

Getting ahead of pandemic risk



INSIGHTS FROM
8 YEARS OF
GLOBAL
PREPAREDNESS
MONITORING

Launch version
2026

Getting ahead of pandemic risk — Insights from 8 years of global preparedness monitoring. GPMB synthesis report and blueprint for the future (2026).

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GLOBAL PREPAREDNESS MONITORING

GPMB synthesis report and blueprint for the future
Launch version 2026

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Foreword

Established in the aftermath of the West Africa Ebola crisis, the Global Preparedness Monitoring Board (GPMB) was created with a singular ambition – to help ensure that the world would never again be unprepared for a major public health emergency.

A decade later, the landscape of epidemic and pandemic preparedness has been transformed. The risks posed by infectious hazards are better understood than ever; political attention has reached unprecedented levels; new institutions, financing mechanisms, surveillance systems, scientific partnerships, and international frameworks have emerged; and advances in vaccines, diagnostics, and therapeutics development, genomics, data science, and AI, have significantly strengthened our ability to detect, assess, and respond to emerging threats.

Yet the drivers of pandemic risk have also become more complex. Climate change, rapid urbanization, environmental degradation, and population mobility are reshaping the conditions under which outbreaks emerge and spread. Geopolitical tensions, declining trust in institutions and between partners, persistent inequities, and unequal access to health technologies are placing new strains on collective action.

The result is a fragmented and contested global environment, one in which the next pandemic will test not only the resilience of health systems, but also the strength of global solidarity.

Against this backdrop, independent, comprehensive monitoring of pandemic risk and preparedness is not merely important, but indispensable. While pandemic preparedness is now firmly established on the global agenda, sustained progress depends on a shared understanding of evolving risks, clear accountability for action, and trust among the diverse actors responsible for protecting global health, including governments, international organizations, the private sector and civil society. This has been at the heart of the GPMB's mandate from the outset.

This final GPMB report draws on eight years of evidence, analysis, and experience to distill key insights that should shape the future of pandemic risk and preparedness monitoring. That future should not simply replicate the model of the past. It demands a new generation of monitoring: continuous rather than periodic; predictive rather than retrospective; digitally enabled and AI-powered; and capable of drawing on the expanding ecosystem of data and intelligence across health, finance, agriculture, environment, climate, and other sectors. Such monitoring would provide a dynamic and integrated understanding of risk, prevention and preparedness, and of the actions needed to address both.

As the GPMB's mandate draws to a close, we urge policymakers, public health leaders, and international partners to seize this opportunity. The progress of the past decade must not be taken for granted. This report presents five key insights and the actions required to translate them into a new era of pandemic risk, prevention and preparedness monitoring. The GPMB stands ready to support that transition.

Future epidemics and pandemics are inevitable. Being caught unprepared is not. By harnessing new technologies, new sources of intelligence and new approaches to monitoring, the world has an opportunity to better anticipate risks, strengthen accountability and act before threats occur and before they escalate into crises. Realizing that opportunity should be a global priority.



Ms Kolinda Grabar-Kitarović
GPMB Co-Chair
and former President
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Ms Joy Phumaphi
GPMB Co-Chair and
former Minister of Health
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Executive summary

Despite the catastrophic risk that pandemics pose, the world still lacks the modern, comprehensive, continuous monitoring and assessment of pandemic risk and preparedness needed to manage them effectively

The GPMB's mandate ends in December 2026, as the global risk environment is becoming more volatile, interconnected and complex, and pandemic risk is escalating. At the same time, advances in institutional capacities, artificial intelligence (AI) and digital technologies are transforming what monitoring can achieve as well as how it needs to be structured.

This creates both an urgent need and an opportunity to establish a new, fit-for-purpose global pandemic risk monitoring mechanism that can provide comprehensive and timely intelligence, and help translate it into earlier action.

Eight years of GPMB monitoring and advocacy have provided a foundation for the design of this new mechanism. An analysis of the evolution of global preparedness monitoring over this period, combined with an examination of GPMB Monitoring Framework assessments and a new maturity analysis of progress on its recommendations, has provided an evidence base for identifying essential elements of the next pandemic risk monitoring mechanism.

In this, our final report, we emphasize five key insights for the design of the next global pandemic risk monitoring mechanism and the actions needed to take them forward. We present the evidence base for these insights and recommendations, and further specifics on how each can be operationalized as a matter of urgency, to ensure that pandemic risk is better anticipated, understood and managed in an increasingly volatile era.



Key insights for the next global pandemic risk monitoring mechanism

01

The pandemic risk monitoring mechanism must have clear and reliable pathways into political processes, institutions and leadership structures to ensure independent evidence turns into sustained political attention, accountability and action. This requires:

- establishing and mandating the mechanism through the World Health Assembly (WHA), with a formal pathway for reporting to the UN General Assembly (UNGA); and
- linking the mechanism to governing bodies and political processes beyond health, including key regional political fora and international financial institutions.

02

It must provide an integrated view of the key sectors, vulnerabilities and systems that shape pandemic risk. This requires:

- bringing together data, analysis and expertise across health, research and development (R&D), agriculture, environment, finance, trade, transport, social protection, education, food systems and security; and
- involving relevant international technical institutions from non-health sectors and ensuring findings reach their governing and decision-making bodies.

03

It must capture the full continuum of pandemic risk, from threat through vulnerability to action. This requires:

- building on the GPMB Monitoring Framework, to capture the full continuum of pandemic risk: from upstream risk drivers and threats, through vulnerabilities, preparedness and resilience, to political commitments, resources and implementation; and
- continuous monitoring, using a stable core of indicators so that changes can be tracked consistently over time.

04

It must harness new AI and digital technologies to bring the vast but fragmented evidence together into a coherent picture of risk. This requires:

- establishing a federated model that connects and synthesizes existing national, regional and international monitoring systems, datasets, institutional assessments and expert inputs; and
- using AI and digital tools to integrate and analyse large, diverse bodies of evidence, while building the analytical capacity of countries and institutions to use these technologies effectively.

05

It must have a strong independent component and full transparency to strengthen trust in how risk is assessed, understood and acted upon. This requires:

- establishing an independent layer of analysis across institutions, with diversified funding, transparent governance and independent expert input from key countries, regions, sectors and disciplines; and
- ensuring equitable access to data, monitoring outputs, analytical tools and expertise, supported by communication that is technically credible, policy-relevant and accessible to the public, and by transparent governance of AI.

Introduction

The world does not manage financial, aviation, or nuclear risks by waiting for the next crisis

Where risks can have catastrophic and cross-border consequences, sustained monitoring and assessment become part of the infrastructure for managing them. After the 2008 financial crisis, the G20 strengthened global financial oversight through the Financial Stability Board; following the Fukushima nuclear accident, governments reinforced international nuclear-safety monitoring and peer review; and as climate change emerged as a global systemic threat, the Intergovernmental Panel on Climate Change (IPCC) was established to provide sustained, authoritative assessments of evolving climate risk. Pandemic risk and preparedness warrant the same sustained attention.

Pandemics are no longer once-in-a-lifetime 'black swan' events, but an increasingly present global threat. The 2026 GPMB Report *A World on the Edge* found that outbreaks are becoming more frequent and severe.¹ Recent modelling estimates a greater than 20% probability of another pandemic causing mortality comparable to COVID-19 within the next decade.² Pandemics are not rare, unpredictable shocks, but a significant, evolving global risk. Their human, economic, social, and political costs are so high that failing to prevent them and limit their impacts when they occur is a risk the world cannot afford.

Pandemic risk monitoring enables action before a spillover event becomes a pandemic and helps limit its consequences when it cannot be contained. By detecting changes in threats and vulnerabilities, identifying where preparedness capacities are weak or deteriorating, and assessing whether systems are ready to respond, monitoring can trigger earlier action, guide resources towards the most consequential gaps and help decision-makers adapt their response as risks evolve. It also allows persistent weaknesses and commitments to be tracked over time, helping sustain attention and accountability before, during and between crises.

Since 2018, the GPMB has served as the independent, comprehensive, multisectoral global mechanism for monitoring pandemic risk, bringing together evidence on the drivers of risk, the status of preparedness and resilience capacities, and the impacts of pandemics and other health emergencies. Its experience demonstrates the value of continuous, independent and multisectoral monitoring of pandemic risk and provides a practical foundation for future arrangements.

