or are challenging in countries with federal governance systems.⁷⁹ Others have discussed how the tool inadequately captures considerations that may relate to health security, such as vector control and vector-borne illness.⁸⁰ Finally, and perhaps best demonstrated over the past year during the response to the COVID-19 pandemic, the JEE fails to account for how human behavior and politics may influence the effectiveness or implementation of the considered capacities. This critique was emphasized in the recent report

Figure 32: Categories in the JEE Framework



⁷⁹ Talisuna A, Yahaya AA, Rajatonirina SC, *et al.* Joint external evaluation of the International Health Regulation (2005) capacities: current status and lessons learnt in the WHO African region. *BMJ Global Health* 2019; 4(6):e001312. doi:10.1136/bmjgh-2018-001312.

⁸⁰ Boyce MR, Attal-Juncqua A, Lin J, *et al.* Global Fund contributions to health security in ten countries, 2014–20: mapping synergies between vertical disease programmes and capacities for preventing, detecting, and responding to public health emergencies. *Lancet Global Health*. 2021;9(2): e181-88. doi: 0.1016/S2214-109X(20)30420-4.

by the Independent Panel for Pandemic Preparedness and Response (IPPPR).⁸¹ The stated purpose of the JEE, however, is to evaluate country capacity to prevent, detect and rapidly respond to public health threats and to measure country-specific status and progress in achieving the stated targets. Accordingly, while not considering the impacts of sociological aspects on the implementation or operability of health security capacities is an indisputable weakness, the capacities contained in the JEE tool remain valid.⁸²

The Global Health Security (GHS) Index represents another global health security framework that draws heavily from the JEE. The GHS Index is a detailed framework of consisting of 6 categories, 34 indicators, and 85 sub-indicators that are used to assess a country's capability to prevent and mitigate epidemics and pandemics. The six categories considered by the Index include Prevent, Detect, and Respond – that is, those considered in the JEE – as well as Health, Norms, and Risk. Thus, it builds upon the strengths of JEE while attempting to better account for functionality by including an assessment for health system indicators. However, the Index lacks the political clout of the JEE, as it was developed by experts at the Nuclear Threat Initiative, Johns Hopkins University, and the Economist Intelligence Unit and not the WHO. It also maintains a focus on national capacity (as opposed for accounting for sub-national) and omits some components that must be addressed on the global level. Early analyses also suggest that it may not be predictive of response to actual public health emergencies.⁸³

Figure 33: Categories in GHSI



Figure 34: Strength and Limitations of JEE and GHSI

Framework	Strengths	Limitations
Joint External Evaluation	<p>Relatively holistic view of health security</p> <p>Validated through widespread, global use</p> <p>Likely an accurate measure of IHR-specific capacities</p>	<p>Does not account for effect of human behavior and politics</p> <p>Certain aspects are less applicable to small states or challenging in federal governance systems</p> <p>Lacking R&D, recovery & public health system components</p>
Global Health Security Index	<p>Combines strength of JEE with assessment for health system indicators</p> <p>Attempts to better account for functionality</p>	<p>Focus on national capacity omits components to be addressed on global level</p> <p>Still maintains a rather narrow scope on acute events</p> <p>May not be predictive of response</p>

⁸¹ IPPPR. COVID-19: Make it the Last Pandemic. Geneva: IPPPR; 2021.

⁸² Lee CT, Frieden T. Why Even Well-Prepared Countries Failed the Pandemic Test. *Foreign Affairs*; 2021.

⁸³ Abbey E, et al. The Global Health Security Index is not predictive of coronavirus pandemic responses among Organization for Economic Cooperation and Development countries. *PLOS One*. 15(10): e0239398. doi:10.1371/journal.pone.0239398.

Other assessment tools for health security may consider specific instances or diseases. For instance, a pandemic – an epidemic occurring over multiple continents, affecting a substantial proportion of the global population, and resulting in a global increase of morbidity or mortality – is likely to be considered a health security concern. Accordingly, the WHO has developed and periodically updated a variety of framework and guidance documents for pandemic preparedness and response.

The WHO Global Influenza Programme's Checklist for Pandemic Influenza Risk and Impact Management represents one such document.⁸⁴ Historically, the influenza virus has been considered a pathogen that has a high pandemic risk – largely due to its history, mode of transmission, and potential for high mortality in human populations. The Checklist for Pandemic Influenza Risk and Impact Management seeks to assess the readiness and public health capacities necessary for mounting a pandemic influenza response. The most recent update, published in 2018, accounts for the health system core capacity requirements under the IHR (2005), lessons learned from the 2009 influenza A(H1N1) pandemic, updated WHO guidance on topics related to public health emergency planning, and other relevant developments in global health security. It includes seven broad considerations, including Preparing for an Emergency; Surveillance, Investigation, and Assessment; Health Services and Clinical Management; Preventing Illness in the Community; Maintaining Essential Services and Recovery; Research and Development; and Evaluation, Testing, and Revising Plans. Each of these broad considerations contains between one and nine sub-considerations.

The WHO's COVID-19 Strategic Preparedness and Response Plan (SPRP) represents another similar framework for conceptualizing health security.⁸⁵ This document was developed by the WHO to provide a guide that could be used by national authorities to develop and update national COVID-19 preparedness and response plans. This document includes recommendations for action that are aligned with recent WHO technical guidance, including those relating to maintaining essential health services and systems during the outbreak and unique considerations for transmission in low-capacity and humanitarian settings. The 10 pillars included in the document are Country-level coordination, planning and monitoring; Risk communication and community engagement; Surveillance, rapid-response teams, and case investigation; Points of entry, international travel and transport; National laboratories; Infection prevention and control; Case management; Operational support and logistics; Maintaining essential health services and systems; and Vaccines.

The primary benefits of these frameworks are that they include more operational considerations. For instance, the WHO Checklist for Pandemic Influenza Risk and Impact Management explicitly lists ethical issues, health service continuity, essential service continuity, and non-pharmaceutical interventions. The COVID-19 Response Pillar checklist on the other hand emphasizes the maintenance of essential health services and systems by including it as a pillar and also includes suggestions for how the recommendations may be adapted to low resource settings or those that require special attention. While many of these concepts may be implied in the JEE process, their relative importance is ambiguous as they are not mentioned. These guidelines, however, are naturally limited in their scope. Although many of the considerations may apply to other health security threats, they are intended for guiding pandemic preparedness and response efforts and do not account for other health security threats such as antimicrobial resistance or zoonotic disease. They also lack the validity of the JEE, as they are guidance documents meant to be adapted to national contexts, and not an instrument of international law.

The aforementioned IPPPR is an additional global health security framework that maintains a focus on COVID-19. In May 2020, the World Health Assembly requested the Director-General

⁸⁴ WHO Global Influenza Programme. A Checklist for Pandemic Influenza Risk and Impact Management. Geneva: WHO; 2018.

⁸⁵ WHO. COVID-19 Strategic Preparedness and Response Plan. Geneva: WHO; 2020.

of the WHO to initiate an independent and comprehensive review of the international health response to the COVID-19 pandemic and of the lessons learned to date. The results of the IPPPR, presented May 2021, were based on the most current status of PPR and had a specific focus on global action items like international surveillance systems and international financing, but the extent to which the recommendations apply to countries and national systems are limited.

Consultants at McKinsey & Company have also authored a report that uses the COVID-19 pandemic to conceptualize health security. The report has unique strengths in that it captures research and development and other market shaping components of PPR, and domains that may be addressed by the Global Fund are clearly defined, but it is an unfamiliar framework for most stakeholders, doesn't differentiate between the functions necessary for preparing for and responding to health security events, and is relatively limited in scope.

Figure 35: IPPR Framework for Pandemic Preparedness

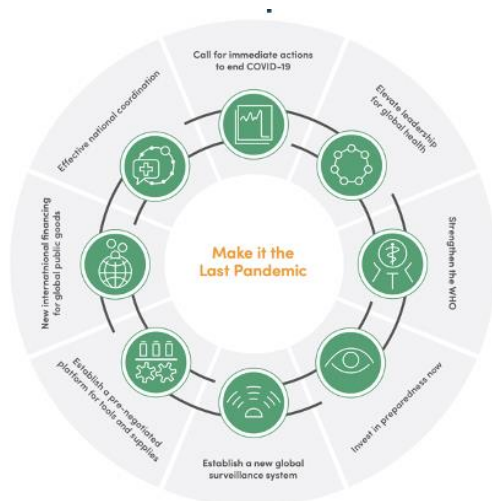


Figure 36: McKinsey Framework for Pandemic Preparedness



Figure 37: Strength and Limitations of other frameworks & assessment tools

Framework	Strengths	Limitations
IPPR	<p>Specific focus on global action items like global surveillance system and international financing</p> <p>Based on most current status of PPR</p>	<p>Comparatively less detailed about national PPR capacities</p>
McKinsey	<p>Captures R&D and market shaping components of PPR</p> <p>GF-addressable domains are clearly delineated</p>	<p>Unfamiliar framework for most stakeholders</p> <p>Doesn't differentiate between prepare and respond functions</p> <p>Limited in scope</p>
WHO Health System Building Block	<p>Comprehensive guide to system strengthening</p>	<p>Not designed to be comprehensive for GHS or PPR (i.e., limited scope)</p> <p>Does not address emergencies or acute events</p>

There are other frameworks that may be used to conceptualize and assess the capacities required for global health security. At its core, global health security depends on strong health systems.⁸⁶ To date, much attention has been paid toward strengthening health systems, which may consist of a wide variety of stakeholders who are tasked with the important mandate of improving human health. Health systems work to deliver preventive, promotive, curative and rehabilitative services through a combination of public health actions and the delivery of personal health care.

