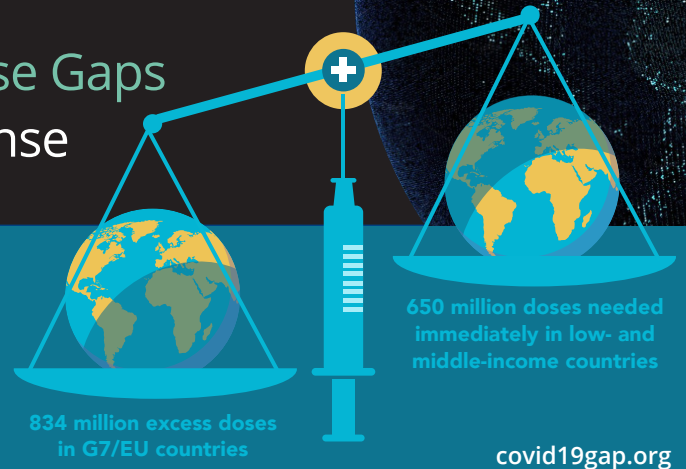




# Holding the World to Account: Urgent Actions Needed to Close Gaps in the Global COVID-19 Response

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## Executive Summary

The [COVID Global Accountability Platform](#) (COVID GAP) serves as an external, independent hub for tracking and catalyzing effective actions to meet and increase commitments to achieve the critical global COVID-19 response goals. COVID GAP will curate multiple sources of data to analyze progress over time, including successes and opportunities for improvement; provide evidence-driven insights and actionable recommendations to accelerate progress globally; and drive collaborations among diverse public and private sector organizations and leaders, including national and regional leaders in low- and middle-income countries (LMICs). COVID GAP is a joint initiative of [Duke University](#) and [COVID Collaborative](#). This initial report describes our approach and presents our early findings:

- More than 22 months into the COVID-19 pandemic, the world continues to struggle to enact a coordinated, effective, and equitable response. Many goals, commitments, and pledges remain largely unfulfilled, resulting in persistent gaps between needs and actions to end the pandemic. This includes the critical goal of achieving 40 percent vaccination coverage in every country by the end of 2021, and 70 percent coverage by mid-2022.
- Nearly all low-income countries, including most African countries, are at high risk of not reaching the 40 percent vaccination target by the end of 2021 (Fig. 1). The distribution of doses has been inequitable, with high-income countries receiving much more than needed and low-income countries falling short of needed doses.
- Factoring in expected COVAX deliveries, 650 million additional doses are required for at-risk countries to reach the target (Fig. 2). This gap can be filled by the

Group of Seven (G7) and European Union (EU) countries, which will have a combined excess of about 834 million doses of authorized high-quality vaccines by year-end, even when taking into account boosters, vaccinations for children, and contingencies (Fig. 3).

- Urgent redistribution of this excess supply can correct the inequitable distribution of doses. G7 and EU countries can (1) “queue shift” expected deliveries from manufacturers to prioritize immediate deliveries to the African Vaccine Acquisition Trust, COVAX, and countries with unfulfilled contracts, and (2) accelerate delivery of pledged donations.
- Sending doses to fill supply gaps is not sufficient. Countries need greater advance notice of deliveries, particularly on expected delivery schedules and dose expiration dates, to plan for distribution and vaccination. To ensure that doses get from airports to arms, there must be substantially increased financial and operational support for mass vaccination programs, guided by health leaders from LMICs.
- For other lifesaving interventions – including oxygen, therapeutics, and diagnostics – globally- agreed, evidence-based, quantifiable targets are needed urgently to drive increased commitments and actions for these critical components of the pandemic response.
- Much has been discussed about future pandemic preparedness, but little action has been taken. Initial steps, including building local vaccine manufacturing capacity and surveillance and rapid response systems, should be transformed into clear resilience goals and commitments for action to achieve them.

## Introduction

Over the past two years, the COVID-19 pandemic has resulted in over 250 million reported cases, more than five million reported deaths, and trillions of dollars in lost economic activity. Unprecedented scientific achievements have led to the development of highly effective and safe vaccines, promising therapies, and other critical interventions such as diagnostics, yet the world continues to struggle to enact a coordinated, effective, and equitable response. The widening gap between vaccine haves and have-nots around the world has prolonged the pandemic, worsened global inequity, and risks the emergence of additional variants that could pierce vaccine immunity. There is growing evidence that in some locations, such as Europe and North America, a new wave of infections is underway.

**The path from commitments to achievement of the critical goals to contain the pandemic worldwide is far from clear.**

Global leaders have come together to commit to actions to address critical gaps. The World Health Organization (WHO), the Group of Twenty (G20), and participants at the [Global COVID-19 Summit](#) have endorsed the goal of achieving 40 percent vaccination coverage in every country by the end of 2021, and 70 percent coverage by mid-2022. Global leaders also have committed to take steps to save lives by providing oxygen, diagnostics, therapies, and other critical equipment; and to strengthen pandemic preparedness and health systems. Significant pledges and commitments have been made, in particular to provide vaccines. The ACT-Accelerator ([ACT-A](#)) has undertaken a strategic review and released a new strategy and budget. But many goals, commitments, and pledges remain largely unfulfilled, resulting in persistent gaps between needs and actions to end the pandemic.

More data and information have become available about the extent of current gaps, [including](#) through [dashboards](#) and other [trackers](#) that monitor progress on various aspects of the pandemic (see Appendix). However, these measures are not consistently resulting in improved decision-making, investments, and policies. As a result, the path from commitments to achievement of the critical goals to contain the pandemic worldwide is far from clear. To address persistent challenges in transparency

and accountability for progress toward global goals, US Secretary of State Blinken announced at the Foreign Ministerial meeting on 10 November the launch of the [Global COVID-19 Access Tracker](#), coordinated by ACT-A and the Multilateral Leaders Task Force (MLTF).

We believe there remains an urgent need for external, independent mechanisms to provide analysis and accountability for implementation of actions to end the pandemic. The [COVID Global Accountability Platform](#) (COVID GAP) seeks to address this need. COVID GAP aims to curate multiple sources of data to analyze progress over time, including successes and opportunities for improvement; provide evidence-driven insights and actionable recommendations to accelerate progress globally; and drive collaborations among diverse public and private sector organizations and leaders, including national and regional leaders in low- and middle-income countries (LMICs), to guide and galvanize actions that hold the world to account. COVID GAP is a joint initiative of Duke University and COVID Collaborative. To achieve its goals, COVID GAP is collaborating with The Rockefeller Foundation, the Bill & Melinda Gates Foundation, and multiple public and private sector stakeholders.