¹ *A World on the Edge – Priorities for a Pandemic Resilient Future: 2026 GPMB report*. Global Preparedness Monitoring Board, Geneva: World Health Organization; 2026 (<https://gpmmb.org/reports/reports-2026>, accessed 29 September 2026).

² Jamison DT, Summers LH, et al. (2024), *Global health 2050: the path to halving premature death by mid-century*. The Lancet, 404:1561–1614

Figure 1. Evolution of pandemic risk over time

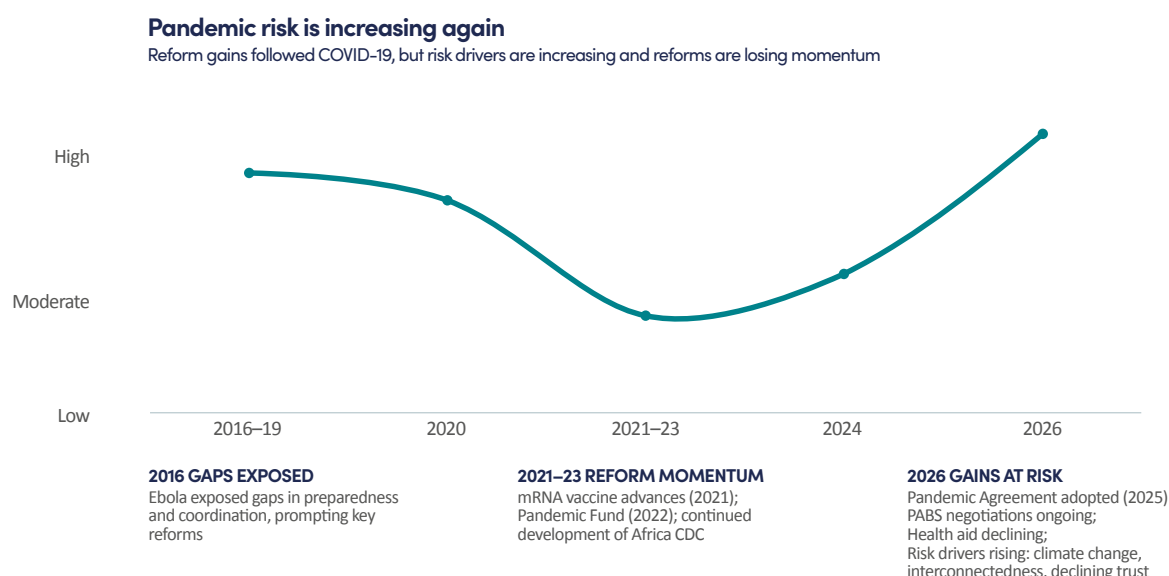




Photo by Jitay biswas on Unsplash

The environment in which pandemic preparedness must operate is becoming more challenging. The intense period of reform that followed COVID-19 has begun to plateau, while threats, vulnerabilities and geopolitical and institutional pressures continue to escalate. As political attention and cooperation deteriorate, the ability to track changes in global pandemic risk and identify critical gaps in preparedness is more essential and urgent than ever.

Future monitoring therefore cannot simply replicate what came before. The lessons from the GPMB's experience must be adapted to a rapidly evolving monitoring landscape. These developments bring the opportunity and the responsibility to harness new technologies, expand analytical capabilities, integrate more diverse sources of evidence, and strengthen the links between independent assessment, political commitment and action.

The GPMB's mandate ends in December 2026, but the need it was created to address has only grown. There is an urgent need to transition from the GPMB to a new mechanism that will uphold the value of independent global monitoring and will be adaptive, connected and able to drive action before crises escalate.

In this report, we examine two key issues: what eight years of global monitoring have taught us about pandemic risk, and how monitoring should evolve in a context of evolving risk. Drawing on eight years of GPMB global monitoring, we identify five key insights to guide the design of a new pandemic risk monitoring mechanism fit for today's risk environment.

DEFINING PANDEMIC RISK

The GPMB defines pandemic risk as the balance between (i) the drivers and threats that increase the likelihood and impact of pandemics, and (ii) the prevention, preparedness and broader resilience capacities that reduce them.

In its 2026 report *A World on the Edge*, the GPMB provided the stark assessment that the trajectory of pandemic risk is moving in the wrong direction, with rising economic and social costs, weakening access to medical countermeasures, declining financing, and societies emerging poorer, more unequal and more divided after public health emergencies of international concern.³

³ *A World on the Edge – Priorities for a Pandemic Resilient Future: 2026 GPMB report*. Global Preparedness Monitoring Board, Geneva: World Health Organization; 2026 (<https://gpmh.org/reports/reports-2026>, accessed 29 September 2026).

THE CASE FOR GLOBAL, INDEPENDENT PANDEMIC RISK MONITORING

Pandemic risk is global and interdependent. While obvious, the implications are fundamental: no country can fully assess or manage its risk in isolation because national preparedness depends on threats, capacities and decisions beyond its borders. Global monitoring provides the shared picture needed to identify cross-border vulnerabilities and determine where collective action and investment are required.

Global analytics bring fragmented information together to reveal the true scale of risk. Countries report large amounts of information. Global monitoring can integrate evidence across countries, institutions and sectors to provide a more coherent and actionable picture of whether the world is becoming safer.

Global monitoring sustains the collective political attention needed between crises. It ensures that lessons and commitments are not forgotten as political priorities shift and helps counter the cycle of panic and neglect.

Global monitoring enables better international prioritization and investment.

By identifying where risks are greatest and capacities weakest, it can guide international resources to support national priorities where they will have the greatest impact.

Global monitoring connects commitments to action. It strengthens accountability when findings are clearly linked to actions, embedded in relevant governance processes and regularly reviewed by political decision-makers. This makes gaps in implementation visible and helps sustain action to address them.

Global monitoring helps countries translate global risk into national action.

It helps national actors understand how global threats, vulnerabilities and preparedness gaps affect their own risk and provides decision-makers with evidence that national assessments alone cannot generate. It can support countries in anticipating emerging risks, assessing their preparedness against a changing global context, identifying priorities for national investment and international cooperation, and applying lessons and best practices to address identified gaps.

The purpose of a global, independent pandemic risk monitoring mechanism is to help countries, multilateral and regional actors identify threats early and work together to address them. It is not to demand more data, produce more reports or add competing voices, nor to investigate, assign blame, or to rank countries against one another.

“

The GPMB’s mandate spanned the COVID-19 pandemic and a period of major reform in PPPR. These years brought important advances, but also missed opportunities to embed stronger monitoring, accountability and follow-through within the evolving PPPR architecture.

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THE EVOLUTION OF THE GPMB AND GLOBAL MONITORING



In the aftermath of the West African Ebola epidemic, the UN High-level Panel on the Global Response to Health Crises called for sustained political oversight of global preparedness and stronger independent assessment, including monitoring progress in implementing agreed reforms.⁴ Building on these recommendations, the UN Global Health Crises Task Force subsequently called for an independent mechanism to monitor system-wide progress in preparedness, strengthen political visibility and accountability, and provide regular assessments of the status of the world's preparedness.⁵ In response, WHO and the World Bank convened the Global Preparedness Monitoring Board in 2018.

The GPMB was established for an initial five-year period and subsequently extended in recognition of the continuing need for independent global monitoring. Its mandate was to advance the common goal of making the world safer from health emergencies by providing high-level, independent oversight of global preparedness: assessing progress and gaps, identifying priorities for urgent action, and advocating at the highest political levels. A key deliverable for the Board was the development of "a global health crises preparedness monitoring framework [to] provide a single, authoritative roadmap for global preparedness that is easily translatable to action for policymakers, decision makers, researchers, health professionals and donors."⁶

The GPMB launched its first report, *A World at Risk*, in 2019, warning of the threat of a rapidly spreading pandemic caused by a lethal respiratory pathogen, an assessment that proved prescient when COVID-19 emerged only months later. It went on to issue six further reports, calling for major reforms including a pandemic agreement and a collective financing mechanism for PPPR, later enacted through the establishment of the Pandemic Fund.

Independent monitoring has since become a more prominent part of the global PPPR architecture, with additional mechanisms established, including the Independent Panel for Pandemic Preparedness and Response and the International Pandemic Preparedness Secretariat (whose mandate ends in January 2027).

At the same time, the capacity to monitor and analyse elements of pandemic risk has expanded considerably. Advances in modelling, digital technologies and AI, alongside stronger national, regional and global institutions and networks, including WHO's Hub for Pandemic and Epidemic Intelligence, have expanded the data and analytical capabilities available. New approaches such as the Dynamic Preparedness Metric also incorporate changing hazards and vulnerabilities alongside national capacities.