The complex and multifaceted nature of health systems and the complex network of stakeholders involved has made the monitoring of performance challenging. To remedy this challenge, the WHO has created a conceptual framework for analyzing health systems, known as the Building Blocks for Health Systems.⁸⁷ This framework lists six core components – the “building blocks” of a health care system – that contribute to health systems strengthening. The six components include: Health service delivery; Health workforce; Health information systems; Access to essential medicines; Health systems financing; and Leadership and governance. The underlying notion of this framework is that by strengthening these six components and ensuring that they are sufficient for local contexts, they will result in desirable outcomes such as improved health, improved equity, improved responsiveness, improved efficiency, and social and financial risk protection.

Previous work has elaborated on Building Blocks’ relevance to health security by using them to evaluate the performance of the health systems of Guinea, Liberia and Sierra Leone in response to the West African Ebola outbreak.⁸⁸ However, while helpful in that it takes a holistic view on strengthening the health system, global health security experts are quick to assert that the field requires a more multidisciplinary approach that the Building Blocks fail to provide. Further, while the Building Blocks seek to ensure outcomes that would benefit global health security, at their core, they are not focused on reducing the risk of the international spread of disease or addressing public health emergencies. Thus, they may be thought of as supporting global health security efforts, but insufficient for conceptualizing the scope of the field or required capacities.

⁸⁶ Kluge H, Martín-Moreno JM, Emiroglu N, *et al.* Strengthening global health security by embedding the International Health Regulations requirements into national health systems. *BMJ Glob Health*. 2018;3(S1):e000656. doi:10.1136/bmjgh-2017-000656

⁸⁷ WHO. Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies. Geneva: WHO; 2010.

⁸⁸ Shoman H, Karafillakis E, Rawaf S. The link between the West African Ebola outbreak and health systems in Guinea, Liberia and Sierra Leone: a systematic review. *Global Health*. 2017;13(1):1. doi:10.1186/s12992-016-0224-2.

G. Description of international and national GHS stakeholders

In this section the main actors in the GHS/PPR landscape are listed and their roles and primary function are described. The section on partnerships in chapter 7 provides details on potential candidates the Global Fund could closely collaborate with on PPR.

International Stakeholders and Organizations

Bill and Melinda Gates Foundation (BMGF)

Description/Organizational Statement:	A philanthropic non-profit group that finances projects focused on fighting poverty, disease, and inequity around the world. While BMGF has no official statement on global health security, they frequently provide grant funding for research that seeks to improve health security and commits to helping finance the response to public health emergencies.
Role in Practice:	Provides grants to a variety of stakeholders – including entrepreneurs, companies, and other organizations – to improve health security capacities. Examples include a 2016 grant to the World Health Organization to “strengthen the capacity of two WHO Country Offices to provide guidance and support to the Ministry of Health to deliver health care, and coordinate actions to prevent, prepare for, detect, rapidly respond to and recover from outbreaks,” a 2019 grant to the University of Oxford to “better detect, prevent, and respond to deadly infectious diseases by combining next-generation DNA sequencing technology with a simple, web-based data collection, processing, and distribution platform to track global spread in real-time,” and co-sponsoring a 2019 simulation exercise with Johns Hopkins University and the World Economic Forum to illustrate areas where public-private partnerships will be necessary during pandemic response to diminish large-scale economic and societal consequences.
Primary Role(s):	Financing
Domain:	Prevent, Detect & Respond

CARE International

Description/Organizational Statement:	CARE International is an international humanitarian agency delivering long-term international development projects and emergency relief. CARE’s programs address a broad range of topics including food security, water sanitation and hygiene (WASH), economic development, climate change, agriculture, education, health, and emergency response. They also advocate for policy change relating to gender equality.
Role in Practice:	CARE International is actively involved in responding to humanitarian crises through their emergency and recovery projects to provide immediate and post-crisis assistance.

	They also emphasize working with communities to prepare for and mitigate the impact of disasters. Efforts pertaining to their statement “respond, prepare, and recover” most commonly relate to climate and food security disasters rather than acute health events.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Respond

Coalition for Epidemic Preparedness Innovations (CEPI)

Description/Organizational Statement:	CEPI is a global partnership that takes donations from public, private, philanthropic, and civil society organizations, to finance independent research projects to develop vaccines to stop future epidemics. Their mission is to accelerate the development of vaccines against emerging infectious diseases and enable equitable access to these vaccines for people during outbreaks. The partnership prioritizes six diseases – Middle Eastern Respiratory Syndrome (MERS), Lassa, Nipah, Rift Valley fever, Chikungunya, and Ebola – though it also lists Disease X (i.e., disease caused by currently unknown pathogens) as a priority.
Role in Practice:	CEPI’s model for work includes financing research to support the discovery and development of new vaccine technologies that protect against their priority diseases, working with the private and public sectors to support licensure and manufacturing of vaccines, and then working with governments and organizations (GAVI, MSF, UNICEF, WHO, MSF, etc.) to support the stockpiling and delivery of vaccines.
Primary Role(s):	Research & Implementation
Domain:	Prevent & Respond

Ending Pandemics

Description/Organizational Statement:	Ending Pandemics works with international partners to identify, verify, and respond to outbreaks using the central principles of engaging directly with the public, deploying a One-Health model, expanding epidemic intelligence, collaborating with neighboring countries and measuring progress.
Role in Practice:	Ending Pandemic’s various projects complement existing surveillance methods and speed up the process of finding, reporting and verifying public health events. It achieves its

	aims through the support of three core projects: Connecting Organisations for Regional Disease Surveillance (CORDS), EpiHack and EpiCore. CORDS is an Ending Pandemics program comprising six regional member networks, working in 28 countries to promote exchange and collaboration among regional surveillance networks globally. EpiHack brings together public health and animal health professionals with public and private sector software developers to design and develop low-cost, open-source software tools for public health systems. Ending Pandemics is one of the Founding Members of EpiCore, a virtual network of health professionals that, through a secure online reporting platform, have the opportunity to provide information about ongoing public health events and verify disease outbreaks.
Primary Role(s):	Technical Assistance
Domain:	Detect & Respond

FIND

Description/Organizational Statement:	FIND, the global alliance for diagnostics, is a global non-profit for the development, evaluation, and delivery of high-quality affordable diagnostic tests for poverty-related diseases. Their strategy is to accelerate global efforts towards universal health coverage and health emergency response.
Role in Practice:	FIND helps coordinate the development of target product profiles (TPP) for diagnostic tools in addition to providing technology review and support for proposed diagnostic solutions that meet priority needs described by TPP. They also manage the FIND Specimen Bank, hosting over 400,000 well-characterized disease samples available for academic and commercial researchers to use in the development or evaluation of new and existing diagnostic tools for infectious diseases in low- and middle-income countries. Additionally, FIND negotiates preferential pricing with both diagnostic suppliers and service providers in LIC and MIC countries.
Primary Role(s):	Financing, Research & Technical Assistance
Domain:	Prevent & Detect

Food and Agriculture Organization of the United Nations (FAO)

Description/Organizational Statement:	The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations – with over 194
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	member states and working in over 130 countries – that leads international efforts to defeat hunger.
Role in Practice:	The FAO plays a role in the humanitarian response to public health emergencies by working to ensure that emergency food assistance and social protection programs are put in place to meet the needs of vulnerable populations.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Respond

Gavi, the Vaccine Alliance

Description/Organizational Statement:	Gavi is a public–private global health partnership that aims to increase access to immunizations in poor countries.
Role in Practice:	Gavi provides a diverse suite of functions for the countries it supports – providing financing for specific vaccines while shaping vaccine delivery, health systems, and the global vaccine market. More specifically, countries may request funding from Gavi for health system strengthening (HSS) support, vaccine support, cold chain equipment optimization platform (CCEOP) support, and targeted country assistance (i.e., technical assistance in the form of the sharing information and expertise, training, and consulting services). Gavi is a member of ACT-A and co-leads COVAX (with CEPI and WHO, and alongside UNICEF and PAHO who are key vaccine delivery partners).
Primary Role(s):	Financing & Technical Assistance
Domain:	Prevent & Respond

Global Fund to Fight AIDS, Tuberculosis, and Malaria

Description/Organizational Statement:	The Global Fund to Fight AIDS, Tuberculosis, and Malaria is an international, multilateral organization designed to accelerate the end of its three namesake diseases as epidemics. It is an innovative financing entity and global partnership designed to raise and disburse funding for programs targeting HIV/AIDS, tuberculosis and malaria in low- and middle-income countries.
Role in Practice:	In addition to financing programs for the three core diseases, the Global Fund also invests in building resilient and sustainable systems for health (RSSH) by improving procurement and supply chains, training health-care workers, strengthening surveillance and laboratory

	capacities, enhancing data quality and analysis, building stronger community response and systems, and promoting delivery of integrated health services.
Primary Role(s):	Financing & Technical Assistance
Domain:	Prevent, Detect & Respond