In this initial report, we provide evidence and insights to guide actions on vaccine supply, distribution, delivery and demand. We focus our initial analysis and resulting recommendations on steps that the G7 and EU countries, as well as other global actors, can take immediately to meet the urgent challenge of reaching 40 percent vaccination coverage in every country by the end of 2021 – a critical milestone on the journey to ending the pandemic everywhere. We also describe opportunities to drive global access to therapeutics, diagnostics, and oxygen; and actions to strengthen pandemic preparedness and health systems. We provide additional analysis and interactive data visualizations (updated weekly) on the COVID GAP website.

Over the coming weeks, COVID GAP will partner with a broad spectrum of stakeholders, especially in LMICs, to further develop the accountability platform, prioritize topics and issues, and provide expanded analysis, visualization, insights, and recommendations to accelerate effective pandemic response and preparedness. This effort will include near-term convenings, jointly with national, regional, and global leaders, focused on identifying critical country-level bottlenecks for vaccination and ways to alleviate them in order to accelerate vaccination efforts.

## Vaccines and Vaccinations

### Most Low-Income and African Countries Are at High Risk of Missing the 40% Vaccination Target

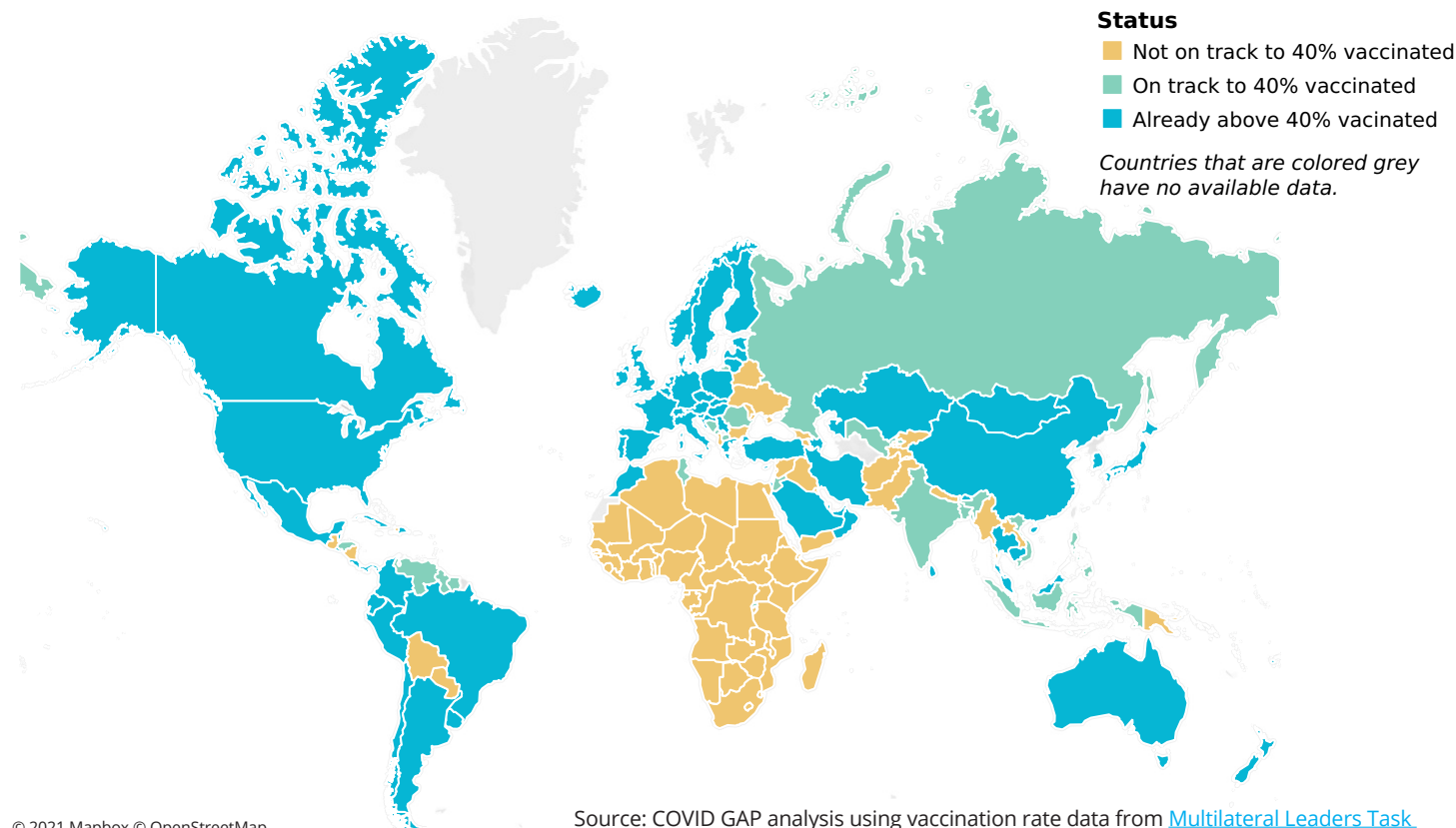
Based on current vaccination rates, nearly all low-income countries, including most African countries, are not on track to reach the 40 percent vaccination target by the end of 2021 (Fig. 1). In contrast, almost all (96 percent) high-income countries already have surpassed 40 percent vaccination coverage, most by wide margins (Source: [Multilateral Leaders Task Force on COVID-19](#)). Our analysis shows that 82 countries across income categories are not on track to meeting the 40 percent

target by the end of the year, similar to the 74 countries reported by the Global COVID-19 Access Tracker.

Further, among the 92 countries covered by the [COVAX Advance Market Commitment](#) (AMC92 countries), the median vaccination coverage is just 11 percent. With less than seven weeks left in 2021, the outlook for these countries is grim. The 40 percent vaccination target will not be reached during 2021 or even by early 2022 without a clear action plan at local, regional, and global levels, significant increases in vaccine supplies, and the resources and capabilities to distribute and use them.