The PPPR ecosystem has also evolved significantly, with strengthened regional institutions and initiatives, including Africa Centres for Disease Control and Prevention (CDC), the Association of Southeast Asian Nations' (ASEAN) Centre for Public Health Emergencies and Emerging Diseases, and the Health Emergency Preparedness and Response Authority (HERA), which contributed to improving the data, analysis and monitoring landscape. However, these initiatives remain primarily focused on national preparedness. They do not provide the system-wide perspective needed to assess how pandemic risk is evolving globally, how threats and vulnerabilities interact across borders, and whether collective arrangements are sufficient to manage that risk.

The GPMB's mandate spanned the COVID-19 pandemic and a period of major reform in PPPR. These years brought important advances, but also missed opportunities to embed stronger monitoring, accountability and follow-through within the evolving PPPR architecture. While the GPMB identified risks, assessed preparedness and set out priorities for action, it lacked sufficiently strong pathways into political processes, which limited the impact of its recommendations.

⁴ UN High-level Panel on the Global Response to Health Crises (2016), *Protecting humanity from future health crises*, A/70/723, 9 February 2016

⁵ United Nations Global Health Crises Task Force. (2017). *Report of the Global Health Crises Task Force: Note by the Secretary-General*. A/72/113, 22 June 2017, paragraph 91, p. 23.

⁶ Global Preparedness Monitoring Board. (2021). *Terms of Reference: Global Preparedness Monitoring Board (GPMB)*. Section II, paragraph 6(d), p. 2.

Before GPMB

Preparedness was monitored primarily through country-level assessments. Major outbreaks such as Ebola in West Africa prompted the creation of panels and review bodies to assess the response to specific crises, but these were largely retrospective and time-limited. No mechanism brought these perspectives together to provide a comprehensive view of preparedness at the global-system level.

2018– 2020

A broader, system-wide view

The Board recognized that preparedness could not be understood by looking at health sector capacities alone. For its first two reports, GPMB took a broader, multisectoral view, examining five priority areas: leadership, systems, financing, governance and international coordination (across health systems, One Health, R&D, social protection, trade and supply chains, and other sectors). The GPMB used this evidence to identify priorities for urgent action. At this stage, these assessments drew primarily on commissioned expert studies and analyses rather than a systematic assessment against defined indicators.

HOW THE GPMB EVOLVED OVER TIME

Turning evidence into accountability and action

Across its work, the GPMB drew together a broad and diverse evidence base, combining data, analysis and expert perspectives from more than a hundred institutions and networks across sectors, disciplines and regions, to develop and implement its Monitoring Framework and provide an independent, credible assessment of global pandemic risk. The Board translated these technical analyses into specific findings, priorities and recommendations and used sustained advocacy to bring them to the attention of political leaders and institutions with the authority to act.

During the COVID-19 pandemic, the GPMB advocated for urgent financing of the response, including an immediate US\$8 billion for vaccines, therapeutics and diagnostics, and for stronger global arrangements for R&D and equitable access, contributing to momentum around initiatives such as the ACT-Accelerator and later reforms to global PPPR financing and access arrangements. It also regularly engaged with the WHA, WHS, UNGA, G20, World Bank and other global and regional forums, maintained dialogue with a broad range of stakeholders, and used media engagement to raise awareness and sustain public and political attention on preparedness. This combination of evidence-based independent monitoring and high-level advocacy was a defining feature of the GPMB's approach.

Additional considerations

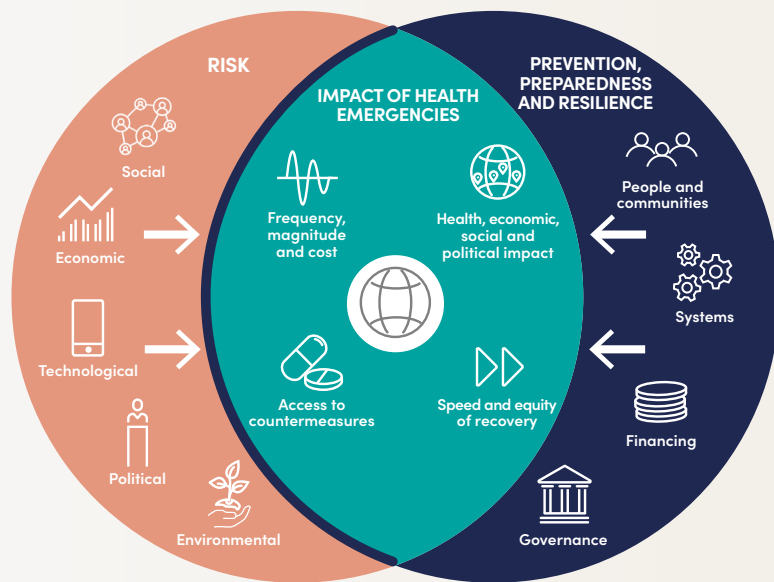
The GPMB intended the Framework's three areas to be reviewed continuously, to allow progress and changes in pandemic risk to be tracked over time. However, resource constraints hampered this and curtailed its vision for a broad, independent and diverse coalition of experts to strengthen the evidence base, alongside a dashboard that could present key findings and trends closer to real time.

Building the GPMB Monitoring Framework

Building on five early priority areas and lessons from COVID-19 and other outbreaks, GPMB developed a Monitoring Framework to underpin its independent assessments, recommendations and political advocacy.

Developed through two years of expert consultations and commissioned analyses, its 90 indicators cover risk drivers; prevention, preparedness and resilience capacities; and impacts, across national, regional and global levels and the sectors and systems shaping pandemic risk (See Figure 2).

Figure 2. Structure of the GPMB Monitoring Framework



2021–
2023

2023

First application of the Framework

The Monitoring Framework was launched in May 2023 and first applied in the 2023 GPMB report *A Fragile State of Preparedness*. It assessed 30 indicators of prevention, preparedness and resilience capacities at the national, regional and global levels. The assessment combined extensive expert analysis with a four-day consultation to test and refine the evidence, inform scoring, and underpin the report's findings and recommendations.

2024

Expanding to the drivers of health emergency risk

The 2024 GPMB report applied the risk drivers dimension of the Framework. This marked an important evolution in monitoring: moving beyond preparedness capacities to examine the wider social, technological, environmental, economic and political ('STEEP') factors shaping pandemic risk.