Global Health Security Agenda Consortium (GHSAC)

Description/Organizational Statement:	A voluntary and open consortium of nongovernmental entities of non-governmental stakeholders committed to helping make the world safe and secure from threats posed by infectious diseases by promoting the values of collaboration, excellence, innovation, and commitment in implementing the Global Health Security Agenda and promoting the adherence of the International Health Regulations (IHRs) and the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Pathways, the Alliance for Country Assessments for Global Health Security and IHR Implementation, and the Biological Weapons Convention and United Nations Security Council Resolution 1540.
Role in Practice:	The exact roles differ according to organization-specific mandates, but broadly speaking, the GHSAC works to promote the adherence to international health laws and agreement and to provide insight, analysis, and support for decision makers around the world to help them prepare for and respond to health security threats.
Primary Role(s):	Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

Global Health Security Agenda Private Sector Round Table (PSRT)

Description/Organizational Statement:	A diverse partnership of companies that seeks to mobilize industry to help countries prevent, detect, and respond to health-related crises and strengthen systems for health security.
Role in Practice:	The exact roles differ according to organization-specific mandates, but broadly speaking, the PSRT serves as the focal point for private sector actors seeking to address health security challenges – aligning public health needs with overarching business objectives. It collaborates with governments, non-governmental partners, and companies in the health care, communications, energy, finance,

	technology, transportation, logistics, and other sectors to support countries in reaching the goals of the Global Health Security Agenda Action Packages. For example, in 2019, the PSRT began a formal partnership with the Ministry of Health of Uganda, offering support for capacity building across areas including data literacy, AMR diagnostics, biosafety and biosecurity, communications, and monitoring & evaluation.
Primary Role(s):	Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

Global Outbreak Alert and Response Network (GOARN)

Description/Organizational Statement:	Established by the World Health Organization, GOARN is a global technical partnership of over 270 institutions and organizations that works to engage the resources of technical agencies beyond the United Nations for the rapid identification, confirmation and response to public health emergencies of international importance. GOARN partners include medical and surveillance initiatives, regional technical networks, networks of laboratories, United Nations organizations (e.g., UNICEF, UNHCR), the Red Cross and Red Crescent Societies (ICRC, IFRC), international humanitarian non-governmental organizations (e.g., Médecins Sans Frontières, International Rescue Committee), and national public health institutions.
Role in Practice:	The primary objective of GOARN is to provide technical support to WHO Member States experiencing a human health emergency due to various health security threats including infectious disease outbreaks, food safety, chemical toxins, zoonosis, and natural and manmade disasters. In its 20-year history, GOARN has conducted over 160 operations and deployed over 3,300 experts to assist greater than 90 countries. At the request of a Ministry of Health, the Network delivers direct support to augment the overall WHO response to the public health emergency. This support takes many forms but may include the deployment of technical experts to the affected countries, the provision of technical advice through expert committees, the provision of resources for the response efforts (e.g., laboratory and operational logistics, tools and equipment to reinforce field teams, etc.). The Network also indirectly supports global health security by providing response training to strengthen the capacity and performance, conducting operational research and developing of tools and technologies to support and improve outbreak response interventions, and sharing best practices across the Network.
Primary Role(s):	Research, Technical Assistance & Implementation

Domain:	Detect & Respond
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International Red Cross and Red Crescent Movement (International Committee of the Red Cross (ICRC); International Federation of Red Cross and Red Crescent Societies (IFRC))

Description/Organizational Statement:	The International Red Cross and Red Crescent Movement is the largest humanitarian network in the world, responding to emergencies such as epidemics, armed conflict, and climate disasters. Its mission is to protect the lives and dignity of victims of conflict and disaster, and to provide them with assistance.
Role in Practice:	The ICRC and IFRC coordinate and direct international assistance. Their operations in conflict and non-conflict zones also include development work, for example supporting capacity building in communities, and programming for risk reduction against diseases like HIV, tuberculosis, influenza, and malaria
Primary Role(s):	Technical Assistance & Implementation
Domain:	Detect & Respond

International Monetary Fund (IMF)

Description/Organizational Statement:	The International Monetary Fund is an organization of 190 countries that seeks to promote and foster international financial stability and monetary cooperation. It also facilitates international trade, promotes employment and sustainable economic growth, and helps to reduce global poverty. The organization does not have any official statement on global health security but plays a role in financing and capacity development.
Role in Practice:	The IMF lacks the expertise to assess the risks of infectious disease outbreaks but plays a vital role in supporting global health security by providing countries with financial policy advice, financial support, capacity development, and debt relief (i.e., for the poorest). The organization helps build both capacity and awareness of pandemic risk in finance ministries that may encourage countries to commit to fiscal measures that reduce their vulnerability to health security risks.
Primary Role(s):	Normative & Financing
Domain:	Prevent, Detect & Respond

International Organization for Migration (IOM)

Description/Organizational Statement:	The International Organization for Migration (IOM) is a UN agency dedicated to ensuring humane and orderly migration, promoting international cooperation on migrant issues, assisting in the search for practical solutions to migrant problems, and providing humanitarian assistance to migrants in need. The IOM operates in 174 member states and 8 observer states, where it provides services and advice to governments and migrants. IOM activities include the promotion of international migration law, policy debate and guidance, protection of migrants' rights, migration health and the gender dimension of migration.
Role in Practice:	The IOM plays a role in the humanitarian response to public health emergencies by disseminating disease prevention information among migration populations, strengthening biosecurity measures and health capacities at migrant shelters, directly delivering aid, and supporting governments to safely manage migrants during disease outbreaks to protect both border officials and migrants.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

International Vaccine Institute (IVI)

Description/Organizational Statement:	An international nonprofit organization established in 1997 as an initiative of the United Nations Development Programme (UNDP) that seeks to discover, develop and deliver safe, effective and affordable vaccines.
Role in Practice:	IVI's approach to engaging in the global health security space hinges on three elements. They conduct research to discover new vaccines, improve existing vaccines, and evaluate non-clinical performance and safety in promising vaccine candidates; they partner with qualified vaccine manufacturers (usually from developing countries) to develop vaccines and facilitate the introduction of newly licensed vaccines in countries where they are needed; and provide training and technical assistance to help build capacity.
Primary Role(s):	Research, Technical Assistance & Implementation
Domain:	Prevent & Respond

Médecins Sans Frontières (MSF)

Description/Organizational Statement:	Médecins Sans Frontières (MSF) is an international, independent medical humanitarian organization that provides medical assistance to people affected by conflict, epidemics, disasters, or exclusion from healthcare.
Role in Practice:	MSF operates on a rapid response model to react to emergency health, conflict or disaster events. They conduct independent evaluations to determine medical needs and assess what assistance to provide, then provide medical care services underpinned by a strong network of supply and logistics.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Detect & Respond

Multilateral Development Banks

Description/Organizational Statement:	Multilateral development banks (MDBs) are financial institutions that provide financial and technical assistance for development in low- and middle-income countries. These banks include the World Bank, as well as regional development banks with geographic-specific focuses (i.e., the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, and the Inter-American Development Bank). MDBs primarily fund large infrastructure and development projects.
Role in Practice:	MDBs can make important contributions to health security by providing financial support to preparedness and response initiatives. They can help finance features such as laboratory networks and disease surveillance systems that are critical components of countries' health security risk management infrastructure. They can also help to foster an awareness of pandemic risk in national finance ministries that may encourage countries to commit the fiscal measures necessary for strengthening necessary capacities and securing health security. MDBs also play an important role in providing financing for the response to health security events.
Primary Role(s):	Financing
Domain:	Prevent, Detect & Respond

PATH

Description/Organizational Statement:	PATH is a global non-profit that partners with governments, social investors, grassroots groups and businesses to deliver technical expertise, resources, and develop innovations that improve health.
Role in Practice:	PATH specializes in developing, introducing, and scaling up solutions to a range of diseases and health conditions. They support the development of medical technology and drugs, creation of diagnostic tools, scale up of digital technologies for health, development and delivery of vaccines, and strengthening of primary health care systems. PATH also provides technical support for advocacy and policy projects, and market research and development.
Primary Role(s):	Research, Technical Assistance & Implementation
Domain:	Prevent & Detect

United Nations Development Programme (UNDP)

Description/Organizational Statement:	The United Nations Development Programme (UNDP) is the UN lead agency for international development in 170 countries and territories. It supports countries to develop policies, leadership skills, partnering abilities, institutional capabilities, and to build resilience to achieve the Sustainable Development Goals. Their work is concentrated in three focus areas: sustainable development, democratic governance and peace building, and climate and disaster resilience.
Role in Practice:	The UNDP plays a role in the humanitarian response to public health emergencies by providing technical support, education and outreach campaigns, as well as helping countries procure medical supplies, leverage digital technologies and ensure health workers are paid. They have also played a role in coordination and service delivery in the response to previous public global health emergencies (e.g., Ebola)
Primary Role(s):	Normative, Financing, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

United Nations International Children's Emergency Fund (UNICEF)

Description/Organizational Statement:	The United Nations International Children's Emergency Fund (UNICEF) operates in more than 190 countries and territories to support children's health and nutrition, education, access
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	to safe water, sanitation, and wellbeing, from early childhood through adolescence.
Role in Practice:	UNICEF is the world's largest provider of vaccines. It also operates during and after humanitarian emergencies to provide technical support and relief. In coordination with other United Nations agencies and humanitarian organizations, UNICEF makes its facilities for rapid response available to its partners to support children and their families.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

United Nations Office for Disaster Risk Reduction (UNDRR)

Description/Organizational Statement:	The United Nations Office for Disaster Risk Reduction (UNDRR) is the primary UN focal point for disaster risk reduction. It oversees the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030, supporting countries in its implementation, monitoring and sharing what works in reducing existing risk and preventing the creation of new risk.
Role in Practice:	The UNDRR provides technical expertise on risk and risk impact. It convenes and coordinates risk reduction activities and initiatives to support stakeholder and partner efforts that reduce disaster loss and prevent the emergence of new risks.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Prevent & Respond

United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

Description/Organizational Statement:	The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) is the part of the UN Secretariat responsible for bringing together humanitarian actors to ensure a coherent response to emergencies. OCHA also helps organize humanitarian response, policy development, and ensures there is a framework within which each actor can contribute to the overall response effort.
Role in Practice:	OCHA coordinates emergency responses through four key ways: alerting and informing governments, partners, and other relevant parties, mobilizing international assistance, and organizing and monitoring financial support for aid workers and pooling funds for emergency relief.