**Figure 1**

### Which countries are on track to fully vaccinate 40% of their population by the end of 2021?



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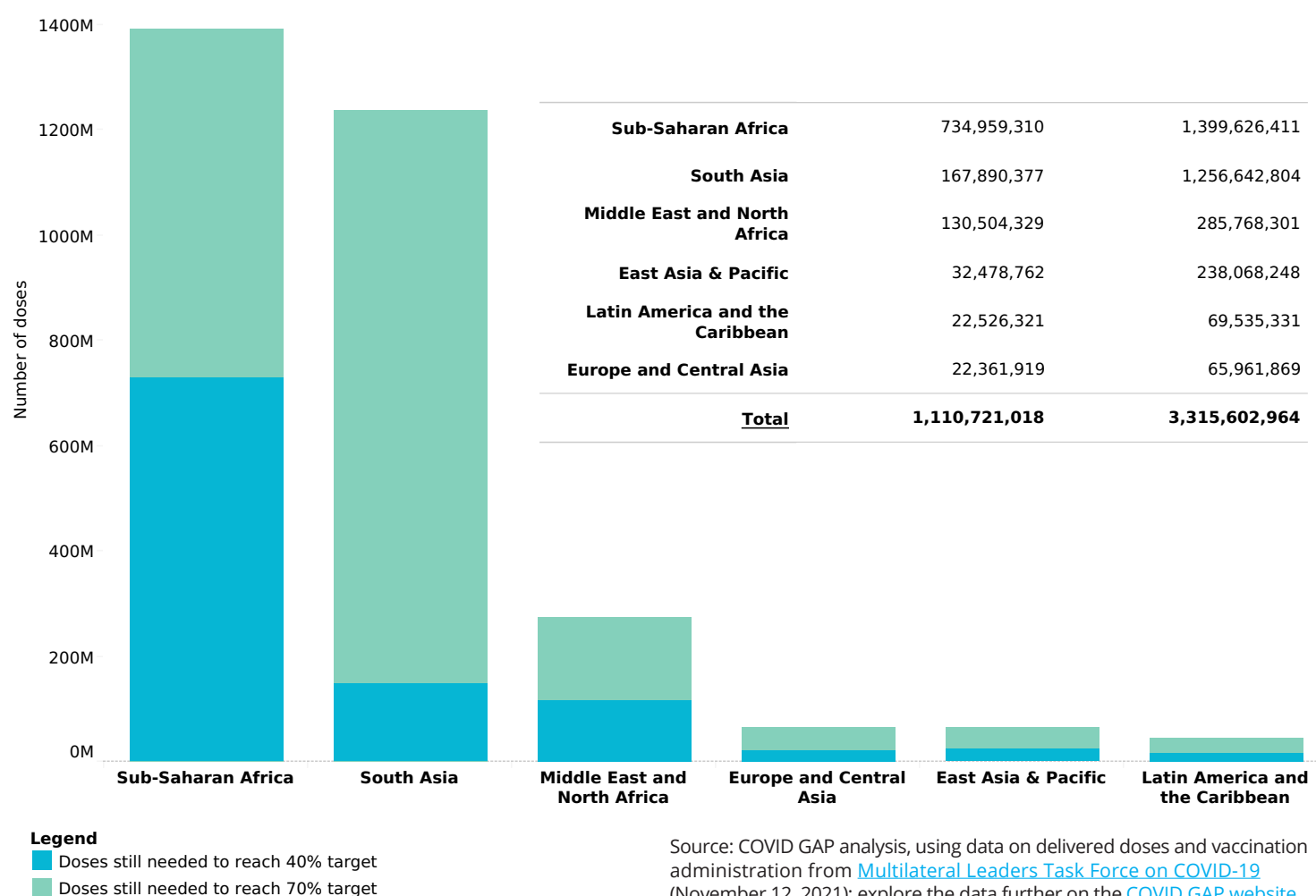
Source: COVID GAP analysis using vaccination rate data from [Multilateral Leaders Task Force on COVID-19](#) (November 12, 2021); explore data further on the [COVID GAP website](#).

Vaccination in many regions of the world remains constrained by lack of adequate supply (Fig. 2). In total, countries short of the 40 percent target still need 1.05 billion doses in additional vaccine supply. For most of these countries, the gaps in supply are due to lack of timely delivery of already purchased (or allocated) doses. Additional deliveries from COVAX by the end of 2021 are expected to address only part of this need.

The Global COVID-19 Access Tracker suggests a supply gap in the range of 514 million to 660 million doses; our analysis indicates that countries will need 650 million doses, in addition to COVAX deliveries, to reach 40 percent coverage (Source: COVID GAP analysis based on WHO, IMF data). Most of these countries are in sub-Saharan Africa and South Asia.

**Figure 2**

## Number of doses that still need to be delivered to reach the 40% and 70% targets (per World Bank Region)



## Rapid Redistribution of G7/EU Excess Supply is Necessary to Close the Vaccine Gap

We estimate that excess supply of authorized vaccines across G7 and EU countries will likely be at least 834 million doses by the end of 2021 (Fig. 3). This calculation assumes countries retain enough supply to achieve 75 percent vaccination coverage (including children) and 20 percent booster coverage by end of 2021. We also include a 10 percent contingency and account for donations that have already been shipped. Our calculation of excess doses is conservative in that it accounts for another 800 million doses in G7 and EU countries by end of December, beyond the 1.4 billion

doses administered to date, allowing for a four-fold increase from the current daily vaccination rates (currently ~3.5 million doses daily across G7/EU). Given that [supply](#) will continue to ramp up in 2022, excess G7/EU doses will increase even as booster coverage increases.

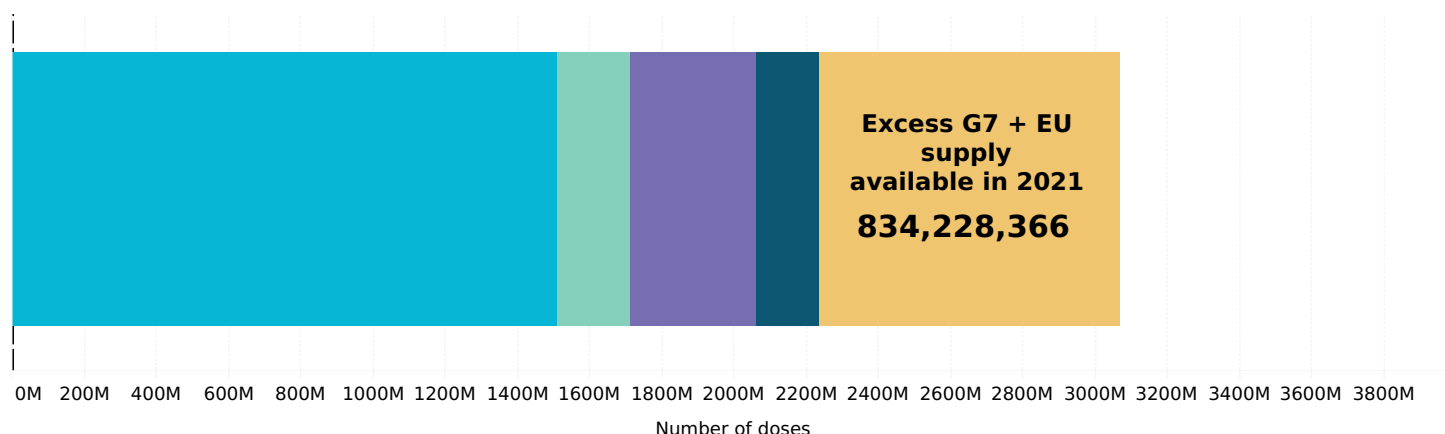
We thus project that the excess doses available in G7 and EU countries will be enough to fully close the 650 million dose supply gap for LMICS to reach the 40 percent vaccination target by the end of the year.