2026

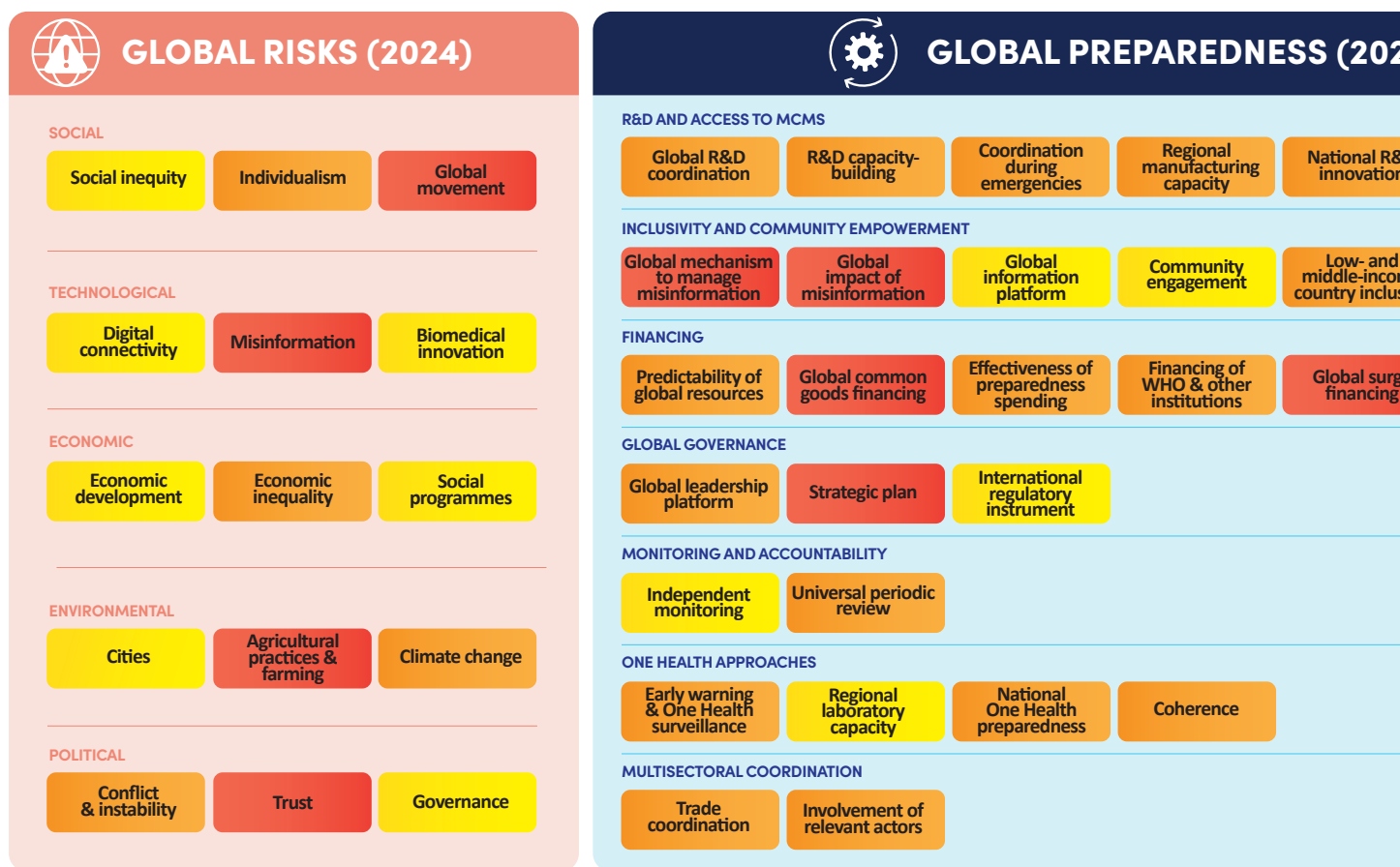
Assessing impacts

The 2026 GPMB report applied the final section of the Framework, focusing on the impacts of pandemics and other health emergencies. Together, the 2023, 2024 and 2026 reports provided a comprehensive picture of pandemic risk across drivers, preparedness and resilience capacities, and impacts.

WHAT 8 YEARS OF GPMB HAVE TAUGHT US

A high-level overview of GPMB's assessments of global

Figure 3. Three dimensions of the GPMB Monitoring Framework



Over the past eight years, the GPMB has assessed more than 50 indicators through its Monitoring Framework, building an increasingly comprehensive picture of global pandemic risk. Viewed together, the assessments show how underlying risk drivers, weaknesses in preparedness and adverse impacts intersect to create persistent vulnerabilities across the global system. **Figure 3** provides a high-level overview of the GPMB's assessments across the three dimensions of its Monitoring Framework.

Across the Framework, several clear patterns emerge:

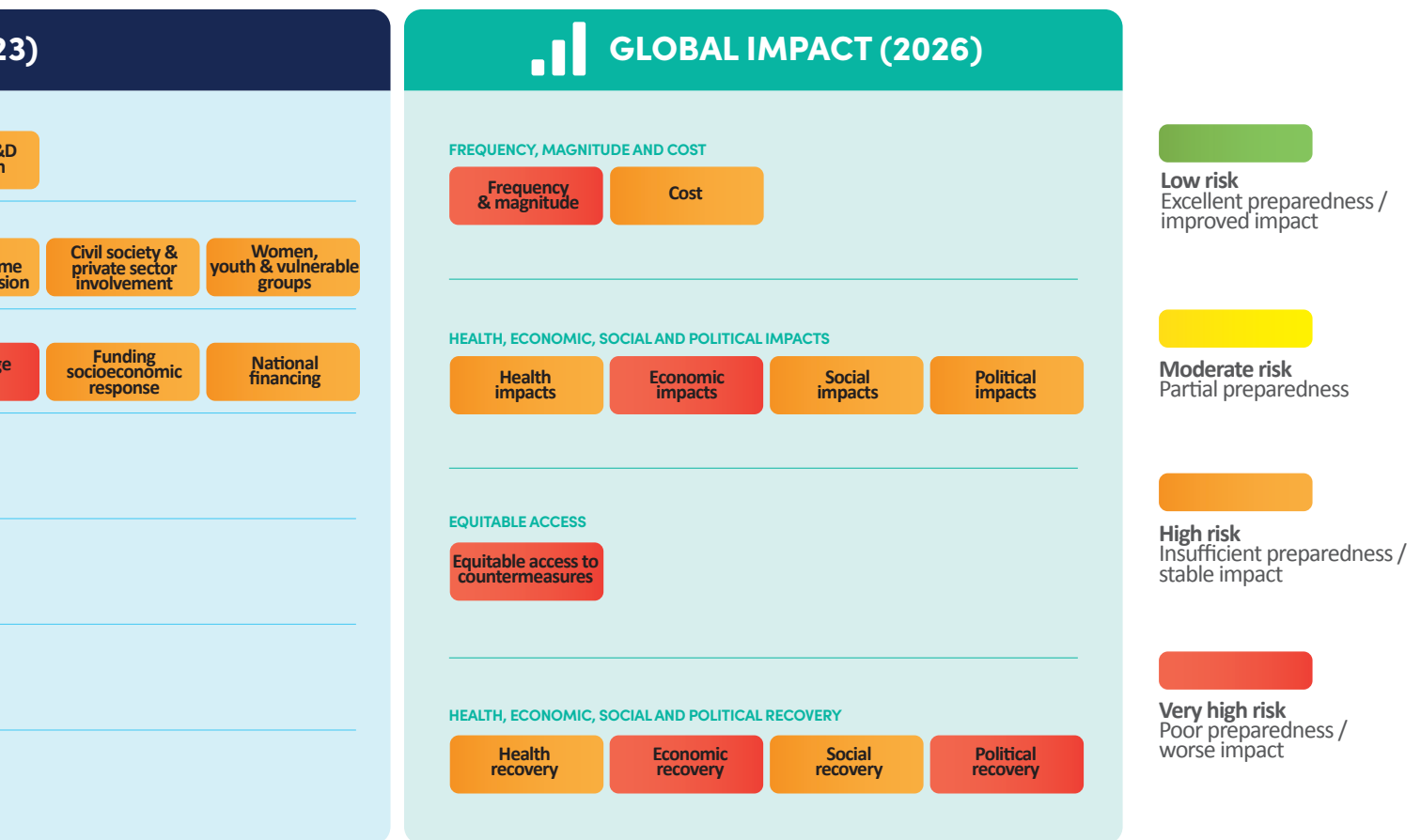
- **Mistrust cuts across risk, preparedness and impact.** Misinformation and mistrust are major drivers of pandemic risk, yet weak community engagement and information management suggest that preparedness efforts are not doing enough to build and sustain trust

in an increasingly difficult information environment. Worsening political recovery shows how fragile that trust can remain during and after health emergencies.

- **Inequity is a system-wide vulnerability,** from high economic inequality and weak inclusion in preparedness to worsening of equitable access to medical countermeasures and economic recovery. R&D, emergency coordination and manufacturing capacity have improved from a low base, but these technical gains are not yet translating into more equitable outcomes.
- **Risks are becoming cross-sectoral faster than preparedness is becoming multisectoral.** Global movement and environmental drivers such as agricultural practices are intensifying interconnected risks, but One Health preparedness and multisectoral

GPMB MONITORING

Risks, preparedness and impact



coordination remain particularly weak, leaving the world less equipped to respond as emergencies become more frequent and severe.

- **The worsening financing environment may be limiting the ability to prevent economic vulnerabilities from translating into worse outcomes.** Preparedness financing is insufficient across several dimensions, economic inequality is high, and both economic impacts and economic recovery are worsening. This suggests that weak financing continues to constrain resilience before, during and after health emergencies.
- **Despite increasing interdependence that has made collaboration even more important, the will to act collectively is deteriorating.** Many of the forces shaping pandemic risk are global in nature and require collective action, yet preparedness for

international cooperation is uneven across areas such as R&D coordination, financing, emergency coordination and trade.

The Monitoring Framework assessments reveal a global system in which pandemic risk is multisectoral, interconnected and poorly managed. Across the different dimensions assessed, the picture is one of significant underlying risk, widespread gaps in preparedness and adverse impacts, with recurring weaknesses in trust, equity, financing, multisectoral action and global cooperation.