Primary Role(s):	Financing, Technical Assistance & Implementation
Domain:	Detect & Respond

United Nations World Food Programme (WFP)

Description/Organizational Statement:	The World Food Programme (WFP) works in over 80 countries to bring life-saving food to people displaced by conflict and made destitute by disasters, and help individuals and communities find life-changing solutions to the multiple challenges they face in building better futures. It partners with governments, other UN agencies, NGOs, private companies, and others to mobilize resources and provide vulnerable communities with food and nutrition assistance.
Role in Practice:	The WFP leads the delivery of relief and food assistance in crisis situations. It also utilizes its logistics capacity and supply chain to provide services where commercial capacity does not exist, ensuring continued mobility of critical health and humanitarian cargo and personnel. The WFP also supports data collection and analysis efforts to inform emergency response strategy decisions.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Respond

Vital Strategies/Resolve to Save Lives

Description/Organizational Statement:	Vital Strategies is a global health organization that helps governments strengthen their public health systems to contend with the most important and difficult health challenges, including health security through their Resolve to Save Lives Initiative.
Role in Practice:	Resolve to Save Lives provides catalytic funding to countries interested in improving epidemic preparedness. They also staff the leading experts for epidemic preparedness, so that they can provide on-the-ground technical assistance. They also assist in identifying and engaging partners to improve preparedness, both in-country and globally.
Primary Role(s):	Financing, Technical Assistance
Domain:	Prevent, Detect & Respond

Wellcome Trust

Description/Organizational Statement:	The Wellcome Trust is an independent global charitable foundation that provides research grants, leads policy and advocacy campaigns, and builds global partnerships to address urgent health challenges.
Role in Practice:	The Wellcome Trust's role in global health security is primarily as a funder. They co-founded CEPI in 2017 and have provided financial support for research relating to efforts to prevent, detect, and respond to infectious disease threats. Their efforts to respond to the COVID-19 pandemic have included advocating for urgent investment in global research and development, supporting a variety of research efforts including the COVID-19 Therapeutics Accelerator (CTA), multinational clinical trials, and supporting the genome sequencing of thousands of COVID-19 samples to help guide research, policies and interventions.
Primary Role(s):	Financing
Domain:	Prevent, Detect & Respond

World Economic Forum (WEF)

Description/Organizational Statement:	The WEF is an international organization focused on fostering public-private cooperation to address pressing global issues, including global health security. The Forum works to engage political, business, cultural and other societal leaders to shape global, regional and agendas.
Role in Practice:	The specific role of the WEF varies according to context, but the Forum generally strives to promote multi-stakeholder cooperation to support preparedness and response to global health security threats. During times not characterized by outbreaks, the Forum will advocate for preparedness and work to promote preparedness. During the response phase of public health emergencies, the Forum will work to galvanize the global business community for collective action and mobilize cooperation and business support for response efforts, as appropriate.
Primary Role(s):	Technical Assistance & Implementation
Domain:	Prevent & Respond

World Health Organization (WHO)

Description/Organizational Statement:	The WHO is the preeminent health actor in the United Nations' system that is tasked with directing international health and leading and coordinating in the response to public health emergencies.
Role in Practice:	Within the WHO, the Health Emergencies Programme is the primary actor in the global health security space. The programme works with WHO member states and other partners to help build the capacities required to prepare for, rapidly detect, and respond to emergency health threats. Beyond that, other specialized WHO offices work to monitor and assess threats. Since 2005, when the International Health Regulations were last revised, the Director General of the WHO also maintains the power to declare a Public Health Emergency of International Concern (PHEIC), which serves as a signal to the international community that a public health event or emergency may require a coordinated international response.
Primary Role(s):	Normative & Technical Assistance
Domain:	Prevent, Detect & Respond

World Organization for Animal Health (OIE)

Description/Organizational Statement:	The World Organisation for Animal Health – formerly known as the Office International des Epizooties (OIE; the organization still uses its historical acronym) – is an intergovernmental organization, independent from the United Nations' system, responsible for improving animal health worldwide.
Role in Practice:	Given the growing recognition that human, animal, and environmental health are all closely linked (i.e., the One Health concept), the OIE's roles in global health security primarily relate to emerging and zoonotic diseases and antibiotic stewardship practices as a means of preventing the development of antibiotic resistance. OIE has a track record of responding to disease emergence at the human animal interface, having mobilized previously for outbreaks of H1N1 (i.e., swine flu), H5N1 and H7N9 (i.e., avian influenza), and coronaviruses (i.e., MERS and COVID-19). The OIE has participated in the WHO's International Health Regulations (2005) Emergency Committees regarding declaration of PHEICs, have developed an evaluation analogous to the WHO's JEE (i.e., OIE PVS Tool), and OIE experts have helped to support the WHO's R&D blueprint (i.e., a global plan allowing for the rapid and coordinated activation of research and development activities).

Primary Role(s):	Normative & Technical Assistance
Domain:	Prevent, Detect & Respond

National & Subnational Stakeholders and Organizations

Ministry of Health / Center for Disease Control & Prevention

Role in Practice:	At the country level, the Ministry of Health, Center for Disease Control, or other analogous structures are the organizations tasked with preparing for and responding to public health emergencies and other health security threats. Select structures (e.g., the Chinese CDC, the Nigerian CDC, the US CDC) have developed reputations as being leaders in the field and will offer technical assistance to others during public health emergencies, when appropriate.
Primary Role(s):	Normative, Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

Ministry of Finance/Commerce

Role in Practice:	Finance Ministries play an important role in determining national budgets, and, by extension, the financing available to maintain routine public health and health security capacities, expand or strengthen capacities, and respond to public health emergencies.
Primary Role(s):	Normative & Financing
Domain:	Prevent, Detect & Respond

Ministry of Defense

Role in Practice:	Militaries and Defense Ministries play varied but important roles in global health security. They can play an important role in the implementation of detection and response capacities and can also offer technical assistance. Those in higher-income countries also frequently play an important role in both researching global health security threats, as well as financing the research of others and capacity development.
Primary Role(s):	Financing, Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

Ministry of the Environment

Role in Practice:	Ministries of the Environment are generally the governmental ministry tasked with monitoring environmental and animal health. Accordingly, their role in global health security is limited to the interface of those aspects with human health but includes considerations such as zoonotic disease and antimicrobial resistance.
Primary Role(s):	Normative, Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

National development agencies

Role in Practice:	The national development agencies of high-income countries play an important role in capacity building and strengthening in lower-income countries. Although the specific roles in practice vary, they generally relate to providing financial assistance for preparedness efforts and technical assistance for response efforts. Notable examples include AUSAID (Australia), CIDA (Canada), GIZ (Germany), JICA (Japan), DFID (UK), and USAID (USA).
Primary Role(s):	Financing & Technical Assistance
Domain:	Prevent, Detect & Respond

Academic institutions

Role in Practice:	The role of academic institutions is generally best characterized as relating to research. They frequently play an important role in conducting both research geared toward understanding global health security threats, building capacities, implementation research to improve the efficiency of capacities, and policy research. This research can relate to preventing, detecting, and responding to emergencies. During emergency response, academic institutions may also be asked to help aid in the response (e.g., assisting in genetic sequencing of pathogens) or to provide technical assistance, as appropriate depending on the threat and context.
Primary Role(s):	Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

Private sector actors

Role in Practice:	Given the vast array of private sector actors around the world, it is infeasible and inappropriate to characterize their role in global health
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	security beyond noting that they make important contributions to virtually every role and every domain.
Primary Role(s):	Normative, Financing, Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