**Figure 3**

### Excess G7 and EU supply available in 2021

*Taking into account doses needed to fully vaccinate 75% of the G7 and EU population and provide boosters for 20%, as well as a 10% contingency*



#### Legend

- Doses needed to fully vaccinate 75% of total G7+EU population
- Doses needed to provide boosters to 20% of total G7+EU population
- Doses donated (shipped not pledged)
- 10% contingency (wastage, additional demand)
- Excess G7+EU supply available in 2021

**Projected number of doses needed by countries (after COVAX deliveries) to reach 40% coverage is 650 MILLION**

Source: COVID GAP analysis, using donations data from [Launch and Scale Speedometer](#), an initiative of the Duke Global Health Innovation Center (November 12, 2021), explore the data further on the [COVID GAP website](#).

As noted above, only a small percentage of pledged doses from G7 countries have been shipped to LMICs to date. Taken together, the G7 countries have shipped about 319 million donated doses so far in 2021, only about 20 percent of what the countries have collectively pledged (Fig. 4). The United States is a clear leader, having pledged 1.1 billion doses and delivered more donated doses (about 235 million doses by the second week in November) than any other country has even pledged.

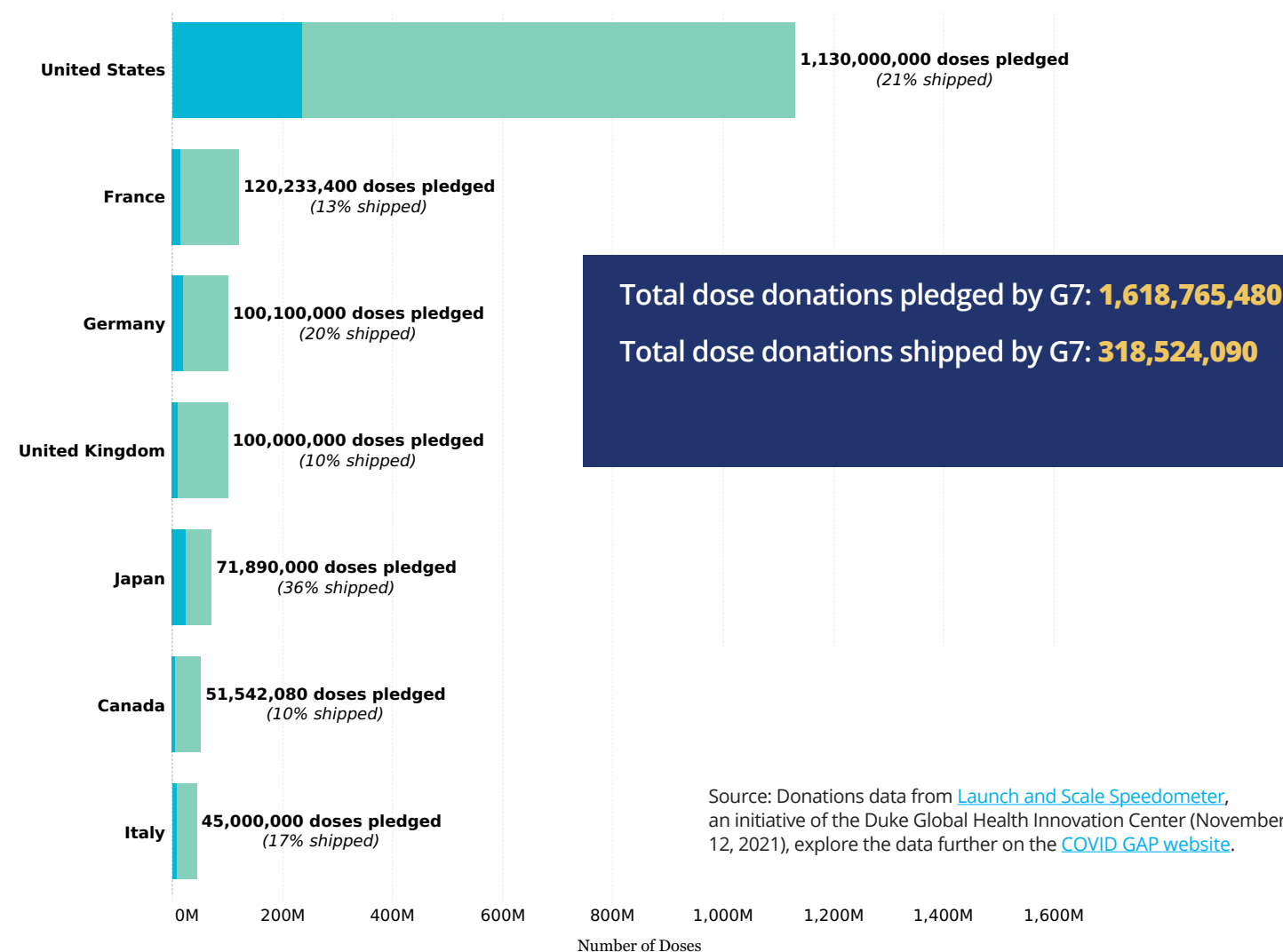
High-income countries have continued to endorse the 40 percent vaccination target without undertaking actions with the necessary scale and urgency to realistically achieve it. To close the supply gap to reach 40 percent coverage by year end, the United States and other G7/EU countries will need to accelerate the delivery of at least 650 million doses through donations and “queue shifting,” as the [US recently did](#), when it deferred delivery of some

of its contracted Moderna doses to prioritize dose delivery to the African Union.

Our calculations rely on publicly available information, which is not comprehensive, timely, or consistently available across countries. Additional transparency from high-income countries and manufacturers, especially on monthly vaccine production, allocation, and delivery, is necessary for more accurate analysis, effective planning, and greater accountability.

**High-income countries have continued to endorse the 40% vaccination target without undertaking actions with necessary scale and urgency to realistically achieve it.**

**Figure 4**  
**Donation pledged and shipped by G7 countries**



### Urgent Action is Needed to Strengthen Vaccine Distribution, Delivery, and Demand Generation

Delivering doses to countries with vaccine shortages is critical, but only a first step; the next challenge is getting these doses from airports into arms. Bottlenecks reported by AMC92 countries include erratic and unpredictable deliveries, short shelf life for vaccines delivered close to expiry dates, lack of vaccinators and support workers (particularly to address supply surges), limited data systems to track doses and potential adverse events, and challenges in vaccine acceptance and misinformation (Source: COVAX alliance partners).