WHAT WE LEARNED ADVOCACY

Over the course of its work, GPMB has issued 32 main recommendations and 93 sub-recommendations targeting gaps identified through its monitoring. Six themes recur: sustainable financing; equitable access to medical countermeasures; the One Health approach; international cooperation, including IHR implementation; multisectoral engagement; and monitoring.

These areas were consistently identified by the Board as most critical to strengthening PPPR. Progress with the implementation of GPMB recommendations illustrates both the impact and limitations of the GPMB's work and provides lessons on how a future global monitoring mechanism can be designed to strengthen accountability and action.

All 32 main GPMB recommendations have seen progress, but only two have been fully achieved.⁷ This reflects the long and uneven pathway from recommendation to sustained change. The GPMB experience demonstrates that progress in PPPR typically moves through three stages: commitment, architecture, and implementation. Governments, institutions, donors and stakeholders first agree on priorities, then establish the institutions, rules and resources needed to act, and finally operationalize them in practice. Progress at one stage enables but does not guarantee progress at the next. Commitments can often be secured relatively quickly (one to two years), while institutional change

and sustained implementation take longer (two to four years and up to 10 years respectively).

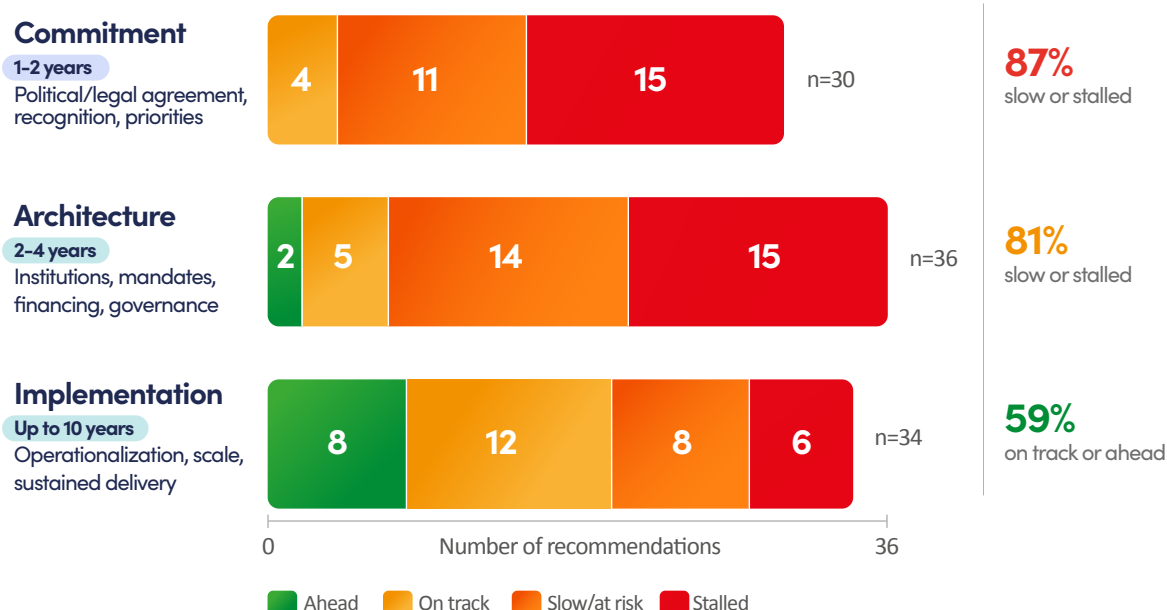
The GPMB recommendations were assessed against this timeline through a maturity analysis, which considers whether the progress achieved is consistent with what could reasonably have been expected, given the type of change required and the time elapsed since the recommendation was made. Recommendations were classified according to whether they require political commitment, new institutional architecture or sustained implementation.

Figure 4 shows the status of GPMB recommendations across each stage (commitment, architecture and implementation). Overall, the maturity analysis shows that 31% of GPMB recommendations are on track or ahead of their expected trajectory, while 69% are progressing more slowly than expected or appear to have stalled.

In terms of stage, 59% of *implementation* recommendations are on track or ahead of their expected timelines, but 87% of *commitment* recommendations are progressing too slowly or have stalled. This can

⁷ Both recommendations are from the 2021 report and call for the establishment of a standing committee on health emergencies under the WHO Executive Board, an increase in WHO assessed contributions, and the establishment of a collective financing mechanism for preparedness.

Figure 4. Maturity analysis: Progress on GPMB recommendations by stage



FROM OUR GPMB

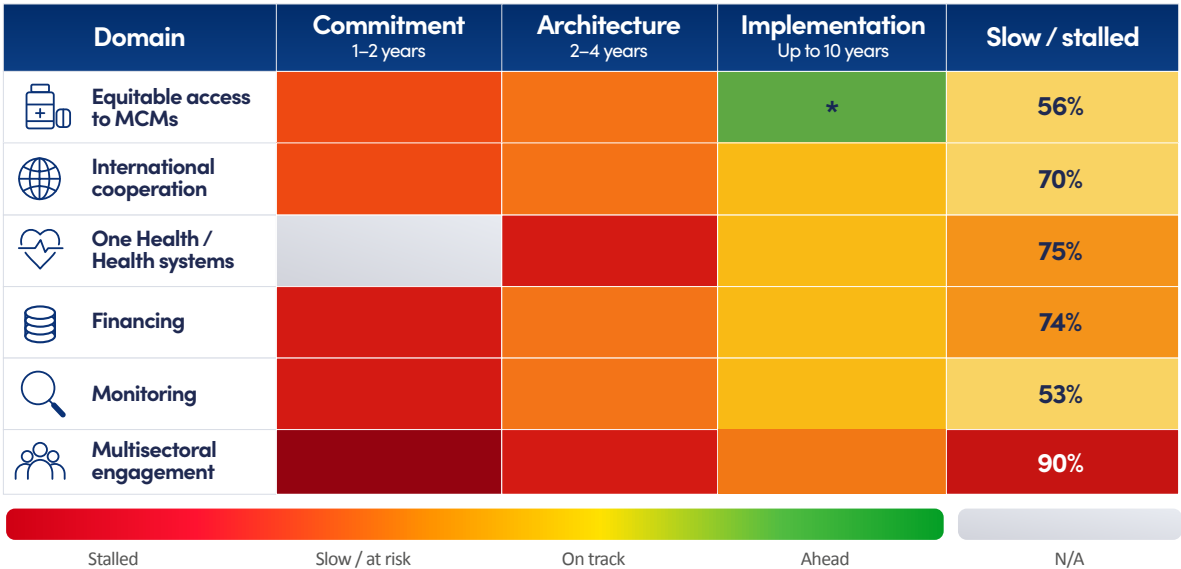
appear counterintuitive: commitments could be expected to advance more quickly than architecture or implementation. This suggests that the main bottlenecks increasingly lie upstream. In the current political environment, it may be easier to improve or expand existing policies, mechanisms and practices than to secure the political and institutional buy-in needed for new commitments and architecture. Slow progress at the commitment stage raises concern about future preparedness reforms, since further institutional change and implementation ultimately depend on stronger political commitment.

Figure 5 presents the maturity gaps (the difference between observed and expected progress) across the six domains prioritized by the GPMB, disaggregated by stages. It highlights how delays in securing commitments are translating into slower progress across all areas of PPPR reviewed by the Board. Because of weak high-level commitments, multisectoral engagement and One Health remain weakly institutionalized, with fragmented mandates, budgets and accountability. Financing reforms are constrained by insufficiently strong, predictable and sustained political commitments, which leads to gaps in financing. International cooperation has advanced through the UN high-level meetings on PPPR and Pandemic Agreement but remains vulnerable to geopolitical tensions and inadequate institutional arrangements.

Implementation of recommendations on monitoring has advanced substantially, but durable political backing and stronger links to accountability and decision-making remain limited. Equitable access to medical countermeasures shows strong momentum, although important elements remain unresolved and will depend in part on the outcome of the Pathogen Access and Benefit-Sharing (PABS) negotiations.

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All 32 main GPMB recommendations have seen progress, but only two have been fully achieved.
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Figure 5. Gaps in progress on GPMB recommendations (observed vs expected progress) by domain and stage



**This ranking reflects progress against GPMB recommendations on equitable access to medical countermeasures and should not be interpreted as indicating that equitable access has been achieved. The GPMB remains deeply concerned about the limited overall progress in ensuring equitable access to medical countermeasures.*

A FINAL REFLECTION ON OUR 8 YEARS

Overall, important advances were made on the GPMB's recommendations during its eight-year mandate, including a new international agreement and financing mechanisms, stronger pandemic intelligence and monitoring, and progress in medical countermeasures and One Health (see Annex 2).