National and sub-national NGOs

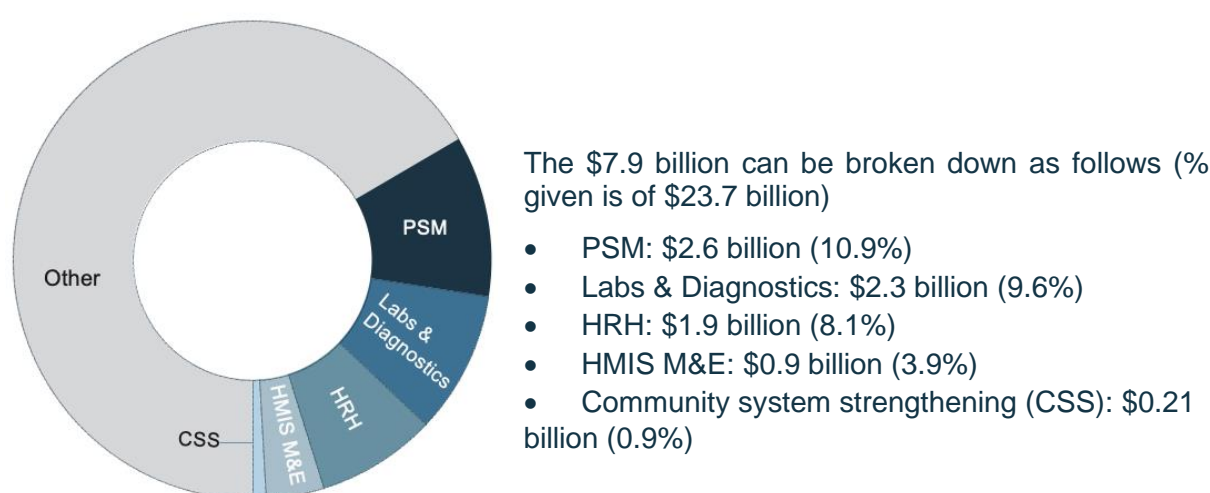
Role in Practice:	Given the vast array of non-governmental organizations around the world, it is infeasible and inappropriate to characterize their role in global health security beyond noting that they make important contributions to virtually every role and every domain.
Primary Role(s):	Normative, Financing, Research, Technical Assistance & Implementation
Domain:	Prevent, Detect & Respond

H. Details on the GF Grant Data Set and Analysis of PPR-Related Investments

The analysis of the Global Fund's capabilities in the PPR arena presented in chapter 5 draws heavily on a data set with a breakdown of approved grants in NFM2 and NFM3. The objective of the grant analysis was to capture investments that contribute to PPR. Due to the limited available, the standardized grant classification (modules, cost categories, cost inputs, interventions) had to be used to compile the data. A line by line assessment using the non-standardized activity description was not feasible, even though this contains the richest description of each budgeted activity. The data was compiled in consultation with the lead data analyst from the RSSH team.

Out of the \$23.7 billion of funding in NFM2 and NFM3, \$7.9 billion or 33% of all grant allocations was judged to be related to PPR (NFM2: \$4.1 billion; NFM3: \$3.8 billion).

Figure 38: Grant allocations within NFM2 and NFM 3 funding



The category PSM was used to analyze the GF's contribution in the PPR area *National PSM*. It includes the entire RSSH module on Health Products Management as well as the cost category for Procurement and Supply Chain Costs.

The category Labs and Diagnostics was used to analyze the GF's contribution in the respective PPR area. The data set includes all NFM3 RSSH modules on lab systems in their entirety. As these categories were newly created in NFM3, a different selection criterion was used for NFM2: all activities were included that were categorized under the intervention Laboratory Systems for Disease Prevention, Control, Treatment and Surveillance. For both funding cycles some additional data was included from the cost categories on Health Product Equipment, Lab Reagents and RDTs.

The category HRH was used to analyze the GF's contribution in the PPR area *Frontline and Community Workers*. The entire RSSH HRH module was included as well as the cost category Human Resources from other modules. Salaries for program management were excluded while salaries for health workers providing service delivery as well as performance incentive payments were included.

The category HMIS M&E was used to analyze the GF's contribution to the PPR area *Integrated Data & Systems*. This included the entire module on RSSH HMIS and M&E.

The category Community System Strengthening was used to analyze the GF's contribution in the PPR community systems and responses. The majority of the funding in this area is categorized under the module RSSH Community Systems Strengthening. From other

modules, the following interventions were included: Community Mobilization and Norms Change, Community Mobilization and Advocacy (HIV/TB), Community Mobilization and Advocacy (TB), Community-based Monitoring and Community-led Advocacy and Research.

I. Executive summaries Country case studies

National level analyses were conducted through six country case studies, using a combination of desk reviews of key documents and interviews with informants. At the country level, three in-depth case studies were conducted in Nigeria, Malawi, and Colombia while three lighter touch vignettes were conducted in Liberia, Haiti, and Cambodia. These countries were selected to encompass a broad spectrum of country needs and capabilities, considering geographic representation, Global Fund portfolio size, vulnerability, language, and GDP (see figure below).

Figure 39: Overview of countries selected for case studies

	Region	GF portfolio size	Fragile state	Francophone	GDP p.c.	Case study depth
Nigeria	AFRO	\$1.5B			\$2,229	Full
Malawi	AFRO	\$1.0B			\$411	Full
Liberia	AFRO	\$129M	✓	✓	\$621	Light
Colombia	AMRO	\$95M			\$6,428	Full
Haiti	AMRO	\$254M	✓		\$1,272	Light
Cambodia	WPRO	\$134M			\$1,643	Light

[summary of key takeaways from the six countries to be added]



Cambodia

Background on HTM: Since the development of the new national healthcare system after the 1980s and a growing Cambodian economy, health outcomes in Cambodia have improved substantially. For instance, life expectancy increased from 39 years in 1980 to 70 years in 2019. In line with that, Cambodia has made clear progress towards the reduction of HIV, malaria and tuberculosis and is targeting virtual elimination of HIV and malaria transmission within the next 5 years. The national HIV prevalence within the population aged 15-49 has fallen from 3.3 percent in 1998 to 0.5 percent in 2019. The incidence of malaria has decreased to historically low levels in Cambodia, dropping from a peak of over 7.4 cases per 1000 in 2006 to 3.9 per 1000 in 2018. Tuberculosis remains a major public health concern in Cambodia and with 302 cases per 100,000 in 2018 the Kingdom continues to rank 22nd among the top 30 highest TB burden countries. To date, the Global Fund has disbursed US\$520 million in Cambodia, which supported the delivery of 7 million insecticide treated nets delivered, the diagnosis and treatment of 143,000 TB cases and the funding of treatment for 80% of people on HIV/AIDS antiretroviral therapy.

National PPR Strengths and Weaknesses: The Joint External Evaluation of IHR Core Capacities conducted in 2016 documents significant deficiencies in Cambodia's ability to detect, prevent, and rapidly respond to emerging diseases. Insufficient health resources and training contribute to a shortage of public health professionals necessary to respond to public health emergency. The Kingdom severely lacks trained epidemiologists (currently 80 for a population of more than 16 million) and the existing specimen transport systems are prone to delays and do not sufficiently cover rural areas.

COVID-19 in Cambodia: Despite its modest rating under the JEE and the GHS Index, Cambodia was remarkable in largely avoiding the first wave of the COVID-19 pandemic in 2020. With the WHO and other technical partners like the USCDC and the Pasteur Institute, Cambodia prioritized COVID-19 detection, isolation, and treatment. These efforts largely eliminated community transmission and until January 2021, the country reported only 400 cases and zero deaths though a lack of capacity within the health care system could have led to undercounting. In February 2021, a new wave of community transmission has challenged the healthcare system. As of June 10, 2021, more than 300 deaths and 36,666 cases were reported.

COVID-19 Impact: The COVID-19 pandemic has strained Cambodia's fragile health care system, which also impacts the country's existing plans and response to HIV, TB, and malaria. To mitigate the negative effects of COVID-19 on HTM, the MoH and its partners have activated novel strategies to maintain treatment and care including the provision of telephone, messaging, or online appointments and using couriers to deliver medications. Nevertheless, services were disrupted substantially. The second wave brought with it a reduction of malaria testing by 10% in April 2021 (compared to previous month) of TB testing and diagnoses by 5-10%. Travel restrictions resulted in significant reductions in HIV/AIDS and STI prevention education and provision of condoms, lube, and Needle-syringe programs (NSP) in target areas.

Cambodia's COVID-19 response: Early in the pandemic, the Ministry of Health, with support from the World Health Organization, developed a National Master Plan for COVID-19, which has been updated in December 2020. The updated plan contains an estimated budget totals to US\$24.5 million. Laboratories and operational logistics and financing are the largest budget items with US\$ 11.4 and US\$ 10.1 million respectively.

In 2020 the Global Fund supported Cambodia's COVID-19 response with US\$ 0.5 million, which was largely allocated to procure commodities and PPE. In April 2021 Cambodia submitted a fast-track proposal for US\$ 7.9 million, which will be used for purchasing pharmaceutical and non-pharmaceutical health products as well as procurement and supply

chain management specifically for PCR reagents, GeneXpert cartridges, specimen collection kits, pipettes, and PPE.

Limitations: Especially the hospital and laboratory infrastructure of Cambodia was not prepared for an infectious disease outbreak with epidemic or pandemic potential. In the early days of the COVID-19 pandemic, the National Institute of Public Health had to exclusively rely on the Pasteur Institute for diagnostic testing, limiting its output to only 40 tests a day. With support from international partners in the form of loans and grants, the NIPH has been able to expand its capacity to more than 4000 tests per day, but the country continues to experience testing constraints, as labs have received more than 10,000 total samples per day during peak testing periods. During the second wave, hospital beds quickly ran out as infections rose, and the military had to convert convention centers and hotels into temporary health facilities and field hospitals.