Because of these bottlenecks, especially lack of consistent and predictable supply, half of the AMC92 countries are using less than 75 percent of the supply on hand as of November 10, 2021 (Source: provisional data reported to or aggregated by COVAX alliance partners; note that percent utilization can be skewed downward if large shipments have arrived recently, as lead time is required prior to vaccine administration). Countries need advance notice of deliveries, a predictable supply schedule, and adequate time to distribute and



administer doses before expiration. Manufacturers and delivering entities, such as COVAX, should provide specific forecasted dose delivery schedules with expiry dates, so countries can plan for prioritization and effective rollout of vaccines.

Countries also need adequate complementary supplies such as syringes to turn doses into vaccinations. Shortages of syringes are anticipated due to increased vaccine production and high demand, disruptions to global supply chains, and bans on syringe exports (Source: [UNICEF](#)). Projections suggest that supplies are adequate for 2021 but that there will be a shortfall of between one and two billion syringes by the end of 2022 (Sources: [PATH](#), [Gates Foundation](#) and [UNICEF](#)). This shortfall will be a significant bottleneck to global vaccination efforts without immediate action to increase manufacturing supply, prioritize syringes and other medical equipment in international shipping, and expanded use of alternative syringe types.

Additionally, priority must be given to strengthening countries' last mile distribution and delivery capabilities. Large-scale vaccination requires significant cold chain

capabilities, distribution plans, a vaccinator workforce, data infrastructure, and public education and communication. COVID GAP is engaging directly with leaders of vaccine programs in LMICs and at regional levels to develop a stronger evidence base of the needs and challenges on the ground in these areas and the swiftest path to overcoming them.

**Priority must be given to strengthening countries' last mile distribution and delivery capabilities.**

Closing the vaccination gap will require increased financial and operational support. These resources can come from more concerted multilateral and bilateral efforts, such as our proposed [US Emergency Plan for Global COVID-19 Relief](#). An agreed-upon cost estimate would also help drive further commitments and accountability.

## Recommendations to Accelerate Global Vaccination

### 1. Improve transparency on vaccine production, supply, and allocation to drive stronger accountability and more effective vaccination planning and implementation

**ACTIONS:** Donating countries and vaccine manufacturers should publicly report monthly expected and actual delivery data with 3-6 month projections, leveraging existing platforms such as the EU-US joint COVID-19 Manufacturing and Supply Chain Taskforce and COVAX Manufacturing Task Force.

### 2. Allocate rapidly increasing supply of vaccines more equitably and urgently

**ACTIONS:** Ensure immediate delivery of vaccines to countries facing supply gaps, including redistribution of approximately 834 million excess doses from G7/EU nations to the 82 countries at risk for missing the 40% vaccination target for end of 2021, through a combination of queue shifting for undelivered doses as well as more urgent shipping of donations from existing excess doses. Manufacturers should also prioritize immediate delivery to countries at highest risk of missing the 40% vaccination target, largely working through AVAT and COVAX.

### 3. Strengthen country-level capabilities and capacity to ensure effective, efficient vaccination

**ACTIONS:** Increase visibility and analysis of country-level disaggregated data; engagement across public and private sectors to enable a cohesive whole-of-society approach; and targeted support through multilateral and bilateral initiatives and platforms, for more effective vaccination campaigns. COVID GAP will shortly undertake convenings jointly with national, regional, and global leaders to move this effort forward.



## Other Lifesaving Interventions

The pandemic cannot be defeated with vaccines alone. Urgent action is needed to ensure widespread and equitable access to other lifesaving measures, including therapeutics, diagnostics, and oxygen.

### Urgent Steps Needed to Assure Equitable Access for Coming Therapeutics

The need to ensure timely and equitable global access of promising new oral antiviral therapies is urgent. Multiple therapies for early treatment of COVID-19 disease are expected to be available in the near future and hold promise to prevent severe disease and death. The first two such drugs have been developed by Merck (Lagevrio; molnupiravir) and Pfizer (Paxlovid; PF-07321332/ritonavir). Both Merck and Pfizer have submitted applications for US FDA Emergency Use Authorization. Merck received its [first regulatory authorization](#) in the United Kingdom (UK) for use in adults with COVID-19 and at least one risk factor for developing severe disease.

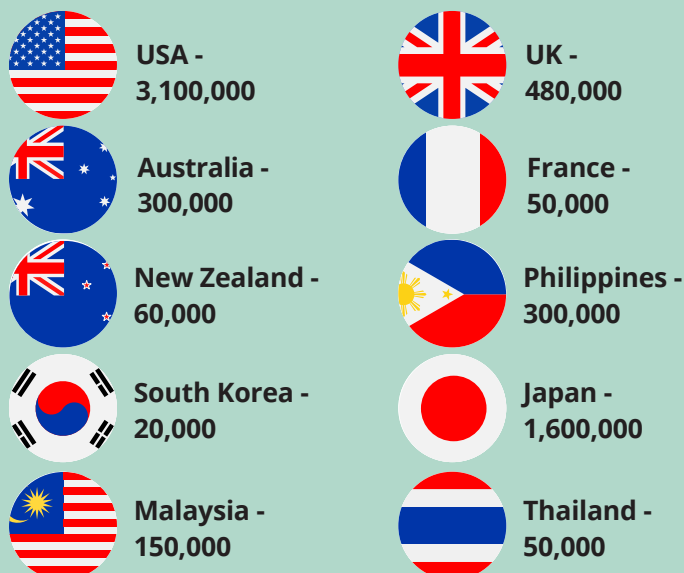
These drugs have the potential to be game-changers in the management of COVID-19, particularly in LMICs where there is limited capacity for using infused treatments, such as monoclonal antibodies. The likely broad indication for use, and the potential to prevent severe disease, will translate to a substantial public health need for these therapies. At some point, they may be recommended for prophylaxis of high-risk contacts of COVID-19 cases. Given the lifesaving potential of these therapeutics, it is critical that the same mistakes made with the global distribution of COVID-19 vaccines are not repeated.

A full course for both the Merck and Pfizer therapies consists of five days of treatment. Merck is ramping up its [manufacturing capacity](#) and plans to produce 10 million courses in 2021 and 20 million in 2022. Much, if not all, of this supply is likely to be contracted to high-income countries, with global sales already topping 6 million courses. To increase manufacturing and access globally, Merck – with financing support from the Bill & Melinda Gates Foundation – has partnered with eight large Indian drug makers and the Medicines Patent Pool to provide royalty-free licensing of molnupiravir in 105 countries. Pfizer [expects to manufacture](#) 180,000 courses of Paxlovid by year-end and 50 million courses in 2022, with at least 21 million courses available by the end of June 2022. It has also signed a voluntary licensing agreement with the Medicines Patent Pool covering 95 countries. The US is [expected](#) to procure 10 million courses of Paxlovid.