However, these gains remained uneven and insufficient relative to the scale and pace of change required. The maturity analysis indicates that the principal constraint has not been a lack of credible evidence, but the capacity and political will to convert it into sustained political commitment, institutional accountability and action. The experience of the GPMB therefore points to a central lesson for future monitoring: identifying risks and priorities is necessary, but monitoring will have limited impact unless it is connected more directly to political and institutional processes.

Through eight years of monitoring and advocacy, the GPMB has learned important lessons about preparedness and what it takes to drive collective action

KEY INSIGHTS FOR THE NEXT GLOBAL MONITORING MECHANISM

Its experience shows that making the world safer from pandemics depends not only on stronger preparedness capacities, but on political commitment, effective institutional arrangements, trust, and the ability to act collectively and adapt as risk evolves. Another central lesson is that the world cannot afford to operate in the dark: effective preparedness depends on a clear, timely and comprehensive understanding of how pandemic risk is changing, where vulnerabilities are emerging, and where action is most urgently needed.

In its 2026 report *A World on the Edge*, the GPMB called for the establishment of an independent, credible, transparent and comprehensive global risk monitoring mechanism, powered by cutting-edge, reliable AI and digital tools, anchored in the World Health Assembly and formally linked to the UN General Assembly and relevant international policy fora for trade, finance, security, agriculture, animal health and environment.

Through its work, the GPMB has identified five key insights that should guide the design and development of this mechanism.

1

Pandemic risk monitoring must have clear and reliable pathways into political processes, institutions and leadership structures to ensure independent evidence turns into sustained political attention, accountability and action

Monitoring cannot stop at identifying risks and issuing warnings: it must keep emerging risks and persistent gaps visible to decision-makers between crises and help create pressure for action when progress is insufficient. The GPMB's work shows that evidence influences action only when it reaches and engages the political processes where priorities are set, responsibilities are assigned and progress is reviewed.

Implications

Because pandemics are ultimately a health risk, the pandemic risk monitoring mechanism should be formally established and mandated by Member States through the World Health Assembly (WHA). Its findings should be reported regularly to the WHA and systematically feed into relevant intergovernmental processes such as the States Parties Committee for the Implementation of the IHR (2005) and the Pandemic Agreement's future Conference of Parties, as well as relevant technical processes supporting PPPR agenda setting and implementation.

The mechanism should have a formal mandate to report to the UN General Assembly through the WHA and to the governing bodies of agencies that are central to a multisectoral response. It should also have robust institutional links with the G20, the BRICS+ countries, ASEAN, the African Union, and international financial institutions. For example, the mechanism should align its reporting cycles with major political moments, transmit its findings and recommendations formally, and use these institutions' agendas, political processes and review mechanisms to secure political attention and follow-up.

The mechanism should move beyond identifying risks and gaps to generating politically actionable analysis and policy options that can drive PPPR commitments and support implementation. Its findings should be connected through clear pathways to political review, decision-making, accountability and follow-up action. In addition, the mechanism should rank the overall severity of pandemic risk, with higher risk levels designed to trigger urgent action by relevant political bodies and institutions.

2

INSIGHT 2

The pandemic risk monitoring mechanism must provide an integrated view of the many sectors, vulnerabilities and systems that shape pandemic risk

Pandemic risk is inherently multisectoral, shaped by interacting social, technological, environmental, economic and political conditions. PPPR must therefore bring together sectors, especially health, agriculture, environment, finance, trade, transport, and security, each of which influences how risks emerge, spread and are managed. Monitoring therefore needs to look beyond health-sector capacities to assess preparedness across sectors, and examine the economic, social, political and institutional conditions that shape whether those capacities can function effectively in practice.

Implications

The pandemic risk monitoring mechanism must integrate data, analysis and perspectives across sectors. It should draw on a broad range of expertise (including in health, R&D, agriculture, environment, finance, trade, transport, social protection, education, food systems, and security) and involve relevant institutions from across these sectors, especially the Food and Agriculture Organization, the International Monetary Fund (IMF), the UN Environment Programme, the United Nations Population Fund (UNFPA), UNICEF, UN Women, the World Organisation for Animal Health, the World Intellectual Property Organization, the World Bank and the World Trade Organization, in the generation and interpretation of evidence. It should also connect with and draw from existing monitoring mechanisms across sectors, so that relevant signals, trends and assessments can be brought together into a single coherent picture of pandemic risk.

Its findings should reach beyond health-sector governance, with clear pathways for reporting to and informing the governing bodies and decision-making structures of relevant organizations across sectors, as emphasized in insight 1. This will help ensure that pandemic risk is understood as a shared responsibility, and that findings inform action by the actors with the mandates and resources to address the different drivers of risk and gaps in preparedness.

3

INSIGHT 3

Pandemic risk monitoring must capture the full risk continuum, from threat through vulnerability to action

Pandemic risk arises from the interaction of evolving risk drivers and the ability of PPPR systems to manage them. The analyses from this report show that risk depends not only on the nature and scale of threats and vulnerabilities, but also on whether commitments are made to mitigate these risks, whether institutions and resources are put in place to deliver them, and

whether action follows. To make the world safer, these elements must form a virtuous chain: risks are identified early, translated into political commitments, supported by effective architecture, implemented in ways that strengthen PPPR, and ultimately result in lower vulnerability and reduced impact.

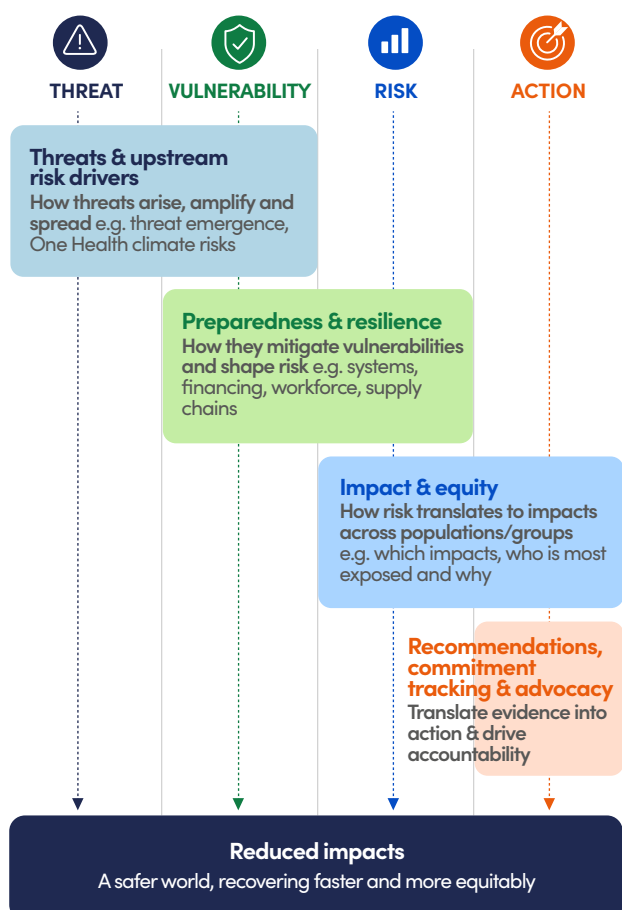
Implications

The pandemic risk monitoring mechanism should go beyond monitoring preparedness capacities; it must follow the full continuum from risk to action and impact (See Figure 6). It should track upstream risk drivers, preparedness and resilience capacities, impacts and inequalities, and the political and institutional action taken in response. For example, the mechanism should monitor financing and equitable access across the full continuum.

Sustained, standardized monitoring is needed to move from snapshots of pandemic risk to an understanding of its trajectory. Consistent assessment of a stable core of indicators can show whether risk drivers are intensifying, preparedness is strengthening, persistent gaps are being addressed and impacts are being reduced. Pandemic risk monitoring should therefore be continuous, with regular reporting that identifies emerging risks, persistent weaknesses and areas requiring corrective action, tracks implementation of PPPR commitments, and translates these findings into clear policy options and recommended actions for decision-makers.

The GPMB Monitoring Framework provides a proven starting point for this approach, demonstrating how risk drivers, preparedness and impact can be brought together within a common analytical framework. Future monitoring should build on this work while consistently tracking a stable core of indicators over time and retaining sufficient flexibility to incorporate new risks, evidence and priorities as the pandemic risk landscape evolves.