Potential Areas for Global Fund Support to PPR: Based on the analysis of available data (incl. existing Global Fund allocations and funding requests, JEE and GHSI, National COVID-19 response plans) and focus group discussions with local experts, areas were identified where the Global Fund can support Cambodia's future preparedness and response. These include:

- **Integrated Planning and Response:** Requiring crosscutting planning within HTM proposals, funding integrated planning resources such as unified infectious disease hospitals and planning personnel and supporting partners that train and develop multivalent public health workers.
- **Emergency Funding:** Establishing an emergency funding mechanism in non-pandemic times to speed up activation when needed
- **Pandemic procurement:** Streamlining supplier registration processes, pre-registering emergency suppliers and establishing standard tender documents for emergency items are examples of activities that could allow more flexibility and faster response
- **Surveillance, Lab Capacity and Lab Capability:** Installing PCR testing, GeneXpert, Cobas, or other multivalent equipment and procuring respective supplies, introducing gene sequencing and strengthening rural lab infrastructure and specimen transport systems
- **Stockpiling essential medical supplies:** Facilitating development of national PPE or medical countermeasures stockpiling strategy and supporting building and maintaining national stockpile



Colombia

Background: Colombia is a middle-income country that is only eligible to receive Global Fund financing for HIV, with a current grant of US\$ 17 million, and support for TB through regional initiatives. Colombia has an HIV prevalence of 0.4 per cent and has achieved 70-74-93 progress towards the UNAIDS 90-90-90 goals. A total of 12,532 tuberculosis cases were reported to the National Tuberculosis Prevention and Control Program for 2020, and deaths from TB have been decreasing steadily but the country has not achieved the goal of reducing mortality from tuberculosis to less than 1.3 cases per 100,000 inhabitants.

Colombia is prone to endemic infectious disease outbreaks of malaria, Chikungunya, Zika, yellow fever, Dengue and leishmaniasis. More than 70,000 cases of malaria can occur annually on average, mainly affecting areas located below 1,600 meters above sea level, (66% of the territory).

COVID-19 Impact: Although Colombia has a moderate rating for PPR as per the GHS index, it has been overwhelmed by three waves of COVID-19. As of July 2021, Colombia has reported over 4.76 million cases and 120,000 deaths due to COVID-19.

HTM outreach services were suspended in early 2020 to protect health workers which led to the closure of places where PLHIV and KPs were traditionally reached. As lockdowns eased, around fifty-five percent of workers were exclusively redeployed for COVID-19, withdrawing workers from HTM programs. Notification rates for HIV reduced by 20% compared to that in 2019, and 55% of PLHIV with TB coinfections did not have access to ART compared to 44% in 2019. Colombia tried to adapt by deploying multi-month ART dispensing but there is no data yet as to the number of PLHIV that did not get appropriate ART. In addition, there was a decrease in detection of TB of at least 15.8% with respect to 2019 due to the low uptake of respiratory symptoms among providers, as well as the reduced follow-up actions to cases and contacts at the community level.

COVID-19 Response: Colombia has responded by increasing hospital capacity for intensive care beds (5,345 to 12,002), establishing regulations for telemedicine, ramping up laboratory capacity so that 164 labs can process up to 65,000 daily PCR tests, establishing a testing and tracking program (PRASS) for contact tracing and deploying risk communication campaigns to promote social distancing and mask wearing.

To respond to COVID-19, a total of \$490,000 of the current GF grant was reprogrammed and an additional \$ 1.2 million was requested from the C19RM response mechanism in 2020, another \$ 2.9 million has been requested under C19RM for 2021. This money has been used to procure PPE for HTM workers and for KPs, and commodities for self-testing, supporting a technical team to monitor multi-month ART dispensing, and providing remote counseling to KPs by peers on seeking health and psychological services remotely.

Based on interviews, funding from GF on mitigation has been instrumental in dampening the effects of COVID-19 on the disruptions of HIV services. In 2020, most KPs were reached only through programs financed by the current grant and the C19RM funds, as municipalities completely halted most public health programs in order to redirect human and financial resources to COVID-19. This funding allowed ENTerritorios, the main recipient, to invest in innovative mobile applications and social media outreach programs and double the number of KPs reached with testing and prevention packages.

Respondents also identified the GF's monitoring and evaluation system as significantly contributing to successful implementation of grants, and an indirect mechanism to build monitoring, and evaluation capacity.

However, the complexity of the C-19 RM grant process coupled with the scarcity of time during the emergency was reported as a hurdle to accessing funds.

Limitations: The COVID-19 response has been hampered by the decentralized nature of the health system with limited technical capacity of local governments, dependency on imported health commodities (PPE, vaccines, medications) and challenges in supply chain management, and lack of community-based surveillance to identify outbreaks more rapidly.

The decentralized nature of Colombia's health care system made it very difficult to track national availability of health commodities, coordinate the public health response of local governments, and ensure that inputs from stakeholders are considered in decision making. In addition, the health information system is not well positioned for timely tracking of service provision, or outcomes, because reporting has lags of one or two years. Remote areas have also faced difficulties in securing the cold chain needed for vaccine distribution, accessing health services remotely, and getting patients to care on time.

Potential Areas for Global Fund Support to PPR: Based on desk research, interviews, and Focus Group Discussions with donors, NGOs, CSOs, and government official, the Global Fund can support, the Global Fund can support Colombia's future preparedness and response by investing in the following areas:

- **Improve lab capacity:** Add capacity for genomic surveillance, support better technical capacity at municipal and departmental level
- **Expertise in Procurement and supply chain:** Invest in training and human resources for procurement and promote better coordination, and support cold chain capacity
- **Invest in Community Surveillance & a real time Information System:** Train CHWs in syndromic surveillance & improve M&E to include real time reporting capacity to monitor outbreaks and service provision
- **Strengthen local government's capacity:** Invest in training and human resources for management of testing, tracing, and deployment of additional healthcare workers
- **Support Surge Capacity:** Stockpile PPE, critical drugs and increase oxygen production, support adaptive mechanisms so that already existing industries/ resources can be used, support vaccine production capacity



Haiti

Background: Since 2003, the Global Fund has committed nearly US\$600 million for combatting HIV, TB, and malaria in Haiti. However, HIV, TB and malaria continue to be endemic in Haiti. Although Haiti has a low prevalence rate of HIV (1.9 %) compared to other countries with endemic epidemics, Haiti's progress towards UNAIDS 90-90-90 goals stood at 72-71-56 at the end of 2019. Haiti also has the highest rate of TB in the Western Hemisphere with an estimated 19,000 new TB cases in 2019, and approximately 2.3 percent of new TB cases test positive for MDR-TB. Malaria is endemic in Haiti with an estimated 2.7 million Haitians at high risk of infection.

National PPR Strengths and Weaknesses: Although Haiti has experience with infectious disease outbreaks (cholera and diphtheria), and natural disasters (earthquakes and Hurricane Matthew), the JEE ranks Haiti as among the least prepared countries (138 out of 195). Haiti has continued to struggle with a lack of national-level strategy & coordination, shortage of trained healthcare workers, epidemiologists and lab staff, deficits in infectious disease surveillance due to lack of field data personnel to gather quality data and a fragile health information system, weak laboratory systems with frequent instrument breakdowns, and critical issues in supply chains for health commodities and limited cold chains for vaccine distribution.

COVID-19 in Haiti: Haiti was largely untouched by COVID-19 for the first year of the pandemic but since April 2021, new cases and deaths have surged and overwhelmed health facilities and clinical care capacity. As of July 2021, Haiti has recorded 196 million cases and 4.19 million deaths due to COVID-19

COVID-19 had severely impacted HTM services as community fear has kept people from accessing health services. HIV prevalence has remained stable, but programs have been disrupted, the number of malaria cases have doubled, and TB testing has gone down considerably. HIV program implementers adapted adapt programming to encourage social distancing and increase the time between visits to health facilities using multi-month dispensing. However, the proportion of timely ART refills reduced from 51.9 percent to 43.8 percent, and there has been a significant impact on activities such as mothers and kid clubs, which had been successful in supporting HIV treatment adherence, but could not operate due to social distancing. For TB, providers have refused to work due of lack of PPE and people with respiratory symptoms were reluctant to go to clinics out of concern they would be labeled as COVID-19 patients resulting in a 45 percent reduction in TB screening.

Haiti's COVID-19 response: Haiti has responded by converting hospital trauma centers to COVID-19 care facilities, creating additional COVID-19 centers, repurposing HIV and TB lab testing for COVID-19, putting health screening procedures in place at points of entry, and creating a National Preparedness plan that is coordinated by MSPP, Disaster management Committee, and other working groups.