## Advanced Purchases of Molnupiravir

Molnupiravir is an antiviral pill from Merck\* for the treatment of mild-to-moderate COVID-19 in high-risk adults.

### Purchasing Country - Confirmed Number of Courses



\*known as MSD outside of the US and Canada

Further steps are needed to assure adequate and equitable production and delivery of these and future oral COVID-19 therapeutics. This begins with refining an evidence-based target for access, and assessing whether plans to produce or provide therapeutics are adequate to meet them. The ACT-A therapeutics pillar [aims](#) to enable access to up to 113 million treatment courses for mild and moderate COVID cases in the next 12 months. At the Global COVID-19 Summit, the US proposed that global stakeholders donate and deliver \$1 billion in courses of authorized COVID-19 therapeutics for LMICs by 2022 and \$2 billion in 2022. Until production contracts are in place, it is difficult to translate these targets into number of courses; the expected price of Merck's molnupiravir from generic manufacturers in India is approximately [\\$20 per course](#). Prices for Paxlovid, if authorized, are still unknown but Pfizer has committed to a tiered pricing structure.

Commitments are not yet tied to an evidence-based assessment of likely LMIC need. More rigorous modeling of projected cases in higher-risk individuals, which would be consistent with the emergency authorization indication for molnupiravir in the UK, should be used to refine estimated demand and set agreed-upon targets. COVID



GAP will undertake efforts to estimate evolving global demand based on indications for emerging therapeutics and inform more detailed target-setting.

To meet global demand, technology transfer to LMIC manufacturers must happen quickly to ensure adequate manufacturing capacity in the next year. Rapid, large-scale manufacturing of these small-molecule drugs is feasible, if production agreements and supply chain issues are resolved soon. For oral antivirals, there is much to learn from the scale-up of HIV/AIDS therapies, and the opportunity to leverage capabilities of The Global Fund and the US President's Emergency Plan for AIDS Relief (PEPFAR) to support more effective and accelerated access.

**Without the rapid development of evidence-based targets and an action plan for access to COVID-19 oral therapeutics – and associated diagnostic testing – allocation of therapeutics will be inequitable.**

Without the rapid development of specific, evidence-based targets and an action plan for access to COVID-19 oral therapeutics, including associated diagnostic testing, allocation of therapeutics will be inequitable, furthering the disparities in COVID-19 impact and outcomes across countries. Transparency on manufacturing and supply also will be essential to prevent inequitable allocation. As we build out the COVID GAP platform, we will track global supply, manufacturing, and distribution of new antiviral treatments.

### **Need for Substantially Increased Testing Capacity**

Commitments on therapeutics must be supported by a corresponding increase in timely testing capacity. Effectiveness of the antivirals requires that they are administered within a limited time period after the start of symptoms. Consequently, effective use will require enhanced access to diagnostic testing and timely reporting of results, ideally pairing rapid testing with access to drugs. In addition, testing is needed for screening in settings that face high-risk outbreaks.

**Without significantly increased testing capacity, countries will continue to struggle to contain spread and risk becoming super-incubators.**

Without significantly increased testing capacity, countries will continue to struggle to contain spread and risk becoming super-incubators.

The international COVID-19 diagnostics and testing landscape is complex; there are multiple dimensions to consider in assessments of testing capacity and need, such as type of test (e.g., PCR versus rapid antigen), diagnostic versus screening and surveillance testing, and requirements for test administration. Around the world, even among high-income countries, proposed targets and approaches vary significantly.

The [Global COVID-19 Access Tracker](#) confirms that there is alignment from ACT-A, MLTF, and the Global COVID Summit on a target for a daily testing rate of 1 in 1,000 people in all countries (also stated as 100 in 100,000 in the ACT-A strategy). This testing rate is less than one-seventh the current rate in high-income countries, highlighting the scale of global disparities.

Data from FIND, a global alliance for diagnostics and co-lead of the ACT-A diagnostics pillar, indicate that many countries are far from meeting this target. Low-income countries are conducting only an average of 6.5 tests per 100,000 people per day (Source: [FIND](#); last updated November 15, 2021). Not surprisingly, big gaps in the data exist – almost half of all sub-Saharan African countries do not have available testing data on the FIND tracker.

The ACT-A strategy set the following targets: procuring 988 million tests over the next 12 months, supporting the development and local manufacturing of three new point of care tests, and expanding genomic sequencing capacity to reach at least 75 percent of countries. The ACT-A diagnostics pillar estimates it will need \$7 billion to execute its strategy, with the majority of the budget allocated for procurement, including for approximately 600 million tests. However, the total funding needed to increase diagnostic capacity is not known.

Consequently, more data should be obtained to assess whether commitments and funding for increased testing capacity will provide reasonable access to timely testing, a topic that COVID GAP will address in the coming weeks. In the meantime, to increase testing capacity, there is need for additional funding for capacity development in laboratories supported by PEPFAR and other global programs, and increased procurement and deployment of rapid point-of-care tests authorized in G7 and EU countries as manufacturing capacity rises.



## Oxygen: Globally Agreed Targets Needed to Drive Action

As countries are waiting for vaccines and therapeutics, with inadequate testing to detect infections and cases, COVID-19 continues to cause severe illness. In many LMICs, hospitals have faced shortages of oxygen during surges. Despite the critical need for medical oxygen in the COVID-19 emergency response, oxygen has received comparatively less attention in terms of targets, commitments, and funding from the global community.

The most recent [projection](#) (November 15, 2021) from PATH's COVID-19 Oxygen Needs Tracker estimates that across all LMICs there is a need for 8.5 million cubic meters of oxygen per day to treat COVID-19 patients, at an annual cost of \$1.7 billion. This projection does not include oxygen needed for non-COVID illness and is thus an underestimate of the true need.

The revised ACT-A strategy sets a target of supporting delivery of 110 to 140 million cubic meters of oxygen to LMICs by the end of 2021 and expanding access to six to eight million severe and critical COVID patients

by September 2022. At the Global COVID-19 Summit, the US proposed a vague target to “make oxygen readily accessible for inpatient health facilities in all countries in the near-term and no later than 2022.”

**There are still no broadly-accepted, evidence-based goals for oxygen access.**

These targets are a start, but still no broadly accepted, evidence-based goals for oxygen access exist. Better data at the country level, and models based on expected case and vaccination rates, would help to inform the development of such targets and concrete actions to meet them.