Figure 6. A comprehensive framework for monitoring pandemic risk: from threat to vulnerability to action



INSIGHT 4

4

Pandemic risk monitoring must harness new AI and digital technologies to bring the vast but fragmented evidence together into a coherent picture of risk

No single institution, dataset or perspective can capture the full spectrum of pandemic risk. Using multiple sources provides a more complete and accurate picture of pandemic risk. AI and digital technologies can help bring fragmented information together, translate complex evidence into timely intelligence for decision-makers, and help to address data and knowledge gaps. As climate science has shown, robust risk assessment can integrate qualitative evidence with the quantitative evidence available today, becoming progressively more robust as data, methods and modelling capabilities evolve.

Implications

The pandemic risk monitoring mechanism must also be able to draw together evidence that is dispersed across institutions, sectors and datasets. The GPMB's experience shows that, despite persistent data gaps, sufficient information already exists to generate a meaningful picture of pandemic risk when evidence from multiple institutions, datasets and expert inputs is systematically brought together.

The priority is therefore not simply to generate more data, but to connect, analyse and interpret the evidence that already exists; to build on and connect existing monitoring initiatives rather than establish parallel systems. The mechanism should therefore operate under a federated model, accessing, coordinating and synthesizing information from all relevant existing national, regional and international efforts to provide a more holistic analysis of pandemic risk and to identify critical gaps.

AI and digital technologies can strengthen this federated model by enabling the synthesis of large and diverse bodies of evidence, supporting more timely and integrated analysis of pandemic risk across sectors, and surfacing issues that emerge at the intersection of different risks, vulnerabilities and systems. This can help turn a fragmented monitoring landscape into a more coherent picture of global risk, allowing the mechanism to build on existing institutions, data and expertise rather than duplicating them.

To support this, AI and digital technology capacity will need to be built across institutions and countries, data quality and interoperability must be improved, and common standards for the responsible and effective use of these tools will need to be established. Importantly, the value of these insights will ultimately depend on whether they are sufficiently trusted and understood to inform policy and action, particularly in contexts of uncertainty and mistrust (see Insight 5).

5

INSIGHT 5

Global pandemic risk monitoring must be independent and transparent to strengthen trust in how risk is assessed, understood and acted upon

Where mistrust itself contributes to pandemic risk, credible information is essential for rebuilding trust and enabling collective action. Self-reporting by countries and institutions is essential, but it should be complemented by independent global monitoring that can assess evidence objectively, challenge assumptions, identify gaps and speak clearly when progress is insufficient. Independence from political and institutional interests strengthens confidence in findings and helps ensure that difficult or politically sensitive risks remain visible.

Monitoring should also make credible evidence accessible to political leaders, policy-makers and communities so that all actors can work from a shared understanding of risk. Preserving trust as AI is integrated into pandemic monitoring will require independent and transparent oversight: without clear governance, these technologies could weaken incentives to share data, enable misuse of pandemic-response technologies, leave countries dependent on technologies and expertise they do not control, and create new biosafety and biosecurity risks as they converge with biological science.

Implications

A pandemic risk monitoring mechanism should operate with political, financial and institutional independence and transparency, underpinned by diversified donors, transparent governance and expert input. It should involve a broad range of experts across countries, regions, sectors and disciplines, combining diverse perspectives and expertise with multiple data sources and transparent methods to generate credible analysis. The mechanism will depend on the technical work of organizations such as WHO, but should provide an independent layer of analysis that brings evidence together across institutions, identifies multisectoral gaps and draws system-wide conclusions that no single organization can provide on its own.

The mechanism should ensure that countries have equitable access to data, information and monitoring analyses. It should also promote countries' access to the analytical capacity and expertise needed to interpret that evidence and translate it into action. It should communicate findings in ways that are technically credible, policy-relevant and accessible to the public.

AI and digital technologies (see Insight 4) should be leveraged in ways that advance information equity, with their benefits shared broadly across countries and institutions. This will require building AI and digital analytical capacity across countries and institutions and ensuring equitable access to the tools, infrastructure and expertise needed to use them effectively. It will also require governance that ensures transparency, equity and accountability in how data is owned, accessed and used, how algorithms are selected and applied, and how AI-generated signals inform analysis and policy action.

AI-supported assessments should be clearly evidenced and documented, based on transparent methodologies that are auditable where appropriate. These assessments should be subject to meaningful human oversight to validate findings, interpret uncertainty and context, and to determine how risk signals are translated into recommendations and action.

Closing reflection

Eight years of GPMB monitoring provide a clear message: the world has more knowledge, tools and preparedness mechanisms than it did in 2018, but pandemic risk remains broad, interconnected and insufficiently managed

The world is changing: it is becoming more volatile, uncertain and complex. It needs clearer, more timely and more actionable warnings about pandemic risk. But the harder challenge is ensuring that those warnings translate into decisions, commitments and action before a crisis exposes the consequences of inaction. Future pandemic risk monitoring must therefore do more than generate evidence and identify risk: it must help countries and institutions recognize how risk is changing, confront persistent weaknesses, and act early enough to prevent or reduce their impact. Ultimately, however, it is the responsibility of countries, institutions and other stakeholders to ensure that monitoring findings are translated into decisions, commitments, resources and action.

AI and digital technologies are changing the possibilities for global pandemic risk monitoring. They can enable more continuous intelligence, faster synthesis of evidence across sectors and institutions, and earlier identification of emerging risks and PPPR gaps. This creates an opportunity to provide a more timely and adaptive picture of risk, helping PPPR respond more quickly as the risk environment evolves.

The closure of the GPMB must mark a transition to a new independent mechanism that is well suited to this new global context, not an end of pandemic risk monitoring. Eight years of experience have demonstrated the value of sustained, comprehensive, multisectoral and independent assessment, but also the need for monitoring that is more continuous, politically connected and capable of driving action. The task now is to carry those insights forward to develop a mechanism that can help the world anticipate pandemic risk earlier and act faster.

GPMB purpose and membership

The GPMB is an independent monitoring and accountability body to ensure preparedness for global health crises, co-convened by the World Health Organization and the World Bank Group. The Board provides an independent and comprehensive appraisal for leaders, key policy-makers and the world on system-wide progress towards increased preparedness and response capacity for disease outbreaks and other emergencies with health consequences. The Board monitors and reports on the state of global preparedness across all sectors and stakeholders, including the UN system, government, non-governmental organizations, and the private sector.

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Annexes

These annexes provide an overview of the methodology for the different sections of this report



Annex 1—Methodology

Learnings from GPMB Monitoring Framework assessments

The GPMB Monitoring Framework provides a multisectoral, whole-of-society assessment of pandemic risks, capacities and impacts at global, regional and national levels. It comprises 90 indicators organized across three dimensions: **Risk; Prevention, Preparedness and Resilience; and Impact**.

- **Risk** includes 15 indicators across five pillars: social, technological, economic, environmental and political determinants.
- **Prevention, Preparedness and Resilience** includes 70 indicators assessing systems, governance, financing and community capacities, using quantitative and qualitative evidence.
- **Impact** includes five indicators assessing the consequences of health emergencies, including their frequency and severity, as well as their health, social, economic and political effects, with a particular focus on recovery and equity.

The GPMB has systematically applied each component of the Framework in successive reports. The 2023 report assessed 30 indicators identified as particularly relevant to equity, leadership and accountability, and coherence. The 2024 report assessed the global state of pandemic risk, and the 2026 report focuses on the impacts of health emergencies and the implications for preparedness. In each assessment, relevant indicators were scored and presented as heatmaps.

For this analysis, the heatmaps from the three reports were compiled into a single dataset and reviewed across Framework dimensions and indicators. Scores were compared across the assessments to identify patterns over time and across different components of pandemic preparedness, risk and impact.

Assessing progress on the GPMB recommendations

To assess progress in implementing its recommendations, the GPMB conducted a **maturity analysis**. The analysis considers whether the progress observed is consistent with what could reasonably have been expected, given the type and scale of change required and the time elapsed since the recommendation was made.

The analysis is based on the premise that progress in PPPR generally develops through three stages: **commitment, architecture and implementation**.

Commitment refers to the political or legal recognition of a priority and agreement on the action required. This may include the adoption of political or legal agreements, endorsement of priorities or principles, or recognition of intended actions, responsibilities or obligations.