Although Haiti did not receive funding during the first phase of C-19 RM 2020, it is eligible for US\$18-20 million of C19RM 2021 funds. Haiti's has received US\$ 1.387 billion for its COVID-19 response from the US government, World Bank, and others. This money has been used to purchase oxygen tanks, fuel for oxygen generation, and to aid vulnerable populations and mitigate the economic impact of COVID. The Global Fund's previous RSSH grants have been used to strengthen in-country lab capacity, supply chains and surveillance systems such that GeneXpert machines could be repurposed, HTM testing strategy could be decentralized from national level to networked labs, CDC supported FETP fellows could be leveraged to supplement the surveillance system, and networks of local organizations could be mobilized quickly. Despite this, limited human resource capacity, shortages of PPE, GeneXpert cartridges & lab reagents, inaccurate assessment of oxygen needs, and challenges in coordination at the departmental, national, and sub-national levels.

Potential Areas for Global Fund Support to PPR: Based on desk research, interviews and Focus Group Discussions, the Global Fund can support Haiti's future preparedness and response by investing in the following areas:

- **Support Integrated Planning and Coordination:** Provide financial and capacity building support for coordination at the National, departmental, and communal level to minimize duplication of resources, encourage information sharing, and improve the accuracy of assessments.
- **Support Surveillance Measures:** Invest in Mobile Surveillance Units, train CHWs in syndromic surveillance and reporting, operationalize the the Surveillance Epidémiologique à Base Communautaire (SEBAC), and support the management and analysis of data
- **Invest in Infrastructure & Human Resources:** Support salaries, medical entrance, training etc. for healthcare workers, CHWs, epidemiologists, and lab technicians for a sustainable workforce. Global Fund support for surge capacity – both in terms of clinical space and human resources – would fill a critical need as Haiti has insufficient infectious disease and intensive care space around the country.
- **Create a Rapid Contingency Funding Mechanism:** Establish a permanent emergency funding mechanism can maximize speed of response and can support unexpected expenditures during crises (both health and environmental); allow flexible funding to fill immediate gaps during times of crisis.



Liberia

Background on HTM: With the civil wars (1989 – 1996 and 1999 – 2003) and the Ebola virus outbreak which claimed about 4800 lives (2014 – 2015), the Liberian health system has endured several substantial disruptions. HIV, tuberculosis and malaria are endemic in the country and remain amongst the top 10 causes of morbidity and mortality. In 2016 the prevalence of HIV was 1.5% with an estimated 47,000 persons living with HIV/AIDS. The estimated incidences of malaria and TB are 362 and 308 per 100,000 population respectively (2018). Malaria is a leading cause of death with over 2,200 fatalities in 2017 and an estimated prevalence of 45% in children under age 5.

National PPR Strengths and Weaknesses: Liberia's JEE evaluation revealed proven capabilities in several areas including established emergency operation centres and incident management systems as well as infection prevention controls following safer quality systems trainings. In collaboration with USCDC's FETP, Emory University (USA) and the Africa Field Epidemiology Network (AFENET), a global mentorship program has been set up which equips national, district and county surveillance officers with epidemiological skills and expertise for early identification and response to disease outbreaks and other health related events the country's robust surveillance system. This program contributes to the country's robust surveillance system.

On the other hand, the country is lagging in its efforts to pass policy frameworks in particular for biosafety and security – areas identified as critical following the EVD outbreak. Policies and guidelines for occupational health, laboratories and infection protection and have been in draft status for over 10 years. Moreover, the Liberia lacks the necessary funding to fund the implementation of these plans and is largely dependent on donor partners. The lack of funding and donor dependence is especially high in areas like workforce development, antimicrobial resistance, effective public health response at points of entry (POE) and laboratory quality systems.

COVID-19 epi: Liberia deployed early prevention strategies for COVID-19 including strict screening at airports and banning of flights from epidemic hotspots. However, the virus was inadvertently introduced into the country with the first case recorded on 16th March 2020. While incidence and test positivity have remained low compared to other West African countries, the case-fatality ratio is one of the highest in the region. As of July 2021, Liberia has reported 5,404 cases of COVID-19 and 148 deaths.

COVID-19 Impact: Liberia experienced disruptions of health service delivery during COVID-19. Due to imposed curfews and lockdown measures, essential healthcare workers were unable to commute to their jobs. There was a general decline in health facility attendance which also resulted in the reduction in access to HTM care services. Specifically, the malaria program had a reduction in ACT uptake as well as IPT provision for pregnant women. Under-5 outpatient consultation reduced by 16% between March and July 2020 compared to 2019 and the number of children given the third dose of pentavalent vaccine dropped by 31%. On the other hand, the pandemic encouraged innovation around service delivery, for instance, there was a revision in method of ARV refill for HIV patients.

Liberia's COVID-19 response: Leveraging the epidemic management architecture set up during the Ebola epidemic, Liberia's primary response strategy focused on active case finding and contact tracing in the communities. The command and control of the Liberia COVID-19 response plan is stratified into 3 levels: 1) the National Disaster Agency which mobilizes resources and takes policy decisions; 2) the National Incident Management System which advises on response strategies and oversees the implementation of the response (incl. risk communication, enhanced surveillance and infection prevention & control) 3) the Country Level Incident Management System responsible for local case management, data collection and analysis and response to local outbreaks.

Liberia has received support from several donor agencies to fight COVID-19. US\$ 7.5 million were received from the World Bank for the cross-sectional COVID-19 response project. The Global Fund supported Liberia with US\$4.9 million in 2020 which was used to support laboratory services (equipment maintenance and supplies, sample collection kits, transportation, training) and infection control in health facilities, adapt malaria control interventions, estimate cost for short-term human resources to fill gaps and staff re-purposing for COVID-19 response and strengthen community-based health services and contact tracing.

Limitations: Liberia was yet to recover from the impact of the Ebola Virus Disease [EVD] on available human resources for health before the onslaught of the COVID-19. Moreover, the country struggles to provide reliable supply of diagnostic commodities and PPE due to weak inventory management at the central level, inadequate laboratory supply chain management, and lack of defined operational roles and responsibilities over supply chain. As a result, Liberia has one of the lowest COVID-19 testing rates in west Africa. Further gaps in PPR include inadequate vaccine coverage and limited private sector engagement.

Potential Areas for Global Fund Support to PPR: Based on the analysis of available data (incl. existing Global Fund allocations and funding requests, JEE and GHSI, National COVID-19 response plans) and focus group discussions with local experts, areas were identified where the Global Fund can support Liberia's future preparedness and response.

- **Increase investments in procurement and surveillance:** by prioritizing investment in commencing and upscaling local production for health commodities to reduce dependence on importation, and further investing in IDSR to improve health security within Liberia.
- **Strengthen and expand Private sector participation:** consider investing in strengthening the capacity of private facilities for quality service delivery as well as investing and collaborating with the Healthcare Federation of Liberia to expand the enabling environment and scale up of private facility involvement
- **Enable health system focused implementation:** Support sustainable health system strengthening by investing in all pillars of the system and improve capacity and human resources of agencies that deal with commodities, surveillance systems etc.
- **Strengthen country health Leadership:** Strengthen health system resilience by leveraging & enabling transfer of capacities to private health sector and implementing partners (non-government officials)



Malawi

Background: The Global Fund has invested more than 1 billion USD in Malawi to fight HIV, TB, malaria and strengthen health systems. However, HIV remains a major public health concern with national prevalence at 8.9%. Malawi is also among the top 20 countries with highest estimated numbers of incident TB cases and is responsible for nearly 8% of malaria cases in the WHO Africa Region.

National PPR Strengths and Weaknesses: Although Malawi completed the Joint External Evaluation (JEE) in 2019, it has not completed a National Action Plan for Health Security to address identified gaps. Malawi has responded to outbreaks of cholera, typhoid and anthrax but has continued to struggle with sparse funding in public health communication, lack of training and coordination of human resources for health, inadequate lab capacity, gaps in data quality and use, and inadequate financial resources for emergency preparedness.

Malawi and COVID-19: Malawi had little global health security experience when the first COVID-19 case was diagnosed in April 2020. Despite its modest rating under the JEE, Malawi experienced a light first wave of COVID-19 from June-September 2020. Infections increased in early 2021 and Malawi instituted curfews, restricted gatherings, and closed schools and borders to reduce transmission. Malawi created a national COVID-19 Preparedness and Response plan in 2020 that targeted 4 aspects of response: community, points of entry, health facility and infectious disease treatment centers. Malawi's COVID-19 response was coordinated by the Disaster management Affairs Department, the Presidential Committee, National Disaster Preparedness committee, Humanitarian Response partners and other working groups.

A significant amount of HTM services were suspended due to COVID-19 which led to significant drop in TB and HIV testing and diagnostic services.

Due to the Global Fund's previous RSSH investments and the additional support of C19RM funds, Malawi was able to leverage existing HTM investments to increase capacity in labs, supply chains, testing and human resources in order to respond to COVID-19. Malawi has received around US\$ 30 million in C-19 RM 2020, and an additional US\$76 million will be made available under 2021 C-19RM. This funding was used to repurpose 15 HIV-testing labs for COVID-19, leverage procurement systems to get diagnostics into the country (including shipments of AstraZeneca vaccine, PPE, COVID-19 tests kits), purchase two new incinerators in two referral hospitals, and support the recruitment of HCWs including 100 laboratory staff, 100 nursing staff, and 80 CHWs.

However, weaknesses remain in subnational coordination, inadequate treatment options & supplies, health care worker shortage, and data quality and management.