## Recommendations to Improve Access to Other Lifesaving Interventions

### 1. Establish clear, measurable, time-bound targets to meet need for therapeutics, diagnostics, oxygen, and other critical interventions in LMICs based on improved evidence

**ACTIONS:** Set clear targets at subnational, national, regional, and global levels, building from ACT-A targets; track progress, identify and prioritize necessary actions, and promote learning and collaboration, through the Global COVID-19 Access Tracker and complementary efforts such as COVID GAP; and coordinate and expand multilateral and bilateral initiatives, along with support from the private sector, to address the need for therapeutics, diagnostics, oxygen, and other life-saving interventions in LMICs.

### 2. Ensure effective and equitable approach to access to emerging oral therapeutics

**ACTIONS:** Establish licensing and manufacturing of emerging oral therapeutics in LMICs from the beginning, and leverage HIV/AIDS response learnings and capabilities to accelerate scaled roll-out of oral antiviral therapies.

### 3. Strengthen data and evidence, and peer learning opportunities, at national and sub-national levels, on LMIC challenges to and best practices for sufficient supply and equitable access to therapeutics, diagnostics and oxygen, in order to empower more effective national, regional, and global response

**ACTIONS:** Establish diverse collaborations, especially with LMIC-based organizations, to curate and disaggregate public and private sources of data for therapeutics, diagnostics, oxygen, and other critical interventions, in order to better identify and prioritize gaps at subnational levels; and expand learning platforms for LMICs to identify gaps, prioritize actions, share exemplars and best practices.



## Pandemic Preparedness and Health Systems Strengthening

Pandemic response and preparedness are intertwined: the best way to prepare for future pandemics is to invest in a more robust and equitable global infrastructure to accelerate an end to the pandemic.

At the Global COVID-19 Summit in September, the US proposed a target of establishing a global health security financial intermediary fund (FIF) in 2021, aligned with recommendations from the G20 High-Level Independent Panel. The US aims to have at least 30 countries and at least 10 organizations sign on to establish the FIF and provide seed funding in 2021. The US made an initial pledge of \$250 million to this fund and the Biden administration plans to request an additional \$800 million from Congress. No other countries have yet made a financial commitment to this proposed fund. Instead, at its summit at the end of October, the G20 merely established a Joint Finance-Health Task Force, which is charged to work on establishing a financial facility for pandemic prevention, preparedness, and response. The task force is to report back to G20 leaders in early 2022, with no action steps yet identified.

Without action in the coming months on financing and governance for pandemic preparedness and global health security, global leaders will miss another critical window of opportunity to develop coordinated and equitable approaches to address future threats. COVID GAP will continue to monitor progress and highlight opportunities for further action.

Without action in the coming months, global leaders will miss another critical window of opportunity to develop coordinated and equitable approaches to address future threats.

Expanding regional vaccine manufacturing capacity in LMICs is a critical strategy to promote equitable access to vaccines and therapeutics, both for the current pandemic and for future needs. This need is particularly acute in Africa, where the lack of regional manufacturing capacity has been associated with the continent's difficulty in obtaining timely, high-quality COVID-19 vaccines. The US announcement that it will invest to expand US-based vaccine manufacturing capacity by at least 1 billion additional doses annually is also a positive step, and could support broader global access to mRNA vaccines. However, it will not replace the critical need for LMIC-based manufacturing to address regional needs as well as more equitable access.

The Africa CDC and African Union launched the Partnerships for African Vaccine Making (PAVM) in April 2021 with the goal to manufacture about 60 percent of Africa's vaccines on the continent by 2040. Funders and governments have responded with pledges of support to develop vaccine manufacturing in Africa, including \$1.3 billion from the Mastercard Foundation, €1 billion (USD 1.1 billion) from the European Commission, and €600 million (USD 682 million) from The World Bank, the US, Germany, and France together.

## Recommendations to Strengthen Future Pandemic Preparedness

### 1. Grow substantially LMIC-based manufacturing capacity as a critical component of longer-term pandemic response and future preparedness

**ACTIONS:** Increase LMIC manufacturing capacity urgently through public and private investment licensing agreements, transfer of know-how capacity-strengthening, and regulatory support; set regional targets and implementation plans for regional vaccine production – for example, a path to producing COVID-19 vaccines in African facilities in 2022 and achieving production capacity for a substantial share of the continent's overall vaccine needs in five to ten years.

### 2. Establish stronger governance and financing structures for global health security

**ACTIONS:** Leverage World Health Assembly Special Session in November/December 2021 and other upcoming action-forcing events to demonstrate progress toward more effective global governance and financing models, including commitment of additional funding, for global health security and pandemic preparedness; and continue to emphasize the critical need for urgent, effective pandemic response as an important driver of future pandemic preparedness.



In conjunction with these financial commitments, additional efforts are underway to grow LMIC-based manufacturing capacity. The US, Japan, Australia, and India are partnering to increase India-based Biological E. Limited's COVID-19 vaccine manufacturing capacity to 1 billion doses in 2022. Pfizer and BioNTech recently [announced](#) agreements with Rwanda and Senegal to build local mRNA manufacturing capacity, which is in addition to the companies' agreement with [BioVac Institute](#) in Cape Town, South Africa. Johnson & Johnson and Aspen Pharmaceuticals are in talks about a [voluntary licensing agreement](#) to expand Aspen's fill-and-finish plant in South Africa to include manufacturing of viral vector

vaccines, with an expected production of 1.3 billion doses annually by 2024. Moderna stated plans to build an mRNA vaccine production site in Africa but has not yet selected a country or taken any further steps toward production. These efforts represent important but not yet fulfilled opportunities to improve timely vaccine availability for future health needs in Africa and Asia, with some potential for impact as soon as 2022 and 2023.

## Conclusion

World leaders have met many times now, including at G7 and G20 meetings, the Global COVID-19 Summit and follow-up Foreign Ministerial meeting, and ACT-A, UN and WHO convenings. They have offered lofty rhetoric about global equity while providing fragmented commitments to actions that will end the pandemic. These efforts have not fundamentally changed the trajectory of the pandemic – they continue to be too little, too late, across the board. We have a growing evidence base of progress and continued gaps, and know the actions necessary to address urgent needs. The science and the resources are available to address these challenges. Yet, we continue to lack the leadership and political will – fundamentally, a problem of governance and accountability.

COVID GAP aims to serve as the evidence engine for accountability and action, partnering with diverse global stakeholders to translate evidence-driven insights and recommendations into concrete steps that can end the pandemic. Additionally, updated information, analyses, and visualizations can be accessed through the [COVID GAP website](#). In collaboration with partners, these analyses will expand over the coming weeks to encompass all the key pillars of an effective global response. We encourage readers to provide feedback and collaborate with us to strengthen accountability for needed action to end the pandemic – everywhere.