Architecture refers to the institutional, governance, coordination, financing and other arrangements needed to translate commitments into action. This may involve creating new institutions or mechanisms, adapting existing ones, establishing rules and responsibilities, or putting in place the systems and resources required for delivery.

Implementation refers to putting those commitments and arrangements into practice. Depending on the recommendation, this may range from a discrete operational action, such as conducting an exercise, issuing guidance or making a specific financial contribution, to the sustained implementation, scaling or institutionalization of changes across countries, institutions or systems.

This reflects a broadly common pathway through which major reforms develop. Governments, institutions, donors and other stakeholders first agree on priorities and commitments; establish or adapt the institutions, rules, governance arrangements and resources needed to deliver them; and then operationalize, scale and sustain the resulting changes in practice. These stages are not always strictly sequential and may overlap, but they provide a useful framework for assessing the maturity of reform.

A review of recent global health reforms and initiatives suggests that major **political commitments** can often be secured within approximately **one to two years**, although complex legal instruments and treaty negotiations may take longer. Establishing and maturing the **institutional and governance arrangements** required to translate those commitments into action typically takes approximately **two to four additional years**. **Implementation** generally takes longer (**up to 10 years**) and varies substantially depending on the nature, scale and complexity of the change required. To account for this variation, five broad categories of implementation were identified, each associated with an indicative timeframe:

- Discrete operational action: 2–3 years
- Coordinate, operationalize or roll out a mechanism: 2–5 years
- Scale and sustain across countries or institutions: 3–7 years
- Embed a sustained system function: 5–10 years
- Achieve system-wide transformation or durable change: 10+ years

These timeframes are intended as analytical benchmarks rather than fixed deadlines. They were derived from a review of recent reforms and initiatives across global health, including the negotiation and adoption of the WHO Pandemic Agreement; the establishment and operationalization of the Pandemic Fund; the adoption of recent political declarations on global health priorities; the adoption, implementation and revision of the International Health Regulations (2005); the establishment and evolution of the Global Fund and Gavi; the negotiation, adoption and implementation of the WHO Framework Convention on Tobacco Control; and the adoption and implementation of the Global Action Plan on Antimicrobial Resistance, among others.

Based on this framework, the GPMB assessed progress against its recommendations. Over the course of its mandate, the GPMB issued 32 main recommendations and 93 sub-recommendations. For the purposes of the analysis, these were converted into units of assessment. Where a main recommendation contained specific sub-recommendations, only the sub-recommendations were assessed; where no sub-recommendations were specified, the main recommendation itself was treated as the unit of assessment. This generated **100 discrete units of assessment**.

Each of the 100 assessment units (recommendations and sub-recommendations) was reviewed across five dimensions:

- (1) the stage of change to which it primarily corresponded: commitment, architecture or implementation;
- (2) its start year, using the earliest relevant year in cases where a recommendation had subsequently been reiterated or reissued;
- (3) the expected reform trajectory and corresponding timeframe, based on the type of change required;
- (4) the level of progress observed to that point in time, scored on a four-point maturity scale: (**achieved = 3, in progress = 2, partial progress = 1, or no progress = 0**); and
- (5) the gap between observed progress and the level of maturity that could reasonably have been expected given the reform trajectory and the time elapsed.

To determine the observed maturity of each recommendation, the GPMB conducted a review of available evidence of progress against each assessment unit, including relevant policy and legal developments, institutional and governance changes, financing arrangements, implementation reports, evaluations and other documented actions. Progress was assessed against the substantive change called for in the recommendation. Each unit was then scored based on the four-point maturity scale.

The expected maturity for each recommendation was assessed assuming a linear trajectory of progress over the expected reform timeframe. The expected maturity score was calculated by dividing the time elapsed since the beginning of the reform trajectory by the expected horizon for that type of change and multiplying by three, corresponding to the maturity scale of zero to three. Expected maturity was capped at three once the expected reform horizon had been reached. The calculation therefore provides a benchmark for the level of progress that might reasonably be expected at a given point in a reform trajectory, rather than assuming that every recommendation should already have been fully implemented.

$$\text{Expected maturity} = 3 \times (\text{years since reform trajectory began} \div \text{expected reform horizon})$$

For each assessment unit, a **maturity gap** was then calculated by subtracting expected maturity from observed maturity:

$$\text{Maturity gap} = \text{observed maturity} - \text{expected maturity}$$

The resulting gap was used to classify progress according to predefined thresholds:

- **Ahead:** maturity gap $\geq +0.5$
- **On track:** maturity gap ≥ -0.5 and $< +0.5$
- **Slow/at risk:** maturity gap ≥ -1.5 and < -0.5
- **Stalled:** maturity gap < -1.5

This approach means that the status of a recommendation reflects not simply the absolute level of progress achieved, but whether that progress is broadly consistent with what could reasonably have been expected given the type of reform, its anticipated timeframe and the time elapsed since the reform trajectory began.

Table 1. Maturity gap scores (observed vs expected progress) by domain and stage

Domain	Commitment 1–2 years	Architecture 2–4 years	Implementation Up to 10 years
Equitable access to MCMs	–1.20	–0.96	+0.52
International cooperation	–1.00	–1.11	–0.30
One Health / Health systems	N/A	–1.83	–0.03
Financing	–1.73	–1.11	–0.59
Monitoring	–2.00	–1.56	–0.13
Multisectoral engagement	–2.50	–1.60	–0.78

Annex 2—Key evidence informing the assessment of progress on GPMB recommendations, by domain

Domain	Evidence of progress
Independent monitoring	Development of WHO Dynamic Preparedness Metrics and the WHO Pandemic Risk-Need Metric; use of risk and needs metrics by the Pandemic Fund; development of the G20 Financing for Emergencies, Vulnerabilities and Response Framework; inclusion of implementation-review arrangements in the WHO Pandemic Agreement; completion of an independent review of the GPMB in 2024; publication of the 2025 WHO-OECD-World Bank assessment of PPPR financing.
International and national financing	Establishment of the Pandemic Fund in 2022, with more than US\$2.1 billion mobilized and support provided to national, multi-country and regional projects; progressive increase in WHO-assessed contributions; integration of preparedness into International Development Association priorities and financing; increased multilateral development bank co-financing for PPR and health-system resilience; use of the IMF Resilience and Sustainability Trust/Facility to support preparedness; establishment of domestic contingency funds in approximately 40% of countries.
Multisectoral engagement	Inclusion of National IHR Authorities in the amended IHR to coordinate implementation across government; establishment of the G20 Joint Finance-Health Task Force; updated Inter-Agency Standing Committee Level 3 emergency protocols; adoption of the Quadripartite One Health Joint Plan of Action 2022–2026; establishment of the Risk Communication and Community Engagement Collective Service with a social science pillar; development of new national and regional One Health coordination initiatives.
Equitable access to medical countermeasures	G7 support for the 100 Days Mission; implementation of Coalition for Epidemic Preparedness Innovations 2.0; strengthening of the WHO R&D Blueprint and updating of the priority pathogen list; development of the interim Medical Countermeasures Network; inclusion of provisions on R&D, technology transfer, equitable access and flexibilities in Trade-Related Aspects of Intellectual Property Rights in the WHO Pandemic Agreement; establishment of negotiations on the PABS system; development of the African Medicines Agency, the African Vaccine Manufacturing Accelerator and Africa CDC manufacturing initiatives.
International cooperation	Convening of UN High-Level Meetings on PPPR and adoption of the 2023 Political Declaration; revision of the IHR and adoption of the WHO Pandemic Agreement; introduction of the ‘pandemic emergency’ determination in the amended IHR; establishment of the WHO Standing Committee on Health Emergency Prevention, Preparedness and Response; creation or strengthening of coordination mechanisms including the G20 Joint Finance-Health Task Force, the G7 Global Health Security Mechanism, Africa CDC and HERA.
One Health and health systems	Development of National Action Plans for Health Security in 95 countries and completion of REMAP resource mapping in 30 countries; conduct of simulation exercises in 94 countries since 2020; adoption of the Quadripartite One Health Joint Plan of Action and development of new national One Health initiatives; establishment of the WHO Hub for Pandemic and Epidemic Intelligence; work to expand the Global Influenza Surveillance and Response System and other information-sharing platforms; increased investment by the Pandemic Fund, Africa CDC and Gavi, the Vaccine Alliance in surveillance, data and analytical capacity; increase in global social protection coverage from 46.9% in 2020 to 52.4% in 2023.



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