Potential Areas for Global Fund Support to PPR: Based on desk research, interviews, and Focus Group Discussions with donors, NGOS, CSOs, and government official, the Global Fund can support Malawi's future preparedness and response by investing in the following areas:

- **National preparedness and response capacity and leadership** – Invest in the Public Health Institute as a semi-autonomous public health institute that manages disease detection and response and contributes to long-term preparedness in Malawi. In addition, the Global Fund should promote sub national capacitation by investing in districts and communities to plan and implement preparedness and response efforts and reach individuals even in the most underserved areas
- **Investment in Surveillance and Laboratory capacity:** Support community and mortality surveillance by training HCWs & CHWS, add capacity in data management, build capacity for molecular diagnostics at the district level

- **Infrastructure** – support construction and/or rehabilitation of modern infectious disease facilities, intensive care units, and isolation centers that can manage highly infectious cases in Malawi’s five regions
- **Regional mechanisms** – invest in regional mechanisms, such as the Africa CDC, to provide rapid support in times of crisis, and a regional stockpile of critical commodities.



Nigeria

Background on HTM: To date, the Global Fund has invested more than US\$2.7 billion in Nigeria with more than US\$1 billion each for malaria and HIV. Between 2014 and 2020, the Global Fund has also (directly and indirectly) contributed to strengthening Nigeria's health security capacity with approximately \$470,034,965 (30.2% of total budgets)⁸⁹. The Global Fund investments have helped expand health services across Nigeria, supporting more than 1.5 million people with life-saving HIV treatment and treating 138,500 people with TB in 2020 alone. Between 2017 and 2020, the investments also contributed to the distribution of more than 100 million mosquito nets.

Despite progress made toward HTM epidemic control, Nigeria continues to contribute significantly to the global burden of the three diseases. 1.9 million people live with HIV, making Nigeria the country with the second-highest number of people living with HIV/AIDS in Africa. It also has the greatest tuberculosis burden in Africa and is one of the eight countries accounting for two-thirds of the global tuberculosis burden. In addition, Nigeria accounts for about a quarter of all malaria cases and deaths (27% and 23% respectively) globally.

National PPR Strengths and Weaknesses: Nigeria's JEE assessment from 2017 emphasizes substantial gaps in pandemic prevention (e.g., legislative policy and financing, biosafety/biosecurity) and response (e.g., emergency procurement and stockpiling). Despite a slightly better score in the detect category, the JEE reported weakness in the specimen referral network. Additional challenges include bureaucratic processes in government that delay the release of budgeted funds, weak Infection Prevention and Control (IPC) practices and poor WASH infrastructure.

COVID-19 epi: Nigeria was one of the first countries in Sub-Saharan Africa to detect a COVID-19 case as early as February 27, 2020. As of February 2021, the Case Fatality Rate (CFR) for COVID-19 in Nigeria was 3.11% with 166,982 confirmed cases and 2,117 deaths.

Nigeria's response to COVID-19: In response to the rising number of cases, Presidential Task Force (PTF) on COVID-19 was inaugurated in March 2020 as the National Coordinating Body for the COVID-19 pandemic response. The Nigeria CDC led the development of a National COVID-19 Multisectoral Pandemic Response Plan. At the beginning of the response, the implementation of the plan was costed at \$232.4 million with 20% expected to be financed from the Federal budget, 39% from a special Federal Government account for COVID-19, and 41% from Development Partners and the Private Sector. The Global Fund supported the Nigerian COVID-19 response with ~USD\$ 28 million in 2020 (USD\$6.1 million in April and USD\$21.9 million in June). The money was primarily used for COVID-19 diagnostics and lab consumables, PPE, optimizing the use of Gene Expert machines, and strengthening sample transport.

Measures to ensure minimal disruptions to service delivery for essential and non-essential health care services in the country included a Lockdown exemption for healthcare workers and those seeking medical care, IPC measures and the use of PPEs for frontline health workers. In addition, new approaches were adopted to respond to possible effects on treatment rates. Examples include long-term supplies of antiretrovirals for HIV patients, home-delivery of HIV and TB medicines for high-risk patients and using mobile applications such as WhatsApp to communicate with patients receiving PMTCT services.

COVID-19 Impact: Although these targeted community interventions led to improvements in case finding for TB and treatment for HIV with more cases identified during the pandemic, they could not balance out the reduction in access to preventive interventions and services, and the interruption of medicine supplies. For instance, Data from Lagos State, shows a marked decline in the uptake of IPT 1 and IPT2 services for pregnant women.

⁸⁹ [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30420-4/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30420-4/fulltext)

Limitations: The overall pandemic response in Nigeria was hampered by the fragility of the health system and the protracted political, economic, social and security situation plaguing the country. A lack of trained health professionals and essential medical supplies made it challenging to maintain essential services. Although private labs began conducting COVID-19 tests to help scale up testing efforts, Nigeria has the lowest daily COVID-19 tests per 10,000 people in the West African Region. The lack of laboratory testing infrastructure in some states and weak sample referral systems between states have prolonged turnaround time and impeded the capacity to track cases and limit spread. Miscommunication and misconception about epidemics are also rife among the Nigerian population, leading to stigmatization of suspected and/or confirmed cases.

Potential Areas for Global Fund Support to PPR: Based on the analysis of available data (including existing Global Fund allocations and funding requests, JEE and GHSI, National COVID-19 response plans) and key informant interviews and focus group discussions with local experts, areas were identified where the Global Fund can support Nigeria's future preparedness and response. These include:

- **Expand investments in diagnostics and surveillance** to make access to equipment and reagents more reliable and to support local production of equipment and supplies to aid domestic diagnostics for infectious diseases. This can be done by investing in GeneXpert Machines, local production of reagents & supplies to improve diagnostics and scale up testing capacity
- **Improve coordination and governance for health**, by funding coordination amongst donors and at national and subnational levels, & engage with the private sector to improve leadership for health security and HTM and implement interventions more efficiently
- **Enable a health system focused implementation** by adopting a more cohesive health systems strengthening approach that focuses on improving governance and accountability, building technical capacity, increasing domestic resource mobilization
- **Strengthen country led approaches** by expanding the CCM to include key Government agencies and COVID-19 experts not currently represented in the CCM to support sub-national systems and promote country ownership

J. The Global Fund's Role in PPR Financing

How should the additional donor money be managed and allocated? There is widespread recognition that to support expanded PPR investments by LMIC countries and avoid the historic cycles of “panic and neglect”, additional PPR financing flows and mechanisms are required, and should be established as soon as possible while the frightening experience with COVID-19 is still fresh in our minds. As mentioned above, various studies estimate that \$20-30 billion dollars of extra financing is needed annually over the coming decade for this purpose. While part of this should be paid for from domestic funding sources, there is a compelling argument for external funding from multilateral and bilateral assistance.

To ensure true additionality, and to bring PPR financing into the limelight as a global security issue and not purely a health matter, it is also widely agreed that the additional international financing should not come from the traditional health aid budgets but should be appropriated by high income countries as part of aid to ensure security, along the lines of international assistance to prevent terrorism or the fallout from natural disasters and climate change.

While there is broad consensus on these first two dimensions of PPR financing, there is much debate over the detailed financial architecture: the degree to which additional donor assistance for PPR should be pooled in one or multiple facilities, and where such pandemic financing facilities might sit – in one or several existing organizations or in a new organization.

Among the existing multilateral institutions, both the development banks and the Global Fund have been mentioned as possible channels for major long-term PPR financing. Both alternatives have advantages and drawbacks (see figure below).

The World Bank and the regional development banks have a track record of making large investments in health system strengthening (including laboratory and surveillance networks) and promoting domestic resource mobilization.

The Global Fund also has a series of attractive features as a potential home for a pandemic financing facility, especially its proven ability to mobilize and transfer large amounts of funding for disease prevention and treatment and for health systems capacity strengthening through a large and diverse network of government and non-government recipients.

The Global Fund and the development banks have features that make them attractive as the main conduit for donor a financing for PPR – as well as limitations

	Advantages	Limitations
MDBs	<ul style="list-style-type: none"> • In-country presence, direct dialogue/access to country decisionmakers • Already big players in health systems strengthening and lend across ministries [multisectoral] • Large scale financing operations, national scope • Can leverage donor funds with concessional and non-concessional loans • Directly involved in fiscal space analysis and TIRM 	<ul style="list-style-type: none"> • Country clients determine demand- low historic borrowing for pandemic/disaster preparedness • Unable to finance non-government actors • Multi-sectoral institution risks loss of sustained focus • Member government only governance, no participation by civil society • Limited technical knowhow
GF	<ul style="list-style-type: none"> • Existing country grantmaking operations at scale • Government and non-government recipients • PPR shares some core functions with other HTM programs (surveillance, epi training, lab, HMIS, HRH) • HTM grants an appealing and effective way to keep PPR capacity "always on" • Global procurement functions in-house, can use GPP directly and quickly for economy • Multistakeholder governance at global/country levels • Deep TA relationships with WHO, PEPFAR/CDC, and others 	<ul style="list-style-type: none"> • Only grant financing, no direct leverage (but can blend/buydown loans) • Current mandate restricted to ATM and related HSS • Limited track record on health system strengthening, mostly commodity oriented • No country presence, depends on other technical agencies • Limited in-house technical capabilities

Pharos

Source: Modified from Dr. Amanda Glassman, Center for Global Development

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Source: Amanda Glassman, Center for Global Development