World leaders have met many times and have offered lofty rhetoric about global equity while providing fragmented commitments to actions that will end the pandemic. These efforts have not fundamentally changed the trajectory of the pandemic – they continue to be **too little, too late.**



## Acknowledgements

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## Disclosures

**Mark B. McClellan, MD, PhD**, is an independent director on the boards of Johnson & Johnson, Cigna, Alignment Healthcare, and PrognomiQ; co-chairs the Guiding Committee for the Health Care Payment Learning and Action Network; and receives fees for serving as an advisor for Arsenal Capital Partners, Blackstone Life Sciences, and MITRE.

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### Covid Collaborative

The [COVID Collaborative](#) is a national, bipartisan assembly of experts, leaders and institutions in health, education, and the economy united to turn the tide on the pandemic. COVID Collaborative includes expertise from across Republican and Democratic administrations at the federal, state and local levels, including former FDA commissioners, CDC directors, and U.S. surgeon generals; former U.S. secretaries of Education, Homeland Security, Defense, and Health and Human Services; leading public health experts and institutions that span the country; leading business groups and CEOs; groups representing historically underserved populations; major global philanthropies; and associations representing those on the frontlines of public health and education.

### Duke Global Health Innovation Center

The [Duke Global Health Innovation Center](#) supports the scaling of health care delivery and policy innovations through applied research and education to improve health worldwide. Duke GHIC links global health, health policy, and health innovation efforts across Duke University, and partners with Innovations in Healthcare, a Duke-hosted non-profit that aims to increase access to quality, affordable health care worldwide by scaling leading innovations.

### Duke Global Health Institute

Formed in 2006 as part of Duke University's commitment to spark innovation in global health research and education, the [Duke Global Health Institute](#) brings together knowledge and resources from across the university to address the most important global health issues of our time.

### About the Duke-Margolis Center for Health Policy

The Robert J. Margolis, MD, Center for Health Policy at Duke University is directed by Mark McClellan, MD, PhD, and brings together expertise from the Washington, DC policy community, Duke University and Duke Health to address the most pressing issues in health policy.

The Center's mission is to improve health, health equity, and the value of health care by developing and implementing evidence-based policy solutions locally, nationally, and globally. For more information, visit [healthpolicy.duke.edu](https://healthpolicy.duke.edu).





## Appendix

### List of Publicly Available Trackers/Dashboards

Measure	Type of Tracker	Link
ACT-A/MLTF	Global COVID-19 Access Tracker	<a href="https://covid19globaltracker.org">https://covid19globaltracker.org</a>
Multilateral Leaders Task Force (MLTF) on COVID-19	Vaccines, therapeutics, and diagnostics	<a href="https://data.covid19taskforce.com/data">https://data.covid19taskforce.com/data</a>
IMF-WHO	Vaccine supply	<a href="https://www.imf.org/en/Topics/imf-and-covid19/IMF-WHO-COVID-19-Vaccine-Supply-Tracker">https://www.imf.org/en/Topics/imf-and-covid19/IMF-WHO-COVID-19-Vaccine-Supply-Tracker</a>
WHO	Vaccines and vaccination	<a href="https://app.powerbi.com/view?r=eyJrjoiMWNjNzZkNjctZT-NiNy00YmMzLTkxZjQ0NmJiZDM2MTYxNzEwIiwidCI6ImY2MTB-jMGI3LWJkMjQ0NGIzOS04MTBiLTNkYzI4MGFmYjU5MCIslmMiOjhh9">https://app.powerbi.com/view?r=eyJrjoiMWNjNzZkNjctZT-NiNy00YmMzLTkxZjQ0NmJiZDM2MTYxNzEwIiwidCI6ImY2MTB-jMGI3LWJkMjQ0NGIzOS04MTBiLTNkYzI4MGFmYjU5MCIslmMiOjhh9</a>
WHO AFRO	Cases, deaths	<a href="https://who.maps.arcgis.com/apps/dashboards/0c9b3a8b-68d0437a8cf28581e9c063a9">https://who.maps.arcgis.com/apps/dashboards/0c9b3a8b-68d0437a8cf28581e9c063a9</a>
PAHO	Vaccines	<a href="https://www.paho.org/en/dashboard-preparedness-reception-covid-19-vaccines-americas">https://www.paho.org/en/dashboard-preparedness-reception-covid-19-vaccines-americas</a>
UNICEF	Vaccines	<a href="https://www.unicef.org/supply/covid-19-vaccine-market-dashboard">https://www.unicef.org/supply/covid-19-vaccine-market-dashboard</a>
UNICEF, COVAX	COVAX vaccine procurement	<a href="https://cpp.unicef.org/dashboard/1">https://cpp.unicef.org/dashboard/1</a>
Duke University	Vaccine purchases, donations, and manufacturing sites	<a href="https://launchandscalefaster.org/COVID-19">https://launchandscalefaster.org/COVID-19</a>
Our World in Data	Cases, deaths, testing, hospitalization, vaccination, etc.	<a href="https://ourworldindata.org/explorers/coronavirus-data-explorer">https://ourworldindata.org/explorers/coronavirus-data-explorer</a>
Bloomberg	Cases and vaccine coverage	<a href="https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/">https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/</a>
UNDP	Cases, deaths, health system capacity	<a href="https://data.undp.org/covid-19/health-first/">https://data.undp.org/covid-19/health-first/</a>
UNDP	Vaccines	<a href="https://data.undp.org/vaccine-equity/">https://data.undp.org/vaccine-equity/</a>
PATH	Oxygen needs	<a href="https://www.path.org/programs/market-dynamics/covid-19-oxygen-needs-tracker/">https://www.path.org/programs/market-dynamics/covid-19-oxygen-needs-tracker/</a>
FIND	Testing	<a href="https://www.finddx.org/covid-19/test-tracker/">https://www.finddx.org/covid-19/test-tracker/</a>
KFF	Global vaccine coverage	<a href="https://www.kff.org/interactive/kff-global-covid-19-coverage-tool-current-and-projected-coverage/">https://www.kff.org/interactive/kff-global-covid-19-coverage-tool-current-and-projected-coverage/</a>
Quad Country COVID-19 Response	Vaccines and funding for Indo-Pacific region	<a href="https://share.usaid.gov/views/QUADCountryCOVID-19Response-Dashboard/Indo-PacificRegionOverview?%3AshowAppBanner=false&amp;%3Adisplay_count=n&amp;%3AshowVizHome=n&amp;%3Aorigin=viz_share_link&amp;%3AisGuestRedirectFromVizportal=y&amp;%3Aembed=y">https://share.usaid.gov/views/QUADCountryCOVID-19Response-Dashboard/Indo-PacificRegionOverview?%3AshowAppBanner=false&amp;%3Adisplay_count=n&amp;%3AshowVizHome=n&amp;%3Aorigin=viz_share_link&amp;%3AisGuestRedirectFromVizportal=y&amp;%3Aembed=y</a>